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Large-scale Residential Development (LRD) and Creche

Barrysparks and Crowscastle, Swords, Co. Dublin

Bovale Developments Unlimited Company (Applicant)

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)

August 2025

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Large-scale Residential Development and Creche at Barrysparks and Crowscastle, Swords, Co. Dublin

Bovale Developments Unlimited Company (Applicant)

Environmental Impact Assessment Report (EIAR) Submitted To Fingal County Council With Planning Application For Largescale Residential Development (LRD)

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NON-TECHNICAL SUMMARY

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The Environmental Impact Assessment Report (EIAR) has been prepared on behalf of the applicant, Bovale Developments Unlimited Company, in association with the submission of a planning application to Fingal County Council, for a Largescale Residential Development (LRD) and creche at Barrysparks and Crowscastle, Swords, Co. Dublin.

The purpose of this Non-Technical Summary (NTS) is to present the key findings in clear, simple language for readers without technical expertise. It provides an overview of the proposed project, its potential environmental impacts, mitigation measures, and alternatives considered. The NTS enables the public and decision-makers to understand and engage with the project's implications and ensures that stakeholders can contribute meaningfully to the approval process.

DESCRIPTION OF PROJECT AND ALTERNATIVES

The site (c. 6ha) is located at Barrysparks and Crowscastle, Swords, Co. Dublin.

The design and layout of the planning application has been informed by the relevant provisions of the *Fingal County Development Plan 2023-2029,* the *Barrysparks & Crowscastle Masterplan 2019* and relevant Ministerial Guidelines.

The proposed development is a Large-scale Residential Development (LRD). The proposed development will consist of 4no. blocks (Blocks A-D) comprising 530 apartments with associated ancillary accommodation and creche.

A summary of the key statistics is as follows:

No of Units:	530no.
Unit Mix:	1 Bedroom Apts 244 (46%) 2 Bedroom Apts 235 (44%) 3 Bedroom Apts 51 (10%)
Total GFA:	49,210sqm
LRD GFA	47,278.5sqm (ex. Creche 462.5sq.m and 1469sq.m ancillaries)
Non LRD GFA	462.5sq.m
LRD GFA as % Of Total GFA	99%
Housing Density:	157 units / ha based on site of 3.3ha.
Plot Ratio:	c.1:1.45
Site Coverage:	c.25%
Building Height:	1-9 storeys
Car Parking Spaces:	163 spaces

The operational activities associated with the development are those typical of any new residential use development in an expanding suburban context. The population arising from the proposed apartments will be c.1200 people. A small number of people, 8 to 9 persons, will be employed by the creche element.

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The construction of the project could take up to 2-3 years to complete and the phasing and construction programme assumed in this EIAR is based on the 4 blocks being developed over a continuous sequential programme. If more than one block is constructed at the same time, then the construction programme will shorten. While the phasing and sequencing "worst case" assumptions are made to inform this EIAR, the phasing is not intended to be binding and can be subject to agreement with the Planning Authority prior to commencement. This EIAR contains a description of the construction process as it is known at this pre-consent stage and ahead of detailed design development and the details are based on the **Outline Construction Environmental Management Plan** (OCEMP) which is submitted with the planning application. (Appendix 2A).

In the event of a grant of permission, the appointed contractor(s) will update the OCEMP to comply with and implement the requirements and mitigation and monitoring measures set out in this EIAR and any conditions imposed as part of the granted planning approval. This report can be submitted to the Planning Authority prior to commencement.

As the project is supported by the Development Plan/ Masterplan, no other alternative locations were considered. The consideration of alternative layouts and design solutions was part of the design process through numerous iterations of the site layout and the design of the buildings in their external manifestation. The iterative design process also involved alternative internal layouts of the buildings based on input from technical experts relating to topics such as mechanical and electrical engineering, structural engineering, fire and daylight/ sunlight. On this basis, reasonable alternatives have been considered and no alternatives have been overlooked which would significantly reduce or further minimise environmental effects.

POPULATION AND HUMAN HEALTH

The policy context for the proposed development is favourable and follows the provisions and guidance set down in the Masterplan, the Development Plan and the regional, national and sectoral policies which the Planning Authority is bound to implement.

The baseline environment is characterised by the site itself which has no permanent residential population at present and is located c.700m to the south of Swords and the Pavilions Shopping Centre, north east of Airside Retail and Business Parks and north of the Holywell residential estate.

There are no existing structures on the lands. The Barrysparks lands comprise an area of undeveloped urban fringe incorporating undulating grassland. The Gaybrook Stream enters the Barrysparks lands at the western boundary from Airside Business Park. The stream turns south along the western boundary and then turns east across the site to divide the site into north and south. The southern section of the site slopes to the north towards the water course. The northern section of the site is relatively flat with a slight slope to the stream.

Against this background, the proposed development is consistent with land use and transportation policy and no significant negative impacts on population and human health are predicted.

During construction, the main likely significant effects are a positive impact on employment with c.-600-650 direct jobs created and indirect employment generated in the local economy as a result of the multiplier effect.

During construction, the proposed development will cause loss of amenity, disruption and inconvenience to local residents and the nearest receptors. However, this impact will be temporary in nature and mitigated insofar as practicable through the Contractor's Construction and Environmental Management Plan (CEMP). The CEMP will implement the requirements and mitigation measures set out in this EIAR and any conditions attached to a grant of planning. The effects caused by air quality, noise and vibration and transport are addressed in the relevant Chapters of this EIAR. Subject to adherence to best practice construction health and safety procedures, no significant adverse effects on human health are anticipated during the construction of this development.

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During the operational phase, the impact of the development on the wider population are considered to be significant and positive and the main impacts are:-

- an increase in population, a long term positive moderate effect which will accelerate the rate of population increase in accordance with local regional and national policy;
- a permanent positive significant change in the landscape from underutilised urban fringe to urban;
- positive long term impact on employment and the local economy through the creation of jobs and associated multiplier effect;
- the commercial facilities in the proposed development will likely have a positive moderate impact on facilities in the area for existing and future populations;

In the operational stage, measures to address health and safety considerations, including risks of fire, flooding and universal access have been addressed as part of design mitigation and will be subject to the relevant regulations to ensure no significant adverse impacts on population and human health. No other significant impacts are predicted.

BIODIVERSITY

The lands at Barrysparks are not designated for nature conservation purposes. They comprise an area of undulating grassland, scrub and hedgerows with a watercourse - the Gaybrook Stream and a drainage ditch running through the site. The majority of the grassland is described as Dry meadows and grassy verge grassland (GS2) with some elements of dry calcareous and neutral grassland (GS1) and wet grassland (GS4). Some areas flood and hold standing water during the winter and these areas contain a mosaic of recolonising bare ground (ED2) and wet grassland (GS4). Other areas are dominated by scrub (WS1). A number of treelines (WL2) are present. The conservation value of the grassland habitats within the site has varied over the years depending on the grazing regime and management. The areas of grassland, scrub, hedgerow, treelines and the watercourse within the application site are assessed as being habitats of high local value (C site) for biodiversity within the context of Swords and environs. The grassland in the wider FCC Barrysparks Masterplan lands are assessed as being of County importance (C+ site).

The Gaybrook Stream and drainage ditch are of local ecological importance but provide a hydrological link between the Barrysparks masterplan lands and the European sites downstream.

The lands support populations of hedgehog, brown rat, rabbit, and fox. Three species of bats were recorded using the site for foraging and commuting purposes – these are Leisler's bat, Common pipistrelle and Soprano pipistrelle.

Ornithological wintering bird surveys were completed over three wintering bird seasons – 2022/2023, 2023/2024 and 2024/2025. These surveys showed waterbirds using the northern FCC Barrysparks lands on a small number of occasions over two wintering bird seasons (2022/2023 and 2023/2024). The most recent of the surveys (2024/2025) recorded no evidence of waterbirds using either the

northern section of the Barrysparks Masterplan lands or the application site. The nature of the habitats within the application site in 2025 are of low importance for ex-situ wintering waterbirds and the current condition of habitats present on the site are not conducive to wintering waterbirds.

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Site specific measures have been designed to be implemented during both the construction and operational phases of the site to ensure that no negative impacts arise from surface water runoff or other potential pollutants from entering the Gaybrook Stream and adjoining drainage ditch with potential subsequent impacts on the Malahide Estuary SAC (Site Code; 000205), the Malahide Estuary SPA (Site Code; 004025) and the North-West Irish Sea SPA (Site Code: 004236), downstream.

At construction stage the OCEMP will ensure that the project avoids potential impacts on water quality in the Gaybrook Stream and the identified European Sites downstream. At operational stage standard SuDs design features will limit run-off rates and safeguard storm water quality discharging to existing watercourses. In relation to foul waters from the proposed development, it has been confirmed that the Swords WWTP has sufficient capacity to accommodate the proposed development.

Biosecurity measures will be implemented to ensure that no invasive species listed under the Birds and Natural Habitats Regulations 2011 are introduced to the site with potential risks to the Malahide Estuary SAC (Site Code; 000205), the Malahide Estuary SPA (Site Code; 004025) and the North-West Irish Sea SPA (Site Code: 004236) downstream. Mitigation measures are included to ensure the protection of waterbird habitat adjoining the application site within the northern lands during the construction phase of the project.

Overall, the impact on flora and fauna within the application site is deemed not to be significant as the habitats and species present are common and widespread.

This land is zoned for residential development and is identified as such within the *Fingal Development Plan 2023 – 2029* and the *Barrysparks & Crowscastle Masterplan 2019*, both of which support the development of the lands adjacent to Swords and the planned Metrolink. As such residential development will occur on this site and the environment on the site will change. The location of the project has been determined by the zoning and designation of the lands.

The proposed development retains and enhances some of the natural features of the site where possible and includes positive planting proposals which will add some diversity to the site which will favour some species.

LAND AND SOILS

Receiving Environment

The site is currently undeveloped and contains no buildings. A ground investigation was carried out, including 20 trial pits dug up to 2.8 m deep, with bedrock expected at about 10 m below ground level. The soils on site mainly consist of glacial till, a clay-rich material that does not allow water to pass through easily. In the southwest, along the Gaybrook Stream, more recent river sediments (alluvium) are present. The underlying bedrock belongs to the Malahide Formation. The site is not located within or near any Geological Heritage Site; the closest is Feltrim Quarry, about 1.1 km to the southeast. Based on the NRA/TII methodology for evaluating geological features, the bedrock and soil characteristics at the site are assessed as having Low Importance.

Characteristics of the Proposed Development

The construction phase of the Proposed Development poses the greatest potential risk to the soil and geological environment. The main activities of concern include site preparation, excavation, and infilling works. Key risks arise from:

- Accidental spills, leaks, or discharges
- Site levelling and excavations
- Storage of hazardous materials
- Import and export of materials.

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Potential Impacts of the Proposed Development

An analysis of the potential effects of the Proposed Development on land, soils, and the geological environment is provided for both the construction and operational phases.

Construction phase

In absence of mitigation measures, the construction phase would present potential impacts associated to the following activities:

- Excavation and infilling.
- Accidental spills, discharges, and leaks.
- Storage of Hazardous Materials.

Soil will be regularly removed offsite to minimize stockpiling. Local soil removal and infilling during construction may increase the aquifer's vulnerability before stormwater drainage and services are installed. However, capping the site with hardstand and buildings after construction will reduce the risk of aquifer contamination.

Without the consideration and employment of mitigation measures the potential impacts during the construction phase on land, soils and geology are negative, not significant and short term.

Operational Phase

The Proposed Development will increase the hardstanding area, which protects the underlying aquifer but reduces local recharge. However, given the large size of the aquifer, this reduction will not significantly affect the natural hydrogeological regime. The operational phase, consisting of typical residential activities, will not disturb the topsoil, subsoils, or geology further. While the increase in hardstanding may have a local effect on land, soils, and geology, there is no need for bulk fuel or diesel storage.

Mitigation Measures

Construction Phase

In order to reduce impacts on the soils, geological and hydrogeological environment, a number of mitigation measures will be adopted as part of the construction works on site.

- Implementation of a Construction & Environmental Management Plan (CEMP).
- Control of soil excavation.
- Regular source of fill and aggregates.
- Surface water management during construction.
- Fuel and chemical handling.

The predicted impact on the geological and hydrogeological environment during the construction phase is neutral, imperceptible and short-term, the magnitude of impact is considered negligible.

Operational Phase

A number of design measures will be put in place to minimise the likelihood of any spills entering the soil and groundwater environment to include the design of the car park with hydrocarbon interceptors. A large portion of the development area will be covered in hardstand, which protects the underlying soil and aquifer but reduces local recharge to the aquifer.

The proposed surface water drainage system comprises multiple design SuDS measures. No further mitigation measures are to be required during the operational phase.

The predicted impact on the geological and hydrogeological environment during the construction phase is neutral, imperceptible and long-term, the magnitude of impact is considered negligible.

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Residual Impact of the Proposed Development
Construction Phase
The mitigation and monitoring measures will effectively address potential impacts during the construction phase, with the residual effect on soils and bedrock being neutral, imperceptible, and short-term, the magnitude of impact is considered negligible.

Operational Phase
The mitigation and monitoring measures will effectively address potential impacts once the Proposed Development is operational. The residual effect on soils and geology during the operational phase is considered neutral, imperceptible, and long-term, with the impact magnitude rated as negligible according to TII criteria.

Cumulative Impact of the Proposed Development
As has been identified in the receiving environment section, all cumulative developments that are already built and in operation contribute to the characterisation of the baseline environment. As such any further environmental impacts that the proposed development may have in addition to these already constructed and operational developments have been assessed in the preceding sections of this chapter.

There are no relevant other than the permitted or proposed developments within the immediate vicinity of the proposed development site.

Construction Phase
During the construction phase, the primary cumulative impact on land, soils, and geology will be from stockpiling materials. However, mitigation measures will be implemented to ensure proper earthworks handling and minimize soil contamination, protecting the underlying aquifer. Contractors for other developments will also be required to follow measures to protect soil quality in compliance with relevant regulations. The residual cumulative impact, combined with other developments, is considered neutral, imperceptible, and short-term.

Operational Phase
During the operational phase, the primary cumulative impact on land, soils, and geology is the risk of accidental spills, leaks, and discharges into the soil. However, mitigation measures will be implemented to prevent and control these risks, safeguarding the soil and underlying bedrock aquifer. The residual cumulative impact, combined with other developments, is considered neutral, imperceptible, and short-term.

WATER & HYDROLOGY

Receiving Environment
The proposed development site lies within two catchment areas: Nanny-Delvin and the Broadmeadow and Mayne subcatchments. The Gaybrook Stream flows from the Airside Business Park along the western boundary of the site toward the south, with a central field drainage ditch discharging into it. Due to the local west-to-east slope, most surface water runoff is expected to drain eastwards into the Gaybrook Stream, which eventually discharges into the Broadmeadow Water Transitional Waterbody and then into Malahide Bay Coastal Waterbody.

The Gaybrook Stream has a Water Framework Directive (WFD) status of 'Poor' (2016–2021), while the Broadmeadow and Malahide Bay waterbodies have a 'Moderate' risk score. There are no recreational waters, bathing waters, or surface water drinking sources in the vicinity. Most of the site lies outside the 0.1% Annual Exceedance Probability (AEP) flood extent, and the site is generally classified as Flood Zone C (low fluvial flood risk). A small section of the proposed new road intersects Flood Zone B, corresponding to a 0.1% AEP flood risk, but the area affected is minimal. No historical floods have been recorded on the site.

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There are no nearby NPWS protected areas. The closest Natura 2000 site, Malahide Estuary SAC/SPA, is approximately 2.5 km east of the site. Based on the TII (2009) methodology, the hydrological features of the site are considered of Low importance.

The bedrock aquifer beneath the site is classified as a Locally Important Aquifer. The site spans two groundwater bodies: Dublin GWB and Swords GWB. Groundwater vulnerability is generally rated as 'Low'. Both groundwater bodies hold a Water Framework Directive (WFD) status of "Good". No Groundwater Dependent Terrestrial Ecosystems (GWDTEs) are present in the vicinity. In line with TII methodology, the hydrogeological features of the site are assessed as being of Medium importance.

Potential Impacts of the Proposed Development

Construction Phase

In absence of mitigation measures, the construction phase would present potential impacts associated to the following activities:

- Increased surface run-off and sediment loading in run-off.
- Accidental spills, discharges and leaks.

Without the consideration and employment of mitigation measures the potential impacts during the construction phase on the hydrology, hydrogeology and surface water quality are negative, significant and short term.

Operational Phase

In absence of mitigation methods, the operational phase would present potential impacts associated to the following activities:

- Accidental Leaks /Unmitigated spills from vehicles.
- Increased surface run-off and sediment loading in run-off.
- Slight increase in hardstanding.

In the absence of mitigation measures (or design measures) the potential impacts during the operational phase on hydrology, hydrogeology and surface water quality are negative, imperceptible, and long-term.

Mitigation Measures

Construction Phase

In order to reduce impacts on the hydrological and hydrogeological environment, a number of mitigation measures will be adopted as part of the construction works on site.

- Construction Environmental Management Plan (CEMP).
- Fuel and chemical handling.
- Wastewater / Surface Water Management
- Silt reduction measures on site will include a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds).
- Control of concrete works.

Operational Phase
A number of design measures will be put in place to minimise the likelihood of any surface water runoff entering the hydrological or hydrogeological environment. In the event of a surface water runoff Sustainable Drainage System (SuDS) will be implemented to prevent contaminants such as hydrocarbons, from entering the stormwater network and affecting local streams, and the underlying groundwater body. The proposed surface water drainage system comprises multiple design SuDS measures. No further mitigation measures are to be required during the operational phase.

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The predicted impact on the geological and hydrogeological environment during the construction phase is neutral, imperceptible and long-term, the magnitude of impact is considered negligible.

Residual Effects of the Proposed Development
Construction Phase
The mitigation and monitoring measures will effectively reduce potential impacts on the hydrological and hydrogeological environment during construction. There will be no significant change in flow or quality. The residual effect on surface water and groundwater quality during construction is considered neutral, imperceptible, and short-term.

Operational Phase
The mitigation and monitoring measures will effectively protect surface and groundwater quality and reduce potential impacts on the hydrological and hydrogeological environment during the operational phase of the development. There will be no significant change in flow or quality. The residual effect on surface water and groundwater quality during operation is considered neutral, imperceptible, and short-term.

AIR AND CLIMATE

The assessment of Air Quality and Climate is contained within Chapter 7.

Air Quality
The air quality assessment has focussed on:

- Potential construction dust emissions and impacts to nearby sensitive receptors such as residential properties, schools, hospitals, etc.
- Potential vehicle emissions from traffic accessing the site for construction works and during operation.

Existing Environment
Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) and are generally well below the current National and European Union (EU) ambient air quality standards.

Impact Assessment
Do Nothing Scenario
In the Do Nothing scenario, the site will remain unchanged, and air quality will follow existing trends. These trends may be influenced by nearby developments and traffic. Since the site is zoned for development, a similar project is likely to be built in the future. As a result, air quality impacts are expected, even without the proposed development and will be *direct, long-term* and *negative* which is overall *not significant.*

Construction Phase
An assessment of the potential dust impacts as a result of the construction phase of the proposed

development was carried out based on the UK Institute for Air Quality Management 2024 guidance document *'Guidance on the Assessment of Dust from Demolition and Construction'*. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property and human health effects. The surrounding area was assessed as being of medium sensitivity to dust soiling and of low sensitivity to dust-related human health effects.

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The sensitivity of the area was combined with the dust emission magnitude for the site under the categories of: earthworks, construction and trackout (movement of vehicles) to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is a medium risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for direct, short-term, negative and slight impacts to air quality, which is an overall not significant impact in EIA terms.

Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. Operational stage traffic emissions were calculated at representative worst-case receptors in the area, and it was determined that concentrations of NO_2, PM_{10} and $PM_{2.5}$ will increase by an insignificant amount as a result of the proposed development. Operational stage traffic emissions will have a long-term, direct, localised, negative and not significant impact on air quality.

Cumulative Impact

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500 m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken.

The dust mitigation measures outlined in Chapter 7 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development is deemed *direct, short-term, negative* and *not significant.*

The traffic figures supplied for the operational phase assessment included traffic associated with cumulative sites. Operational phase direct impacts on air quality associated with the proposed development are predicted to be *long-term, direct, localised, negative* and overall, *not significant*.

Overall, no significant cumulative impacts to air quality are predicted during the construction or operational phases of the proposed development.

Mitigation

Construction Phase

Detailed dust mitigation measures are outlined within Section 7.2.7 of Chapter 7 to ensure that no significant impacts as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction'* as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered, *short-term, direct, negative* and *imperceptible,* which is overall *not significant* in EIA terms, posing no nuisance at nearby sensitive receptors (such as local residences).

Operational Phase

No site-specific mitigation measures are proposed for the operational phase as there are no significant impacts predicted.

Residual Impact Assessment
When the dust mitigation measures are implemented, the residual effect of fugitive emissions of dust and particulate matter from the site will be *short-term, direct, localised, negative* and *not significant*.

The impact to air quality during the operational phase of the proposed development as a result of emissions from vehicles accessing the site have been assessed as having a *long-term, direct, localised, negative* and *not significant*.

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Climate

Existing Environment
The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 57.64 Mt CO_2e in 2024. This is 1.03 Mt CO_2e higher than Ireland's annual target for emissions in 2024. EPA projections indicate that Ireland has used 82.5% of the 295 Mt CO_2e Carbon Budget for the five-year period 2021-2025. This leaves 17.5% of the budget available for 2025, requiring a substantial 10.3% annual emissions reduction for 2025 to stay within budget.

Impact Assessment
The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

Greenhouse Gas Assessment
GHG emissions associated with the proposed development are predicted to be a small fraction of the relevant sectoral 2030 emissions ceilings. The proposed development will incorporate some mitigation measures which will aim to reduce climate impacts during construction and once the development is operational. At a minimum these include the Nearly Zero Energy Building (NZEB) compliance and targeting a Building Energy Ratio (BER) in line with the NZEB requirements.

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough to meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "*PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document"*. There will be a slight increase in the traffic on the local road network which will result in some minor increases in CO_2 emissions. These have been assessed as a small fraction of Ireland's transport sector 2030 emissions ceiling.

A number of sustainability measures have been incorporated into the design of the development to ensure impacts to climate are reduced.

Climate Change Risk Assessment
A CCRA was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog; wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is

not considered significant.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the proposed development.

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Cumulative Assessment

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that *"the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative".*

As a result, the cumulative impact of the proposed development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

Mitigation

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised. Design mitigation has been considered when assessing the vulnerability of the development to future climate change.

Residual Impact Assessment

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII reference the Institute of Sustainability and Environmental Professionals (ISEF) (formerly known as Institute of Environmental Management & Assessment (IEMA)) guidance which states that the crux of assessing significance is *"not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050".* The proposed development has been designed to reduce the impact on climate where possible during operation. The proposed development has incorporated some mitigation measures to reduce climate change impacts. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered *direct, long-term, negative* and *slight* which is *not significant* in EIA terms.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change.

NOISE AND VIBRATION

AWN Consulting Limited has been commissioned to conduct an assessment of the noise and vibration impacts associated with the proposed proposed large scale residential development (LRD) and crèche at Barrysparks and Crowscastle, Swords, Co. Dublin.

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are primarily attributed to aircraft and road traffic. The Dublin Airport noise contours have also been taken into account for this assessment.

The noise impact assessment has focused on the potential outward impacts associated with the construction and operational phases of the proposed development on its surrounding environment, as well as the potential inward impacts on the development itself during the operational stage.

Construction Phase

During the construction phase, noise impacts are expected to vary depending on receptor type and distance from the works. For residential receptors, works within approximately 35m of the site boundary may result in exceedances of the Construction Noise Threshold (CNT), leading to short-term, negative and moderate to significant impacts. These exceedances are associated with the initial site clearance and preparation phase, which is temporary in nature and limited to a duration of approximately six months. For the remainder of the site works, predicted noise levels are lower, and within the CNT at the closest residential receptors located 35 m from the site boundary. At greater distances, predicted noise levels reduce below the CNT and noise impacts are expected to be short-term, negative and slight to moderate. Given the higher CNT applicable to commercial properties, exceedances are only expected where works occur within approximately 10 m of the site boundary. In such cases, noise impacts are predicted to be short-term, negative and moderate to significant. Beyond this distance, predicted noise levels fall below the CNTs, and noise impacts are expected to be short-term, negative and slight to moderate.

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Construction Vibration

Vibration impacts from construction works at residential receptors are expected to be below a level that would cause disturbance to building occupants. The impacts are predicted to be temporary, imperceptible to not significant. Similarly, at commercial receptors vibration levels are expected to be below a level that would cause disturbance to building occupants although it may be perceptible. The impacts are predicted to be temporary, not significant to slight.

Operational Phase

During the operational phase, the outward noise impact to the surrounding environment will be due to additional traffic on surrounding roads and plant noise. Additional traffic from the proposed development is predicted to cause a negative, not significant and long-term impact. Suitable criteria have been selected for plant noise emissions that will be adhered to at the design stage to ensure the impact is negative, not significant and long-term.

Inward Impact

The operational phase inward impact assessment has taken account of the road traffic increases. The assessment provides upgraded glazing and ventilation specifications that are required in order to mitigate the inward noise impact on the development itself. The mitigation covers both the residential aspects of the development and the childcare facility.

MATERIAL ASSETS: BUILT SERVICES

POGA Consultant Engineers prepared the Material Assets chapter. This chapter looks at how the proposed 530-unit residential development at Barrysparks, Swords will affect local services and infrastructure, such as water, wastewater, drainage, electricity, and communications.

Main Findings

- Built Environment & Land Use: The site covers 6 hectares and will include four apartment blocks and a crèche. The land is already zoned for this type of development under the Fingal County Development Plan, so the project is in line with planning policy.
- Access & Roads: The development will be accessed from the R132, Lakeshore Drive, and a new link road to the Holywell Distributor Road. Roads and pedestrian/cycle routes will meet national design standards. Once completed, roads and open spaces will be handed over to the local authority.
- Water, Wastewater & Drainage:
- A connection to the public water supply is feasible, though upgrades to local pipes will be

needed (to be funded by the developer).

- Wastewater can connect to the existing sewer on Drynam Road, which has enough capacity.
- Surface water will be managed on-site using Sustainable Drainage Systems (SuDS) using natured based solutions, such as green roofs, swales, rain gardens, and an attenuation basin, before being released into a nearby ditch and stream.
- Gas: The development will not use natural gas; electricity will be the sole energy source.
- Electricity: Electricity supply will come from the local ESB network with new substations included on-site. The network can handle the extra demand.
- Telecommunications: Telecoms and broadband services can be provided by existing operators without infrastructure upgrade.
- Waste Management: Waste will be managed in line with Fingal County Council's plans and Ireland's national shift toward a "circular economy," focusing on recycling and reuse.

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Impacts

During Construction: Temporary impacts such as noise, dust, and traffic are expected but will be controlled through standard measures. Utility connections may cause brief local disruptions, but these will be coordinated with service providers. Overall, construction impacts are assessed as minor and temporary.

During Operation: Once complete, the development will have no significant negative impacts on services or infrastructure. It will make positive contributions by providing housing in an area near future public transport upgrades (e.g., MetroLink).

Mitigation & Monitoring

Construction will follow a management plan to minimise local disruption.

Utility works will be coordinated with service providers.

No additional long-term monitoring is required beyond what is already covered in other EIAR sections.

Overall Conclusion

The project is expected to have neutral to positive long-term effects on material assets. Local services can accommodate the development with some planned upgrades, and the scheme supports Fingal's planning goals for higher-density housing in well-connected areas.

MATERIAL ASSETS: TRANSPORTATION

The Traffic and Transport chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by ILTP Consulting (ILTP) and assesses any likely and significant impacts associated with traffic due to the proposed development. Mitigation measures are proposed where negative effects are identified.

Methodology

ILTP coordinated traffic count surveys undertaken in May 2025 to collate the full set of traffic data necessary to support the planning application for the proposed development.

ILTP conducted an assessment of available information on traffic trends, including the Transport Strategy for the Greater Dublin Area, the current Fingal County Development Plan 2022 – 2028, the National Sustainable Mobility Policy (2022) and the Climate Action Plan.

ILTP calculated the estimated trip rates from the proposed development and added these figures to the base flows. A LinSig analysis was also undertaken to assess the capacity of the proposed new signalised access onto the R132.

Picady, Arcady and LinSig Traffic Signal Junction modelling software was also utilised to assess the capacity of the adjacent junctions with the proposed development in place. The Picady and Arcady software packages were used to calculate RFC (ratio of flow to capacity) factors for the approaches to a junction. These industry-standard software packages are often used to assess the capacity of priority junctions and roundabouts, respectively.

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From these results, a conclusion could be drawn as to the impact that the development will have on the overall traffic flows. Once details were available, ILTP then assessed what impact the development had on the road network.

The proposed development also includes a new link road through the lands connecting the R132 with the Holywell Distributor Road. This allows some of the existing traffic on the surrounding roads to link through the lands. The redistribution of traffic was also assessed and traffic on surrounding routes was shown to reduce.

A study of public transport provisions in the area was also carried out to determine the likely usage of public transport services by residents, staff and customers to the new development.

As part of the Traffic & Transport Assessment (TTA) undertaken, ILTP prepared a Mobility Management Plan (MMP) for the proposed development, with the specific objectives of reducing in overall terms both the number of trips generated by the development and ensuring that greater numbers use the extensive public transport services in the immediate area.

ILTP also assessed the construction stage traffic impacts of the proposed development on the wider road network.

In terms of projecting future year traffic scenarios beyond the 2025 Base Year, the assumed Opening Year of the proposed development was taken to be 2028, with the Design Year taken as 2043. The Opening Year refers to the anticipated year of first occupation of the development, and the Design Year is 15 years post Opening Year.

Baseline Environment

The Barrysparks lands are bounded by the R132 to the north, current access is via an existing entrance off Drynam Road in the northeast of the site. The adjoining road network includes the Holywell Link Road to the southeast of the lands and Lakeshore drive near the western boundary.

Potential Impacts of the Proposed Project

Construction Phase
Construction of the Proposed Development will have slight short-term negative impacts on the adjoining road network as a result of the following:

Additional HGV traffic along the proposed designated haul route will have a slight medium-term adverse effect on the local road network during the construction works.

Additional construction personnel car / light vehicle movements which will have a slight medium-term adverse effect on the local road network during the construction works.

Construction vehicle movements associated the proposed development when undergoing service connections on the public road, which will have a slight short-term adverse effect on traffic movements on these roads in the vicinity of the proposed development.

Construction vehicle movements and works will have a slight short-term adverse effect on pedestrian and cycle movements on roads in the vicinity of the proposed development, for example due to pedestrians and cyclists having to give way at the construction access to the site and/or divert around construction works.

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Operational Phase
The new signalised junction on the R132 will have a significant long-term impact in the immediate vicinity of the proposed development on the R132.

Traffic flows along the R132 and the Holywell Distributor Road in the immediate vicinity of the proposed accesses are estimated to increase by over existing levels, which will have a moderate long-term effect on the adjoining section of public road. Traffic flows on the wider road network are estimated to increase by less than 5% and will therefore have a slight traffic impact on the wider road network.

However, these traffic increases will be offset by the redistribution of some existing traffic through the Barrysparks LRD site via the new link road. This will have a long term positive traffic impact on the wider road network.

The improved walk and cycle facilities included in the development, including a new pedestrian and cycle route link through the site, would further improve connectivity to the bus and the proposed Metrolink service in the area for both new and existing residents of the area.

The proposed pedestrian and cycle routes through the proposed development would have significant long-term positive effects regarding reduced walking and cycling travel times to public transport services and improved permeability and connectivity to amenities in the area

Residual Impacts (post-mitigation)
The implementation of mitigation measures during the construction and operational phases will ensure that the Proposed Development will not give rise to any likely significant long-term traffic impacts.

MATERIAL ASSETS: RESOURCE AND WASTE MANAGEMENT

AWN Consulting undertook the waste management assessment. The receiving environment is largely defined by Fingal County Council (FCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

There will be waste materials generated from site clearance works, excavations, construction of the new development and from the operation of the new development. There is currently no waste generated at the proposed development site.

Potential Impacts and Mitigation Measures of the Proposed Development

Construction Phase
During the construction phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be long-term, significant and negative.

Operational Phase

The potential impacts on the environment during the operational phase of the proposed development would be caused by improper, or lack of waste management. In the absence of mitigation, the effect on the local and regional environment is likely to be *long-term, significant and negative.*

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Residual Effect of the Proposed Development

Construction Phase

During the construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. While the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the main contractor, who will appoint a construction phase Resource Manager (RM) to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

A carefully planned approach to waste management and adherence to the site-specific Resource and Waste Management Plan (Appendix 11A) and chapter 11 during the construction phase, this will ensure that the effect on the environment will be *short-term, neutral and imperceptible.*

Operational Phase

During the operational phase, waste will be generated by the residents and the creche tenant. Dedicated shared waste storage areas (WSAs) and an individual WSA (creche) have been allocated throughout the development for the use of residents and the creche tenant. The WSAs have been appropriately sized to accommodate the estimated waste arisings from the development. The WSAs have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the curb by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

An Operational Waste Management Plan has been prepared and included as part of this submission as Appendix 11B, This OWMP provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, glass, mixed non-recyclables, garden/green waste, batteries, waste electrical equipment, printer cartridges, chemicals, lightbulbs, textiles, cooking oil, furniture and abandoned bicycles.

Provided the mitigation measures outlined in chapter 11 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be *long-term, neutral* and *imperceptible.*

Cumulative Impact of the Proposed Development

Construction Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. In a worst-case scenario, multiple developments in the area

could be developed concurrently or overlap in the construction phase. Due to the high number of waste contractors in the FCC region, as provided from the National Waste Collection Permit Office and the EPA, there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all of the developments.

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Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate against any potential cumulative effects associated with waste generation and waste management. As such the cumulative effect will be *short-term, imperceptible* and *neutral.*

Operational Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place. All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate any potential cumulative impacts associated with waste generation and waste management. As such the cumulative effect will be a *long-term, imperceptible* and *neutral.*

CULTURAL HERITAGE

IAC Archaeology has prepared this chapter to study the impact, if any, on the archaeological, architectural and cultural heritage resource of a proposed development at Barryspark and Crowscastle, Swords, Co. Dublin. The assessment was carried out by Faith Bailey (MA, BA (Hons), MIAI, MCIfA) and Elizabeth Di Vincenzo (BA (Hons), MSc) of IAC Archaeology.

There are no recorded monuments located within the development area. The closest is a holy well (RMP DU011-045), located c. 40m to the south. There are no protected structures or NIAH structures located in or within the study area of the proposed development. The closest demesne landscape was located c. 245m to the north, but it is no longer extant, having been subject to extensive modern development.

A review of the Excavations Bulletin (1970-2025) has shown that three programmes of archaeological excavation have been carried out within the landscape containing the proposed development. In 2009, part of the site was subject to geophysical survey although the majority of the site was not suitable for survey, having been subject to disturbance in 2008. In 2010 the western portion of the development area was subject to testing, but nothing of significance was identified. In 2021, the eastern portion of the development was subject to testing, but nothing of significance was recorded.

The proposed development area has been subject to a large degree of disturbance, with remaining areas included in a programme of geophysical survey, followed by two programme of archaeological testing. No features or areas of archaeological significance have been identified within the proposed development area. It is possible that isolated or small-scale archaeological features survive within the proposed development area outside of the locations of the previously excavated test trenches. Any such features would subject to direct, negative, permanent impacts as a result of ground disturbances

associated with the construction of the development. Effects may range from moderate to significant, depending on the nature and extent of any remains that may be present.

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There are no architectural sites within the proposed development area and as such there will be no impacts arising from the construction of the proposed development.

The townland boundaries are largely being retained as part of the proposed development, with the exception of a small portion of the Barryspark/Crowscastle, which will removed to facilitate a roadway as part of the proposed development. This represents a direct, negative permanent impact. The significance of effect is slight.

Archaeological monitoring of topsoil stripping will be carried out by a suitably qualified archaeologist in order to identify any archaeological features that may survive within the proposed development area. If any such features are discovered, further mitigation will be required such as preservation in situ or preservation by record. Any further mitigation will require agreement from the National Monuments Service.

A written and photographic record will be made of the section of the townland boundary to be removed and its removal will be subject to archaeological monitoring.

Following the implementation of the mitigation measures, there will be no significant residual impacts on the archaeological, architectural and cultural heritage resource.

No impacts are predicted upon archaeological, architectural and cultural heritage resource at operation stage. In addition, no cumulative impacts are predicted upon on the archaeological, architectural or cultural heritage resource.

LANDSCAPE

The Landscape chapter, prepared by Richard Butler MILI MIPI of Model Works Ltd, assesses the potential effects of the proposed development on the landscape character and visual amenity of the receiving environment. It should be read in conjunction with the book of verified photomontages contained in Appendix 13A of the EIAR (Volume 2).

The Site

The site is a greenfield land parcel of c. 6 ha, and forms part of a wider landholding (all greenfield) of c. 18 ha owned by the applicant. The lands were previously used for agriculture, but this use has ceased and the land cover can now be described as rough grassland with patches of gorse. There are trees and unkempt hedgerow on the banks of the Gaybrook Stream on the west site boundary. The topography of the site is relatively flat and low-lying, and the land rises to the south.

A spur extends from the site to the R132 Swords Bypass, which passes to the north. Between the site and road is the site of the planned/future Swords Central Metrolink station. The site also includes a corridor that runs through the Barrysparks lands to connect the main development area to Holywell Road and the R125 to the south.

Site's Strategic Location

The site is located directly across the R132 from the Pavilions Shopping Centre, which forms part of Swords town centre. The site is 600m from Swords Main Street. The site is thus contiguous with the town centre and adjacent to a future high capacity public transport hub (Swords Central station).

In the Eastern and Midland Regional Spatial and Economic Strategy 2019-2031 (RSES), Swords is identified as one of three Key Towns in the metropolitan area of Dublin. Swords is the northern satellite urban core and gateway to the metropolitan area. The RSES settlement strategy for the key towns is to "*Provide for the sustainable, compact, sequential growth and urban regeneration in the town core... by consolidating the built footprint through a focus on regeneration and development of identified Key Town centre infill/brownfield sites"*.

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The site's strategic location with respect to Swords town centre and the Metrolink, combined with its greenfield condition, has implications for its future land use and landscape character. Compact growth policy demands that such sites be developed to their maximum sustainable potential, taking account of any environmental constraints including landscape/townscape character and visual amenity.

Landscape Character of the Receiving Environment

At the macro level, Swords can be divided into three distinct character areas. These are (1) the town centre, (2) the 20th century western and northern residential suburbs, and (3) a modern, mixed use zone east and south of the town centre, between the R132 Swords Bypass and the M1. The site falls into the latter area. This landscape is characterised by a mix of business, industrial, retail and residential uses, a mostly course urban grain, a lack of permeability/navigability, and diverse plot and building typologies, scale and architecture. Such landscapes have an inherent capacity to accommodate change as there is no norm with which new development can or should conform.

The business, industrial and retail uses (e.g. Airside Business Park, Airside Retail Park and MSD Biotech, all adjacent to the Barrysparks lands) also limit the quality, visual amenity and value of the landscape. The area could benefit from development that counteracts the 'anti-urban' qualities of these uses/developments.

Key Potential Receptors of Landscape and Visual Change

West and south of site

Adjacent to the west of the site is Airside Business Park. This is a sprawling business campus, with large-footprint buildings of various height and mixed architectural quality, surrounded by parking areas. The buildings closest to the site are lower and of lesser architectural quality, while to the south, nearer the business park entrance off the R125, the buildings are taller and more attractive. South of the R125 is an area of retail parks. Both landscape types (business and retail parks) are of low landscape value and sensitivity.

North of site

To the north of the site is the R132 and beyond the wide dual carriageway is Swords Pavilions Shopping Centre. The road carries a large volume of traffic through the modern, mixed use area of the town, and road users are exposed to a wide range of development. The R132 and the road users, as potential receptors of landscape/visual change, are of low sensitivity. The shopping centre north of the road is also of low sensitivity. The site of the future Swords Central Metrolink station, adjacent to the site, is intended to be a catalyst for urban consolidation and densification in the area. It too can be considered of low sensitivity to change of the type proposed.

The only potentially sensitive receptor to the north is the Carlton Court residential estate to the west of Pavilions, diagonally across the R132 from the site – and buffered from the site by the wide road corridor. The estate is additionally protected from the R132 by a dense belt of trees. These trees will function as a visual screen for any development that takes place on the site.

East of site

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Adjacent to the east of the site is an area of unused/greenfield land of the same type as the site. This is part of the applicant's landholding, to be developed in future phases following the proposed development (if permitted).

Further to the east is a residential neighbourhood west of Drynam Road, including Drynam Court, Primrose and Commons East. These are streets of detached and semi-detached houses of suburban character. This area is the only potential receptor to the east that can be considered sensitive to landscape/visual change – although, as an urban neighbourhood in an area already characterised by mixed use and diverse building typologies, scale and architecture, there is some tolerance for change.

Landscape Sensitivities

The main landscape sensitivity on or near the site is the Gaybrook Stream that runs along part of the west boundary before turning east to run through the Barrysparks lands (south of the application site). The stream requires consideration and protection in the development of the lands.

There is also a holy well, St Werburgh's Well, just to the south of the site beside a parking area on the east side of the Airside Business Park access road. The well is hidden in a stand of vegetation. The area surrounding the well is of poor environmental quality, and the well's condition and presentation could be enhanced by the area's development.

Relevant Policy and Guidance – Fingal Development Plan 2023-2029

In the Fingal Development Plan 2023-2029, the site is zoned ME (Metro Economic Corridor), with the objective to: *"Facilitate opportunities for high density mixed use employment generating activity and commercial development, and support the provision of an appropriate quantum of residential development within the Metro Economic Corridor*".

The site is additionally identified as (part of) Masterplan Area 8.D. Section 2.4.2 of the FDP states: *"The preparation of Masterplans will continue to assist in achieving quality developments in terms of, inter alia, urban design, structure, delivery of community/amenity facilities and permeability… The Council will continue to implement the Masterplans currently in place at the time of adoption of the Development Plan".* Among the operational Masterplans identified in the FDP are the Swords Masterplans, which includes the Barrysparks and Crowscastle Masterplan, 2019.

Relevant Policy and Guidance – Barrysparks and Crowscastle Masterplan 2019

The FDP's land use zoning and masterplan designation of Barrysparks confirms that the lands (including the site) are deemed suitable by Fingal Co. Co. for urban development, and that the transformation of Barrysparks into an urban landscape is acceptable in principle. The Barrysparks and Crowscastle Masterplan provides guidance for that landscape change, in the form of a vision and principles, which are grouped under the headings 'land use', 'green infrastructure', 'built form (including urban design), typologies and density', 'interface areas', 'height', and 'open space'.

In a situation such as this, where a landscape is designated for change and a masterplan has been prepared to guide that change, the principles expressed in the masterplan can be used to evaluate proposed developments in the area. If a proposed development is in keeping with the principles of the masterplan and would contribute to the realisation of the vision, then the effects of the proposed development can be classified positive.

Predicted Visual Impacts

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Based on the analysis of the receiving environment and consideration of the characteristics of the proposal, 16 no. viewpoints were selected for visual effects assessment informed by verified photomontages. The viewpoints were also selected to provide visualisations of the proposed development (in the form of verified photomontages) from a wide range of angles and distances.

The effects on each view are individually described and assessed in the chapter. The assessments should be read in conjunction with the verified photomontages provided in Appendix 13A. For each viewpoint, the following views are provided:

- Existing View (photograph)
- Proposed View (Existing View + render of the proposed development)
- Cumulative/Masterplan View (Proposed View + the planning-permitted VHI scheme + massing model of the future phases of development on the applicant's lands)

The effects on the views are summarised in the table below.

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
1	R125 to south of site	Low	Medium	Medium	Not significant negative	Slight positive
2	Airside Business Park main access road	Low	Low-Medium	Low-Medium	Not significant negative	Slight positive
3	Airside Business Park adjacent to St Werbergh's Well	Low	Medium	Medium	Not significant negative	Slight positive
4	Airside Business Park	Low	Medium	Medium	Slight negative	Moderate neutral
5	Airside Business Park	Low	Medium	Medium	Slight negative	Moderate neutral
6	Airside Business Park	Low	Medium	Medium	Slight negative	Moderate neutral
7	Holywell residential estate	Medium	Low	Low	Not significant negative	Not significant neutral
8	Holywell Road	Low	High	High	Slight negative	Moderate positive
9	Barrysparks	Low	Very High	Very High	Not significant negative	Moderate positive
10	Drynam Court off Drynam Road	Medium	Low-Medium	Low-Medium	Slight negative	Moderate positive
11	Commons East off Drynam Road	Medium	Medium	Medium	Slight negative	Moderate positive
12	Footbridge over R132	Low	Medium	Medium	Not significant negative	Moderate positive
13	Pavilions Shopping Centre	Low	Medium	Medium	Not significant negative	Slight positive
14	Exit from Pavilions Shopping Centre onto R132	Low	Medium-High	Medium-High	Not significant negative	Moderate positive

15	The R132 passing to the north of the site	Low	Medium-High	Medium-High	Not significant negative	Moderate positive
16	Carlton Court north of the R132	Medium	Negligible	Negligible	Not significant neutral	Not significant neutral

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Predicted Landscape Impacts

Landscape Sensitivity

The landscape sensitivity of the receiving environment can be classified 'low' (definition: *Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and the principal management objective may be to facilitate change through development, repair, restoration or enhancement*).

There are few valued landscape elements, features or characteristics on or in proximity to the site. Any sensitive receptors (the houses off Drynam Road and at Carlton Court) are well removed and buffered from the site. Much of the site environs – including the Barrysparks lands themselves, Airside Business and Retail Parks, Swords Pavilions and the MSD Biotech site – could benefit from consolidation and enhancement of the urban landscape. In particular, the landscape could benefit from the establishment of a legible, navigable urban grain, the introduction of built form to define streets and spaces, the provision of public open space with passive surveillance from surrounding buildings, and the introduction of uses (e.g. residential) to complement the existing office, employment and retail uses to activate the area.

Magnitude of Landscape Change

The magnitude of landscape change which would result from the proposed development can be classified 'high' (definition: *Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the landscape and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape*). The high magnitude of change classification is based on the following:

- At c. 6 ha, the subject site is large for an urban infill site and constitutes a substantial portion of the Barrysparks lands.
- Comprised of (a) four buildings ranging from one to nine storeys and containing 530 no. apartments and a creche, (b) new streets defined/enclosed by the buildings, (c) road connections to the R132 and across the Barrysparks lands to Holywell Road, and (d) extensive new public open space, the proposed development is of substantial spatial extent and height.
- The development would introduce a new building typology (high density residential) and urban elements and characteristics (urban grain, streets and blocks, buildings/ architecture, public realm, etc.) to the heretofore undeveloped Barrysparks landscape. This would have the effect of expanding Swords town centre southwards across the R132, into the Barrysparks area. It would cause a shift in character in that area - and the wider town centre - towards a 'contemporary urban' condition. While this shift would be relatively remote (and not visible) from the historic town centre (Main Street), it would constitute a significant change in the Barrysparks and Airside area.
- Due to the site's location within view from certain heavily trafficked areas, namely Swords Pavilions, the R132, the R125 and the future Swords Central Metrolink station, the landscape change would be visible to a large number of people. (It should be noted that none of these people would be sensitive to landscape/visual change.)

Significance and Quality of Landscape Effects

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Measuring the magnitude of change ('high') against the sensitivity of the receiving environment ('low'), the significance of the proposed development's landscape effects can be classified 'moderate' (EPA definition: *An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends*).

The key question in a situation such as Barrysparks, when the area has been deemed suitable for development, is zoned for development, and where a masterplan has been prepared by the planning authority to guide the transformation of the landscape, is whether the proposed development is aligned with the principles of the masterplan, and would contribute to the realisation of the vision. This is considered below:

Transport and Movement: The alignment of the proposed roads and their entry points to the site are in keeping with the Barrysparks and Crowscastle Masterplan 2019. The development would establish an urban grain and routes of movement across the site (for pedestrians, cyclists and vehicles) very closely aligned with those envisioned in the Masterplan.

Open Space and Green Infrastructure: The proposal includes a wide corridor of open space inside the east boundary of the main development area of the site, to the east of Blocks C and D. The location and proportions of this space are very closely aligned with the Masterplan's envisaged 'central green spine'. The proposed open space includes pedestrian and cycle routes (allowing for future connections to the Metrolink station and over the R132 to the Pavilions), water detention basins (SUDS features), a playground, exercise equipment and passive recreation amenities (seating). The space includes numerous trees as well as wildflower meadow, amenity lawn areas and ornamental planting. The abundant planting and the scale of the space are such that they would create a parkland character. This is in keeping with the Masterplan, which states: *"It is intended that the Masterplan lands will be set in parkland, with a central green spine of open space that incorporates walking and cycling facilities"*.

The proposal includes a belt of trees and riparian planting along the Gaybrook Stream on the west boundary, as part of a 10m wide riparian corridor (free of built development other than pedestrian paths). This forms a 2nd north-south 'green corridor' to complement the central green spine.

Land Use, Built Form, Typologies and Density: The proposed development includes 530 no. apartments and a creche in four buildings: (a) two linear buildings (Blocks A, B) parallel to the site's west boundary, west of the north-south access road; (b) two blocks of apartment buildings (Block C, D) east of the north-south access road. The buildings are located in the area designated in the Masterplan for apartment development (the area closest to the future Metrolink station and the R132), and their positioning and typologies (linear blocks, perimeter/courtyard blocks) are in keeping with the forms expressed in the Masterplan maps/diagrams.

Height and Interface Areas: The proposed Blocks C and D are both 1–9 no. storeys, with each block comprised of volumes are varying height, to divide the massing into smaller visual units and create visual interest. The height of Blocks C and D is in keeping with the Masterplan, which recognises the favourable context for building height provided by the central green spine to the east of these blocks (the Masterplan states: *"Overall heights on the land will range from 2- to 9-storeys… It is considered that along the central green corridor through the lands and both the R132 and R125, that greater building heights would be appropriate"*).

Proposed Block A is 1–7 no. storeys and proposed Block B is 6–9 no. storeys. These buildings are taller than what was envisioned in the Masterplan, and this is the main difference between the proposal and

the Masterplan (from the LVIA perspective). While taller than the Masterplan's specified heights, the positioning of greater height inside the west boundary is in keeping with the Masterplan's principle of considering the context and respectfully transitioning down where required, e.g. to neighbouring residential areas (such as Drynam Road). The area to the west of Blocks A and B is a part of Airside Business Park. The buildings in this area are two commercial/office storeys tall. (Elsewhere in the business park there are taller buildings, up to six storeys.) The business campus cannot be considered a sensitive landscape, and it would be unsustainable for development on the Barrysparks lands, beside the Metrolink, to be constrained by the scale of the buildings on the neighbouring 20th century business park. Furthermore, it is not unusual, nor necessarily undesirable, for there to be pronounced variations in scale in contemporary urban environments. This can contribute to character, place-making and legibility. The main considerations should be (a) whether the height is warranted/sustainable in the location, and (b) whether it causes any harm (landscape/visual or other) to any sensitive receptors. In this case (a) the additional height in Blocks A and B seeks to make optimal use of the site's position with respect to the Metrolink and Swords town centre, and (b) it would cause no harm to any sensitive receptor; the juxtaposition in scale between Blocks A and B and the neighbouring business park buildings would be notable only from the business park itself.

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One of the Key Objectives of the Masterplan in relation to height is to provide a variety of heights to create visual interest and facilitate access to light. The photomontages illustrate that the proposed development meets this objective.

In conclusion, the landscape effects of the proposed development are predicted to be of moderate significance and positive. The development would create a new high density residential neighbourhood appropriately located close to the Swords Central Metrolink station and Swords town centre. The neighbourhood would be characterised by (a) a legible, navigable urban grain; (b) wide streets prioritising pedestrian and cycle movement and densely planted to form green avenues; (c) generous provision of public open space in the form the central green spine, a green/riparian corridor along the Gaybrook Stream and another green corridor between Blocks C and D (collectively giving the area a parkland character); and (d) buildings of high design and material quality and visual interest.

The assessment of the effects on 16 no. representative viewpoints found that the development would have only positive or neutral visual effects. No negative effects were identified - and there would be no negative effects resulting from Block A and B being taller than envisioned in the Masterplan. The development would make a significant contribution to the realisation of the vision outlined in the Barrysparks and Crowscastle Masterplan 2019 and would cause a positive change in the character of the landscape south and east of the R132.

Mitigation Measures

Construction Stage

The most effective mitigation for the landscape and visual effects of construction is site hoarding. However, hoarding is only effective for ground level activity. When buildings under construction rise above ground level they are exposed and unsightly. Therefore, negative impacts are unavoidable in the construction phase of multi-storey development.

Good practice in site management can reduce unnecessary visual impacts. These may include (a) considered positioning and layout of the construction site with regard to the most sensitive visual receptors, (b) dust control, (c) waste control, and (d) considered positioning of security lighting. A Construction Environmental Management Plan (CEMP) has been prepared and submitted with the LRD application. The CEMP includes measures - or a framework for the future agreement of measures - such as those identified above.

The only recommended construction stage mitigation measures are (1) the positioning of the construction compound as far as practicable from the Drynam Road neighbourhood to the east of the site, and (2) erection and maintenance of site hoarding around the construction site for the duration of construction.

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Operation Stage

The assessment found that the operation stage visual effects of the proposed development would be positive or neutral for all 16 no. representative viewpoints, and the landscape effects would also be positive. Therefore, no operation stage mitigation measures are recommended.

CULMULATIVE IMPACTS

Proposed Metrolink Project

There is potential for cumulative landscape and visual effects to arise from the proposed development in combination with the proposed Metrolink project. The proposed station structure, the railway corridor itself and the associated hard and soft landscaping would have a strong urbanising effect on the landscape locally, affecting the R132 and the adjacent Barrysparks lands in particular. The landscape and visual effects of the two developments would be complementary, combining to reinforce the expansion of Swords town centre across the R132, overcoming the severing/barrier effect that the road currently has in the landscape.

Applicant's Proposed Masterplan for the Wider Barrysparks Landholding

The proposed development has been designed in parallel with the preparation of a masterplan for the Applicant's wider Barrysparks landholding. The proposed development is phase 1 of 5 phases (as currently planned) and would provide important enabling infrastructure (e.g. the road connections to the R132 and Holywell Road) for the subsequent phases. The proposed development and the future phases would combine to cause significant positive landscape effects, expanding the new mixed use quarter across the Barrysparks lands as far as Holywell Road and the R125. This would redefine the landscape character locally - with the relatively low quality, car dominated environments of the Airside Business and Retail Parks, MSD Biotech, etc. counterbalanced by the new high quality, green, sustainable urban environment of Barrysparks.

For a number of the viewpoints assessed in the chapter, the future phases of development across Barrysparks would screen the proposed development from view. Importantly, this is the case for the views from the Drynam Road residential area (Viewpoints 10, 11). Any visual impact that would result from the proposed development on its own will be extinguished by future phases of development on the lands between the site and the Drynam Road area.

Permitted VHI Health Centre

The permitted VHI Health Centre is on the Barrysparks lands to the south east of the site, close to Holywell Road. Although somewhat removed from the site, the two developments would combine to have positive cumulative landscape and visual effects, together advancing the urban development of the Barrysparks lands.

CONCLUSION

The EIAR has considered the likely, significant, adverse effects of the proposed project on the receiving environment, including cumulative impacts and having regard to assessments under other European

Directives. Mitigation measures (see Chapter 15) are included, to avoid and / or reduce impacts on the environment where considered necessary. This includes mitigation measures incorporated into the design of the proposed development. The EIAR concludes that there are no material or significant environmental issues arising from the project which would prohibit the competent authority from issuing consent for the development.

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1. INTRODUCTION

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1.1 PURPOSE OF REPORT

This Environmental Impact Assessment Report (EIAR) has been prepared on behalf of Bovale Developments Unlimited Company (hereafter the Applicant) in association with the submission of a planning application to Fingal County Council, for a proposed Large-scale Residential Development (LRD) and creche at Barrysparks and Crowscastle, Swords, Co. Dublin

The EIA process, including the preparation of this EIAR, and the examination of the information presented by the Local Authority, will inform the decision-making process. The purpose of this EIAR is to assist and inform the Competent Authority in undertaking an environmental assessment of this project.

Therefore, the objectives of this EIAR are summarised as follows:-

- To identify the significant environmental impacts of the project during the construction and operational phases having regard to the characteristics of the receiving environment.
- To evaluate the magnitude and significance of impacts and to propose appropriate measures to mitigate potential adverse impacts.
- To identify, where appropriate, monitoring measures to be implemented during the construction and operational phases.

The nature and extent of the development proposed, i.e. the project being assessed in this EIAR, is outlined in Chapter 2. This is prepared with reference to the plans and particulars submitted with the planning application.

Details of the project will be available online through the EIA Portal[1] and on the website of Competent Authority. A copy of the application, including this EIAR, will also be available on the project specific website for this LRD development.

1.2 STATUTORY REQUIREMENTS

The EIA Directive, Council Directive 85/337/EEC of 27 June 1985 *on the assessment of the effects of certain public and private projects on the environment*, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given.

Council Directive 85/337/EEC has been amended by Council Directives 97/11/EC, 2003/35/EC and 2009/31/EC. These amendments were codified in Directive 2011/92/EU. In 2014, the Directive was further amended by Directive 2014/52/EU.

[1] The EIA Portal is accessible via the Department of Housing, Planning and Local Government website at https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal

1.2.1 Directive 2014/52/EU (Amendment of Directive 2011/92/EU)

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Directive 2014/52/EU amending Directive 2011/92/EU *on the assessment of the effects of certain public and private projects on the environment* was adopted on 16 April 2014.

The definition of the EIA process is redefined under Article 2(g) as follows:-

> *"Environmental impact assessment" means a process consisting of:*
> *(i) The preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2);*
> *(ii) The carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;*
> *(iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;*
> *(iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and*
> *(v) The integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a."*

The content of an EIAR is included in Article 5(1) and expanded upon in Annex IV (See Box 1.1):-

> *"Article 5*
> *1. Where an environmental impact assessment is required, the developer shall prepare and submit an environmental impact assessment report. The information to be provided by the developer shall include at least:*
> *(a) a description of the project comprising information on the site, design, size and other relevant features of the project;*
> *(b) a description of the likely significant effects of the project on the environment;*
> *(c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*
> *(d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*
> *(e) a non-technical summary of the information referred to in points (a) to (d); and*
> *(f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected."*

BOX 1.1 ANNEX IV: DIRECTIVE 2011/92/EU AS AMENDED BY DIRECTIVE 2014/52/EU

INFORMATION REFERRED TO IN ARTICLE 5(1)
(INFORMATION FOR THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT)

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1. *A Description of the project, including in particular:*
   (a) a description of the location of the project;
   (b) a description of the physical characteristics of the whole project, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;
   (c) a description of the main characteristics of the operational phase of the project (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;
   (d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.
2. *A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.*
3. *A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.*
4. *A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.*
5. *A description of the likely significant effects of the project on the environment resulting from, inter alia:*
   (a) the construction and existence of the project, including, where relevant, demolition works;
   (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
   (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
   (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
   (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
   (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;
   (g) the technologies and the substances used.
   The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium- term and long-term, permanent and

temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.

6. *A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.*
7. *A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.*
8. *A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.*
9. *A non-technical summary of the information provided under points 1 to 8.*
10. *A reference list detailing the sources used for the descriptions and assessments included in the report.*

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1.2.2 National EIA Legislation

The 2014 EIA Directive has principally been transposed into national planning law by the *European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018* (S.I. No. 296 of 2018).

EIA provisions in relation to planning permissions are contained in Part X of the *Planning and Development Act, 2000*, As Amended and Part 10 and Schedules 5, 6, 7 and 7A of the *Planning and Development Regulations*, 2001, As Amended.

1.2.3 EIA Related Guidance

EIA related guidance has been published by the European Commission, the Department of Housing, Planning and Local Government (DHPLG) and the Environmental Protection Agency as follows: -

- European Commission (2017) *Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report.*
- DHPCLG (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.*
- EPA (2022) *Guidelines on the Information to be contained in Environmental Impact Assessment Reports.*

1.3 THE NEED FOR AN EIAR – SCREENING

Schedule 5 of the Planning and Development Regulations 2001, As Amended, specifies a variety of projects which require an EIAR. Part 2 (10) relates to 'Infrastructure Projects' and states as follows:-

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10.Infrastructure projects
(a) Industrial estate development, where the area would exceed 15 hectares.
(b) (i) Construction of more than 500 dwelling units.
(ii) Construction of car-parks providing more than 400 spaces, other than a car-park provided as part of, and incidental to the primary purpose of, a development.
(iii) Construction of shopping centres with a gross floor space exceeding 10,000 square metres
(iv) Urban development which would involve an area greater than 2 hectares in the case of a Business District, 10 hectares in the case of other parts of a built-up area, and 20 hectares elsewhere. (In this paragraph "business district" means a district within a city or town in which the predominant land use is retail or commercial use.)"

The development proposed is above the relevant threshold for Part 10(b)(i) and therefore an EIAR is required for this project.

1.4 PROJECT TEAM / CONTRIBUTORS

This EIAR has been prepared on behalf of the developer by a team of qualified experts, as required by the EIA Directive.

As EIA Directors, BMA Planning prepared the Introduction, Description of Project and Alternatives, Principal Interactions and Cumulative Impacts, as well as coordinating and editing the various Chapters, the Non Technical Summary and the Technical Appendices

The expert contributors responsible for the individual Chapters of the EIAR are identified in Table 1.1. Where there were other contributors to these Chapters or the associated Technical Appendices, these inputs are credited in the main Chapter.

Table 1.1 EIAR Team

Chapter	Company	Expert Contributor
3 Population and Human Health	**BMA Planning**, Planning and Development Consultants, Taney Hall, Eglington Terrace, Dundrum, Dublin 14.	**John Murphy** BA MRUP MIPI is a Senior Planner with BMA Planning and has over 20 years' experience in planning and development projects including experience of directing and contributing to the preparation of environmental impact assessments for a variety of projects.
4 Biodiversity / Species and Habitats	**Faith Wilson Ecological Consultant** Kestrel Ridge Tigroney West Avoca Co. Wicklow Ireland	**Faith Wilson** BSc CEnv MCIEEM is an independent ecologist with over twenty five years experience working in the commercial planning and natural heritage sector, contributing to the preparation of environmental impact assessments for a variety of projects.
5 Land and Soils	**AWN Consulting**, The Tecpro Building, Clonshaugh Business & Technology Park, Dublin 17	**Marcelo Allende** (BSc, BEng) is a Principal Environmental Consultant (Hydrologist) at AWN Consulting with over 20 years of experience in

		Environmental Consulting as well as hydrological and hydrogeological technical studies. **Ana Keeley** (BSc) is an Environmental Consultant with AWN Consulting with over 3 years of experience in geology and hydrogeology work.
6 Water	**AWN Consulting**	**Marcelo Allende** – see above. **Ana Keely** – see above
7 Air and Climate	**AWN Consulting**	**Ciara Nolan** MSc.,BSc. Eng. MIAQM, MIENVSC is a Principal Environmental Consultant in the air quality and climate section of AWN Consulting Ltd. She has over 8 years of experience in undertaking air quality and climate assessments.
8 Noise and Vibration	**AWN Consulting**	**Alistair Maclaurin** BSc PgDip MIOA, is a Senior Consultant at AWN Consulting who has prepared multiple EIS and EIAR documents throughout his over 9 years' experience as an environmental consultant. **Robert Holohan** (BA, MSc) is an Acoustic Consultant who holds a certificate from the Institute of Acoustics in environmental noise monitoring and building acoustics testing. He has 2 years of experience contributing to numerous projects related to environmental surveying, noise modelling, and impact assessment for various sectors including industrial, commercial, and residential.
9 Material Assets: Built Services	**POGA Consulting Engineers**, Unit C2, Nutgrove Office Park, Meadow Park Avenue, Rathfarnham, Dublin 14	**Paul Moran** BE, MIEI, Meur.Ing FCEI is Managing Director of POGA Consulting Engineers with 20 years' experience as a Consultant Engineer in Ireland. **Thainara Souza**, BEng MIEI, is a Senior Design Engineer at POGA Consulting Engineers with over 5 years of experience in the construction, structure design, detailing of buildings in Ireland, including civil and structural design, site supervision and project management. She has wide-ranging experienced in securing planning permissions and delivering civil design solutions for residential schemes in line with local planning and engineering standards.
10 Material Assets: Transportation	**ILTP Consulting** St Albert's House, Dunboyne Co. Meath	**Christy O'Sullivan** is the Managing Director of ILTP and qualified as a Civil Engineer (BEng.) from University College Cork (UCC) in 1982. He is a Chartered Engineer (CEng.) with 30+ years of experience in traffic and transport engineering and planning and is a Fellow of the Chartered Institution of Highways and Transportation (FCIHT). **Ben Waite** is a Senior Transport Analyst; he holds a BA (Hons.) in Geography and an MSc. (Hons) in Geographic Information Science and a Member of the Chartered Institution of Highways and Transportation (MCIHT) and has over 15 years' experience in traffic and transport design, analysis and planning.

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11 Material Assets: Resource and Waste Management	**AWN Consulting**	**Chonaill Bradley** (Bsc ENV,PG Dip Circ Econ, AssocCIWM) of AWN Consulting. Chonaill Bradley is an Associate in AWN in the Environment Team at AWN. He holds a BSc in Environmental Science from Griffith University, Australia and a Postgraduate Diploma in Circular Economy Leadership for the Built Environment from the Atlantic Technological University, Galway. He is an Associate Member of the Institute of Waste Management (AssocCIWM). Chonaill has over 10 years' experience in the environmental consultancy sector and specialises in environmental construction compliance, sustainability, resource and waste management. **Sara Ryan** BA, MSc is an Environmental Consultant in the waste and water section at AWN Consulting Ltd. With 1+ years experience as both an environmental consultant and environmental compliance advisor.
12 Cultural Heritage	**IAC Archaeology** Unit G1, Network Enterprise Park, Kilcoole, Co. Wicklow	**Faith Bailey** BA (Hons), MA, MCIfA, MIAI is an Associate Director, Senior Archaeologist and Cultural Heritage Consultant with IAC Archaeology. She is a licence eligible archaeologist and has over 22 years' experience working in the commercial archaeological, architectural and cultural heritage sector. **Elizabeth Di Vincenzo** (BA (Hons), MSc) is an archaeological and cultural heritage consultant with IAC Archaeology. She has over 3 years' experience in the commercial archaeological and cultural heritage sector in the Rep. of Ireland and United Kingdom.
13 The Landscape	**Model Works** The Old Courtyard, Newtownpark Ave, Glebe, Blackrock, Co. Dublin	**Richard Butler** MSc Sp. Planning, BSc Landscape Arch., Dip Proj Mgmt, MIPI, MILI. is Director of Model Works's Planning Services department. Richard has 23 years' experience in development and environmental planning, specialising in Landscape and Visual Impact Assessment (LVIA).

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1.5 SCOPING OF EIAR

'Scoping' is a process to determine what information should be contained in an EIAR. It will also decide what methods should be used to gather and assess that information.

1.5.1 Statutory Instruments and Guidance

In the first instance, the scope of the EIAR has been determined with regard to the Statutory Instruments and Regulations relating to EIA and related guidance from the European Union, the Government and the EPA. These sources are listed within Sections 1.2.1 to 1.2.4 above.

1.5.2 Site & Project Specific Issues

The experts / contributors to this EIAR completed a scoping exercise for the project for each of the Chapters, taking into consideration the site's baseline environmental conditions and any likely significant adverse effects associated with a project of this nature that are relevant to the assessment of the current planning application.

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The 2022 EPA Guidelines recommend that the scoping process use 'likely' and 'significant' as the principal determining criteria for what should be assessed in the EIAR. Only issues that are "material" from a planning / environmental perspective are addressed and any issues which do not pass the test are omitted or 'scoped out' from further assessment.

1.5.3 Consultation

A formal scoping opinion was not sought from the planning authority in relation to this EIAR. Issues raised in the context of preplanning consultations have been taken on board in the compilation of this EIAR. This consultation took place at as statutorily required by the planning legislation and involved the local authority Planning Department and the other departments responsible for roads, water services, parks and housing. Where additional consultation took place with utility providers and other prescribed bodies /consultees, details are provided in the relevant Chapter.

1.5.4 Related Projects/ Cumulative Effects

Cumulative effects are defined as per the EPA Guidelines (EPA, 2022) as: *"The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects."*

The *'Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment August 2018' state as follows:*

> *Cumulative Effects*
> *6.11. Effects are not to be considered in isolation but cumulatively i.e. when they are added to other effects. A single effect on its own may not be significant in terms of impact on the environment but, when considered together with other effects, may have a significant impact on the environment. Also, a single effect which may, on its own, have a significant effect, may have a reduced and insignificant impact when combined with other effects.*
>
> *6.12. The Directive requires that the EIAR describes the cumulation of effects (104). Cumulative effects may arise from:*
> *- The interaction between the various impacts within a single project;*
> *- The interaction between all of the different existing and/or approved projects in the same area as the proposed project*
>
> 104 Annex IV, point 5(e) of the Directive. See also Schedule 6(2)(e)(i)(V) to the Regulations.

The Chapters have not been prepared in insolation and the key interactions between the Chapters are detailed in the respective Chapters and Chapter 14 contains a summary of the principal interactions between the main topics.

The scoping of the assessment also considers interactions with other projects or activities (permitted or planned) that are not included in the project but which may result in cumulative impacts. These projects are listed in Chapter 2. By considering these projects, the EIAR allows the Competent Authority to form an overall understanding of the likely effects that will arise, including direct, indirect / secondary or cumulative impacts, if the current project proceeds.

1.5.5 Plans and Programmes

Plans and programmes relevant to the project have been subjected to a higher tier of environmental assessment through the Strategic Environmental Assessment (SEA) process and in line with Section 3.3.5 of the EPA Guidance (see above), the higher level considerations do not need to be assessed again. This EIAR however, has due regard to the policies and objectives in the relevant plans and programmes.

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1.6 STRUCTURE/ METHODOLOGY

1.6.1 Structure of EIAR

The overall structuring and scope of this EIAR has regard to the information requirements of the EC Directives, Irish Statutory Regulations and established best practice.

The EIAR has been written and illustrated with figures in a manner which, insofar as possible, is intended to be understandable to the public generally.

In accordance with the statutory regulations, a Non-Technical Summary has been prepared and is included in this EIAR.

Chapter 2 of the EIAR provides the context for the EIA assessment including a description of the site, the project and the construction methodology and alternatives considered.

This is followed by each of the assessment chapters. The structure used in this EIAR is a Grouped Format structure which examines each environmental factor, as specified by Annex IV(4) of the Directive[2], in a separate chapter.

Chapter 14 summarises the significant effects, including cumulative effects (both the addition of many minor or significant effects and the effects of other projects), and addresses the interactions between impacts on different factors.

In accordance with Section 3.8.4 of the *Guidelines on Information to be Contained in Environmental Impact Assessment Reports* (2022), a compendium of the mitigation and monitoring measures to be adopted during the construction and operational phases of the project, detailed within each chapter, are included in Chapter 15.

The Appendices contain background and technical details relating to the project and are referred to in the relevant Chapters (numbered with the relevant Chapter number and followed by A, B, C etc.).

1.6.2 Methodology

A systematic approach is employed using standard descriptive methods, replicable prediction

[2] Directive 2014/52/EU, Annex IV(4) states: *'A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.'*

techniques and standardised impact descriptions to provide an appropriate evaluation of each environmental topic under consideration.

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An outline of the methodology generally employed to examine each environmental topic is provided below:

- **Introduction:** Provides an overview of the scope of the Chapter and identifies the specialist who prepared the assessment.
- **Assessment Methodology:** outlines the method by which the relevant impact assessment has been conducted.
- **Receiving Environment:** description of the context, character, significance and sensitivity of the baseline receiving environment.
- **Characteristics of the Proposed Development:** A description of the specific characteristics of the project as they relate to the relevant environmental topic.
- **Construction Impacts**: Description of the impacts that may arise during the construction and operational phases.
- **Operational Impacts:** Description of the impacts that may arise during the operational phases.
- **Mitigation Measures**: Appropriate mitigation and/ or monitoring measures are included where required.
- **Residual Impacts**: provides a description of any impacts post implementation of any mitigation measures.
- **Interactions and Cumulative Impacts**: Considers interactions with the other environmental topics/ chapters and other significant projects in the area that could give rise to cumulative effects on the topic being assessed.
- **References**: List of references specific to the chapter.

1.6.3 Forecasting Methods

The individual forecasting methods used to assess the various effects of the project on the environment are outlined in the relevant Chapters of this EIAR in the 'Methodology' section.

1.6.4 Difficulties Encountered

Some details of the project and the construction methodology / programme are matters which may be subject to change depending on the contractor(s) appointed and other considerations which are not finalised at this stage, and which cannot be finalised until a grant of planning permission for the project has been issued. These are matters which can be addressed prior to commencement of development in consultation with the planning authority and other relevant stakeholders. No other significant difficulties were encountered in the preparation of the EIAR.

Any limitations or technical difficulties associated with assessment of an environmental factor are detailed in the relevant chapter.

1.6.5 Reference List

At the end of each assessment chapter, a reference list of additional sources relied on in that Chapter, specific to that assessment, is provided.

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1.7 TERMINOLOGY

The descriptions used to assess the effects on the environment in this EIAR are listed below. These descriptions are taken from the *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (2022):-

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	*Positive Effects* A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities). *Neutral Effects* No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. *Negative/adverse Effects* A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
Describing the Significance of Effects ''Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see *Determining Significance* below.).	*Imperceptible* An effect capable of measurement but without significant consequences. *Not significant* An effect which causes noticeable changes in the character of the environment but without significant consequences. *Slight Effects* An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. *Moderate Effects* An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. *Significant Effects* An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.

Very Significant
An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.

Profound Effects
An effect which obliterates sensitive characteristics

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Describing the Extent and Context of Effects
Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.

Extent
Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.

Context
Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)

Describing the Probability of Effects
Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the CA can take a view of the balance of risk over advantage when making a decision.

Likely Effects
The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.

Unlikely Effects
The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

Describing the Duration and Frequency of Effects
'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.

Momentary Effects
Effects lasting from seconds to minutes

Brief Effects
Effects lasting less than a day

Temporary Effects
Effects lasting less than a year

Short-term Effects
Effects lasting one to seven years.

Medium-term Effects
Effects lasting seven to fifteen years.

Long-term Effects
Effects lasting fifteen to sixty years.

Permanent Effects
Effects lasting over sixty years

Reversible Effects
Effects that can be undone, for example through remediation or restoration

Frequency of Effects
Describe how often the effect will occur ((once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually))

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Describing the Types of Effects

Indirect Effects (or. Secondary Effects)
Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.

Cumulative Effects
The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.

'Do-Nothing Effects'
The environment as it would be in the future should the subject project not be carried out.

`Worst case' Effects
The effects arising from a project in the case where mitigation measures substantially fail.

Indeterminable Effects
When the full consequences of a change in the environment cannot be described.

Irreversible Effects
When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.

Residual Effects
The degree of environmental change that will occur after the proposed mitigation measures have taken effect.

Synergistic Effects
Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

2. DESCRIPTION OF PROJECT AND ALTERNATIVES

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2.1 INTRODUCTION

This Chapter provides a description of the project site in the context of its receiving environment and a description of the project and the main alternatives considered in so far as relevant from an environmental impact perspective.

The project description should be read in conjunction with the plans and particulars submitted with the planning application including the Planning Application Report, design statements and other technical studies. To avoid unnecessary repetition, it is not proposed to repeat the contents of these reports.

2.2 THE SITE

Figures 2.1 and 2.2 identify the location of the site. The application site red line (c.6 ha) is identified on the Site Location Plan enclosed with the application – refer to MCORM Architecture drawings.

The site is located in Swords. Co. Dublin, c.600m south of Swords Main Street and within the townlands of Barrysparks and Crowscastle.

There are no existing structures on the lands. The site comprises an area of undeveloped urban fringe incorporating undulating grassland and hedgerows. The Gaybrook Stream enters the Barrysparks lands at the western boundary from Airside Business Park. The stream turns south along the western boundary and then turns east across the site to divide the site into north and south. The southern section of the site slopes to the north towards the water course. The northern section of the site is relatively flat with a slight slope to the stream. There is an unnamed watercourse on the western boundary of the site and a field ditch running west to east and then south east through the centre of the Barrysparks lands.

The site is bound to the north by the R132, with the Pavilions Shopping Centre, Longlands residential neighbourhood and Swords Main Street further to the north. The Drynam Road residential neighbourhood, Feltrim Business Park and MSD Biotech Campus are located to the east of the site with the M1 motorway further to the east. The Holywell residential estate and Tesco supermarket are located to the south. Airside Business Park is located to the west of the site with Airside Retail Park and Airside Motor Park further to the west.

The adjoining road network includes the Holywell Distributor Road with a roundabout at the southeast of the lands, Lakeshore Drive at the southwestern boundary of the site, Drynam Road at the northeast of the site and the R132 which forms the northern boundary of the lands. Access to the lands is currently provided via an existing entrance from Drynam Road at the north eastern corner.

The applicant's overall landholding at Barrysparks and Crowscastle comprised c.18ha.

Permission (Reg. Ref. F23A/0727) for a healthcare facility by VHI Group DAC relating to a c.1.1ha site at the southern end of the applicant's landholding, including access from the Holywell Distributor Road, was granted in January 2024.

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A MetroLink Station, known as Swords Central, is proposed within the Barrysparks lands situated south of the R132. The MetroLink project is the subject of a current Railway Order application to An Bord Pleanala.

The applicant's design team has developed a masterplan with c.6no. phases for the remainder of the lands within the applicant's ownership, c. 16.9ha. The applicant's masterplan follows the structure and framework established by the *Barrysparks & Crowcastle Masterplan 2019*.

The lands the subject of this application, comprise the first phase of the applicant's Masterplan incorporating c.6ha of the applicant's overall landholding and are located within the northern half of the Barrysparks lands, to the south of the R132. The net developable area of the lands comprises c.3.3ha.

Photographs 1 to 6 below illustrate the principle features of the site and surroundings.

Fig 2.1: Aerial View of lands. Source: Google Earth

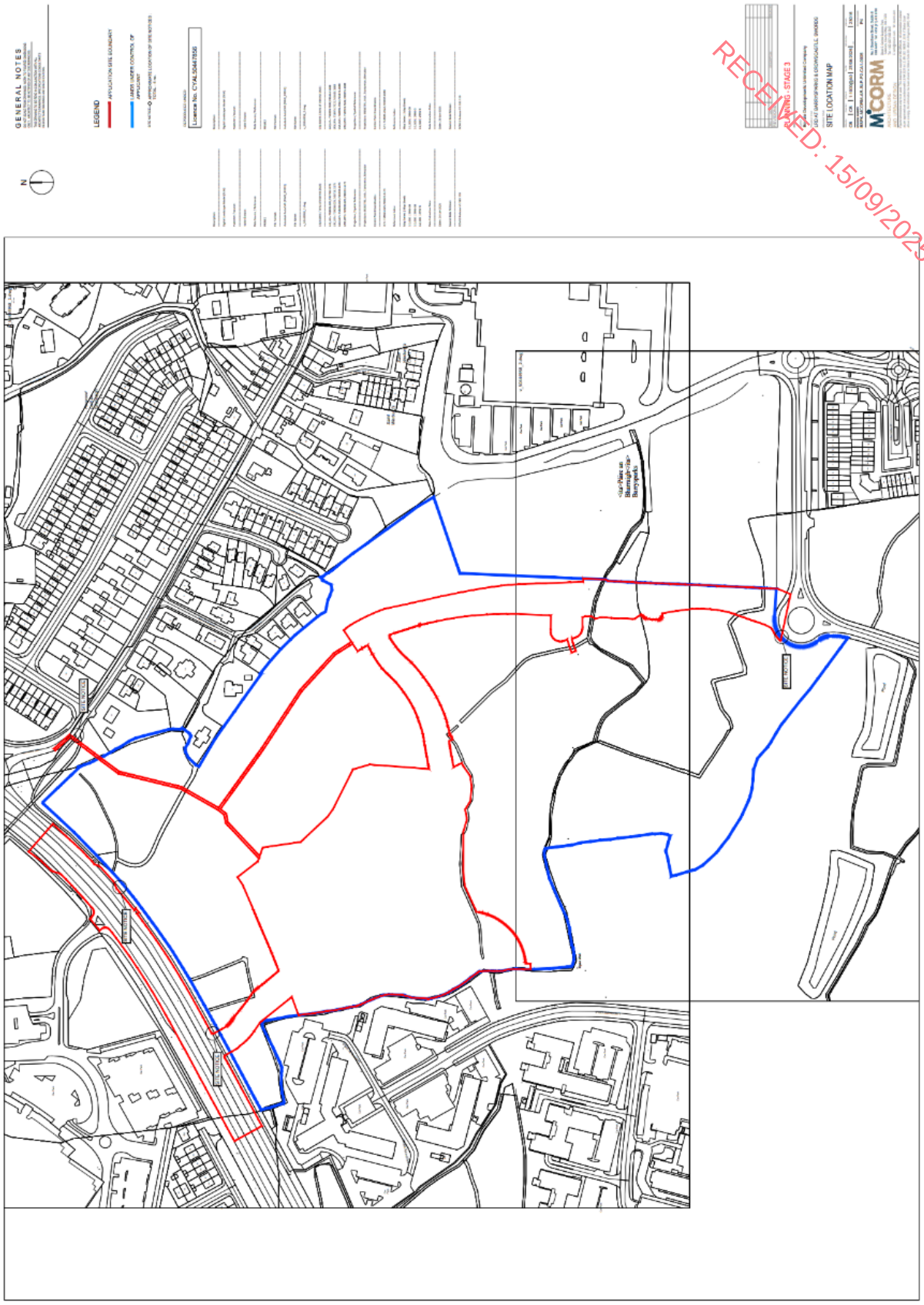

Figure 2.2: Site Location Plan (MCORM Architects)

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1. View North of the Boundary of the Site with the R132

2. View South of the Boundary of the Site with the R132

3. View South of the Existing Entrance to the Site From Drynam Road

4. View North East Across the Site from Lakeshore Drive

5. View North West Across the Site From the Holywell Distributor Road Roundabout

6. View North Across the Site from the Tesco, Holywell Access Road

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7. View South Towards Holywell from the Interior of the Site

8. View North Towards Swords From the Interior of the Site

2.3 PROJECT DESCRIPTION

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The proposed development is a Large-scale Residential Development (LRD).

The layout and content of the planning application has been informed by the relevant provisions of the *Fingal Development Plan 2023-2029*, the *Barrysparks & Crowscastle Masterplan 2019* and relevant Ministerial Guidelines.

The proposed Metrolink route and Metrolink station, Swords Central, is proposed to be located along the northern boundary of the site. The proposed development has been designed having regard to the construction and operational phases of this future public transport project.

The full description of the development contained in the statutory notices is as follows:

The development will consist of a Large-scale Residential development (LRD) of 530no. residential units and creche in 4no. blocks (Blocks A to D) with a total gross floor area (GFA) of 49,210sqm (excluding basement car parking) with associated ancillary accommodation, private balconies, communal amenity spaces and public open spaces as follows: Block A: 1 to 7 storey block comprising 74no. apartments (37no. 1 bed units and 37no. 2 bed units), Block B: 6 to 9 storey block comprising 108no. apartments (44no. 1 bed units and, 55no. 2 bed units and 9no. 3 bed units), Block C: 1 to 9 storey block comprising 138no. apartments (49no. 1 bed units, 61no. 2 bed units and 28no. 3 bed units) and a creche (462.5sq.m) with external play space, Block D: 1 to 9 block storey comprising 210no. apartments (114no. 1 bed units, 82no. 2 bed units and 14no. 3 bed units). A total of 163no. car parking spaces are provided in a combination of surface spaces and at basement level beneath Block D. The development will be accessed from the south via a connection to the existing roundabout on the Holywell Distributor Road and from the north via a fully signalised junction with the R132 including works to the north and south bound carriageways and central median of the R132 to provide for the fully signalised junction with associated turning lanes and a separate pedestrian and cycle crossing on the R132. Permission is also sought for hard and soft landscaping in public realm and public open spaces within the development, cycle and motorcycle parking, bin stores, water supply and foul water connections, surface water infrastructure, connections to public utilities, ESB substations, plant areas, roof mounted photovoltaic (PV) panels, building and directional signage and all associated site and development works. A 10 year permission is sought. The planning application may be inspected online at www.barrysparks-lrd.ie

A ***Schedule of Accommodation*** (MCORM Architects) is enclosed and contains a detailed breakdown of the floor space and uses proposed in this application.

Figure 2.3 illustrates the proposed site layout plan.

The following is a summary of the key development statistics.

Table 2.1: Development Overview

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No of Units:	530no.
Unit Mix:	1 Bedroom Apts 244 (46%) 2 Bedroom Apts 235 (44%) 3 Bedroom Apts 51 (10%)
Total GFA:	49,210sqm
LRD GFA	47,278.5sqm (ex. Creche 462.5sq.m and 1469sq.m ancillaries)
Non LRD GFA	462.5sq.m
LRD GFA as % Of Total GFA	99%
Housing Density:	157 units / ha based on site of 3.3ha.
Plot Ratio:	c.1:1.45
Site Coverage:	c.25%
Building Height:	1-9 storeys
Car Parking Spaces:	163 spaces

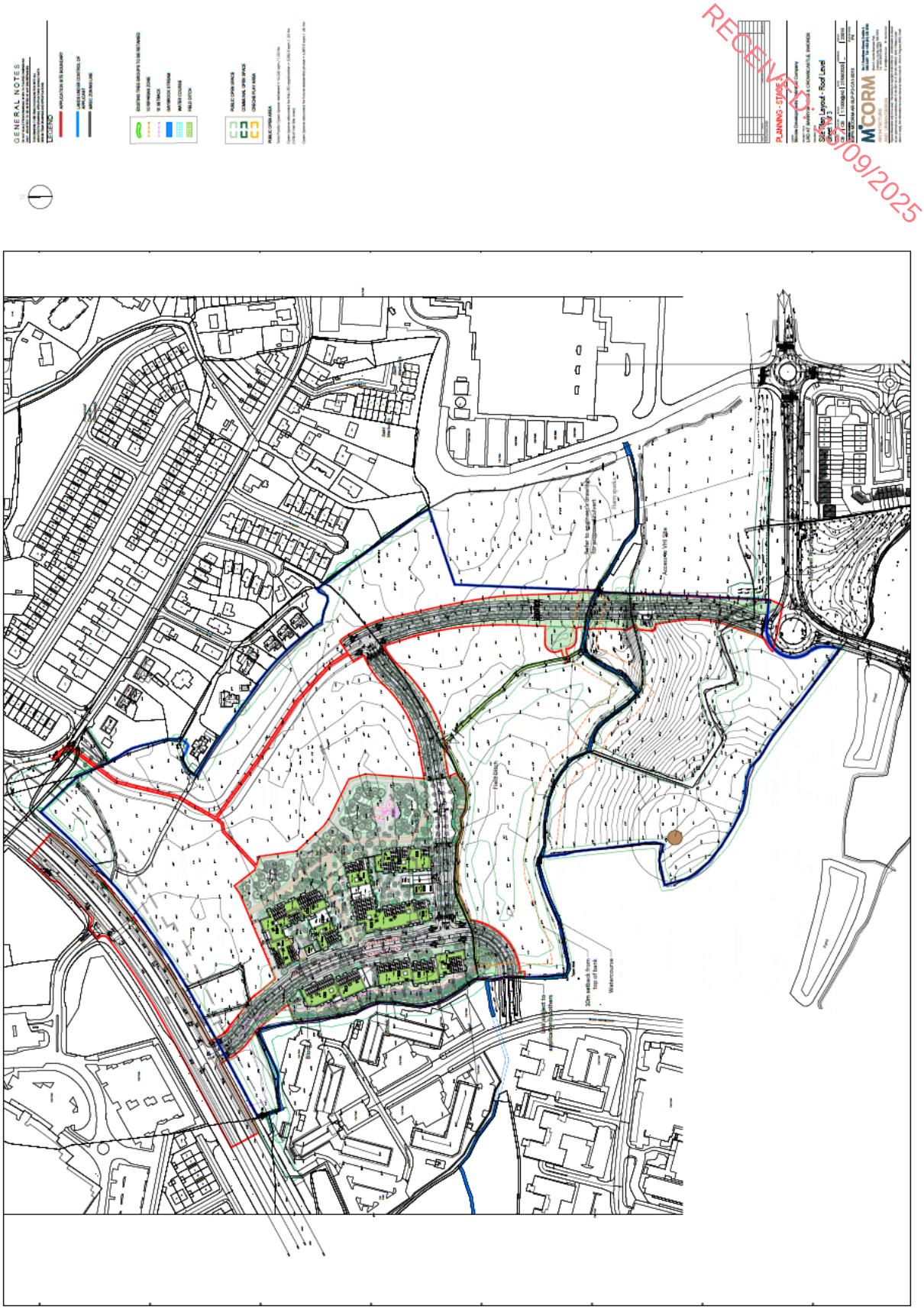

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Fig 2.3: Site Layout Plan (MCORM Architects)

2.4 OPERATIONAL ACTIVITIES

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The typical activities that will take place during the operational phase can influence environmental factors such as population / human health, noise, traffic, material assets and waste.

The following is an outline of the main characteristics for each type of development proposed in this application during the operational phase:

- Residential Occupancy: Residents (c.1200 persons) and visitors with all activities of residents, including living, cooking, cleaning, and socializing, including use of any shared amenities by residents, movement of residents' vehicles in and out of the site, visitor parking and occasional delivery vehicles (e.g online shopping deliveries, groceries), maintenance of communal areas (e.g., hallways, lobbies, shared gardens) and continuous use and maintenance of electricity, water, and heating/cooling systems, elevators, and other essential building services, waste collection activities, including segregation of recyclables, general waste, and organic waste.

- Operation of the Creche: Creche staff and patrons including daily movement of employee and parent vehicles, bicycles, or public transportation access and movement of service vehicles and deliveries.

2.5 CONSTRUCTION ACTIVITIES

This section contains a description of the construction process as it is known at this pre-consent stage and ahead of detailed design development. For the purposes of this EIA, certain assumptions are made based on the information available at this time. Where full details of the construction process are not known or available at this stage, the assessment has considered the outermost or “not to exceed” parameters. It is not proposed or intended that the applicant / contractor(s) are bound by these proposals which may change depending on the timing and circumstances pertaining at the time of construction.

An ***Outline Construction Environmental Management Plan*** (OCEMP) is submitted with the planning application and is included as Appendix 2A of this EIAR. On receipt of a grant of permission, prior to the commencement of development, the appointed contractor(s) will update the OCEMP to comply with and implement any environmental mitigation and monitoring measures set out in this EIAR and any conditions imposed as part of the granted planning approval.

2.5.1 Construction Duration and Phasing

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The phasing strategy outlined below is a high-level indicative construction phasing plan.

The development will be delivered in a single phase, beginning with Block D (south-eastern block) and moving to Block C, Block B, and Block A.

The central road serving all four blocks would need to be delivered as part of this first phase and a significant part of the Public Open Space would also form part of this phase.

The construction of the project is planned to take c.30 months to complete.

The delivery of blocks may not be sequential, and works may be undertaken concurrently on two or more blocks. The final delivery will be reviewed by the developer and the appointed Contractor depending on factors pertaining at the time and can be agreed with the planning authority prior to commencement.

The phasing period above does not include allowance for pre-development due diligence, funding, contractor negotiations and tendering and so a ten year permission is necessary to allow for these aspects and any unknowns or unforeseeable circumstances beyond the control of the applicants.

2.5.2 Construction Land Take

Apart from minor works associated with reinstatement of public roads and footpaths and connections to existing public utilities, all lands that are required for the construction of the project are within the current application site red line area.

2.5.3 Site Working Hours

Subject to the agreement of the Planning Authority, the following site operation hours are proposed:

Monday to Friday:	07:00 to 19:00
Saturdays:	08:00 to 14:00
Sundays and Bank Holidays:	Works not proposed

It may be necessary for some construction operations to be undertaken outside these times, for example: service diversions and connections; concrete finishing and fit-out works; etc. There may also be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times. These deviations can be subject to the prior agreement of the Planning Authority and the Contractor shall take all reasonable measures to minimise noise and other nuisances that could arise.

2.5.4 Construction Site Access and Traffic Management

The construction site will be accessed from the south via existing roundabout on the Holywell Distributor Road and a haul road constructed on the line of the proposed southern access road.

Temporary road/ lane closure and stop/go systems may be required on occasion to facilitate the construction stage of the development.

Some vehicle parking for construction personnel will be provided within the development site and the amount of parking will vary during the construction programme. To the extent possible, personnel will also be encouraged to use car pooling and public transport, and information.

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Deliveries to the site will be managed to minimise disruption to the adjoining road network. Prior notice of all major deliveries of materials, plant and equipment will be required. Typically, a 'just in time' principle will apply to delivery of materials and a traffic co-ordinator will be appointed.

The measures required to manage staff parking and construction related deliveries will be detailed in the Contractor's Traffic Management Plan as part of the CEMP.

2.5.5 Site Set Up and Accommodation

The site set up works, to be carried out by the appointed Contractor, will include the following:-

Hoarding - Perimeter hoardings will be erected around the zone of the site to be developed. The hoarding will be 2.4m high generally. The hoarding will be painted, well maintained and may contain graphics portraying project information.

Site Security- The site will be secured with a solid hoarding, with an access control system and remote camera monitoring system for out of hours monitoring. During working hours gatemen will control all movements and deliveries.

Staff Facilities **-** On-site facilities will include site offices and staff welfare facilities (e.g. toilets, drying room, canteen, secure bike storage, etc.). The number of workers on the site will vary throughout the construction programme.

Site Compounds and Storage - Site compounds will be established by the main contractor(s) and the extent of compounds and storage space required will be decided by the main contractor upon appointment. Given the size and nature of the site, it is envisaged that there is adequate space on the site for the storage stockpiles, albeit that these areas may be relocated throughout the site during the construction stage.

Hazardous Materials - Hydrocarbons and other harmful material will be stored on site for use in connection with the construction works only. Where on site facilities are used, there will be a bunded filling area using double bunded steel tank at a minimum.

Site Preparation / Utility Diversions - As part of the site preparation, before any ground break up is undertaken, the Contractor will carry out a detailed services survey of the site to identify all buried services and sewers, determine what services are live, redundant and potentially serve neighbouring properties.

Cranes - There will be a requirement for one or more tower cranes during the construction phase of the development. In addition, mobile cranes, hoists and teleporters will be used within the site and around its perimeter as required during the project. No loads will be lifted over the public domain or adjacent properties.

Wheel wash - A wheel wash facility will be installed within the site to prevent transfer of mud and debris to the public road network.

On completion of the works all hoarding, portacabins, construction materials, debris, temporary hardstands etc. from the site compound will be removed off site and the site layout and landscaping will be completed as per the permitted layout.

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2.5.6 Site Clearance and Demolitions

The proposed development includes site clearance of comprising primarily soft landscaping and grassed areas. There are no existing buildings on site to be demolished. All site clearance waste that cannot be reused on site will be removed off site by a licensed operator and where possible will be recycled.

2.5.7 Excavations and Sub-structures

It is estimated that there will be more fill than cut. The project engineer has estimated 11,038m3 cut and 50,195m3 of fill with 50% of the cut material (c.5,500m3) being reused on site. The remaining fill material will be sourced from suitable providers. Given the ground condition, standard foundation solutions will be used required. Piling will be required for the substructure of the proposed 9 storey buildings.

2.5.8 Superstructure

There are a number of options for the superstructure design and these will not be decided until detail design and tender stage.

The most likely options would be reinforced concrete (RC) column and flat slab, RC / masonry cross wall and precast slab, precast concrete twin wall and precast slab, or a combination of these construction methods. Once the envelope of the buildings are formed, scaffolding will be erected and cladding works and glazing will follow in a sequential manner.

Once the building is weather tight, first fix mechanical and electrical fitting will commence, followed by the initial installation of any stud work and internal plastering. Second fix and the final connections will be undertaken prior to completion of internal finishes and fit-out.

The superstructures are estimated to contain circa 95,000 tonnes of concrete elements, there would be circa 20,000 tonnes of in-situ reinforcement concrete with 75,000 tonnes of Precast Elements manufactured off site.

The approximate quantity and type of construction materials involved in the project is as follows:

Table 2.3: Quantity And Type of Construction Materials

ELEMENT	QUANTITY
Imported material for siteworks	50,000m3
Piling	1,200 No.
In-situ reinforced concrete systems	35,000m3
Reinforcement	5000 tonnes
Structural Steelwork (secondary steel)	250 tonnes
Masonry systems	72,0000m2

2.5.9 Health & Safety

The Main Contractor will be responsible for progressing the works in accordance with the Safety, Health & Welfare at Work Act 2005, Construction Regulations 2013 and any other codes and best practice.

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2.6 OTHER RELATED PROJECTS

There are no related projects (off-site or secondary) occurring as a direct result of the project.

2.7 CUMULATIVE IMPACTS

It is necessary to have regard to cumulative impacts which is broadly defined as *'the addition of many minor or insignificant effects, including effects or other projects, to create larger, more significant effects'*[3].

Cumulative effects may rise from:

- *'The interaction between the various impacts within a single project.*
- *The interaction between all of the different existing and/ or approved projects in the same area as the proposed project'*[4].

2.7.1 Interactions within the Project

Regarding the interactions of impacts within this project, each chapter of this EIAR considers interactions with the other environmental topics. Chapter 14 summaries the interactions between the Chapters of the EIAR and provides further details on the nature of these interactions in the construction and operational phases.

2.7.2 Interactions with Other Projects

In a developing urban area such as the one that the subject site is situate, construction activity is a constant feature. Recognising the potential for cumulative effects on the environment as a result of potential interactions with other projects, a review is undertaken of projects within the surrounding area that have potential to give rise to cumulative impacts, when considered in combination with the proposed development.

A radius of c.500m is chosen as an appropriate study area in respect of cumulative assessment and the identification of relevant other projects. A search[5] was undertaken of planning applications on the local authority online planning database and An Coimisiun Pleanala online Map Search facility. Larger scale projects, comprising 100+ residential units, 1000sq.m+ commercial floorspace and significant infrastructure proposals, are included due to the potential for significant cumulative impacts arising from developments of this scale. Approved projects (commenced and not commenced) are included on the basis that they may proceed and have the potential to interact with the proposed project.

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[3] *Guidelines on the Information to be contained in Environmental Impact Assessment Reports*, EPA, 2022.
[4] *Guidelines for Planning Authorities and An Bord Pleanala on carrying out Environmental Impact Assessment*, Department of Housing, Planning and Local Government, 2018.
[5] Search undertaken on 24/06/2025.

Table 2.4 lists the relevant other projects arising from the methodology above.

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Table 2.4: Other Projects

Ref.	Description	Address	Status
NA29N.314724	Metrolink. Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to Charlemont, Co. Dublin.	Swords, Co. Dublin to Charlemount, Dublin 2	Pending
JP06F.310145	R132 Connectivity Project, to carry out road alteration works along the R132 at Swords, Co. Dublin	R132, Swords. Co. Dublin	Granted 20 Jan 2022
HA06D.317121	BusConnects Swords to City Centre Bus Corridor Scheme	Swords to Dublin City Centre	Granted 19 June 2024
F25A/0413E	Proposed development comprises the continued use on a permanent basis of the existing access and exit roadway off the western carriageway of the R132 regional route, south of the existing Malahide Road roundabout. The existing access road serves internal circulation and car parking areas within Swords Pavilions Shopping Centre. The access road and associated site development and landscape works and lighting exist as previously permitted under register reference nos. F03A/1331, F05A/1201, F06A/1693; F07A/1195, F10A/0392, F15A/0179, F16A/0440 and F20A/0180, but is subject to a Condition restricting the period of its use.	Pavilions Shopping Centre, Malahide Road, Swords, Co. Dublin	Pending
F23A/0083	The development will consist of the demolition and reinstatement of existing hotel floorspace (c. 175 sq m) at ground floor level, internal alterations to the existing hotel floorspace (including the removal of 3 No. existing hotel bedrooms) at ground and first floor level and the demolition of an existing ESB substation (c. 31 sq m). The development will also consist of: the construction of a 4 storey hotel extension (max. height c. 13.8m to top of plant / staircore) measuring c. 1,944 sq m to the front (south-west) of the existing hotel building, comprising 55 No. hotel bedrooms, a plant room and store rooms. The proposed development will result in a total of 182 No. hotel bedrooms and an overall Gross Floor Area of c. 6,066 sq m. The development will also include the provision of a replacement ESB substation (c. 31 sq m); 2 No. internally-illuminated signs, each having a display area of c. 3.3 sq m, located on the proposed south- east and north-west building elevations; lift access and stair cores; reduction in car parking spaces (from 116 No. to 103 No. spaces); bicycle parking; modifications to the existing vehicular entrance; minor alterations and part removal of the existing south-west boundary treatments; hard and soft landscaping; changes in level; drainage works; green roof; piped infrastructure and ducting; roof plant; and all associated site excavation works above and below ground.	Travelodge Dublin Airport North 'Swords', Pinnockhill, Swords, Co. Dublin, K67 K6R2	Granted 03 Oct 2023
TA06F.320806	278 no. apartments, childcare facility and associated site works. Reactivated case, previous case no. 308366.	Fosterstown North and Cremona, Forest Road, Swords, Co.	Pending

		Dublin	
F21A/0100	A new link road from the roundabout to the south of Lakeshore Drive, Crowcastle, Swords, Co Dublin that will be constructed to a length of approximately 290m. The road will incorporate lighting, drainage, footpaths and cycle tracks.	Crowcastle, Swords, Co Dublin	Granted 21 Jan 2022
F25A/0521E	The development will consist of a health, racquets and wellness club facility, including: a. A two storey club building of circa 4,726 sq.m gross internal floorspace with a maximum height of 8.2 metres to include sports hall, swimming pool and kids pools, wellness/health area to include saunas, steam rooms and other facilities, café/restaurant, gym and fitness/exercise studio, changing and shower facilities, back of house, internal plant areas and rooftop plant, ancillary offices, stores and staff areas, and circulation areas; b. Outdoor facilities including: 3 no. tennis courts; 3 no. padel courts; Multi-use court; Battle-box; Children's play area; Outdoor swimming pool; Spa garden; Outdoor seating terrace with servery/BBQ; and Viewing area adjacent to existing pond. 2. The proposed development will also consist of: a. the provision of a pedestrian, cycle and vehicular access point from the Holywell Distributor Road; b. the provision of a pedestrian/cycle links to lands to the west and to Holywell Distributor Road to the east; c.service yard; d.car parking for 192 no. spaces, including 10 no. accessible spaces and 20 no. EV spaces with charging points); 20 no. motorcycle parking spaces; 362 no. bicycle parking spaces including 16 covered long stay spaces. e. sub-station; f. hard and soft landscaping and boundary treatments; g. external lighting; h. culverting and diversion of existing drainage ditches / water courses; i. amendments to embankment and reprofiling of at the existing pond on the site; j. piped infrastructure and ducting; k. Solar/PV panels; l. Signage comprising of 3 no. backlit 'David Lloyd' signs, one to each of north, south and west elevations of the proposed two storey building, and 1 no. backlit three sided totem sign adjacent to the site entrance from Holywell distributor road; and m.all ancillary works, including change on site levels, site excavation, site drainage and development works above and below ground, including a foul pumping station and rising main.	Lands at Crowscastle (to the west of Holywell Distributor Road), Swords, Co. Dublin	Pending

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F24A/0159	Permission and retention permission for the reorganisation of on-site carsite car parking to increase of the total number of permitted car parking from 346 No. spaces to 416 No. spaces at MSD International GmbH (MSD Biotech Dublin), Drynam Road, Barrysparks, Swords, Co. Dublin. The proposed development includes: 1.Retention permission for restoration of car parking spaces required to be removed under planning registration reference F18A/0198 together with realignment of the internal road network of the car park adjacent to the Drynam Road (North) campus entrance to provide a total of 240 No. spaces; 2.Permanent permission for 172 No. spaces and associated works located in the existing temporary construction car park adjacent to the Holywell Road (South) campus entrance; 3. Removal of 170 No. spaces from the permitted central car park area and use of this area to an open service yard and staging area; 4. Provision of a covered cycle store to accommodate 30 No. cycle spaces positioned to the south of the Drynam road car park; 5. Retention permission for existing covered cycle store for 40 No. cycle spaces located adjacent to the south entrance of the main facility building, and alignment of existing adjacent existing parking spaces to provide for 4 no Accessible car spaces.	Drynam Road, Barrysparks, Swords, Co. Dublin	Granted 9 May 2024
LADP/008/23	In accordance with Section 179A of the Planning and Development Act 2000 (as amended), Fingal County Council hereby gives notice of the proposed works to be carried out at Holywell, Swords, Co. Dublin. A Residential Development (5,189 sq m Gross Floor Space) arranged over 3 no. buildings ranging in height from 4 to 6 storeys at a site of approximately 0.77 ha located in the Townland of Crowscastle, Holywell, Swords, Co. Dublin, consisting of 57 no. residential units (20 no. 1-bedroom apartments, 29 no. 2-bedroom apartments, and 8 no. 3-bedroom apartments). Ancillary infrastructure incl. 223 no. bicycle parking spaces (167 no. enclosed long term and 56 no. external short term) and 34 no. surface vehicle parking spaces (3 no. accessible/ disabled, 1 no. accessible/disabled electric vehicle, 7 no. electric vehicle, and 23 no. vehicle). Boundary treatments, hard and soft landscaping, pedestrian walkways and permeability, services (incl. sustainable urban drainage measures), site and public lighting, and all other ancillary and associated site development works above and below ground level. Primary vehicular and pedestrian access to the proposed development will be maintained via the enhanced existing vehicular and pedestrian entrance from the link road section that links to the R125 to the south and Mountgorry Way to the east. Two new dedicated secondary pedestrian entrances will also be provided from the link road section that links to the R125 to the south and Mountgorry Way to the east.	Site located in the Townland of Crowscastle, Holywell, Swords, Co. Dublin	Granted 13 Oct 2023
F23A/0727	The development will consist of a Healthcare Facility of 4,425.8 sqm gross floor area (GFA), across three storeys over a lower ground floor level car park and all ancillary site works on a site of 2.1 ha. At ground floor level, the proposed Healthcare facility accommodates a welcome area with café and community space, a physiotherapy unit	Barrysparks & Crowcastle, Holywell Distrubutor Road, Swords, Co. Dublin	Granted 05 Mar 2024

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	with a gym, support spaces, administrative areas, staff and visitor welfare facilities and storage areas. The upper floors of the proposed Healthcare Facility accommodate an urgent care unit and diagnostics imaging services, together with all associated clinical support rooms, administration spaces, storage and welfare spaces. The proposed lower ground floor level contains car parking (77 no. car parking spaces including 2 no. disabled parking spaces), storage areas, services and utilities (including medical gas room; ESB substation; switch room; pump room; fan room; medical and general waste areas; linen storage; generators; a water storage tank; and an external service yard). A total of 100 no. car parking spaces are proposed (23 no. surface level and 77 no. spaces at lower ground floor level). 10 no. motorcycle spaces are proposed as lower ground floor level. A set down area, an ambulance set down area, a facilities management set down area, and 60 no. bicycle spaces (comprising 32 no. long stay covered spaces and 28 no. short stay spaces) are proposed at surface level. Ancillary signage comprises of; 1 no. high-level sign of 18 sqm on the eastern elevation; 1 no. high-level sign of 12 sqm on the southern elevation; 4 no. wayfinding totem signs; and 2 no. finger post signs. The proposed healthcare facility will be accessed from the existing roundabout via a 150-metre extension of the Holywell Distributor Road. It is proposed to connect to existing wastewater service infrastructure at Drynam Road, and to water services at the Holywell Distributor Road via the proposed road extension. These, and all associated site and infrastructural works including surface water drainage, attenuation areas, plant and photovoltaic panels (at roof level), open space, boundary and landscape treatments on a site of 2.1 ha. This application will be accompanied by a Natura Impact Statement (NIS).		
LH06F.321455	Large-scale residential development (LRD): Construction of 123 dwellings with all associated site works.	A site fronting the Swords to Malahide Road (R106), Mountgorry, Swords, Co. Dublin	Granted 25 Feb 2025

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It is possible that other minor projects will be under construction in the area at the same time as the current project but these will be the subject of their own planning and environmental assessment procedures and are not likely to be material to the assessment of environmental impacts for this project.

2.8 ALTERNATIVES EXAMINED

The consideration of "Alternatives" is a requirement of the EIA process. By outlining alternatives considered, it is possible to reduce or minimise environmental impacts and ensure that better solutions are not overlooked.

2.8.1 Alternative Locations

The EPA Guidelines recognises that it is not always necessary or appropriate to consider alternative options for projects which have been previously determined in a higher plan.

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> *"Hierarchy*
> *EIA is only concerned with projects. Many projects, especially in the area of public infrastructure, arise on account of plans, strategies and policies which have previously been decided upon. It is important to acknowledge that* ***in some instances neither the applicant nor the competent authority can be realistically expected to examine options which have already been previously determined by a higher authority*** *(such as a national plan or regional programme for infrastructure or a spatial plan)."*
>
> (Source: EPA *Guidelines on the information to be contained in Environmental Impact Statements,* Section 2.4.3 Alternatives, page 12)

The location of the project has been determined by the zoning and designation of the lands within the *Fingal Development Plan 2023 – 2029* and the *Barrysparks & Crowscastle Masterplan 2019*, both of which support the development of the lands adjacent to Swords and the planned Metrolink.

As the development of this site for the land uses proposed has been identified at a local / national scale in the Development Plan / Masterplan, no alternative sites were considered in this EIAR.

2.8.2 Alternative Layout and Designs

The layout of the proposed development is limited in the range of layout options by the Masterplan.

Alternative design solutions for the different parts of the site were considered and developed by the architects during the design process, with input from the overall project team. This involved testing different designs and layouts to establish the optimum design solution. Insofar as effects on the environment are concerned, these issues were taken into considered in arriving at the chosen scheme and, in that sense, the proposed development embodies these considerations.

In terms of the more significant layout and design alternatives that arose during the planning process, these are outlined below.

Alternative 1:
A proposal comprising a multi-level car park structure in lieu of basement car parking was considered at pre-planning stage. This layout was amended following preplanning feed back from FCC that sought car parking provision in a more central location, accessible to the future residents of the scheme.

There are no significant adverse environmental consequences to this alternative layout as now proposed. The proposed layout gives rise to positive outcomes from a population and human health and landscape perspective for the following reasons: -

- Population and Human Health – The current layout is preferable in terms of urban design with the majority of car parking provided in an underground basement. As a result, more surface level areas are devoted to Active Travel infrastructure and public and communal

open spaces for use by the residents of the development.

- Landscape – The current layout is preferable in terms of a reduced number of blocks to 4no. and eliminating the scale and massing of the additional 4 /5 storey car parking block.

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Fig. 2.4: Alternative 5-block Layout

Alternative 2:

The provision of retail/ commercial uses was considered at ground floor level within the proposed Blocks C&D. However, it is considered appropriate that local retail and services uses are focused on the future Metrolink plaza area around the planned Swords Central station (c.150m to north) where there will be the highest levels of footfall, and such uses will be viable and attractive for end user retailers and service providers. The application site is also located directly to the south (c.300-400m) of Swords Town Centre/ the Pavilions Shopping Centre and future residents will have access to the existing supermarkets, shops and services within the centre via Active Travel and vehicular routes.

There are no significant adverse impacts arising from the proposal to provide residential accommodation at the ground floor level within the proposed Blocks C & D. It is considered that the scheme as now proposed will result in a positive outcome in the area of Population & Human Health. Concentrating retail/ commercial opportunities in the area of highest footfall around the Metrolink station is considered prudent and allows additional residential units to be provided within Blocks C and D which is considered a positive outcome in terms of providing additional dwelling units for future residents.

2.8.3 Alternative Processes

Not applicable. The detailed processes / construction techniques to be used in the proposed development are not prescribed as part of the planning process but the methods of construction will be the standard construction methods for a development of this nature and will comply with the relevant codes in the Buildings Regulations.

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2.8.4 Conclusion on Assessment of Alternatives

On the basis of the foregoing, it is considered that all reasonable alternatives to the project are considered and no alternatives have been overlooked which would significantly reduce or further minimise environmental effects. Having considered all alternatives, the final design chosen by the developer, ie. the project as now submitted for considered, is deemed to be the most suitable project for the site.

3. POPULATION AND HUMAN HEALTH

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3.1 INTRODUCTION

This chapter was prepared by John Murphy BA MRUP MIPI of BMA Planning and addresses impacts on 'Population and Human Health' as required under the 2014 EIA Directive. Refer to Table 1.1 for details on relevant qualifications and experience.

Impacts on population include impacts on the social and economic environment arising from the development such as impacts on population change, demographic trends, employment and economic activity, implications for land use patterns and, impacts on social and community infrastructure. In this regard, this chapter is also prepared having regard to the requirement of Development Plan Objective DMS078, whereby planning applications for large scale residential developments of 50 or more units are required to include a Community and Social Infrastructure Audit.

According to European Commission's *Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report* (2017), human health relates to matters such as release of toxic substances, health risks arising from major hazards, changes in disease vectors, changes in living conditions, effects on vulnerable groups and exposure to traffic noise or air pollutants. These could impact on workers on the project or the local population.

In accordance with Article 3(2) and paragraph 5(d) of Annex IV of the 2014 EIA Directive, the EIA process should also assess the vulnerability of the project to risks of major accidents and/or disasters and the implications for the likelihood of significant effects on the environment if it did occur.

The Environmental Protection Agency (EPA) *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* - (2024) acknowledge that *"..the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g. under the environmental factors of air, water, soil etc."*

3.2 ASSESSMENT METHODOLOGY

3.2.2 Consultation

The proposed development has been the subject of consultation with the Planning Authority as part of the planning process including Stages 1 and 2 of the LRD process.

The *Barrysparks and Crowscastle Masterplan 2019* was the subject of a process of consultation with the general public and local community through the preparation process in 2019. The issues and opinions of the residents were taken on board in the masterplan and in the design process leading to this planning application. The Masterplan was also noted by the elected members of FCC.

3.2.1 Site Visit

A site visit was undertaken on 21/05/2025 and again on 19/06/2025 as part of this assessment. The application site and surroundings were visited to examine the receiving environment insofar as people and communities are concerned and, in particular, to identify the people most likely to be affected by the project.

3.2.3 Desktop Study

The relevant land use planning and transportation sources were reviewed to get an overview of the planning and development context within which the development is located. In particular, the consideration of impact on individual people and communities impacted by the development had regard to the policy context enshrined in the statutory Development Plan for the area and Section 28 Ministerial Planning Guidelines.

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The presentation of the receiving environment is based on site visits and a desk-based study. The study area profile is based on official Census data by the Central Statistics Office (CSO) (www.cso.ie).

3.2.4 Study Area

The study area was identified and the nearest sensitive receptors were identified with particular focus on those within the immediate area who are likely to be most impacted by the development.

Existing social and community infrastructure in the vicinity is identified and the nearest sensitive receptors (individual or grouped) are listed to assist in the identification of people and communities who would be most affected by the project. Based on this baseline presentation of the receiving environment, the likely significant adverse impacts on population and human health were considered and are presented with reference to Land Use/ Settlement Patterns, Amenity, Population and Economy. Mitigation Measures are proposed in respect of the above topics where appropriate.

The impact assessment section of this chapter follows the terminology (where applicable) used in the EPA Guidelines as set out in Chapter 1 of this EIAR. While perceptions of project can be somewhat subjective, it is considered that the impacts presented are broadly representative of the impacts on the population within the study area.

3.2.5 Residential Design Standards

For any residential development, the quality of the living environment for future residents of the scheme is considered in the design process and the proposed apartments meet all the standards contained in the Development Plan and the relevant Section 28 Guidelines. Technical design standards and guidelines which are integral to the design of the proposed development (eg. apartment size standards, daylight/ sunlight analysis and wind/microclimate analysis) are addressed as part of the normal development management process are outside of the scope of this EIA. These assessments and design tools are addressed within the documents submitted to the Planning Authority with this planning application and referred to in this EIAR where relevant to the findings of the assessment. Similarly, design considerations that are within the scope of the Building Regulations (eg. fire safety, energy efficiency, disability access etc.) are deemed not to be within the scope of this EIAR.

3.2.6 Scoping for Risk of Major Accidents Or Disasters

Article 3(2) of the 2014 EIA Directive states that an EIAR shall consider:-

> *'The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned'.*

The 2018 *Guidelines for Planning Authorities and An Bord Pleanala on carrying out Environmental Impact Assessment* sets out two key considerations to address this:-

- *"The potential of the project to cause accidents and/or disasters, including implications for human health, cultural heritage, and the environment;*

- *The vulnerability of the project to potential disasters/accidents, including the risk to the project of both natural disasters (e.g. flooding) and man-made disasters (e.g. technological disasters)."*

(Source: Page 31, Section 4.29)

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Based on the above requirements, this Chapter has considered potential for major accidents and disasters in the construction and operational phases.

The proposed development is an urban development typical within an urban setting. Having regard to the nature of the project (its location, type, context and future constraints and likely receptors) there are no particular features of the project that suggest a high risk of major accidents or disasters relating directly to this project itself. Therefore, an examination of major accidents / disasters has been scoped out of this EIA. The potential risks examined in this scoping exercise are detailed in Table 3.1.

If such events were likely, they would have been identified as part of the SEA process undertaken as part of the Development Plan.

Table 3.1: Scoping for Major Accidents and Disasters

Risk	**Comment on Vulnerability**	**Likely Significant Effect**
Construction Accidents	The construction of any project of this nature has potential to give rise to unplanned events or accidents, including fire, which impact on health and safety of human beings if such activities are not managed appropriately. Measures to address such health and safety considerations will be subject to Regulations under the relevant Health and Safety codes. The Contractors' CEMP will also address safety measures to be implemented on site.	No
Flooding	The development is informed by a Site Specific Flood Risk Assessment (SSFRA) and has been designed above flood levels to remove this risk.	No
Fire Safety:	The risk of fire from the development itself is from the normal risks in any urban area including gas explosions, electrical faults, kitchen accidents, smoking, arson, or malfunctioning equipment and is addressed through the Building Regulations (Fire Safety) and is therefore addressed through primary mitigation in the design process through fire detection systems, sprinklers, fire-resistant materials, clear evacuation routes etc.	No
Traffic Accidents:	Risk of road traffic accidents involving vehicles entering or exiting the development will be low due to the low speed limits that apply and will be managed by emergency services as per their standard procedures. The Quality Audit process will ensure that the design of the roads and pedestrian areas in the development are designed to best practice standards to mitigate undue risks of traffic accidents.	No
Structural Failures:	Design flaws, poor construction quality, foundation issues, material degradation can cause structural failures posing risks to occupants. Adherence to	No

	building codes, regular maintenance and the use of high-quality materials will ensure that such risks in this instance are not likely or significant.	
Hazardous Material Incidents	There are no significant direct impacts associated with the project itself in the operational phase. COMAH (Seveso) establishments are recognised as posing an identified risk to public and environmental health and safety, and are regulated by the Health and Safety Authority (HSA). There are no Seveso sites in the vicinity of the site.	No

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3.3 RECEIVING ENVIRONMENT

3.3.1 Planning Policy Context

The current application has been prepared in the context of a range of national, regional and local planning policy sources. These are reviewed and commented on in detail in the *Planning Application Report*, prepared by BMA Planning and submitted with this application. The main sources are summarised below.

National (Spatial)	• *Project Ireland 2040 - The National Planning Framework (NPF)*
National (Section 28 Guidelines)	• 'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities (revised 2023)' • Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities 2024 • Urban Development and Building Heights Guidelines for Planning Authorities (2018)'
Regional	• *Regional Spatial and Economic Strategy (RSES) 2019-2031 for the Eastern and Midland Region*
Local	• *Fingal County Development Plan 2023 – 2029* (FCDP)
Site	• Barrysparks and Crowscastle Masterplan 2019

The project will deliver a high-density scheme of modern and adaptable new homes, within an existing urban area, in close proximity to existing public transport and local service provision. This is in accordance with the principles and vision of the above national and regional plans. In general terms, therefore, the proposed development is set against a favourable policy background which supports the development of the site for high density residential scheme as proposed.

3.3.2 Population and Demographics

<u>Swords -Seatown</u>
The lands are within the Swords-Seatown Electoral Area (ED) which had a population of 7465 persons in the most recent Census in 2022 with most of this population focused to the east/north east of the ED, east of Swords Village ED and west of the R132. Swords-Seatown covers a total area of 4 square kilometers and has a population density of 1849.1 persons per square kilometre. The population density of Ireland as a whole is 73.3.

Overall, this area has experienced steady population growth and increased demographic diversity

over the past 15-20 years (2006 to the present) with new residential developments added in the 1990's/ 2000's to supplement the more mature suburbs of Swords Village and Swords-Glasmore ED's dating from the 70's and 80's. The area has seen significant development in housing, office and retail/ commercial development on lands south of the Malahide Road within the Holywell, Airside and Kinsealy areas, all located within the Kinsaley ED to directly to the south.

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Population

As stated above, population growth has been steady over the last 10-15 years with 6 to 7% growth on average in the intercensal periods 2011-2016 and 2016-2022. These growth rates of are slightly less than the 8% and 11% growth rates in Fingal and in line with the 6% and 7% growth rates in Dublin over the same intercensal periods. The proposed development lands will represent a increase population in line with the vision for the lands and planning policy to consolidate suburban areas based on improved public transport connectivity.

Age Distribution

The area had a relatively young population. For example, in 2022 there were 1,543 persons aged 0-14 compared with 699 people aged 65+. The age distribution for the area as identified within the 2022 Census results in an Age Dependency Ratio of 42.9, which is notably lower than the national average of 53.2. That means that there are fewer dependents (young and old) per 100 working-age people (15-64) compared to the rest of the population.

Employment

The Swords-Seatown area has unemployment rates for females and males of 7% and 6% respectively. These rates of unemployment are in line with national unemployment rates of 7% for both genders. The labour force participation rate in Swords-Seatown was 71.6%, which is higher than the national average of 61.3%. Residents of the area are employed across a broad range of sectors, including wholesale and retail trade, professional, scientific and technical activities, health and social work and information and communication.

Education

The Swords-Seatown area has a high level of educational attainment with 53% of the population being educated to third level and only 4% of the population with a primary education only. This a strong level of educational attainment when compared with the national figures of 38% of the population being educated to third level and 12% of the national population with a primary education only.

Economic and Social Indicators

The Deprivation Index for the Swords-Seatown area is "Marginally above average" based on the Pobal index. The Lone Parent Rates for the area of 18% is slightly higher than the national rate of 15%.

Ethnic and Cultural Diversity

In keeping with the trend evident across the Dublin region, Swords-Seatown has become more ethnically and culturally diverse in recent the years as evidenced by the 2022 Census findings. 82.5% of the population identified as White Irish with 17.5% identifying as other enthnic backgrounds including Other White backgrounds, Black or Black Irish – African, Asian or Asian Irish, Mixed or Other ethnicities and Irish Traveller community.

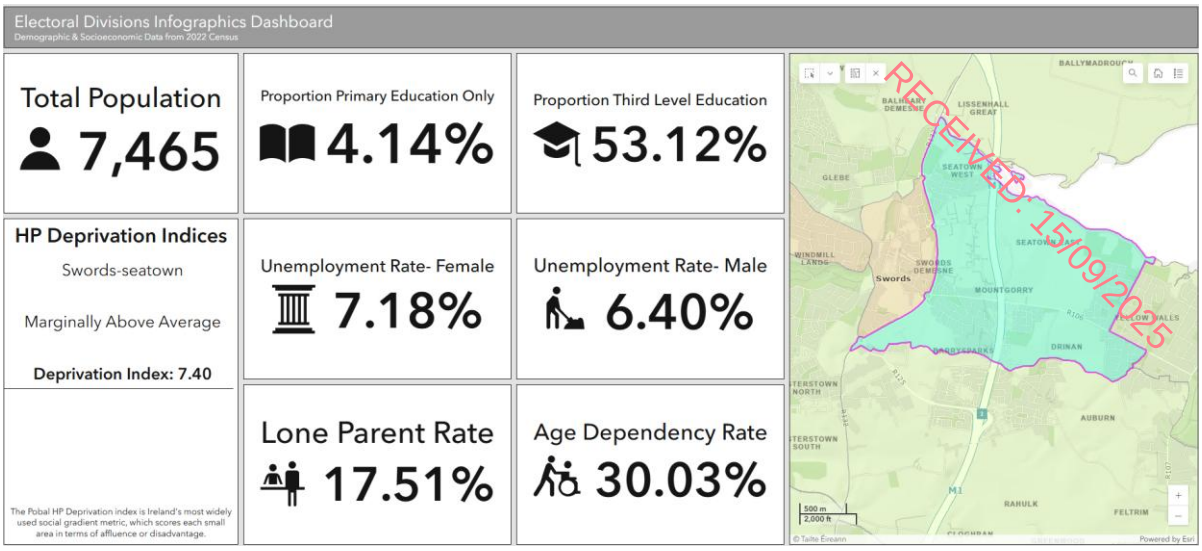

Fig 3.1: Swords-Seatown ED – Demographic & Socioeconomic Data, Census 2022

3.3.3 Land Use and Receptors

The EPA Guidelines identify receptors as neighbouring landowners, local communities and other parties which are likely to be directly affected by the project.

The site is located c.700m to the south of Swords and the Pavilions Shopping Centre, north east of Airside Retail and Business Parks and north of the Holywell residential estate. There are no dwellings and therefore no population on the site at present.

The site is bounded by the R132 linking Pinnock Hill to the west to the M1 to the north and adjoins the Masterplan lands to the south. The R132 is the proposed route for MetroLink. The north-east and southeast boundaries are formed by the residential areas of Holywell and the Drynam Road. The MSD Biotech building is located to the south eastern boundary of the site, while further commercial buildings are located on Lakeshore Drive to the west of the site and include Fujitsu and Ryanair.

The sensitive population receptors in the area are the communities and properties identified below, and geographically presented on Fig 3.2:

Table 3.3 : Sensitive Receptors within the Surrounding Area

R1	Drynam Road residential neighbourhoods
R2	MSD Industrial Facility
R3	Airside Retail And Business Park
R4	Masterplan lands to south (currently lands are primarily comprised of grassland, with a marsh area)
R5	Lakeshore Drive Office Park
R6	Carlton Court Residential Development
R7	Lands to southeast of Swords Pavilions

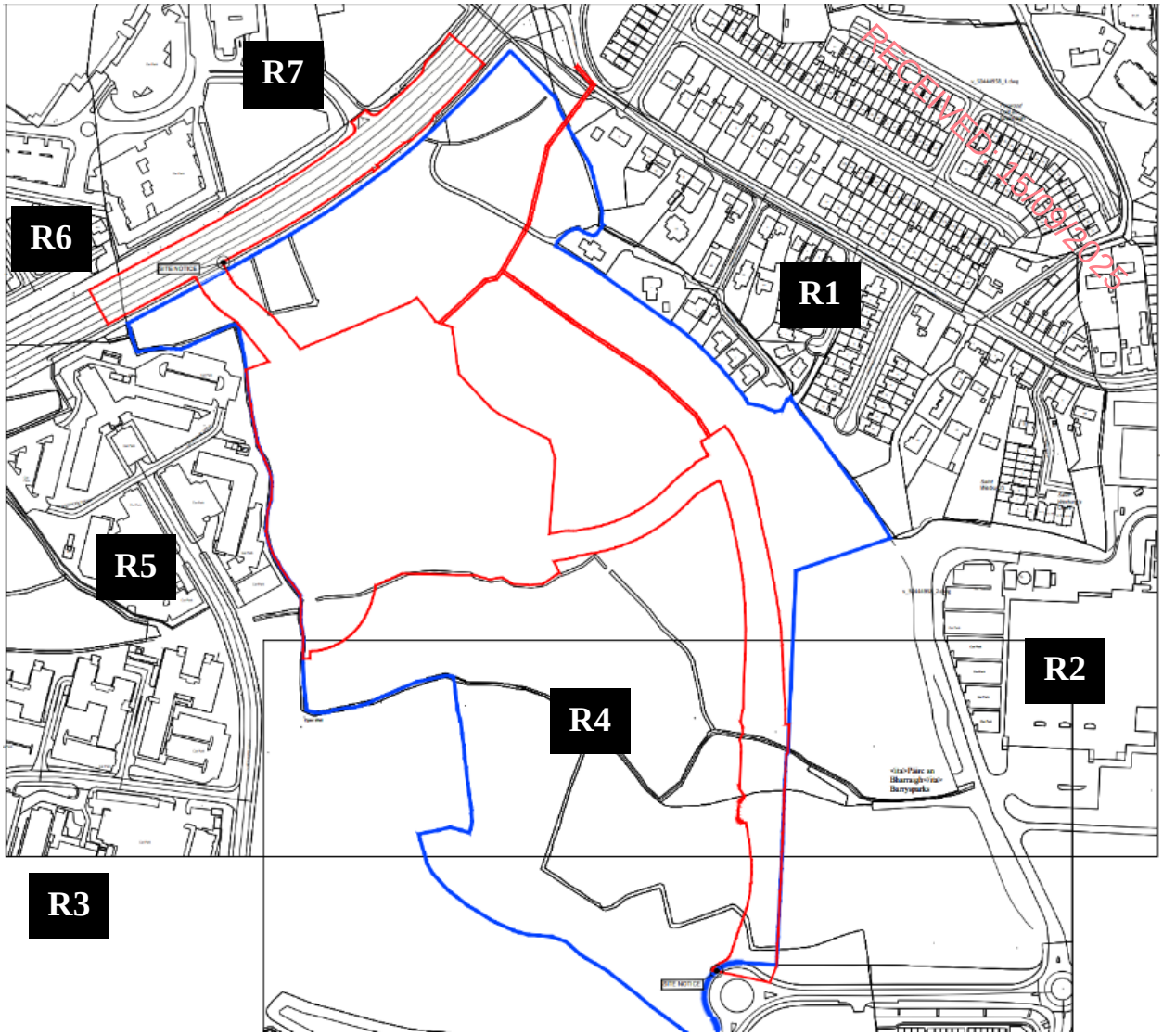

Fig 3.2: Local Receptors in the vicinity of the site

3.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The project is described in detail in Chapter 2 and will involve the construction of 530 new apartment units with associated ancillary accommodation and a creche.

In terms of population and human health, the construction phase of the development will involve construction activities, as described in Chapter 2, across the site for the period of up to 4 years. In the operational phase, the proposed development will generate a resident population of c.1,200 based on an average national apartment occupancy rate of 2.1 persons per household. It is anticipated that the proposed creche will employ 8 to 9 people. The expected operational activities are also described in Chapter 2.

In the event that the project does not proceed, the 'do nothing scenario', the site would remain as it is currently as undeveloped urban fringe. Zoned and master planned lands would not be developed for housing in accordance with the national, regional and local planning policy guidance.

3.5 CONSTRUCTION IMPACTS

Land Use/ Settlement Patterns

Construction activities will be generally confined to the site and will not impact on the ongoing operation of land uses in the vicinity. Movements by the general public (vehicular, cycle or pedestrian) will not be affected during construction.

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Amenity

The construction phase of the proposed development will cause a certain amount of loss of amenity, disruption, nuisance and inconvenience to the local community, particularly the residents who are located closest to the project on Drynam Road (R1). These are ***likely short term negative*** effects and their significance is considered to be ***slight*** to ***not significant***.

The main impact areas on human health relate to air borne dust, noise generation and vibration associated with construction activities and these will also mainly affect residents in R1 but also businesses surrounding the site in R5. These impacts are addressed in Chapters 7 - Air and Climate and 8 - Noise and Vibration of this EIAR.

The population will be also be affected by impacts associated with traffic disruption, utility and services disruptions and visual impacts. These effects are considered in the relevant chapters of this EIAR (namely Chapters 9 – Materials Assets: Built Services, 10 – Materials Assets: Transportation and 13 – Landscape).

Mitigation Measures are detailed below to ensure the construction meets best practice and is capable of responding to issues raised during the construction stage of the project.

Population

Some increase in population may arise during the construction period related to construction workers seeking accommodation. However, such impacts in relation to population will be ***not significant.*** No mitigation or monitoring measures are proposed

Economy

The construction phase of the project will provide for the employment of a substantial number of construction workers over the construction programme. The Construction Industry Federation (CIF), estimate that approximately 1.2 direct jobs are created per new residential unit during the construction phase. This figure includes a range of construction roles which would equate to in the region of **600-650** construction jobs. Therefore, this will be a ***significant positive short term*** impact in terms of employment within the wider region.

3.6 OPERATIONAL IMPACTS

Land Use and Settlement Patterns

The project will deliver a new residential community with supporting land uses which will change the character of the existing landscape. As addressed in Chapter 13 Landscape, the area will transform from an area of undeveloped urban fringe incorporating undulating grassland and hedgerows area to a high density mixed use precinct. The impact on the existing residents on Drynam Road (R1) will be ***profound*** and ***neutral***.

The main impacts on human health, associated with air quality, noise, traffic and transportation and landscape, are considered elsewhere in this EIAR (Chapters 7 - Air and Climate, 8 - Noise and Vibration, 10 - Materials Assets: Transportation and 13 – The Landscape including mitigation measures).

No other mitigation or monitoring measures are recommended.

Amenity

For the future residents of the scheme, the living environment was considered in the design process to ensure a high quality scheme was designed in accordance with the relevant codes and guidance. The scheme meets all quantitative standards and the qualitative aspects of the scheme are demonstrated in the Housing Quality Assessment (MCORM) and other supporting documents submitted with the planning application, including the Daylight and Sunlight Report (Modelworks) and the various other technical reports that informed the final scheme design. On the basis of the high quality living environment presented, it is considered that the overall impact on human beings is ***neutral.***

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Population

The residential population of the proposed housing units will be in excess of c.1,200 people based on an assumed 2.1 people per unit[6]. The impact on the population is considered to be a ***long term significant positive effect*** which is consistent with the trend in the wider area. New residential units will contribute to the delivery of a critical mass of population which will support a wide range of additional local businesses, services, transport infrastructure and employment opportunities. No mitigation or monitoring measures are proposed.

Economy

The project will have a ***slight to moderate positive impact*** on the local economy through the direct employment in the creche and indirectly in relation to support services to the new residential population. The increased population will also have an indirect positive impact on the local economy through its spending power which will assist in retaining local service jobs in the area.

The project should act as a catalyst for further development / investment in the area and there is likely to be a positive impact on existing property and land values in the area as the area transforms. This change is consistent with planning policy and is a ***long term positive effect.***

No mitigation or monitoring measures are proposed for the operational phase of the development.

3.7 MITIGATION AND MONITORING MEASURES

	Construction Mitigation
PPH-C1	**Construction and Environmental Management Plan (CEMP)-** In order to mitigate potential temporary community disturbance during construction, a Construction and Environmental Management Plan (OCEMP) has been prepared and is included with the application. If the project is approved and implemented, the appointed contractor will incorporate the environmental commitments contained in this EIAR and prepare a Construction and Environment Management Plan (CEMP) for the agreement of the Planning Authority prior to development commencing on site.

[6] According to the Census 2022, the average household size in apartments in Ireland was approximately 2.1 persons per household.

PPH-C2	**Liaison Officer** - The contractor(s) will appoint a liaison officer to ensure that any issues from the local community are dealt with promptly and efficiently during construction. These details will be included in the Contractor(s) CEMP prepared prior to construction commencing.
PPH-C3	**Working Hours -** Typically, construction working hours will be limited to 7am – 7pm Monday to Friday and 8am to 2pm on Saturday. It is anticipated that there will be times, due to exceptional circumstances, that construction work will be necessary outside these standard hours i.e. large concrete pours. Deviations from these standard times will be agreed in advance with the Planning Authority.
	Operational Mitigation
	N/A
	Monitoring
	N/A

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3.8 RESIDUAL IMPACTS

Following the implementation of the mitigation measures outlined above, and elsewhere in this EIAR, the residual impact on Population and Human Health is predicted to be negative, slight to not significant and short-term at a local level.

No significant negative residual impacts have been identified for the operational stage.

3.9 INTERACTIONS AND CUMULATIVE IMPACTS

3.9.1 Cumulative Impacts across topics

All topics interact with population and human health to a certain degree but the more significant areas of interaction considered in this EIAR are:-

Construction Stage

- Air and Climate – Construction activities give rise to air borne dust which impact on the residential amenity of local population and, in exceptional circumstances, can affect human health.

- Noise and Vibration - Construction activities give rise to noise and vibration which impact on the residential amenity of local population and, in exceptional circumstances, can affect human health.

- Material Assets: Transportation – Construction activities can give rise to disruption to local population due to traffic congestion and traffic hazard.

- Landscape – The project will impact on the receiving landscape in terms of hoarding cranes and other construction plant and machinery.

Operational Stage

- Material Assets: Built Services – The impact on population and human health is closely related to the ongoing management, maintenance and improvement of public infrastructure assets dealing with water Supply, foul drainage and surface water.

- Material Assets: Transportation – During the operational phase there is potential for negative impacts as a result of additional traffic on the road network. These impacts need to be considered in the context of positive benefits that accrue from improvements in sustainable public transport modes, walking and cycling.

- Landscape – The project will transform the local landscape which will impact on the perception of the site by the existing local population and also by future residents.

In terms of the cumulative impacts identified across the EIA topics above, subject to implementation of the CEMP and best practice in construction, there are no significant adverse effects for Population and Human Health anticipated,

3.9.2 Cumulative Impacts Other Projects

Negative impacts on Population and Human Health outlined above could be exacerbated if construction of the development was to coincide with the development of the projects listed in Table 2.4 above. The implementation of the Contractors Construction and Environmental Management Plan and the other mitigation measure proposed above will ensure that any such cumulative temporary impacts are kept to an acceptable level.

From an operational perspective the proposed development has been conceived within the Barrysparks and Crowcastle Masterplan, 2019 framework which ensures that the development is coordinated with the other future developments on adjacent sites. Combined, these projects will deliver positive long term effects for population and human health and no mitigation is required.

3.10 REFERENCES

- *Fingal County Development Plan 2023-2029*
- Swords Masterplans Part B: Barrysparks & Crowscastle, 2019
- Census (2022) www.cso.ie
- Pobal (2020) https://maps.pobal.ie/

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4. BIODIVERSITY

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4.1 INTRODUCTION

This chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by Faith Wilson (an independent ecologist) on behalf of Bovale Developments Unlimited Company in association with the submission of a planning application to Fingal County Council, for a proposed Large-scale Residential Development (LRD) and creche at Barrysparks and Crowscastle, Swords, Co. Dublin.

This chapter establishes baseline ecological data for the proposed development site and other relevant areas. It identifies and assesses the ecological value of the identified features within the proposed development and the potential impacts of the development on the ecology of the site and the surrounding area and within the potential zone of influence (ZOI), prior to and after proposed mitigation.

The surveys and assessments have been designed to identify and describe the existing ecology of the area and detail the habitats or species of conservation interest recorded there.

This chapter also assesses the significance of the likely impacts of the scheme on the biodiversity elements and designs mitigation measures to alleviate identified impacts.

The mitigation measures are outlined within the Biodiversity Chapter and elsewhere within the EIAR.

4.2 ASSESSMENT METHODOLOGY

This chapter has been prepared having regard to the following guidelines:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022).
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018).
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018).
- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017).
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment.(European Commission, 2013).
- Guidelines for Assessment of Ecological Impacts of National Roads Schemes: Revision 2 (National Roads Authority, 2009).
- Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).
- Bat Mitigation Guidelines for Ireland V2 (Marnell, et al, 2022).
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (National Roads Authority, 2006a).
- Bird Monitoring Methods - A Manual of Techniques for Key UK Species (Gilbert et al., 1998).
- Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2011).
- Guide to Habitats in Ireland (Fossitt, 2000).

4.2.1 Desktop Study

A desk study was carried out to collate the available information on the ecological environment at Barrysparks and to determine the proximity of the proposed development to designated areas for conservation.

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The National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage database of designated conservation areas were checked with regard to the location of the lands at Barrysparks.

A review of the NPWS site synopses and conservation objectives for the relevant European Sites was completed. Information on habitats and species of fauna and flora listed for protection under Annex II of the EU Habitats Directive (92/43/EEC), Annex I of the Birds Directive (79/409/EEC) and the Wildlife (Amendment) Act (2000) was also sought from Fingal County Council Biodiversity Officer, NPWS, the National Biodiversity Data Centre and published sources.

Recent, high resolution, colour aerial photographs were used to identify habitats of conservation value. Other ecological sites and watercourses in the study area were identified by examining GIS datasets, maps and aerial photographs, and by drawing on existing information.

A review of other relevant reports and plans was also completed. These included:

- the Swords Masterplans Part A: Masterplans for Barrysparks & Crowscastle; Fosterstown; & Estuary West,
- the NIS produced for the Swords Masterplan - Part B: Barrysparks & Crowscastle,
- the NIS produced for the Barrysparks Healthcare Facility and associated enabling works, Barrysparks, Swords, Co. Dublin (Wilson, 2023),
- the Ecological Impact Assessment produced for the Barrysparks Healthcare Facility and associated enabling works, Barrysparks, Swords, Co. Dublin (Wilson, 2023),
- the biodiversity chapter and NIS produced for the MetroLink project (JACOBS IDOM (2022a, 2022b),
- the updated EIAR Biodiversity Chapter and Appropriate Assessment produced for the MetroLink project (JACOBS IDOM (2024a, 2024b),
- the Post Oral hearing AA Update produced for the MetroLink project (JACOBS IDOM (2024a),
- the biodiversity chapter and NIS produced for the Swords to City Centre Core Bus Corridor Scheme project (JACOBS ARUP SYSTRA 2023a, 2023b),
- the NIS produced for the Airside Link Road between the Holywell roundabout and Airside (Moore Group 2021), and
- a report for Screening for Appropriate Assessment for lands to the south east of the Holywell roundabout (Wilson, 2018).

4.2.2 Ecological Field Surveys

The FCC Barrysparks Master Plan lands and the Bovale LRD application site have been surveyed on many occasions by this author over several years for the purposes of ecology as presented in Table 4.1 within Appendix 4A and further detailed in Section 4.2.3, 4.2.4, 4.2.5 and 4.2.6.

4.2.3 Terrestrial Field Surveys

The FCC Barrysparks Master Plan lands have been surveyed over many years between 2020 and 2025 as can be seen on Table 4.1 within Appendix 4A.

The site visits aimed to survey and map the habitats present using the habitat survey and mapping techniques described by Smith *et al.* (2011) and described using the Heritage Council Habitat

Classification (Fossitt, 2000). Any affinity between the habitats present and a habitat type listed under Annex I of the EU Habitats Directive was also considered.

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A survey for invasive and non-native terrestrial vascular plant species, which threaten biodiversity was completed over several years and any observations of invasive species have been documented during all site visits.

A dedicated large mammal survey was carried out during the site visits using the techniques as prescribed in Ecological Survey Techniques for Protected Flora and Fauna (NRA, 2009). This entailed searching for and identification of signs, tracks and droppings of various mammals (including otter, badger, pine marten, Irish stoat, Irish hare, red squirrel, hedgehog and pygmy shrew along with non-native species such as American mink, grey squirrel and rabbit) within the site. Badger setts, trails and foraging areas were looked for along earthen banks, hedgerows and treelines within the property. Otter and mink signs were looked for along the watercourse and ditches within the property.

Breeding birds were assessed over the course of the site visits completed in 2020, 2021, 2023 and 2024.

Bat surveys of the site were initially completed on the 28th August 2020, 29th September 2020 and 19th August 2021 and updated on the 24th September 2024. The lands were walked and bat emergence and hunting and foraging activity at dusk were recorded using a number of bat detectors including an Echo Meter Touch Pro, and two heterodyne Bat Box Duet bat detectors.

The dusk emergence surveys commenced approximately 15 minutes before sunset and ended approximately 90 minutes after sunset. The surveys were conducted in appropriate weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C).

Calls recorded during the surveys were then further analysed using Kaleidoscope Pro software.

The potential for water birds to utilise the site was first noted during a site visit in December 2020 when the site was flooded and a number of waterbirds were present. On foot of that a series of wintering bird surveys were completed on the FCC Barrysparks lands (including the site) over 2022/2023, 2023/2024 and 2024/2025 as detailed below in Section 4.2.4, 4.2.5 and 4.2.6.

4.2.4 Ornithological Field Surveys

During the winter of 2022/23 Faith Wilson, Ecological Consultant, was commissioned, to undertake an ornithological study of waterbird usage of the Barrysparks and Crowscastle Masterplan lands.

The ornithological study area included all of the FCC Barrysparks and Crowscastle Masterplan lands, which were divided into three study areas (A, B and C as shown on Figure 4.1 below). The study was completed between November 2022 and April 2023 when site visits were undertaken twice monthly, during which surveys and observations of bird usage of the study area were undertaken. A total of nine bird survey sessions were undertaken between November 2022 and April 2023 inclusive (see Table 4.2 within Appendix 4A).

All birds seen or heard were located and recorded onto maps. During each visit the lands were walked slowly for the duration of each survey period. The route walked focused primarily on existing hedgerows, areas of scrub, wet areas and areas with mature trees. Open areas were occasionally walked in an attempt to flush any unseen birds such as Snipe, Meadow Pipit, Skylark,

finches, etc. Bird species that were heard or seen were recorded and their position noted on a map. All visits were undertaken when weather conditions were suitable for surveying (avoiding days with strong winds, heavy rain and/ or poor visibility). Binoculars (42x10) were used throughout each survey period to aid with identification of species and activities.

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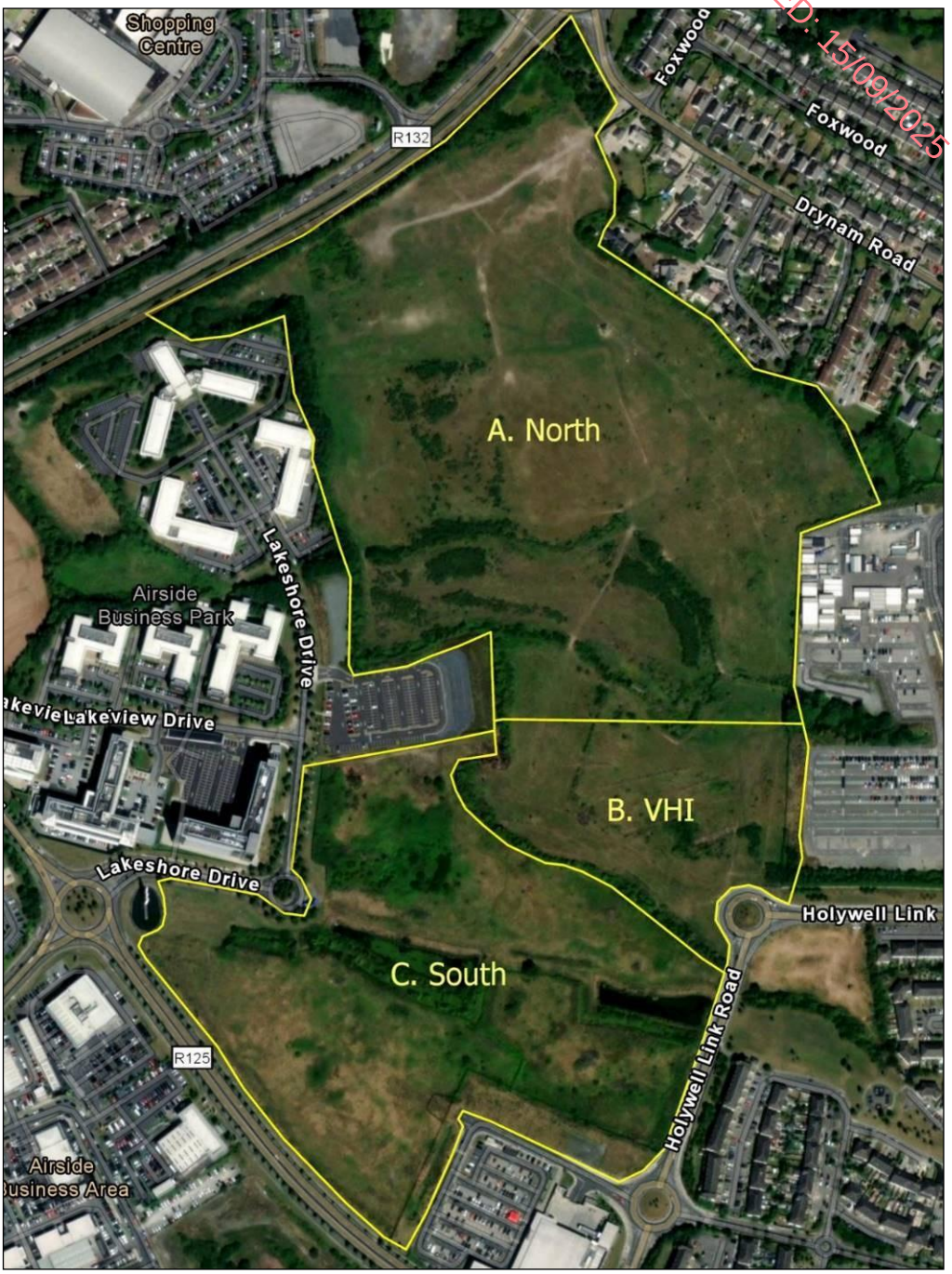

Figure 4.1. Ornithological study area in the Barrysparks Masterplan lands in 2022/2023
(Illustrating the proposed LRD development area (within Area A), the permitted VHI development area (B) and additional area to the south (C) that were surveyed.)

Data are presented in Appendix 4A for the FCC Barrysparks and Crowscastle Masterplan lands and separately for each of the three survey areas and include summaries of records in terms of the species, their totals and their conservation status.

Specific focus was given to any waterbirds using the site given these are listed for nearby Malahide

Estuary SPA (004025) and the North-West Irish Sea SPA (Site Code: 004236), as well as other nearby SPAs, namely Rogerstown Estuary (004015) to the north and Baldoyle Bay (004016), North Bull Island (004006) and South Dublin Bay and River Tolka Estuary (004024) to the south.

All of these SPAs list 'waterbirds and wetlands' as a qualifying feature, recognising the importance of these sites for a diversity of species.

They also list species that occur in qualifying levels (further details about these sites and their qualifying interests are presented in Table 4.13 within Appendix 4A).

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4.2.5 Ornithological Field Surveys – 2023/ 2024

The ornithological study of waterbird usage of the FCC Barrysparks Masterplan lands continued during the winter of 2023/24 focusing on the northern section as shown on Figure 4.2 below.

Figure 4.2. Overview of site illustrating the section of the FCC Barrysparks Masterplan lands (Surveyed between September 2023 and April 2024.)

Survey effort was increased in 2023/2024 and the surveys were undertaken over 36 dates between 13/09/23 and 24/04/24 as shown on Table 4.3 within Appendix 4A.

Most of the visits were undertaken close to high tide (18 sessions, Table 4.3 within Appendix 4A), as this was anticipated as the most likely time for waders to be present, and visits were completed more frequently when waterbirds were recorded at the site.

During each visit, the area was scanned from locations along the road to the north of the site with binoculars and a telescope, and all waterbirds present were counted and their locations plotted onto maps.

All visits were undertaken when weather conditions were suitable for surveying (avoiding days with strong winds, heavy rain and/ or poor visibility).

4.2.6 Ornithological Field Surveys – 2024/ 2025

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The ornithological wintering bird surveys continued in 2024/2025 using the same approach as detailed above. Surveys commenced in October 2024 and concluded in April 2025 as shown below in Table 4.4 within Appendix 4A.

4.2.7 Impact Assessment

The information gathered from desk study and field survey was then used to prepare an ecological impact assessment (EcIA) for the proposed development upon the identified ecological features.

The EcIA has been undertaken following the methodology set out in EPA (2022) and CIEEM (2018) and with reference to BS 42020:2013. EcIA is based upon a source-pathway-receptor model, where the source is defined as the individual elements of the proposed development that have the potential to affect identified ecological features. The pathway is defined as the means or route by which a source can affect the ecological features. An ecological feature is defined as the feature of interest, being a species, habitat or ecologically functioning unit of natural heritage importance. Each element can exist independently however an effect is created where there is a linkage between the source, pathway and feature.

A significant effect is defined in CIEEM (2018) as:
"an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'…. or for biodiversity in general".

BS 42020:2013 states that if an effect is sufficiently important to be given weight in the planning balance or to warrant the imposition of a planning condition, e.g. to provide or guarantee necessary mitigation measures, it is likely to be "significant" in that context at the level under consideration. The converse is also true: insignificant effects would not warrant a refusal of permission or the imposition of conditions.

Likely significant effects are predicted on the basis of the proposed development as set out in Chapter 2: Development Description.

The valuation of ecological features is in accordance with the methodology detailed in National Roads Authority Guidelines (2009) (Table 4.5 within Appendix 4A). To qualify as an ecological feature (referred to as key ecological receptors in the NRA Guidelines), features must be of local ecological importance (higher value) or higher as per the geographical frame of reference detailed in Table 4.5 within Appendix 4A.

Ecological features might also be important because they play a key functional role in the landscape as 'stepping stones' for migratory species to move during their annual migration cycle, as well as for species to move between sites, to disperse populations to new locations, to forage, or move in response to climate change. Features of lower ecological value are not assessed.

4.2.8 Difficulties Encountered in Completing Information

All surveys were undertaken within an appropriate survey period and in suitable weather conditions. No constraints to the survey information gathered are noted.

4.3 RECEIVING ENVIRONMENT

The application site and general site context are described in detail in Chapter 2 above.

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4.3.1 International Nature Conservation Designations

The lands within the FCC Barrysparks Master Plan lands and the proposed LRD site (henceforth referred to as the application site) are not currently designated for any nature conservation purposes under international conservation legislation as shown on Figure 4.3 below.

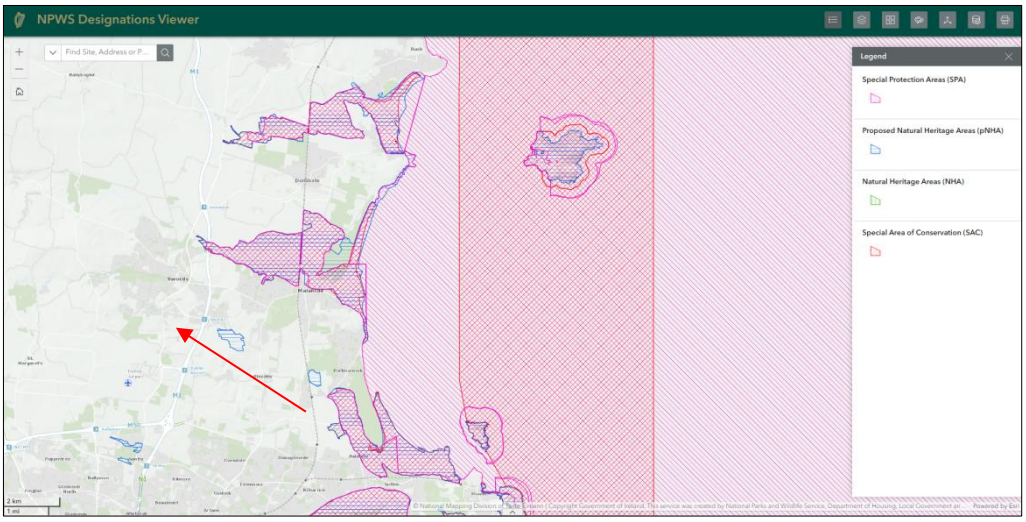

Figure 4.3. Site location at Barrysparks, Swords indicated by the red arrow.
(Source: National Parks and Wildlife Service online map viewer).

Eighteen European Sites have been identified within the zone of impact of the lands at Barrysparks as follows:

- Baldoyle Bay SAC 000199
- Baldoyle Bay SPA 004016
- Howth Head SAC 000202
- Howth Head Coast SPA 004113
- Ireland's Eye SAC 002193
- Ireland's Eye SPA 004117
- Lambay Island SAC 000204
- Lambay Island SPA 004069
- Malahide Estuary SAC 000205
- Broadmeadow/Swords Estuary SPA 004025
- North Dublin Bay 000206
- North Bull Island SPA 004006
- North-West Irish Sea SPA 004236
- Rockabill to Dalkey Island SAC 003000
- Rogerstown Estuary SAC 000208
- Rogerstown Estuary SPA 004015
- South Dublin Bay SAC 000210
- South Dublin Bay and River Tolka Estuary SPA 004024

Special Areas of Conservation (SACs) are habitats of international significance that have been identified by NPWS and submitted for designation to the EU. SAC is a statutory designation, which has a legal basis under the EU Habitats Directive (92/43/EEC) as transposed into Irish law through the European Communities (Natural Habitats) Regulations, 1997, which were amended in 1998,

2005 and 2011. The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats)(Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in the Court of Justice of the European Union (CJEU) judgements.

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A Special Protection Area (SPA) is a statutory designation, which has a legal basis under the EU Birds Directive (79/409/EEC). The primary objective of SPAs is to maintain or enhance the favourable conservation status of the birds for which the SPAs have been designated.

The location of these European Sites are shown on Figure 4.3 above and they are summarised in Table 4.6 within Appendix 4A. The most pertinent of these European sites are those downstream i.e. the Malahide Estuary SAC (Site Code: 000205), the Malahide Estuary SPA (Site Code: 004025)and the North-West Irish Sea SPA (Site Code: 004236) as the Gaybrook Stream provides a hydrological link between the FCC Barrysparks Master Plan lands and these European sites.

4.3.2 National Nature Conservation Designations

Proposed NHAs are habitats or sites of interest to wildlife that have been identified by NPWS. These sites become NHAs once they have been formally advertised and land owners have been notified of their designation. NHAs are protected under the Wildlife (Amendment) Act, 2000, from the date they are formally proposed. NHA is a statutory designation according to the Wildlife (Amended) Act, 2000 and requires consultation with NPWS if any development impacts on a pNHA.

There are twenty proposed Natural Heritage Areas (pNHAs)/Natural Heritage Areas (NHAs) within the zone of influence of the site some of which are also designated as Natura 2000 sites. These pNHAs include:

- Baldoyle Bay pNHA 000199
- Bog of the Ring pNHA 001204
- Booterstown Marsh pNHA 001205
- Dolphins, Dublin Docks pNHA 000201
- Feltrim Hill pNHA 001208
- Grand Canal pNHA 002104
- Howth Head pNHA 000202
- Ireland's Eye NHA 000203
- Knock Lake pNHA 001203
- Lambay Island pNHA 000204
- Liffey Valley pNHA 000128
- Loughshinny Coast pNHA 002000
- Malahide Estuary pNHA 000205
- North Dublin Bay pNHA 000206
- Portraine Shore pNHA 001215
- Rogerstown Estuary pNHA 000208
- Royal Canal pNHA 002103
- Santry Demesne pNHA 001208
- Sluice River March pNHA 001763
- South Dublin Bay pNHA 000210

The lands at Barrysparks are not currently designated for any nature conservation purposes under national conservation legislation.

4.3.3 Hydrology

The Gaybrook Stream (and a drainage ditch incorrectly marked as the Gaybrook Stream North on Figure 4.4 below) drain the wider FCC Barrysparks Master Plan lands. The Gaybrook Stream enters the FCC Barrysparks Master Plan lands at the western boundary from Airside Business Park. The stream turns south along the western boundary and then turns east across the site to divide the site into north and south. This stream is best described as a lowland depositing river (FW2). A field ditch runs west to east and then south east through the centre of the FCC Barrysparks Master Plan lands.

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These watercourses are culverted after leaving the FCC Barrysparks Master Plan lands but ultimately drain to the main channel of the Gaybrook Stream, which is located south of Holywell as shown on Figure 4.4 below. The Gaybrook Stream (IE_EA_08G080700) has not been assigned to any category under the Water Framework Directive. The Gaybrook Stream drains to the Malahide Estuary thereby providing a hydrological link between the FCC Barrysparks Master Plan lands and the European sites downstream. The most relevant of the protected sites is the Malahide Estuary SAC/SPA, which is hydrologically connected to the FCC Barrysparks Master Plan lands via the Gaybrook Stream and the North-West Irish Sea SPA further offshore.

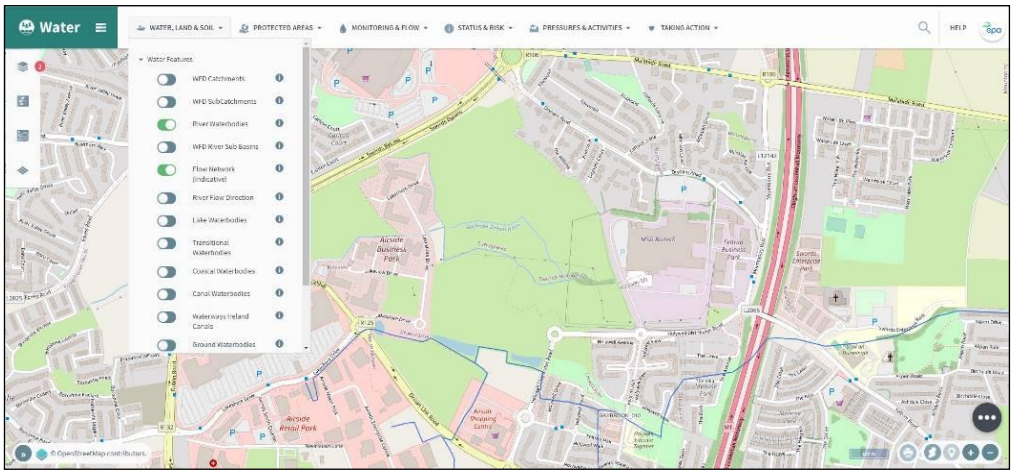

Figure 4.4 Watercourses within the FCC Barrysparks Master Plan lands
(Source: www.catchments.ie)

4.3.4 Soils & Geology

According to the GSI's Online Map Viewer, the underlying bedrock of the FCC Barrysparks Master Plan lands is "*Argillaceous bioclastic limestone, shale*" known as the Malahide Formation as shown on Figure 4.5 below.

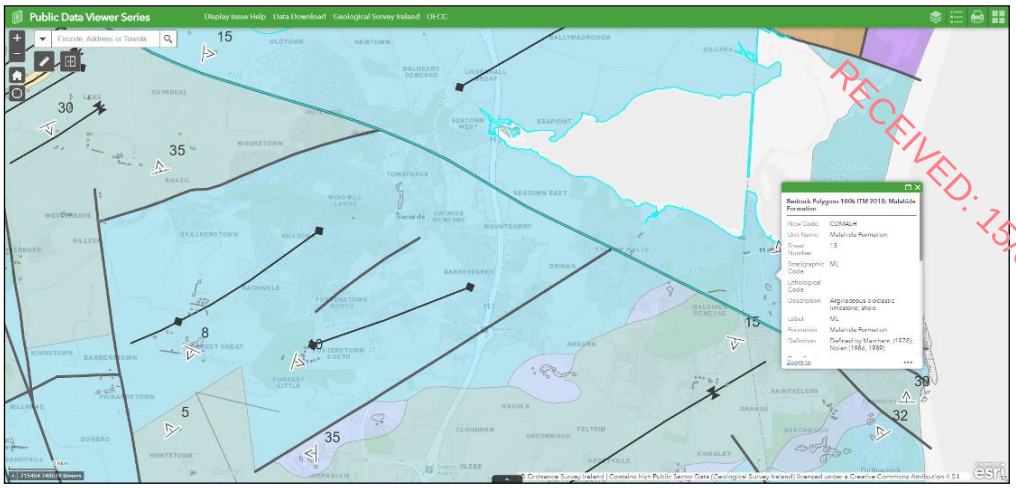

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Figure 4.5. The underlying bedrock of the FCC Barrysparks Master Plan lands
("Argillaceous bioclastic limestone, shale" (Source: GSI))

The soils are described by the EPA as '*Fine loamy drift with limestones'*, and are known as the Elton Formation as shown on Figure 4.6 below.

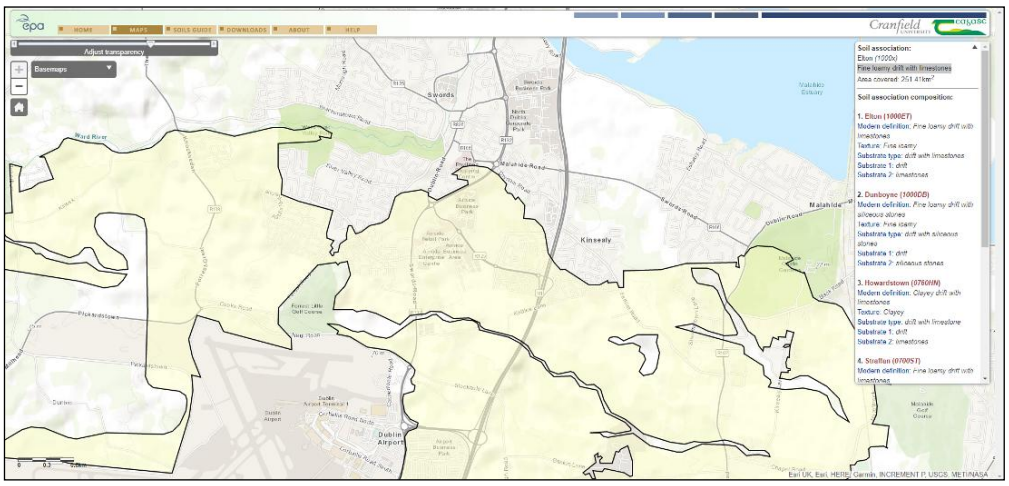

Figure 4.6 The underlying soils are described as Fine loamy drift with limestones'
(Source: EPA).

There are two groundwater bodies located within the masterplan lands - "*Swords*" and "*Dublin*". The 'Swords' groundwater body is considered to be of "Good" status under the Water Framework Directive's monitoring requirements and "*Not at risk*" of failing the WFD groundwater quality objectives, whereas the 'Dublin' one although considered to be of "*Good*" status under the Water Framework Directive's monitoring requirements is currently under review.

The groundwater vulnerability of the area is "*Low*". The aquifer in the area is described as "*a locally important aquifer- bedrock which is moderately productive only in local zones"*.

4.3.5 Habitats

Within the LRD application site the majority of the grassland is described as **Dry meadows and grassy verge grassland (GS2).** In 2025 the dominant species included the grasses sweet vernal grass (*Anthoxanthum odoratum*), common bent (*Agrostis capillaris*), red fescue (*Festuca rubra*), perennial rye-grass (*Lolium perenne*), Timothy grass (*Phleum pratense*), Yorkshire fog (*Holcus lanatus*), cock's-foot grass (*Dactylis glomerata*), and creeping bent (*Agrostis stolonifera*) with herbaceous species such as white clover (*Trifolium repens*), red clover (*Trifolium pratense*), meadow buttercup (*Ranunculus acris*), creeping buttercup (*Ranunculus repens*), ribwort plantain

(*Plantago lanceolata*), silverweed (*Potentilla anserina*), and dandelion (*Taraxacum* agg.). Species such as docks (*Rumex crispus, Rumex obtusifolius, Rumex conglomeratus*), ragwort (*Senecio jacobaea*), daisy (*Bellis perennis*), nettle (*Urtica dioica*), creeping thistle (*Cirsium arvense*), dove's-foot crane's-bill (*Geranium molle*), spear thistle (*Cirsium vulgare*), greater plantain (*Plantago major*), red bartsia (*Odontites vernus*), smooth hawksbeard (*Crepis capillaris*), cat's-ear (*Hypochaeris radicata*), yellow clover (*Trifolium dubium*), selfheal (*Prunella vulgaris*), yarrow (*Achillea millefolium*), and creeping cinquefoil (*Potentilla reptans*) were also recorded.

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Small examples of the Annex I habitat **Lowland hay meadows [6510]** were previously in the LRD application lands. The extent and quality of this grassland has varied in response to management within the site. When these lands were first surveyed much of the grassland was overgrazed but then recovered and had an affinity to the habitat **Lowland hay meadow (6510)** as listed under Annex I of the EU Habitats Directive. A total of 9 positive (+ve) indicator species for the Annex I habitat 'Lowland hay meadows' 6510 were recorded. Following the removal of grazing stock from the lands the quality of these areas of grassland has again declined.

Small pockets of grassland correspond to the habitat **dry calcareous and neutral grassland (GS1).** Species recorded here include: common knapweed (*Centaurea nigra*), bird's foot trefoil (*Lotus corniculatus*), ox eye daisy (*Leucanthemum vulgare*), glaucous sedge (*Carex flacca*), germander speedwell (*Veronica chamaedrys*), meadow vetchling (*Lathyrus pratensis*), yellow rattle (*Rhinanthus minor*), tufted vetch (*Vicia cracca*), bulbous buttercup (*Ranunculus bulbosus*), wild carrot (*Daucus carota*), sheep's sorrel (*Rumex acetosella*), ladies bedstraw (*Galium verum*), field wood-rush (*Luzula campestris*), soft brome (*Bromus hordeaceus*), common fleabane (*Pulicaria dysenterica*), crested dog's tail grass (*Cynosurus cristatus*), hoary ragwort (*Jacobaea erucifolia*), common centaury (*Centaurium erythraea*) and cowslip (*Primula veris*).

What appeared to be a **freshwater spring (FP1)** in the northern portion of the FCC Barrysparks Master Plan lands was observed during the site visit on the 13th December 2020 when much of the lands were flooded. The origins of the spring and the areas of standing water in the site were the subject of further detailed botanical and hydrogeological investigations in 2023 (AWN, 2023), which further informed this NIS. The areas of the FCC Barrysparks Master Plan lands that have contained standing water in the winter months can be seen on **Figure 4.7** below.

Figure 4.7 Areas of standing water on the FCC Barrysparks Master Plan lands

(during the winter months – are evident on the imagery dated March 2024 (Source: Google Earth imagery))

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Areas of ground which previously supported standing water are wetter and here species typical of **wet grassland (GS4)** such as creeping bent (*Agrostis stolonifera*), Yorkshire fog (*Holcus lanatus*), common bent (*Agrostis capillaris*), silverweed (*Potentilla anserina*), ragwort (*Senecio jacobaea*), creeping buttercup (*Ranunculus repens*), and hogweed (*Heracleum sphondylium*) become more frequent.

The areas which held standing water are dominated by bryophytes - the main species present are the mosses *Cratoneuron filicinum* and *Calliergonella cuspidata*. A stonewort *Chara vulgaris* was present in May 2023 when water levels were higher. Areas dominated by silverweed and the moss *Calliergonella cuspidata* indicate the extent of the influence of the standing water and can extend for some distance outside the flooded areas. Willow (*Salix cinerea*) is beginning to invade in the absence of grazing.

Following significant poaching by the grazing horses these areas became dominated by marsh cudweed (*Gnaphalium uliginosum*) in 2024 and hence were classified as **recolonising bare ground (ED2)**.

In July 2025 the flora of these formerly flooded areas had again changed on account of changes to the hydrology and the lack of grazing animals and are now best described as a mosaic of **recolonising bare ground (ED2)** and **wet grassland (GS4)**. Vegetation recorded in the formerly flooded areas included; purple loosestrife (*Lythrum salicaria*), jointed rush (*Juncus articulatus*), thyme leaved speedwell (*Veronica serpyllifolia*), brookweed (*Samolus valerandi*), greater plantain (*Plantago major*), common fleabane (*Pulicaria dysenterica*), marsh foxtail (*Alopecurus geniculatus*), redshank (*Persicaria maculosa*), silverweed (*Potentilla anserina*), and abundant marsh cudweed (*Gnaphalium uliginosum*).

There are also localised areas of grassland on higher ground near the wet areas which contain a greater diversity of species including glaucous sedge, red clover, yellow clover, yellow rattle, creeping cinquefoil, knapweed, bird's-foot trefoil, ribwort plantain, crested dog's-tail, and selfheal - these areas may be underlain by gravels and hence are more free draining.

Figure 4.8. Habitat Map of the FCC Barrysparks Master Plan
(Lands under the ownership of the applicant shown in blue)

The north-eastern boundary of the FCC Barrysparks Master Plan lands consists of a short length of **treeline (WL2)** with mature sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*) and Wych elm (*Ulmus glabra*), with an understorey of dense bramble (*Rubus fruticosus* agg.) and blackthorn (*Prunus spinosa*) which is spreading into the field.

A small area of mature **scrub (WS1)** is found at the eastern end of Commons East. This is dominated by blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus* agg.), with immature sycamore (*Acer pseudoplatanus* at the rear.

A block wall forms the shared boundary of the FCC Barrysparks Master Plan lands with the houses on Commons East with some scattered patches of low bramble scrub in this area.

Remnants of a mature **treeline (WL2)** of mature ash (*Fraxinus excelsior*) with mature hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus* agg.) at the base are found along the shared boundary of the wider FCC Barrysparks Master Plan lands with the properties on Drynam Road. A small section of immature beech hedging is also present here.

The north-western boundary of the FCC Barrysparks Master Plan lands adjoins the Swords bypass-road along which mature screening planting of sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*) and birch (*Betula pendula*) is present. Extending from this in the northern corner of the FCC Barrysparks Master Plan lands is an extensive area of **scrub (WS1)** dominated by blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus* agg.).

A small 'finger' of land extends west from here adjoining the R132 and the business park with **treelines (WL2)** of semi-mature sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*) enveloped in extending **scrub (WS1)** of hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), elder (*Sambucus nigra*) and bramble (*Rubus fruticosus* agg.). These treelines are former

planting associated with the development of the business park and extend south to form the western boundary of the wider FCC Barrysparks Master Plan lands adjoining Lakeshore Drive.

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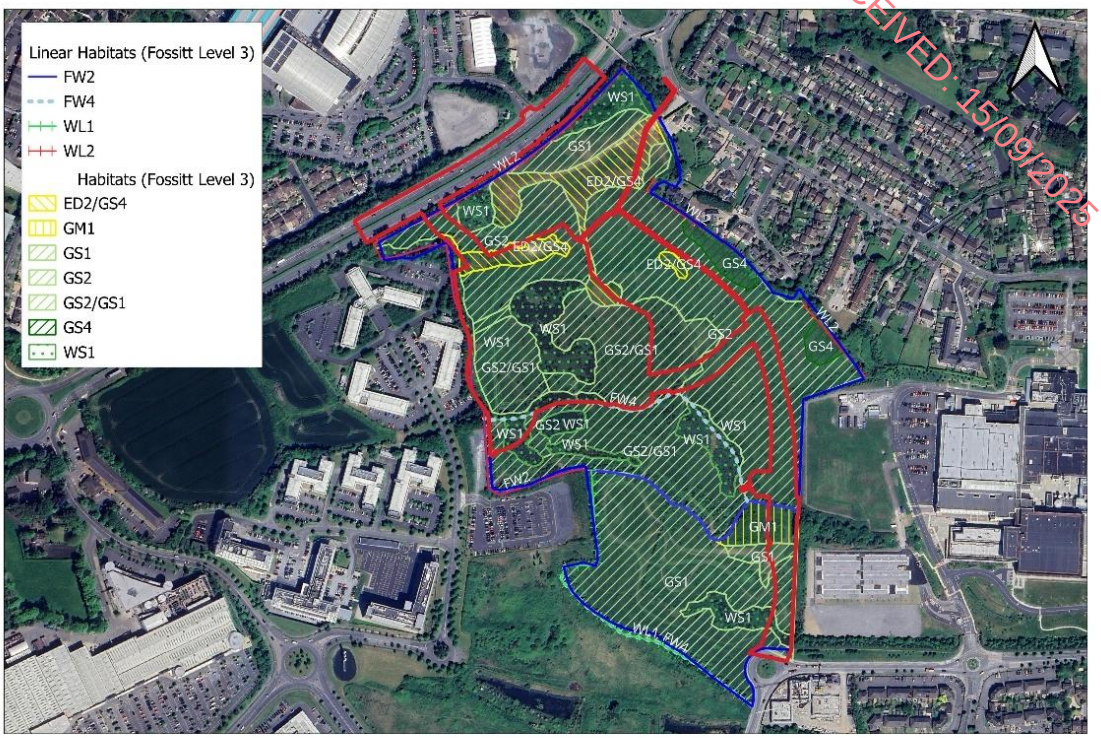

Figure 4.9. Habitat Map showing the Application Site (in red).

The Gaybrook Stream (and a ditch called the Gaybrook Stream North) drain the wider FCC Barrysparks Master Plan lands as shown on Figure 4.4 above. This watercourse is culverted after leaving the FCC Barrysparks Master Plan lands but ultimately drain to the main channel of the Gaybrook Stream, which is located south of Holywell as shown on Figure 4.4 above. The Gaybrook Stream (IE_EA_08G080700) has not been assigned to any category under the Water Framework Directive. The Gaybrook Stream drains to the Malahide Estuary thereby providing a hydrological link between the FCC Barrysparks Master Plan lands and the European sites downstream. Gaybrook Stream is best described as a lowland depositing river (FW2).

The Gaybrook Stream flows in a southward direction along the western boundary of the FCC Barrysparks Master Plan lands adjoining Lakeshore Drive before flowing east through the FCC Barrysparks Master Plan lands and exiting the lands into a large culvert at the boundary of the MSD Biotech site. This watercourse has been subjected to drainage (coupled with infilling of land on the adjoining banks) in the western portion of the site as it is c.3m below ground level of the adjoining field/car parking area associated with Lakeshore Drive. Winter heliotrope (*Petasites fragrans*) was noted on one of the banks here.

A drainage ditch (named the Gaybrook Stream North) flows through the FCC Barrysparks Master Plan lands in an easterly direction before turning south and joining the Gaybrook Stream just before it enters the large culvert at the boundary of the MSD Biotech site. Water level in this ditch is c.1-2m below the adjoining field levels.

In 2021, following heavy rain, the ground adjoining much of the Gaybrook Stream on the southern side was flooded and the stream had broken its banks.

Within the Gaybrook Stream the watercourse and bank margins support fool's water cress (*Apium*

nodiflorum), flag iris (*Iris pseudacorus*), greater reedmace (*Typha latifolia*), hoary willow herb (*Epilobium hirsutum*), wild angelica (*Angelica sylvestris*), reed canary grass (*Phalaris arundinacea*), soft rush (*Juncus effusus*), and grey willow (*Salix cinerea*). Other species recorded include: watercress (*Nasturtium officinale*), lesser pondweed (*Potamogeton pusillus*), broad-leaved pondweed (*Potamogeton natans*), water horsetail (*Equisetum fluviatile*), water starwort (*Callitriche* cf. *platycarpa*) and the bryophytes *Calliergonella cuspidata* and *Cratoneuron filicinum*. The stream had a pH of 7.57 and has consistently retained high water levels even during dry weather and the water is generally very clear. The species present suggest relatively low levels of nutrients, despite the fact that the general environs are surrounded by development and it is possible that this stream receives some groundwater input.

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Scrub (WS1) composed of European gorse (*Ulex europaeus*), scattered hawthorn (*Crataegus monogyna*), dog rose (*Rosa canina*), clumps of bramble (*Rubus fruticosus* agg.) and blackthorn (*Prunus spinosa*), are frequent along the banks of the stream, the drainage ditch and within the northern portion of the FCC Barrysparks Masterplan lands. Field rose (*Rosa arvensis*) was also recorded. In 2025 following a long dry spell these areas of scrub had been burnt during fires set by trespassers.

The invasive species butterfly bush (*Buddleia davidii*) and pheasantberry (*Leycesteria formosa*) were noted along the Gaybrook Stream.

The results of the habitat surveys completed on site are also reflected in the surveys completed as part of the MetroLink project in the northern part of the FCC Barrysparks Master Plan lands. The MetroLink study also recorded areas of dry calcareous grassland GS1 and wet grassland GS4 along with areas of recolonising bare ground ED2 in the northern lands. The MetroLink project surveys here also recorded bee orchid (*Ophrys apifera*) in 2018.

4.3.6 Rare, Scarce or Threaten Flora

A review of the NPWS database of historical records of rare and protected flora revealed that there are several records of rare, scarce or threatened flora within the 10km grid square in which the FCC Barrysparks Master Plan lands are located (namely grid square reference O14). Several of these are legally protected under the Flora (Protection) Order (2022) as summarised below in Table 4.7 within Appendix 4A. Suitable habitat for these species does not occur within the site and none of these species were recorded within the FCC Barrysparks Master Plan lands.

4.3.7 Invasive Species

No invasive species listed under the Third Schedule: Part 1 Plants of S.I. No. 374 of 2024 European Union (Invasive Alien Species) Regulations 2024 and on the Birds and Natural Habitats Regulations (2011) were recorded on the FCC Barrysparks Master Plan lands.

The non-native invasive species recorded include some of those listed under the TII guidelines. They include:

- Winter heliotrope (*Petasites fragrans*)
- Buddleia (*Buddleia davidii*)
- Pheasant berry (*Leycesteria formosa*)
- Canadian fleabane (*Conyza canadensis*)

4.3.8 Mammalian Fauna

The terrestrial mammalian fauna consists of relatively few species. The surveys confirmed the presence of hedgehog (*Erinaceus europaeus*), brown rat (*Rattus norvegicus*), rabbit (*Oryctolagus cuniculus*), and fox (*Vulpes vulpes*) while pygmy shrew (*Sorex minutus*) and wood mouse

(*Apodemus sylvaticus*) would also be expected.

Badgers
There were no badger (*Meles meles*) setts recorded and no signs of badger activity were noted within the FCC Barrysparks Master Plan lands.

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Otter
There was no evidence of otter (*Lutra lutra*) usage of the Gaybrook Stream or the drainage ditch in the FCC Barrysparks Master Plan lands. Given the culverted nature of large sections of the Gaybrook Stream east of here, it's value to larger mammals such as otter, which might move from the Malahide Estuary along the watercourse, would be reduced on account of lack of connectivity.

Bats
The Bat Conservation Ireland Database of bat records was searched for records of bats from the Swords/Malahide area. The database contains records of roosts, ad hoc observations and the results of surveys such as the BATLAS 2010 and 2020 projects and the All Ireland Daubenton's Monitoring Project. Bat species recorded from within a 10km radius of the FCC Barrysparks Master Plan lands include:

- Common pipistrelle (*Pipistrellus pipistrellus*),
- Soprano pipistrelle (*Pipistrellus pygmaeus*),
- Daubenton's bat (*Myotis daubentonii*),
- Leisler's bat (*Nyctalus leisleri*),
- Brown long-eared bat (*Plecotus auritus*),
- Several unidentified *Myotis* species, and
- an unidentified pipistrelle species (*Pipistrellus* sp.).

Previous dedicated bat surveys of the FCC Barrysparks Master Plan lands include studies completed for MetroLink and for the VHI application which completed in 2021 and 2024.

MetroLink 2018 - 2021
The bat surveys originally conducted as part of the MetroLink project during 2018 – 2021 recorded Common pipistrelle, Soprano pipistrelle, an unidentified Pipistrelle bat and Leisler's bat on the northern part of the FCC Barrysparks Master Plan lands.

VHI – 2021
The bat surveys conducted as part of the VHI application in 2021 recorded Common pipistrelle, Soprano pipistrelle, an unidentified Pipistrelle bat and Leisler's bat on the southern part of the FCC Barrysparks Master Plan lands.

MetroLink 2022
The MetroLink bat surveys were updated in 2022 but did not report any bat activity from the FCC Barrysparks Master Plan lands.

All of these surveys have recorded three species of bats utilising the FCC Barrysparks Master Plan lands for foraging purposes. The most recent studies completed in 2024 reconfirmed these earlier findings. The bat species recorded were soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle (*Pipistrellus pipistrellus*) and Leisler's bat (*Nyctalus leisleri*).

Figure 4.10. Spectrograms of bat species recorded within the Barrysparks lands.

There are no structures on site for bats to avail of for roosting purposes. The suitability of roosting habitats and habitats for commuting, foraging or swarming bats was assessed and categorised according to Table 4.8 within Appendix 4A.

There are very few roosting opportunities for bats in trees on the FCC Barrysparks Master Plan lands – potential roosts are limited to ivy clad growth or occasional splits or crevices in trees. These are rated as 'negligible/low' roost features. The foraging and commuting habitat for bats is rated as 'high' given the nature of the habitats present (including grassland, scrub, and a watercourse) all of which support a diversity of invertebrate fauna.

Light pollution from the surrounding lands was noted including from the Swords Bypass.

4.3.9 Amphibians

Frogs (*Rana temporaria*) would be expected to breed in areas of standing water, in drainage ditches and in the water attenuation ponds to the south of the FCC Barrysparks Master Plan lands.

4.3.10 Bird Surveys

Passerines - General Observations

The bird fauna utilising the FCC Barrysparks Master Plan lands is rich and a good variety of common countryside and urban bird species are associated with the boundary hedgerow, grasslands and areas of gorse and blackthorn scrub within the application site.

These include blackbird (*Turdus merula*), wren (*Troglodytes troglodytes*), robin (*Erithacus rubecula*), dunnock (*Prunella modularis*), song thrush (*Turdus philomelos*), goldfinch (*Carduelis carduelis*), blackcap (*Sylvia atricapilla*), stonechat (*Saxicola rubicola*), greenfinch (*Chloris chloris*), goldcrest (*Regulus regulus*) and mistle thrush (*Turdus viscivorus*).

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Swallows (*Hirundo rustica*), house martin (*Delichon urbicum*) and sand martin (*Riparia riparia*) have been recorded hunting over the FCC Barrysparks Master Plan lands during the summer.

Pied wagtail (*Motacilla alba yarrellii*) has been observed near the Drynam Road entrance.

Other species recorded include; great tit (*Parus major)*, house sparrow (*Passer domesticus*), coal tit (*Parus ater)*, chaffinch *Fringilla coelebs,* rook (*Corvus frugilegus*), jackdaw (*Corvus monedula*), hooded crow (*Corvus cornix*) and magpie (*Pica pica*).

The grasslands were used by breeding skylark (*Alauda arvensis*) and meadow pipit (*Anthus pratensis*) in the summer of 2023 and 2024.

Both feral pigeon (*Columba columba* domest.) and woodpigeon (*Columba palumbus*) were recorded and starlings (*Sturnus vulgaris*) were also present. Yellowhammer (*Emberiza citrinella*) was recorded flying over the site.

Grey heron (*Ardea cinerea*) and Reed bunting (*Emberiza schoeniclus*) were recorded along the Gaybrook stream. were also recorded here. Snipe (*Gallinago gallinago*) was recorded in 2020 and have also been flushed during winter visits.

Buzzard (*Buteo buteo*) and sparrowhawk (*Accipiter nisus*) were recorded hunting over the site.

Winter passerine visitors included fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*). Pheasant (*Phasianus colchicus*), stock dove (*Columba oenas*) and collared dove (*Streptopelia decaocto*) was also recorded.

MetroLink Wintering and Breeding Bird Surveys – 2018 – 2021

A review of the wintering and breeding bird surveys conducted by Scott Cawley as part of the MetroLink Project (JACOBS IDM 2022a) was completed. This study took place across a wide number of identified sites, including the FCC Barrysparks Master Plan lands (described in their reports as Site 115). Each site was surveyed during four visits across the wintering bird season in 2018, 2019, 2020 and 20221.

The MetroLink wintering bird surveys recorded a number of species listed under Annex I of the EU Birds Directive and BOCCI red listed birds from the FCC Barrysparks Master Plan lands. These included;

- Black-tailed godwits** (max count of 84 birds; species recorded during two of three visits),
- Meadow pipit (four individuals; species recorded during two visits of three visits),
- Snipe** (recorded during the second, third and fourth visit),
- Herring gull* (details not provided for Barrysparks), and
- Redwing.

Mallard*, Mute swan* and Moorhen* were recorded from the attenuation ponds in the Crowscastle Lands. The MetroLink surveys confirmed the FCC Barrysparks Master Plan lands as an ex-situ site for six waterbird species, two of which are listed as Species of Conservation Interest (SCIs) for the nearby SPAs. These are marked above with a double asterisk**, while the waterbirds are marked with a single asterisk*.

The breeding bird surveys recorded Starling, Meadow pipit, Swallow, Linnet, House sparrow, Greenfinch and Herring gull from the lands.

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Wintering Bird Survey 2022/2023 - FCC Barrysparks and Crowscastle Master Plan lands

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A wintering bird survey was completed of the entire FCC Barrysparks and Crowscastle Master Plan lands in 2022/2023 as part of the VHI application. This survey recorded 49 species from the FCC Barrysparks and Crowscastle Master Plan lands, including 26 that were recorded on at least 50% of occasions (see Table 4.9 within Appendix 4A).

Forty-one species were recorded in Section A (north), 26 in B (VHI) and 32 in C (south) – see Table 4.1 in Appendix 4A. The application site is located in Section A (north). A total of 14 waterbird species were recorded from the FCC Barrysparks and Crowscastle Master Plan lands, including five that are listed as qualifying in at least one of the nearby coastal SPAs. Ten species that are Red-listed species of conservation concern (including six waterbird species) and 12 Amber-listed species of conservation concern (5 waterbirds) were recorded.

Usage by waterbirds of the FCC Barrysparks and Crowscastle Master Plan lands

Waterbirds were recorded during all survey sessions in 2022/2023 and were most abundant at the FCC Barrysparks and Crowscastle Master Plan lands during the early January count (Table 4.10 within Appendix 4A). The peak count in January included a total of 509 waterbirds recorded during that count, which included a single large congregation of waterbirds in Section A (locations 14, 16, 17 and 20 on Figure 4.11). That count included 420 Black-tailed Godwits and 6 Redshank, together with three roosting gull species (total 33 birds).

Nothing unusual about the conditions on site was identified during this particular visit which may have influenced the presence of such large numbers, particularly of godwits. Other waterbird counts in late January and February were also relatively high.

A total of 27 locations were mapped illustrating usage by waterbirds of the FCC Barrysparks and Crowscastle Master Plan lands during all survey sessions (Figure 4.11). An area of grassland in the FCC Barrysparks and Crowscastle Master Plan lands (locations 14, 16, 17 and 20 on Figure 4.11) regularly supported waterbirds (six out of nine sessions) and which supported the above-mentioned largest aggregation.

Full details about usage of the mapped locations are given in Table 4.2 in Appendix 4A. Most of these locations were used once only.

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Figure 4.11. Waterbirds using the Barrysparks Master Plan lands in 2022/2023.
Refer to Appendix 4A for further details.

MetroLink Wintering and Breeding Bird Surveys – 2022

Updates to the previous surveys conducted for wintering and breeding birds for the MetroLink project were completed in 2022 (JACOBS, 2023a).

Breeding Birds
The breeding bird surveys for Metrolink were updated in 2022 and were conducted by ecologists from Scott Cawley Ltd. Surveys were carried out on 19 and 25 May and 1, 7, 15, 27 June 2022 using a methodology adapted from the Breeding Bird Survey (Gilbert *et al.,* 1998).

Birds recorded on the FCC Barrysparks Master Plan lands included Great tit, Swallow, Collared dove, Jackdaw, Magpie, Woodpigeon, Blackcap, Dunnock, House Sparrow, Starling, Sedge

warbler, Wren, Blackbird, Stonechat, Blue tit, Chaffinch and Robin.

Wintering Birds

The winter bird field surveys for Metrolink were updated in 2022 and were conducted by ecologists from Scott Cawley Ltd. Each Metrolink site was surveyed during six visits across the wintering bird season. This study found the following:

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'The 2022/23 wintering bird surveys recorded a total of 32 species across the study area, including; 20 species listed as SCIs for SPAs, 4 Birds Directive Annex I species, 10 Red listed species of conservation concern, 12 Amber listed species of conservation concern and 8 Green listed bird species of conservation concern. This represents 6 fewer species than originally recorded across the 2018-2021 wintering bird surveys.

An additional four species were recorded during the 2022/23 surveys that were not previously recorded across the 2018-2021 surveys: bar-tailed godwit *Limosa lapponica*, redshank *Tringa etanus*, fieldfare *Turdus pilaris*, grey plover *Pluvialis squatarola*'.

Birds recorded on the FCC Barrysparks Master Plan lands included Black tailed godwit, Herring gull, Black headed gull, Curlew and Redshank.

Wintering Bird Survey 2023/2024 – FCC Barrysparks Master Plan Lands

Wintering bird surveys continued on the FCC Barrysparks Master Plan lands during 2023 and 2024 as part of the current application.

Waterbirds were present on 26 (72%) of the 36 count sessions. Five species of gulls, mostly Herring Gull and Black-headed Gull, were the most regularly recorded waterbirds (Table 4.11 within Appendix 4A), while waders (mostly Black-tailed Godwit and Redshank) were the most numerous when recorded and were present on seven dates during the mid-winter period (between 27/12/23 and 01/02/24). Other waterbirds recorded included Mallard (3 dates), Little Egret and Grey Heron (on 30/01/24 and 26/02/24 respectively).

Most of the wader flocks recorded were feeding on the grasslands (Figure 4.12). The gulls were recorded either interacting with the areas of standing water/pools or nearby grassland areas.

These areas are for the most part located outside the proposed development site as can be seen on Figure 4.13.

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Figure 4.12. Distribution and location of wader flocks
(Recorded between 15th January and 1st February 2024 (light yellow = 15/01, purple = 16/01, red = 25/01, blue = 30/01, green = 01/02). Grey shaded areas indicate the areas that were regularly flooded during the survey sessions.)

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Figure 4.13. An overview of the areas which previously supported standing water
(And were used by waterbirds and the footprint of the proposed LRD development and the MetroLink lands.)

Wintering Waterbird Survey 2024/2025 – FCC Barrysparks Master Plan lands

Wintering waterbird surveys continued in 2024/2025.

Conditions on site had changed significantly between 2023/2024 and 2024/2025 from the perspective of wintering waterbirds. The lands are no longer grazed resulting in tall rank grassland and only small areas of standing water were observed in contrast to the previous years. The reason for this is unclear and may be reflective of a dry winter period.

As a result almost no waterbird activity was encountered.

There were only three sightings of two species (Snipe and Grey Heron) in 2024/25 as shown below on Table 4.12.

4.3.11 Assessment of Ecological Significance

Habitats – Application Site
The main floral/habitat interest in the application site are the grassland habitats, the Gaybrook Stream and drainage ditch, and the boundary hedgerows/treelines and areas of scrub.

The conservation value of the grassland habitats within the site has varied over the years depending on the grazing regime and management.

The ecological importance of the habitats within the application site was assessed using the criteria listed in the *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*

(NRA, 2009) and the *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2019).

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Criteria used to evaluate habitats and sites include site designation, presence of rare and/ or protected species, local rarity, habitat functional role, naturalness, habitat diversity, size of habitat or species population and rich assemblages of plants and animals. The importance of an ecological feature is considered within a defined geographical context. Under this ecological evaluation scheme habitats are rated as being of either:

- International ecological importance
- National ecological importance
- County ecological importance
- Local (higher value) ecological importance
- Local (lower value) ecological importance

The areas of grassland, scrub, hedgerow, treelines and the watercourse within the application site are assessed as being habitats of high local value (C site) for biodiversity within the context of Swords and environs. The grassland in the wider FCC Barrysparks Wasterplan lands are assessed as being of County importance (C+ site).

The Gaybrook Stream and drainage ditch is of local ecological importance and the Guidance from Inland Fisheries Ireland on the Treatment of Urban Watercourses has been considered in any development proposals for the lands and implemented to protect same during construction.

Furthermore the Gaybrook Stream, drains to the Malahide Estuary thereby providing a hydrological link between the Barrysparks Master Plan lands and the European sites.

Assessment of Ecological Significance – Terrestrial Fauna

The application site lands are used by a variety of fauna and provide a locally important habitat for fauna in terms of cover for hunting and foraging as well as breeding habitat. They support a number of legally protected mammals – namely three species of bat (Soprano pipistrelle, Common Pipistrelle and Leisler's bat) and Hedgehog.

Assessment of Ecological Significance – Wintering Birds – Species of Conservation Interest

Wintering bird surveys conducted during 2022/2023 (Wilson, 2023) and are summarised in Section 4.2.4 above demonstrated that the wider FCC Barrysparks Master Plan lands supported waterbirds with 14 species recorded, seven on at least 50% of survey sessions. Several of the species which were recorded during the surveys are listed as qualifying interests (Species of Conservation Interest) of one or more of the nearby coastal SPAs. These are presented in Table 4.13 within Appendix 4A.

The 2022/2023 study noted that while waterbird numbers utilising the FCC Barrysparks and Crowscastle Master Plan lands were generally quite low, there was one count of Black-tailed Godwits (420) that exceeded the national 1% threshold (200 birds, Burke *et al*. 2018).

These birds were recorded feeding in the grasslands in the FCC Barrysparks and Crowscastle Master Plan lands alongside other waterbirds. These lands adjoin the application site.

The wintering bird surveys completed in 2023/2024 confirmed that the northern lands at Barrysparks supported waterbirds; 12 species were recorded during the wintering bird surveys completed in 2023/24 (this compares with 14 species recorded across the wider Crowscastle/Barrysparks LAP lands in 2022/23 of which 11 were recorded in the northern FCC Barrysparks Master Plan lands).

While waterbird numbers were generally quite low, the exceptions were that on the 6th January 2023 a flock of 420 black tailed godwits was recorded utilising the northern Barrysparks FCC Masterplan Lands and on three occasions in January and February 2024 large numbers of black tailed godwits (279, 420 and 272) were also recorded. These counts all exceed the national 1% threshold for the species (200 birds, Burke *et al.* 2018).

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Over two wintering bird survey seasons 2022/2023 and 2023/2024, the northern FCC Barrysparks Master Plan lands supported ex-situ populations of Black-tailed Godwit occurring in numbers of national importance in the mid-winter period.

Ornithological surveys continued in 2024/2025. Waterbirds were largely absent in 2024/25, with the exception of two sessions, because of limited availability of suitable habitat. Only two waterbird species were present in 2024/25 on the northern FCC Barrysparks Master Plan lands – Snipe (which is Red listed) and Grey Heron – see Table 4.12, Appendix 4A. This was primarily because of the lack of large areas of standing water; which had been present to varying extents during all of the observation sessions in survey sessions in the previous winters, coupled with the condition of the grassland habitat.

It is unclear if anything occurred on the northern FCC Barrysparks Master Plan lands to alter the water regime previously recorded or if this simply reflected a dry winter. Met Eireann[7] in their climate statement for winter 2024/2025 reported that 'Provisional gridded rainfall data suggests winter 2024/25 was the 41st driest winter since 1940, with 95% of the 1991-2020 LTA or 102% of the 1981-2010 LTA'. Met Eireann similarly report[8] that 'Spring 2025 was also relatively dry, provisionally ranking as the 16th driest since records began in 1941, and the driest since 2020'.

Ground investigation works associated with the MetroLink project and for the VHI application may also have permeated the clay layer at the surface that held standing water. Archaeological investigations have also been completed on site which may have had similar impacts.

Furthermore, the northern FCC Barrysparks Master Plan lands had not been grazed so the grass was long and rank rendering it unsuitable, even for most invertebrate-feeding waders. However these conditions were suitable for Snipe which was recorded on two occasions in 2024/25, yet were absent in 2023/24.

The condition of the northern FCC Barrysparks Master Plan lands during the 2024/25 season for waterbirds was unfavourable (rank grass and lack of standing water/ wet grassland), resulting in a lack of waterbirds present during the survey sessions.

This demonstrates how local variations in land condition in relation to vegetation height, vegetation composition and hydrology and land use can change on an annual basis rendering a site favourable/unfavourable for ex-situ waterbirds.

Assessment of Ecological Significance – Wintering Birds – Birds of Conservation Concern

A range of water bird species that are either Red or Amber-listed have been recorded from the FCC Barrysparks Master Plan lands during the winter months.

In 2022/2023 these included Oystercatcher, Lapwing, Snipe, Black tailed godwit, Curlew, and Redshank(Red List Species), and Mallard, Black Headed Gull, Common Gull, and Herring Gull (Amber List Species). Passerines included Stock dove, Meadow Pipit, and Redwing (Red List

[7] https://www.met.ie/climate-statement-for-winter-2024-2025
[8] https://www.met.ie/climate-statement-for-spring-2025

Species) and Goldcrest, Starling, House Sparrow, Greenfinch, Linnet and Bullfinch (Amber List Species).

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In 2023/2024 waterbirds included Lapwing, Black tailed godwit and Redshank, (Red List Species), and Mallard, Ruff, Black Headed Gull, Common Gull, Lesser Black-backed Gull and Herring Gull, (Amber List Species).

All of these species have benefited from the diversity of habitats available to them in winter, especially the previously flooded areas, areas of rough grassland, the watercourse, areas of scrub and hedgerows/treelines within the FCC Barrysparks Master Plan lands.

In 2024/2025 only two waterbird species were recorded – Snipe which is red listed and Grey heron which is Amber listed.

Spatial Usage of the FCC Barrysparks Master Plan lands by Wintering Birds

Generally, the greatest usage by wintering birds were of the flooded areas in the FCC Barrysparks Master Plan lands as shown on the Google Imagery in Figure 4.13 with the bird locations shown on Figure 4.14. In 2022/2023 and 2023/2024 these areas remained suitable for waterbird foraging, no doubt benefitting from the grazing horses which kept the sward relatively short. These areas only supported smaller areas of standing water in 2024/2025 and were no longer grazed. As a result, their value for waterbirds, was much diminished.

Spatial Usage of the Application Site by Wintering Birds

Only a small proportion of the northern FCC Barrysparks lands proposed for development for the LRD application are/were ever suitable for waterbirds.

The majority of the lands are dominated by dry meadow and grassy verge grassland and scrub which are not habitats that support waterbirds. The exception to this is at the north eastern side and northern end of the application site where standing water has been recorded as can be seen in Figure 4.14 below.

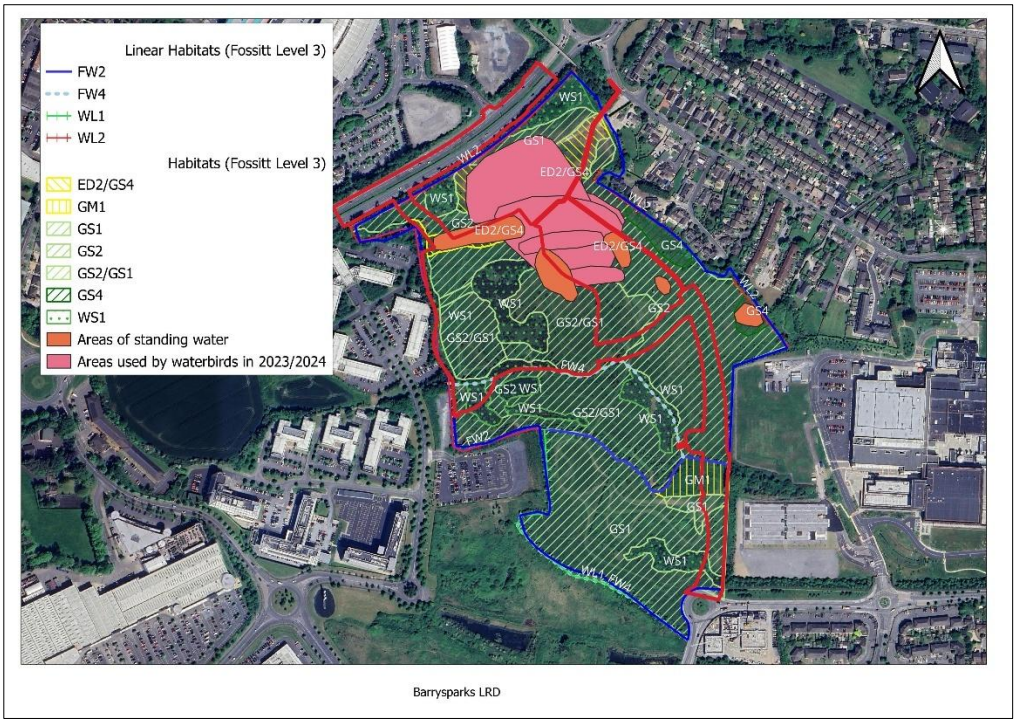

Figure 4.14. Wintering bird habitat within the application site.

Hydrology of the FCC Barrysparks Master Plan lands and the application site

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The flooded areas used by waterbirds in 2022/2023 and 2023/2024 were examined as part of a hydrological study of the FCC Barrysparks Master Plan lands (AWN, 2023).

This study has found that the surface water deposits are located in areas underlain by granular deposits possibly associated with man-made fill in the site and are confined by low permeable carboniferous tills (Clay). These flooded areas are believed to be associated with direct rainfall recharge over these granular deposits. As these deposits are confined by low permeable tills, it is believed that this recharge saturates these deposits and becomes perched/ standing waters within these gravels.

AWN (2023) stated:

'This perched water is confined to the extent of these deposits (i.e., it would not infiltrate vertically into the underlying bedrock aquifer) and outcrops at their lowest points. During dry weather periods, it is believed that this dynamic becomes stagnant and therefore no flow into these flooded areas is observed.

The bedrock underlying the study area would be located at depths c. 10 m below ground level, according to the existing GSI characterisation of the site. Therefore, the bedrock is not hydro-geologically connected to the surface water flooded areas.

It is therefore concluded that the observed seasonal flooded areas are fed by perched water associated with direct rainfall events and, in no case, from the underlying bedrock groundwater (i.e., similar to a 'petrifying spring'). This is consistent with the surface water quality results obtained at different surface water points.

These results are not indicative of the presence of Tufa Springs and infer that there is no hydrological connection between surface water collected in these surface waters and water in contact with carboniferous tills/gravels (such as Holywell)'.

The majority of the lands proposed for development as part of the current application are dominated by scrub and dry meadow and grassy verge grassland and do not flood or support wintering birds.

The locations of the flooded areas and the wader flocks recorded during the wintering bird survey season in 2023/2024 are shown alongside the proposed site layout in Figure 4.15 above which also shows the extent of the proposed MetroLink development.

4.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

A number of impacts on the local biodiversity, habitats and species associated with the application site arise from its development for housing and associated infrastructure. These are outlined below.

4.5 CONSTRUCTION IMPACTS

The main potential impacts arising from the proposed development of the application site during the construction period are assessed as follows:

- Loss of habitats within the red line boundary of the site and the associated infrastructure

corridor.

- Loss of habitat for fauna (including birds, non-volant mammals, bats and invertebrates) using the site.
- Potential damage to the habitats adjoining the site from the construction works.
- Potential for the spread of invasive species if biosecurity measures are not implemented during the works.
- Potential impacts on breeding birds through removal of vegetation used for nesting and feeding purposes.
- Potential impacts on bats which use the lands for foraging purposes.
- Potential impacts on bats potentially utilising trees on the site boundary for roosting purposes.
- Potential for disturbance to bats from lighting including loss of hunting habitat and barriers to the movement of bats through the site.
- Potential for disturbance to fauna using the Gaybrook Stream and associated drainage ditch.
- Potential for loss of feeding and shelter for fauna using the Gaybrook Stream and associated drainage ditch.
- Potential loss of ecological corridor of the Gaybrook Stream and associated drainage ditch.
- Potential impacts on water quality within the Gaybrook Stream and associated drainage ditch through siltation and runoff from site during the works.
- Potential impacts on areas of species rich Annex I grassland habitat adjoining the site.

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4.6 OPERATIONAL IMPACTS

Potential impacts during the operational phase of the housing development on these lands include the following:

- Disturbance to fauna (including birds, non-volant mammals, bats and invertebrates) using the site and adjoining lands.
- Potential disturbance to bats and other fauna from lighting.
- Potential sanitisation of the stream corridor through removal of vegetation, trampling pressure, future development, etc.
- Disturbance to breeding birds through increased public use.
- Disturbance to fauna utilising the stream corridor.
- Inappropriate management/mowing regime of adjoining species rich grassland areas including abandonment.

4.7 MITIGATION & MONITORING MEASURES

4.7.1 Mitigation by Avoidance

The principal mitigation that should be considered in any development is avoidance of impact. Direct impacts on the majority of trees and shrubs within the western site boundary hedgerow, associated areas of scrub and the Gaybrook Stream have been avoided. These areas will require protection before construction works begin.

Before any construction related works begin on the application site these areas will be clearly marked out on the ground and afforded suitable protection as set out in the tree protection plan prepared for the project. This will be done by the ecological clerk of works with the project architect and contractor.

There will be no storage of building materials, soils or other construction related items such as site compounds, parking, etc. within these areas.

The footprint of the development will result in the permanent loss of species rich grassland and scrub elsewhere within the application site boundary.

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4.7.2 Control of Sediment

The OCEMP details measures to reduce and avoid sedimant reaching local drainage systems and the Gaybrook Stream.

These are further expanded on below.

Sediment control practices are used on building sites to prevent sand, soil, cement and other building materials from reaching streams and ditches. Even a small amount of pollution from a site can cause significant environmental damage by killing aquatic life, silting up streams and blocking storm water pipes. Storm water can contain many pollutants which can enter our local drainage ditches, streams, rivers and marine systems, causing harm to native animals, plants, fish breeding habitats and recreational areas.

Soil erosion, sediment and litter from building sites can be major sources of storm water pollution, and can cause:

- significant harm to the environment
- weed infestation of waterways caused by sediment settling in watercourses and ditches and transporting nutrients
- loss of valuable topsoil
- significant public safety problems when washed onto roads and intersections
- blocked drains creating flooding and increased maintenance costs
- damage to recreational and commercial fishing downstream.

Sediment control usually requires little effort and results in:

- Cleaner waterways and healthier aquatic life.
- Improved site conditions.
- Improved wet weather working conditions.
- Reduced wet weather construction delays.
- Reduced losses from material stockpiles.
- Fewer mud and dust problems.

Good site management in relation to sediment control during the construction phase should prevent this from occurring and possible mitigation measures for consideration are outlined below. Other measures to be implemented on site include briefing of all site contractors regarding the sensitivity of the watercourse within the site and the need for strict site management in relation to potential run off.

Minimising site disturbance:

Prevention is better than cure. Careful design and an efficient construction sequence will minimise disturbance to the site. This will save money and reduce environmental impact.

Clear only those areas necessary for building work to occur. Preserve grassed areas and vegetation where possible. This helps filter sediment from storm water run off before it reaches the watercourse and stops rain turning exposed soil into mud. Delay removing vegetation or commencing earthworks until just before building activities start. Avoid building activities that involve soil disturbance during periods of expected heavy or lengthy rainfall.

Implement sediment control:
Install sediment control measures along the watercourse using techniques such as silt fencing before commencing any excavation or earth moving. Regularly maintain them until construction is complete and the site is stabilised.

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4.7.3 Contractor Briefing

All site contractors will be briefed regarding the biodiversity value of the retained habitats within and adjoining the site (these include the boundary treeline, retained scrub and grassland areas and the watercourse) to ensure that there are no accidental or unintentional actions conducted during the project construction that could lead to a reduction in water quality/damage to same. Such matters often arise through ignorance or by accident rather than as a result of an intentional action.

4.7.4 Mitigation Measures for Birds

Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amendment) Act 2000, restricts the cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated land or in hedges or ditches during the nesting and breeding season for birds and wildlife, from 1 March to 31 August.

No clearance of vegetation suitable for nesting birds within the site (gorse scrub, bramble tangles, etc.) will take place during this period. Should such clearance be required than the area proposed for clearance should be inspected by an ecologist to ascertain if any nesting birds are present.

A variety of artificial nesting opportunities for birds (bird boxes) will be erected on the buildings within the development.

4.7.5 Mitigation Measures for Bats

A number of mitigation measures for bats are detailed below.

Bat Foraging Habitat
It is important that all areas of retained habitat adjoining the application site boundary and along the watercourse are retained in full as this provides foraging habitat for bats supporting a diversity of invertebrates. These habitats also help to maintain and create a corridor which allows bats (and other fauna) to forage and commute through these lands.

These areas of retained habitats must be fenced and protected during the construction phase to ensure that they are not damaged during the works. Protective fencing will be erected in advance of any construction works commencing in order to prevent damage to these retained habitats during construction in accordance with BS 5837:2012. This will be signed off on by a qualified ecologist to ensure it has been erected properly and the vegetation has been protected before any machinery/works are allowed on site. No ground clearance, earth moving, stock-piling or machinery movement will occur within these protected areas.

Reduction of light disturbance
The FCC Barrysparks Master Plan lands are currently unlit at night and provide an important dark habitat for hunting bats and other fauna.

Design recommendations from the BCT (2010) for wildlife-friendly lighting include:

- Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. Use only the minimum amount of light needed for safety. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light.

- Eliminate any bare bulbs and any light pointing upwards. The spread of light should be kept near to or below the horizontal.
- Use narrow spectrum bulbs to lower the range of species affected by lighting.
- Use light sources that emit minimal ultra-violet light. Insects are attracted to light sources that emit ultra-violet radiation.
- Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light.
- Reduce the height of lighting columns. Light at a low level reduces ecological impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
- For pedestrian lighting, use low level lighting that is directional as possible and below 3 lux at ground level.
- Limit the times that lights are on to provide some dark periods for wildlife.
- Use lighting design computer programs and professional lighting designers to predict where light spill will occur.

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In general any lighting used in the development should not overspill onto the adjoining watercourse and retained habitats thereby ensuring that a dark corridor for foraging and commuting bats and movement for other wildlife across the site is maintained.

In addition:

- Luminaires will be dimmable LED (light emitting diode) fittings with High performance optics to provide high visual comfort.
- Luminaires will be selected to ensure that when installed there shall be zero direct upward light emitted to the sky (all output shall be at or below 90º to the horizontal to help prevent sky glow from light pollution of the night sky).
- Luminaires will be selected to ensure that there is no light spill from the proposed development onto the watercourse, the retained areas of vegetation and boundary features.
- The light emitted from these fittings shall have no photo biological risk and shall be categorised as “Exempt Group” in relation to emissions of Blue light, Infrared and Ultra Violet Radiation in accordance with EN 62741:2008.
- All luminaires shall have a Luminous intensity Classification of between G4 and G6 to IS EN 13201-2:2003(E) / BS 5489-1:2013.

The recommendations of the Institution of Lighting Professionals and Bat Conservation Trust “Bats and Lighting in the UK” documentation and Bat Conversation Ireland Guidance Notes for planners, engineers, architects and developers December 2010 will be met.

These guidelines will be implemented in the project lighting design.

Potential Bat Roosts in Trees

A very small number of trees on the site boundary have the potential to support roosting bats and are very limited from a bat roosting potential. The majority of trees are to be retained in full and will be afforded protection during construction as detailed above and in the arborists drawings. If additional trees are to be removed they will be further assessed by a licensed bat specialist prior to removal to check for the presence of bats. If any bats are encountered during the assessment a bat derogation licence for the works will be sought from NPWS. The results of the survey will determine how they should be felled. Tree felling of potential bat roosts will be conducted during the winter months of October and November to avoid both the bird breeding season and the maternity/hibernation periods for bats.

Protection Measures for Bat Foraging and Commuting

The northern and western boundary treeline, large areas of native vegetation, and the ecological corridor of the watercourse will be afforded protection during the works as described above. These areas support large numbers of invertebrates on which both bats and birds rely for feeding and foraging and also provide cover and shelter for a variety of species.

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It is recommended that 20 integrated bat boxes are included in the new buildings to provide roosting potential for bats. These will be sited by the contractor under the supervision of a suitably qualified ecologist.

4.7.6 Biosecurity During Construction

Should earth or other material be brought to site this material should be screened to confirm that no invasive species such as Japanese knotweed or other species as described on http://www.invasivespeciesireland.com/ are present.

All machinery and plant entering the site should be cleaned to ensure that no fragments of Japanese knotweed or seeds of other invasive species are brought on to the site in line with S.I. No. 374 of 2024 European Union (Invasive Alien Species) Regulations 2024 and the Birds and Natural Habitats Regulations (2011). The landscaping plan should also reflect these requirements.

4.7.7 Ecological Input into Landscaping Design

The landscaping proposals for the development were developed by RMDA in conjunction with the project ecologist. The planting proposals set out to strengthen the existing areas within the application site for wildlife and biodiversity and to reinstate green infrastructure across the FCC Barrysparks Master Plan lands post construction in line with that set out in the Masterplan. They are also mindful of the requirements of the Dublin Airport Authority which requires planting proposals that do not attract bird flocks as the development is within the zone of influence of Dublin Airport.

Suitable species for additional planting along the stream include: willow (*Salix alba*, *Salix fragilis*, *Salix cinerea*, *Salix caprea*) and Alder (*Alnus glutinosa*).

The species used will be native and of local origin, certified stock is available from nurseries who supply stock for the Native Woodland Scheme.

4.7.8 Invasive Species Control and Management

An invasive species management plan to remove and control the regeneration of the Buddleia (*Buddleia davidii*), Himalayan honeysuckle/pheasant berry (*Leycesteria formosa*), Canadian fleabane (*Conyza canadensis*) and winter heliotrope (*Petasites fragrans*) within the FCC Barrysparks Master Plan lands will be developed.

This will then be implemented on the ground and will be subject to annual monitoring to determine its effectiveness and any adjustments to the plan/additional treatments can then be developed/implemented.

Invasive species control will be required during both the construction and operational stages.

4.7.9 Protection Measures for the Gaybrook Stream

The Guidance from Inland Fisheries Ireland on the treatment of urban watercourses which sets out the following steps has been implemented in the design of the proposed development and the future development of the Barrysparks Master Plan lands. These are as follows:

- Protect The Streamside Riparian Zone.
- Create A Middle Riparian Zone – Can Include Amenity Infrastructure, Eg. Footpaths.

- Create An Outer Zone to Incorporate Sustainable Urban Drainage Systems
- Rehabilitate The River Itself to Recreate Diversity of Instream Features Found in Natural Channels.

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Note that the culverting and piping of small streams and drains is generally not permitted except under exceptional circumstances and only through agreement with Inland Fisheries Ireland.

Suitable species for planting along the Gaybrook Stream include: willow (*Salix alba*, *Salix fragilis*, *Salix cinerea*, *Salix caprea*) and Alder (*Alnus glutinosa*). These will be added to the existing vegetation along the watercourse to strengthen the ecological corridor this habitat provides for faunal species. Any planting here will need to be protected from grazing animals to prevent browsing damage.

The sediment control measures in the OCEMP and outlined above will also be implemented in full to protect the watercourse.

4.7.10 Ecological Clerk of Works

An ecological clerk of works will be appointed to oversee the construction of the proposed development and the implementation of the mitigation measures and recommendations set out in this report and to sign off on same.

4.7.11 Monitoring

The ecological mitigation measures will be monitored for a period of time during and following construction (years 1, 2, 3 and 5) to ensure that they are delivering for biodiversity and any adjustments to management or interventions such as the control of invasive species will be implemented by the developer.

	Construction Phase
BIO-C1	Prior to commencement of works, the Tree Protection Plan shall be implemented.
BIO-C2	The construction phase surface water management strategy contained in the Outline Construction Environmental Management Plans shall be implemented.
BIO-C3	Prior to commencement, All site contractors will be briefed regarding the biodiversity value of the retained habitats within and adjoining the site (these include the boundary treeline, retained scrub and grassland areas and the watercourse) to ensure that there are no accidental or unintentional actions conducted during the project construction that could lead to a reduction in water quality/damage to same.
BIO-C4	No clearance of vegetation suitable for nesting birds within the site (gorse scrub, bramble tangles, etc.) will take place during this period. Should such clearance be required than the area proposed for clearance should be inspected by an ecologist to ascertain if any nesting birds are present.
BIO-C5	Site and compound lighting is to be strictly controlled to illuminate only the required works areas to ensure that there is no light spill from the proposed development onto the watercourse, the retained areas of vegetation and boundary features.
BIO-C6	20 integrated bat boxes are to be included in the new buildings to provide roosting potential for bats. These will be sited by the contractor under the supervision of a suitably qualified ecologist.
BIO-C6	All machinery and plant entering the site should be cleaned to ensure that no fragments of Japanese knotweed or seeds of other invasive species are brought

	on to the site in line with S.I. No. 374 of 2024 European Union (Invasive Alien Species) Regulations 2024 and the Birds and Natural Habitats Regulations (2011).
BIO-C7	All planting is to be native and of local origin.
BIO-C8	An Invasive Species Management Plan shall be prepared and implemented.
BIO-C9	The sediment control measures in the OCEMP shall be implemented in full to protect the Gaybrook Stream watercourse.
BIO-C10	An ecological clerk of works will be appointed to oversee the construction of the proposed development and the implementation of the mitigation measures and recommendations set out in this report and to sign off on same.
	Operational Phase
BIO-O1	Invasive Species Control and Management shall continue in the operational phase through the implementation of a landscape management plan for the completed development.
	Monitoring
BIO-M1	Ecological mitigation measures will be monitored for a period of time during and following construction (years 1, 2, 3 and 5)

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4.8 DO NOTHING SCENARIO

Under a 'do-nothing' scenario the application site and the wider FCC Barrysparks Master Plan Lands will continue to be unmanaged and will no longer be grazed.

The habitat value of the grasslands present on the site will continue to decline and in the absence of grazing areas of grassland with high diversity will be replaced with rank grassland. Over time the grassland will become dominated by gorse and brambles and other colonising species such as willow which is currently happening on site. This would develop into and be replaced by scrub (as has previously occurred on the site in the recent past where large patches of gorse scrub occur) and these would ultimately become woodland over time.

The wintering waterbirds which availed of the site for roosting and foraging purposes are unlikely to return in the absence of grazing or habitat management and these ex-situ populations of waterbirds will be permanently displaced from the lands.

4.9 WORST CASE SCENARIO

Under a worst case scenario none of the mitigation measures recommended will be implemented during the construction phase when the main damage and losses to local biodiversity can occur.

It is for this reason that an ecological clerk of works is to be appointed to brief the contractor and oversee same.

4.10 PREDICTED IMPACT OF THE PROPOSED DEVELOPMENT

The overall impact on flora and fauna within the application site is deemed negative and permanent as they are currently undeveloped and the habitats and species present offer ecological structure and diversity. However, the impact on flora and fauna within the application site is deemed not to be significant as the habitats and species present are common and widespread.

This land is zoned for Residential Development and is identified as such within the *Fingal Development Plan 2023 – 2029* and the *Barrysparks & Crowscastle Masterplan 2019*, both of which support the development of the lands adjacent to Swords and the planned Metrolink. As such residential development will occur on this site and the environment on the site will change. The location of the project has been determined by the zoning and designation of the lands.

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The proposed development retains and enhances some of the natural features of the site where possible and includes positive planting proposals which will add some diversity to the site which will favour some species.

4.11 INTERACTIONS AND CUMULATIVE IMPACTS

The land at Barrysparks is zoned for development and is identified as such within the Fingal Development Plan 2023 – 2029 and the Barrysparks & Crowscastle Masterplan 2019, both of which support the development of the lands adjacent to Swords and the planned Metrolink.

These developments will result ultimately in the loss of some grasslands while some of the natural features will be retained and enhanced where possible through the provision of green infrastructure and positive planting proposals. The habitats and the species who use them are common and widespread and on that basis, the development of the strategic landbank is deemed not to be significant from a biodiversity perspective.

4.12 REFERENCES

Altringham, J. (2003). British Bats. The New Naturalist Series 93. Harper Collins.

Anon. (1996). Interpretation Manual of European Union Habitats. Version EUR 15, European Commission, Brussels.

AWN (2023). Hydrological and Hydrogeological Assessment for a Proposed Healthcare Facility at Barrysparks, Swords, Co. Dublin. Unpublished report. Dated 10/11/2023.

Bat Conservation Ireland, (2010). Guidance notes for Planners, Engineers, Architects, and Developers.

Bat Conservation Ireland (2025). Database containing records of Bat Roosts, Transects (Car Transect Monitoring Records) and Ad Hoc Observations.

Benson, L. (2009). Use of Inland Feeding Sites by Light-bellied Brent Geese in Dublin 2008-2009: A New Conservation Concern? Irish Birds 8: 563-570.

Biodiversity Ireland National Biodiversity Data Centre Mapping System. Available: http://maps.biodiversityireland.ie

BTHK (2018). Bat Roosts in Trees – A Guide to Identification and Assessment for Tree Care and Ecology Professionals. Pelagic Publishing, Exeter UK.

Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G. & Tierney, T.D. (2018). Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16. Irish Birds 11, 1-12.

CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Coastal, Freshwater and Marine. The Institute for Ecology and Environmental Management.

CIRIA (2000). Environmental Handbook for Building and Civil Engineering Projects (C512).

CIRIA (2001). Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532).

CIRIA (2006a). Control of water pollution from linear construction projects: Technical guidance (C648).

CIRIA (2006b). Control of water pollution from linear construction projects: Site guide (C649).

CIRIA (2007). The SUDS Manual (C697).

CIRIA (2015). Environmental Good Practice on Site. Fourth edition. (C741).

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982.

Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979.

Council of the European Communities (1992). Council Directive of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (92/43/EEC). O.J. L 206/35, 22 July 1992.

Council of the European Communities (1979). Council Directive of 02 April 1979 on the conservation of wild birds (79/409/EEC). O.J.L. 103, 25 April 1979.

Cutts, N., Phelps, A. and Burdon, D. (2009). Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Huber INCA. Institute of Estuarine and Coastal Studies, University of Hull.

Fingal County Council (2022). Fingal Biodiversity Action Plan 2022-2030.

Fossitt, J. (2000). A Guide to Habitats in Ireland. Heritage Council, Kilkenny.

Flora (Protection) Order 2022. Government of Ireland.

Gilbert, G., Gibbons, D.W., and Evans, J. (1998). Bird Monitoring Methods – A Manual of Techniques for Key UK Species. RSPB, Sandy.

Gilbert G, Stanbury, A. and Lewis L.J. (2021). Birds of Conservation Concern in Ireland 2020 – 2026. Irish Birds 43, 1-22.

Hayden, T. & R. Harrington (2000). Exploring Irish Mammals. Dúchas. Town House, Dublin.

Inland Fisheries Ireland (IFI) (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

Inland Fisheries Ireland (2020). Planning For Watercourses in the Urban Environment. A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning *Including one-off

RECEIVED 15/09/2025

developments. A Guideline Developed by Inland Fisheries Ireland.

JACOBS IDOM (2022a). Metrolink – Chapter 15. Biodiversity. Report prepared for Transport Infrastructure Ireland.

JACOBS IDOM (2022b). Natura Impact Statement - Metrolink. Report prepared for Transport Infrastructure Ireland.

JACOBS IDOM (2024a). Metrolink Appropriate Assessment Update Report. Report prepared for Transport Infrastructure Ireland. Dated 05/03/2024.

JACOBS IDOM (2024b). Metrolink EIAR Biodiversity Update Report. Report prepared for Transport Infrastructure Ireland. Dated 06/06/2024.

JACOBS ARUP SYSTRA (2023a). Chapter 12 – Biodiversity. Environmental Impact Assessment Report (EIAR) Volume 2 of 4 Main Report. May 2023.

JACOBS ARUP SYSTRA (2023b). Natura Impact Statement - Swords to City Centre Core Bus Corridor Scheme. May 2023.

Kennedy, J., Burke, B., Fitzgerald, N., Kelly, S.B.A., Walsh, A.J. & Lewis, L.J. (2023). Irish Wetland Bird Survey: I-WeBS National and Site Trends Report 1994/95 – 2019/20. BirdWatch Ireland Waterbird Report to the National Parks and Wildlife Service. BirdWatch Ireland, Wicklow. (https://birdwatchireland.ie/app/uploads/2023/08/iwebs_trends_report.html)

Kelly, F.L., Matson, R., Connor, L., Feeney, R., Morrissey, E., Wogerbauer, C. and Rocks, K. (2012). Water Framework Directive Fish Stock Survey of Rivers in the Eastern River Basin District. Inland Fisheries Ireland, Swords Business Campus, Swords, Co. Dublin, Ireland.

King, J.L., Marnell, F., Kingston, N., Rosell, R., Boylan, P., Caffrey, J.M., FitzPatrick, Ú., Gargan, P.G., Kelly, F.L., O'Grady, M.F., Poole, R., Roche, W.K. & Cassidy, D. (2011). Ireland Red List No. 5: Amphibians, Reptiles & Freshwater Fish. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. (2019). Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland

Marnell, F., Looney, D. & Lawton, C. (2019). Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

McAney, K. (2006). A Conservation Plan for Irish Vesper Bats. Irish Wildlife Manuals, No. 20. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

McCorkell, C. (2025). Tree Survey, Arboricultural Impact Assessment & Arboricultural Method Statement – Barrysparks LRD. Unpublished report.

National Parks and Wildlife Service Online Database. Available online at www.npws.ie

Natura 2000 Sites - Site Synopsis. Available online at www.npws.ie

National Roads Authority (2006). Best Practice Guidelines for the Conservation of Bats in the

RECEIVED 15/09/2025

Planning of National Road Schemes. National Roads Authority, Dublin.

National Roads Authority (2006). Guidelines for the Treatments of Bats Prior to the Construction of National Road Schemes. National Roads Authority, Dublin.

NRA (2008). NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes. National Roads Authority, Dublin.

NRA (2009). Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2. National Roads Authority, Dublin.

National Roads Authority, (2010). Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads. National Roads Authority, Dublin.

Parnell, J. and T.G. Curtis. (1996). Webb's An Irish Flora. Cork University Press.

Ramao, C. (2003). Interpretation Manual of the European Union Habitats Version Eur 25. European Commission DG Environment Nature and Biodiversity. Brussels.

Regan, E.C., Nelson, B., Aldwell, B., Bertrand, C., Bond, K., Harding, J., Nash, D., Nixon, D., & Wilson, C.J. (2010). Ireland Red List No. 4 Butterflies. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Ireland.

Scannell, M.J.P. and Synnott, D.M. (1987). Census Catalogue of the Flora of Ireland – Clár de Phlandaí na hÉireann. The Stationary Office, Dublin.

Scott Cawley (2019). Natura Impact Statement - Barrysparks and Crowscastle Masterplan. Unpublished report prepared for Fingal County Council.

S.I. No. 477 of 2011. The European Communities (Birds and Natural Habitats) Regulations 2011. Irish Government, Government Publications Office, Molesworth Street, Dublin 2.

S.I. No. 293 of 2021. The European Communities (Birds and Natural Habitats) Regulations 2011-2021. Irish Government, Government Publications Office, Molesworth Street, Dublin 2.

Wildlife Act, 1976 including all other amendments 1976–2010 Number 39 of 1976 and Number 38 of 2000. Dublin: Office of the Attorney General. Wildlife (Amendment) Act (2000). Government of Ireland.

Wilson, F. (2023). Barrysparks Healthcare Facility, Barrysparks, Swords, Co. Dublin - Natura Impact Statement. Unpublished report dated 22nd November 2023.

Wyse Jackson, M., Fitzpatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016). Ireland Red List No. 10: Vascular Plants. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

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5. LAND AND SOILS

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5.1 INTRODUCTION

This chapter of the EIAR was prepared to assess the potential significant effects of the proposed development for Barrysparks, Swords, Co, Dublin. It evaluates the likely significant effects, if any, which the Proposed Development will have on land, soils and geology.

This chapter contains necessary information as defined in the Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022). Reference is made to hydrogeology, but this aspect is covered in more detail in Chapter 5 (Hydrology and Hydrogeology).

The chapter initially provides a description of the receiving environment of the site and the potential impacts of the development. When assessing the potential impacts, this assessment considers the significance of the environmental attributes, and the predicted scale, and duration of the likely effects.

The chapter also outlines the proposed mitigation measures that will reduce or eliminate the identified potential impacts and define the residual effects of the Proposed Overall Development (the effect after the implementation of mitigation measures).

This chapter should be read in conjunction with Chapter 6 (Hydrology and Hydrogeology) and with Chapter 2 for the EIAR which does into further detail with regards to the site description.

This chapter of the EIAR has been prepared by Marcelo Allende and Ana Keeley of AWN Consulting. Marcelo Allende (BSc, BEng) is a Principal Environmental Consultant (Hydrologist) with AWN Consulting with over 20 years of experience in water resources technical studies, conceptual and numerical hydrological/hydrogeological modelling and environmental consultancy. Marcelo holds a degree in Water Resource Civil Engineering (BEng, Hons) from the University of Chile and a Bachelor of Science in Engineering (BSc, Hons). He has worked on a wide of range of projects including multi-aspect environmental investigations, geo-environmental impact assessments, surface and groundwater resource management, hydrological and hydrogeological conceptual and numerical modelling, strategic and site specific flood risk assessments (Stage 1,2 and 3), Due Diligence reporting, baselines studies, soils, surface water and groundwater monitoring and field sampling programmes on a variety of brownfield and greenfield sites throughout Ireland as well as overseas in Chile, Argentina, Peru and Panama. He also has detailed knowledge of environmental guidance, legislation, regulations & standards and expertise in GIS (expert level) and MATTE studies at COMAH establishments. He is currently a member of the International Association of Hydrogeologists (IAH, Irish Group) and a member of Engineers Ireland (MIEI).

Ana Keeley is an Environmental Consultant with AWN Consulting with ongoing roles within the water department. Ana has a BSc in GeoScience from Trinity College Dublin. Ana has worked on a range of projects including environmental investigations, environmental impact assessment reports, hydrological risk assessments and ArcGIS mapping. Ana is a member of the International Association of Hydrogeologists (Irish Group).

5.2 ASSESSMENT METHODOLOGY

5.2.1 Criteria for Rating of Effects

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The section establishes the criteria and guidance used to rate the significance of the potential impacts of the Proposed Development project on the land, soil and geological aspects of the site and surrounding area.

This chapter is prepared in line with the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022) and due consideration is also given to the guidelines provided by the Institute of Geologists of Ireland (IGI) in the document entitled 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements' (IGI 2013).

The document entitled 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the Transport Infrastructure Ireland (TII) formerly National Roads Authority (NRA) (TII, 2009) is referenced where the methodology for assessment of impact is appropriate. Furthermore, in line with the TII Guidelines, an assessment of the attribute importance has been undertaken in order to provide a basis for the assessment of impact provided. The attribute importance considers the potential as well as the existing use of the surface water features as a water resource (i.e., water supply, fisheries and other uses) as well as ecological habitat requirements. The TII criteria for rating the soil and geology related attributes are presented in Appendix 5.1.

The quality, significance, and duration of the potential impacts, residual effects, and cumulative effects are described using standard EIA descriptive terminology (EPA, 2022) that is set out in Chapter 1 of this EIAR.

The principal attributes (and effects) to be assessed include the following:

- Geological heritage sites within the vicinity of/ within the perimeter of the Proposed Development site.
- Landfills, industrial sites in the vicinity of the site and the potential risk of encountering contaminated ground.
- The quality, drainage characteristics and range of agricultural use(s) of subsoil around the site.
- Quarries or mines in the vicinity and the potential implications (if any) for existing activities and extractable reserves.
- The extent of topsoil and subsoil cover and the potential use of this material on site as well as any requirement to remove it off-site as waste for disposal (D) or recovery (R) options.

5.2.2 Relevant Legislation & Guidance

The baseline study and impact assessment have will be out in accordance with the following key guidance and established best practice:

- Environmental Protection Agency (EPA) Advice notes on current practice in the preparation of Environmental Impact Statement (EPA, 2003) and Guidelines on the Information to be contained in Environmental Impact Statements (EPA, 2022a).
- TII/National Roads Authority Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (TII/formerly NRA, 2009).
- Transport Infrastructure Ireland - Road Drainage and Water Environment (TII, 2015).

- Institute of Geologists Ireland (IGI) -Geology in Environmental Impact Statements, a guide (IGI, 2002) and Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements (IGI, 2013).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW).

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Land, soil and geology resource management in Ireland is dealt with in the following key pieces of legislation and guidelines:

- Institute of Geologists Ireland (IGI) -Geology in Environmental Impact Statements, a guide (IGI, 2002) and Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements (IGI, 2013).
- Waste Management Acts 1996 as amended;
- Environment Agency (EA), Land contamination: risk assessment (EA 2020);
- BS 10175:2011 + A2:2017 Investigation of potentially contaminated sites. Code of practice (British Standards Institute 2017);
- CIRIA C552 Contaminated Land Risk Assessment: A Guide to Good Practice (CIRIA 2001);
- TII/National Roads Authority Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (TII/formerly NRA, 2009).
- Transport Infrastructure Ireland, The Management of Waste from National Road Construction Projects (TII 2017);
- Environmental Protection Agency, Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013);
- Local Authority planning guidance as applicable,
- Consolidated EIA Directive 2011/92/EU and 2014/52/EU

5.2.3 Sources of information

Desk-based hydrological information in the vicinity of the site was obtained through accessing databases and other archives where available. Data was sourced from the following:
Latest EPA Envision water quality monitoring data for watercourses in the area.

- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1:100,000 mapping.
- River Basin Management Plan for Ireland 2022-2027 (Department of Housing, Planning and Local Government, 2018).
- Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW, 2009).
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie).
- Relevant Eastern Catchment Flood Risk Assessment and Management (CFRAM) Flood Reports.
- National Parks and Wildlife Services (NPWS) – Protected Site Register.
- Fingal County Development Plan 2022-2028 – Strategic Flood Risk Assessment (SFRA, 2023-2029).

Site specific data was derived from the following sources:

- POGA Consulting Engineers- Engineering Planning Report (2025).

- POGA Consulting Engineers- Construction and Environmental Management Plan (2025).
- POGA Consulting Engineers- Flood Risk Assessment (2025).
- Swords GWB: Summary of Initial Characteristics (2004).
- Dublin GWB: Summary of Initial Characteristics (2004).
- Uisce Eireann Annual Environmental Report- Swords D0024-01 (2023).
- Ground Investigation Report- Barrysparks Site Ground Investigation Ireland (GII) (2020).

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5.3 RECEIVING ENVIRONMENT

5.3.1 Site Description

The proposed development site is located at Barrysparks, Swords, Co. Dublin and covers an area of approximately 6.0 hectares (14.8 acres). Situated c. 10 km north of Dublin City Centre, the site lies on the outskirts of Swords and represents one of the principal undeveloped land parcels in the area. It is bounded to the north by the R132 regional road, while to the east the lands are largely unoccupied with portions adjoining existing residential properties. To the south, the site is bordered by predominantly greenfield lands and the Holywell Road roundabout, and to the west it is enclosed mainly by greenfield lands, with the north-western boundary adjoining an established industrial park.

The topography of the site is relatively uniform, the site moderately slopes from the East to West; levels of approximately 24.9m AOD to the west and 24.1m AOD to the east. The site at present is a greenfield site unoccupied by any structures or buildings, as shown in Figure 5.1

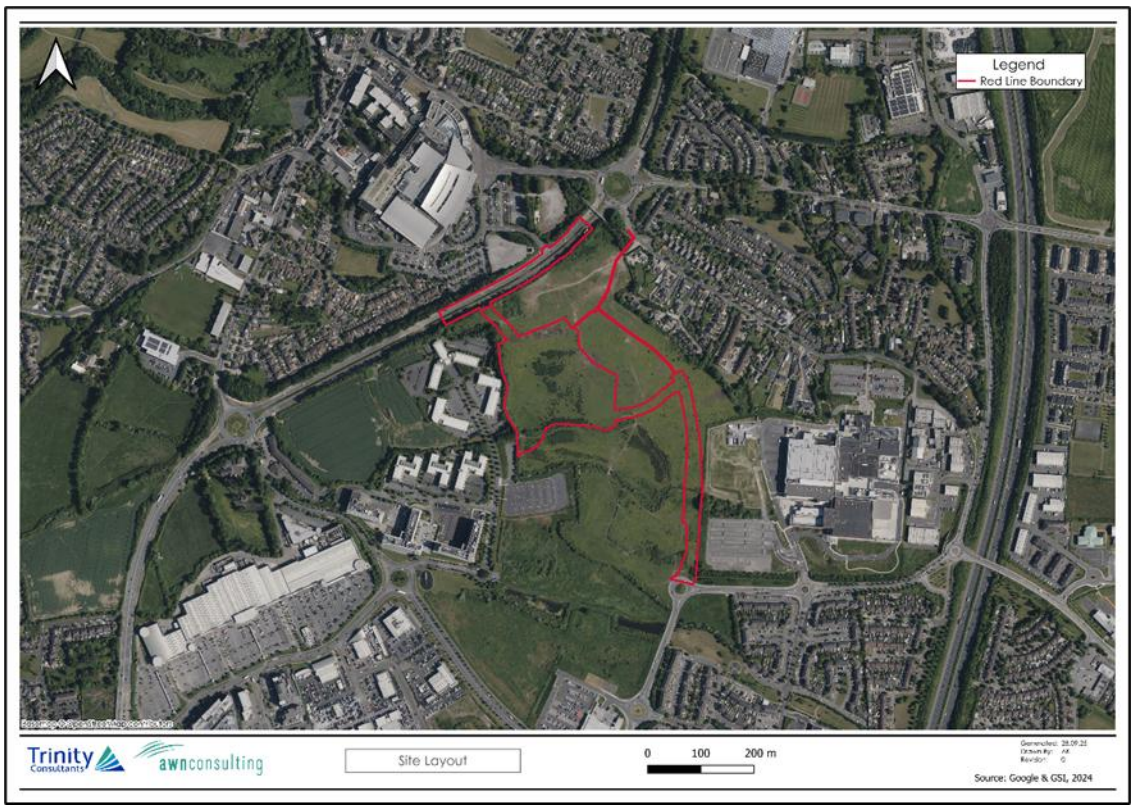

Figure 5.1 Site Layout

5.3.2 Existing Land Use and Site History

The site at present is unoccupied by any structure or buildings. Historical Ordnance Survey maps (www.tailte.ie) were examined during the preparation of this EIAR Chapter.

The 1830s six-inch Ordnance Survey maps indicate that the site was undeveloped at that time and primarily in agricultural use. Much of the surrounding road network had not yet been constructed, and the proposed site boundary traversed several smaller, subdivided land parcels.

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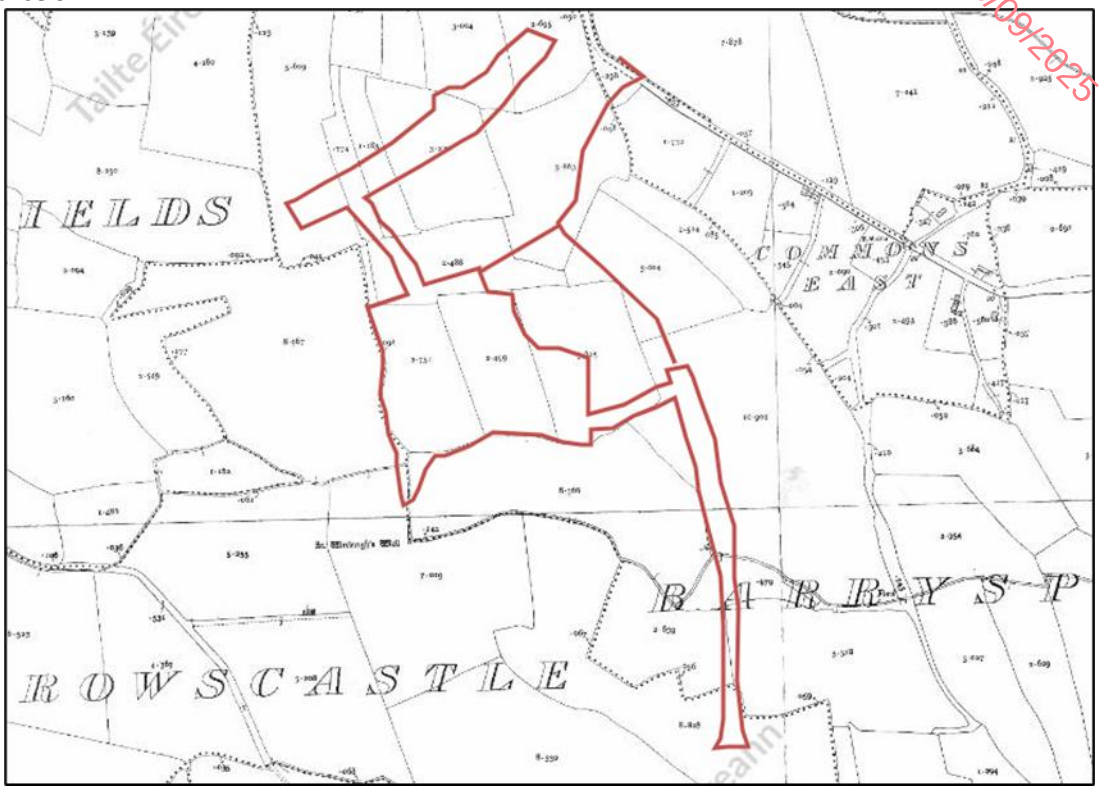

Figure 5.2: 25-inch Historic Map (site boundary indicative only)

Figure 5.3: Imagery Black and White Map 1995 (site boundary indicative only)

Figure 5.4 Imagery Colour Map 1996-2000 (site boundary indicative only)

Figure 5.5 Imagery Colour Map 2013- 2019 (site boundary indicative only)

Figures 5.3, 5.4 and 5.5 above illustrate that the lands within the proposed site boundary have remained largely undeveloped and in agricultural use over time. Between 1995 and 2000, significant development occurred in the wider area, including the construction of Airside Retail Park and associated car parking to the west of the site. Figure 5.5 also records the development of Holywell Road and the Holywell Roundabout at the southern extent of the study area, which is identified as a proposed access point to the development site.

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5.3.3 Surrounding Land Use

There are no licenced facilities within the site boundary or adjacent to the Proposed Development. Table 5.1 below shows the closest Industrial Emissions or Integrated Pollution Control (IE/IPC) facilities to the Proposed Development according to the EPA (2025) within a 1 km radius of the proposed development.

MSD International GmbH t/a MSD Ireland (Biotech Dublin) is the nearest of these facilities, located c. 244m west from the Proposed Development. There is no hydraulic connectivity between this site and proposed development.

Table 5.1 EPA Licenced facilities nearby to the proposed development site (EPA, 2025)

Registration number	Name	Category	License type	Distance (km)
P1106	MSD International (Biotech Dublin)	Industry	IE	0.24
P0060	Arch Chemicals BV	Industry	IE	0.88
P0014	Sk Biotek Ireland Limite	Industry	IE	1.0
P0083	Evode Industries Limited	Industry	IPPC	1.6
P0189	Anglo Beef Processors Ireland	Industry	IPPC	2.3
P0921	International Aerospace Coatings Limited	Industry	IPC	2.4
P0480	Dublin Aerospace Limited	Industry	IE	2.4

5.3.4 Site Investigation

A ground investigation and subsoils assessment of the proposed development site and surrounding lands was undertaken by Ground Investigation Ireland (GII) in November 2020. The purpose of the works was to characterise subsurface conditions through a range of investigative techniques carried out in accordance with the project specifications. A total of 20 trial pits were excavated to a maximum depth of 2.80 m below ground level (BGL), with their locations illustrated in Figure 5.7. The ground conditions encountered generally comprised the following sequence of strata:

- Topsoil: Present in all exploratory holes, with a maximum thickness of 0.25 m below ground level (BGL).
- Made Ground: Encountered beneath the topsoil at TP-01, TP-02, and TP-03, extending to depths between 0.30 m and 1.10 m BGL. These deposits were generally described as sandy, clayey gravel.
- Granular Deposits: Found beneath the topsoil at TP-05, TP-06, TP-08, TP-09, TP-10, TP-12, TP-17, TP-18, TP-19, and TP-20, and beneath the Made Ground at TP-01. These were typically described as sandy, clayey gravel.

Cohesive Deposits: Recorded beneath the topsoil and/or Made Ground at TP-02, TP-03, TP-04, TP-07, TP-11, TP-13, TP-14, TP-15, and TP-16, generally described as sandy, gravelly clay.

In general, trial pits were excavated until excavation was halted by obstructions. These obstructions are considered to be associated with tightly compacted cohesive deposits containing boulders, rather than underlying bedrock. Bedrock in the area is expected to occur at approximately 10 m depth. The full Site Investigation Report is included in Appendix 5.2.

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Figure 5.6 Trial Pit Locations and Distribution of Soil Type

5.3.5 Soils and Subsoils

The GSI/Teagasc (2025) mapping currently denotes a single principal soil type occurring across the site, identified as well drained soils. Alluvial deposits are also identified to the southern boundary of the site, which are associated with the historic Gaybrook Stream riverbed.

The Quaternary Period is the final stage of the geological time scale. This period includes the start of the Ice Age (approximately 1.6 million years ago), known as the Pleistocene Epoch right through to the postglacial period, known as the Holocene Epoch, which began 10,000 years ago and extends from the Pleistocene to the present day.

The Pleistocene Epoch in Ireland began when there was a significant cooling of the Earth's climate and was characterised by alternating extended periods of very cold conditions, during which time much of the country was covered by an ice sheet. These colder periods were interspaced with warmer periods, known as interglacial, which lasted for approximately 10,000 years at a time.

According to GSI (2025), quaternary sediments in the site indicates the principal subsoil type in the area comprises of of low-permeability cohesive deposits (glacial till derived from limestones). The most southwestern corner of the proposed site contains alluvium sediments along the Gaybrook Stream (refer to Figure 5.7).

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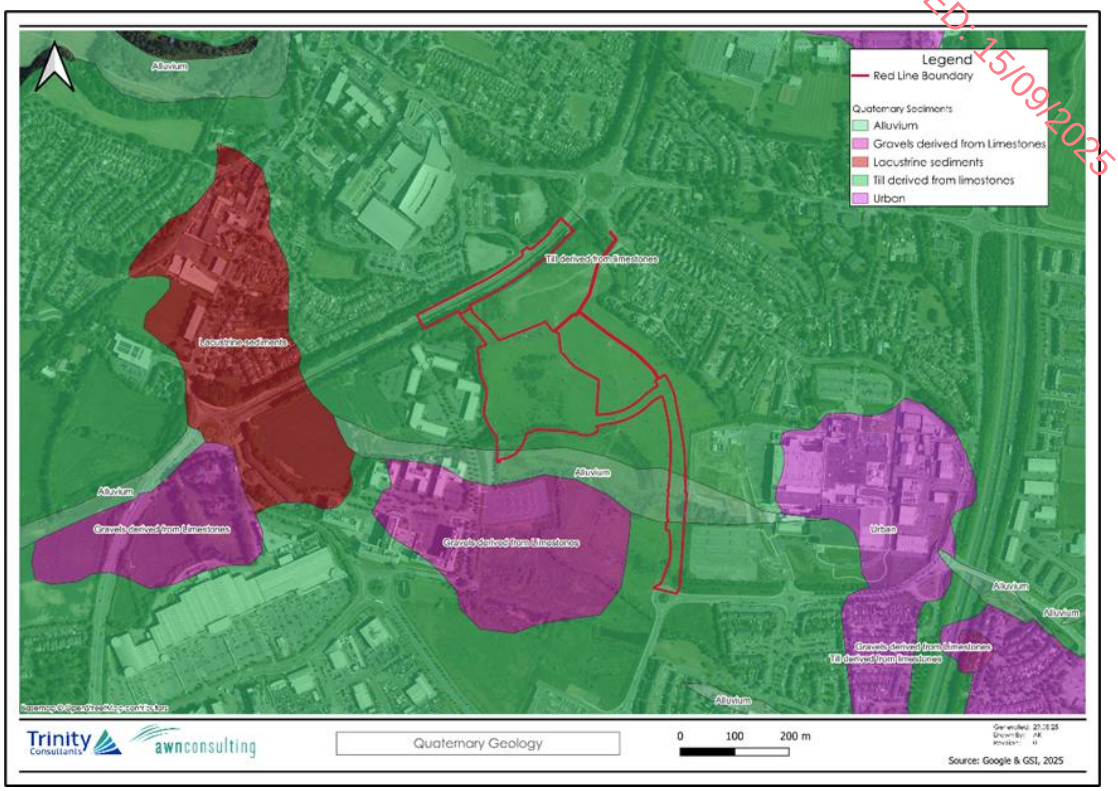

Figure 5.7 Quaternary Geology in the vicinity of the Proposed Development

5.3.5 Bedrock Geology

The Geological Survey of Ireland (GSI, 2025) identifies the bedrock underlying the proposed site and its surrounding area as comprising of the Malahide Formation, part of the Dublin Basin's Lower Carboniferous (Dinantian) succession, consists mainly of pale-grey, poorly bedded limestone—often forming mudmounds or reef-like structures—with occasional internal dolomitisation and thin shale interbeds (refer to Figure 5.8 below).

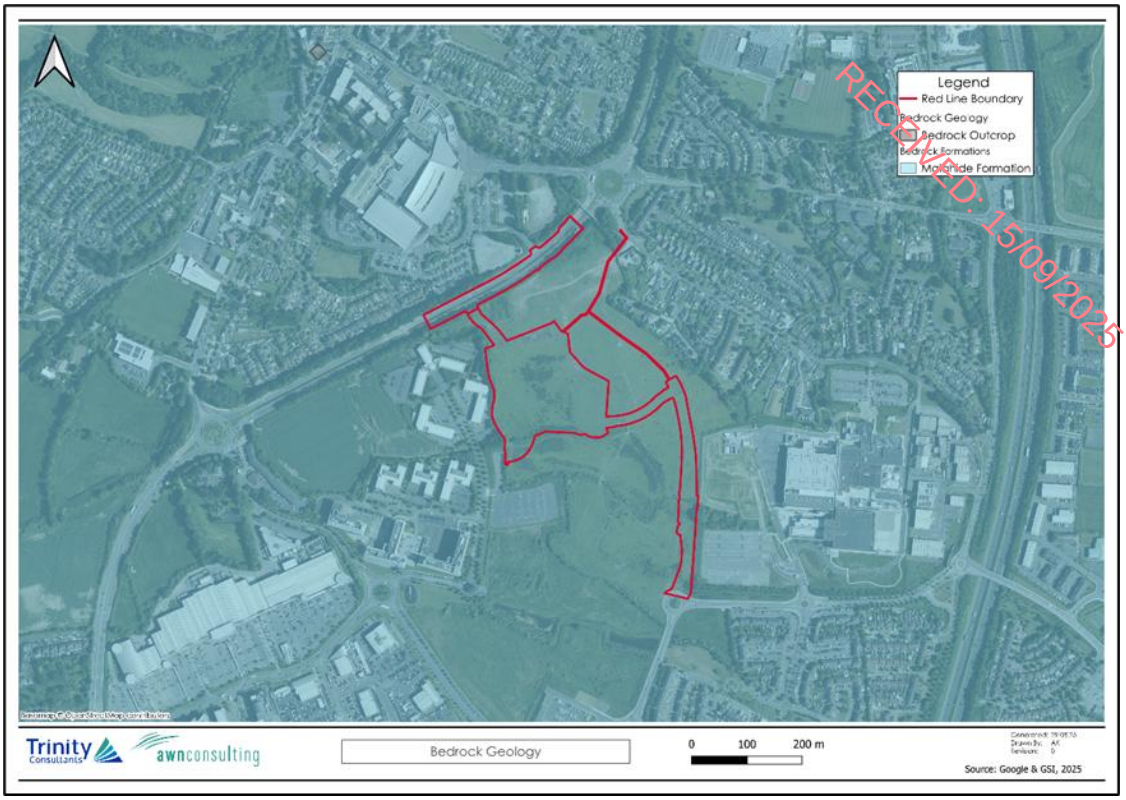

Figure 5.8: Bedrock Geology (GSI, 2025)

5.3.6 Geological Heritage Sites

According to the Geological Survey of Ireland (GSI, 2025) the proposed site development does not lie within or is in close proximity to any Geological Heritage Sites. The nearest site is Feltrim Quarry (Site Code: DF005) located c. 1.1km southeast of the site.

5.3.7 Economic Geology

The GSI (2025) mineral database was consulted to determine whether there were any mineral sites in close proximity to the study area. There were 3 mineral sites identified within a 5 km radius of the proposed site are presented in Table 5.2 below

Table 5.2: Mineral Localities within 5km of the site

Mineral Location Ref	Mineral Type	Key Mineral	Description	Comments	Location	County
3031	LS	Limestone	Non-Metallic	Large active quarry	Feltrim	Dublin
3259	CLBR	Clay & Brick	Non-Metallic	Brick field notes on old 6" map	Beechwood	Dublin
3258	CLBR	Clay & Brick	Non-Metallic	Site of brick works	Portmarnock	Dublin

5.3.8 Geohazards

Much of the Earth's surface is covered by unconsolidated sediments which can be especially prone to instability. Water often plays a key role in lubricating slope failure. Instability is often significantly increased by man's activities in building houses, roads, drainage and agricultural

changes. Landslides, mud flows, bog bursts (in Ireland) and debris flows are a result. In general, Ireland suffers few landslides. Landslides are more common in unconsolidated material than in bedrock, and where the sea constantly erodes the material at the base of a cliff landslides and falls lead to recession of the cliffs. Landslides have also occurred in Ireland in recent years in upland peat areas due to disturbance of peat associated with construction activities.

Based on the GSI spatial map viewer, the landslide susceptibility classification within the site boundary ranges from 'Low' (GSI, 2025). Due to the local topography and the underlying strata, there is a negligible risk of a landslide event occurring at the site. There are no active volcanoes in Ireland so there is no risk from volcanic activity.

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5.3.9 Rating of Site Importance of the Geological Feature

Based on the NRA/TII methodology, the criteria for rating the importance of geological features, the importance of the bedrock and soil features at this site is rated as 'Low' Importance (refer to Appendix 5.1). This is based on the assessment that the attribute has a low quality, significance or value on a local scale.

5.4 CHARACTERISITCS OF THE PROPOSED DEVELOPMENT

The purpose of this section is to provide an overview of the key relevant details of the construction phase and operational phase of the Proposed Development. The information presented in this section is informed by the project design, but it is not a complete description of the Proposed Development. Therefore, it should be read in conjunction with the full development package. For a more comprehensive understanding of the Proposed Development, please refer to Chapter 2 (Description of the Proposed Development) of the EIA Report. Chapter 2 provides a detailed overview of the lifecycle of the project, including reference to the architectural and civil engineering, drawings, plans, reports, and other relevant document in order to define the Proposed Development.

As outlined below the activities required for the construction phase of the Proposed Development represents the greatest risk of potential impact on the soil and geological environment. These activities primarily pertain to the site preparation / enabling works, excavation, and infilling activities required to facilitate construction of the Proposed Development.

5.4.1 Construction Phase

5.4.1.1 Accidental Spills, Leaks and Discharges

There is potential for pollutants associated with construction activity, such as hydrocarbons, oils, and other contaminants, to impact the site. If a spill occurs, contaminated water and collected surface water run-off from construction areas can pose a short-term risk to the underlying subsoil and rock if the contaminated water is allowed to percolate to the aquifer unmitigated which could contribute to localized contamination.

5.4.1.2 Site Levelling and Excavations

The Proposed Development requires soil and stones to be excavated to facilitate construction of, and the installation of, underground services. The project engineers POGA Consulting Engineers have estimated that c. 11,000 m3 of material will need to be excavated to do so. It is currently envisaged that 50% of the cut material will be reused onsite, the rest of the

excavated material will be removed from the site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

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5.4.1.3 Storage of Hazardous Materials

During the construction phase there will be a requirement for the temporary storage of fuels. Liquid materials i.e., fuel storage will be located within temporary bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications - BS8007-1987) to prevent spillage.

Construction activities will necessitate storage of cement and concrete materials, temporary oils, and fuels on site. Small localised accidental releases of contaminating substances including hydrocarbons have the potential to occur from construction traffic and vehicles operating on site. There is limited potential for leaks or spills of petroleum hydrocarbons during the construction of the development. Unmitigated leaks or spills may lead to contamination of soil and/or groundwater. Soils that are contaminated by petroleum hydrocarbons can affect soil health.

5.4.1.4 Import/Export of Materials

There will be a requirement for deliveries of imported engineering fill (sands and gravels), and other construction materials including, steel structure, concrete, cladding, ducting and piping. Construction materials will be brought to site via road.

A ‘Just in Time’ delivery system will operate to minimise storage of materials. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials to prevent the escape of material along public roadways. Where possible it is proposed to source general construction materials from the local area to minimise transportation distances.

Soil requiring offsite removal will be removed from site regularly to ensure there is minimal need for stockpiling. Surplus topsoil, subsoil, and stones material will be transported off site and disposed of at a fully authorised soil recovery site. It is predicted that c. 5500 m3 of excavated material will be removed from the site.

5.4.2 Operational Phase

The Proposed Development will result in the increase in hardstanding area. This provides protection to the underlying aquifer but also reduces local recharge in this area of the aquifer. As the aquifer is classified as a ‘Locally Important Aquifer (LI)- Bedrock which is Generally Unproductive in Local Zones’ area of aquifer is relatively unproductive and will have no significant change in the natural hydrogeological regime. The operational stage of the development will not involve further disturbance to the topsoil, subsoils and geology of the area. Increase in hardstand could have a local effect on the land, soils and geology.

It should be noted that there is no requirement for bulk fuels or diesel storage will be required. Therefore, there will be no requirements for mitigations for land soil or geology post construction phase of the development.

5.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

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An analysis of the potential effects of the Proposed Development on the land, soils and geological environment during the construction and operational phases are outlined below. Due to the inter-relationship between land, soils, and geology; and hydrology and hydrogeology the following impacts discussed will be considered applicable to both Chapter 5 (Land, Soils and Geology) and 6 (Hydrology and Hydrogeology) of this EIA Report. Mitigation measures included in the design of this project to address these potential impacts are presented in Section 5.7.

5.5.1 Construction Phase

5.5.1.1 Potential Impacts on Land, Soil and Geology

Soil requiring removal offsite will be removed regularly to ensure there is minimal need for stockpiling. Some of the material will be re-used on site for backfill. Any surplus material will be transported off site and disposed of at a fully authorised soil recovery site. It is predicted that c. 11,000 m3 of soil will be excavated and 50% will be transported off site.

As stated above, the excavation of topsoil and subsoil will be required for levelling of the site. Local removal and reinstatement (including infilling) of soil within the development area will increase the aquifer vulnerability during construction prior to paving and installation of stormwater drainage and services. Capping of significant areas of the site by hardstand/building following construction and installation of drainage will minimize the potential for contamination of the aquifer beneath the site.

In the absence of mitigation measures the potential impacts during the construction phase on land, soils and geology are **short-term**, **significant** and **negative**.

5.5.1.2 Potential Impacts on Human Health and Population

A reduction in soil quality via unmitigated pollutants entering the soil has the potential to lead to negative impacts on human health and populations. Hydrocarbons and petroleum products for example have a risk for humans by inhaling the fumes / dust from contaminated soil. Depending on the type of contaminant and the level of exposure, soil contamination can have serious health implications. No hazardous waste has been identified within the vicinity of the proposed development or its surrounding areas.

Given the historical and current use of the land—primarily agricultural—it is unlikely that hazardous waste or soil contamination is present within the site or surrounding areas.

In the absence of mitigation measures the potential impacts during the construction phase on land, soils and geology are **short term**, **significant** and **negative**.

5.5.2 Operational Phase

5.5.2.1 Potential Impacts on Land, Soils and Geology

There will be no requirement for excavation of topsoil, subsoil and near-surface rock head during the operational phase. The majority of the site will be capped by hardstand/building during construction and installation of drainage will minimize the potential for contamination of the aquifer beneath the site during the operational phase.

Therefore, there will be no requirements for mitigations against increased run-off and sediment loading post construction phase of the development.

Therefore, on this basis in the absence of mitigation measures the potential impacts during the operational phase on land, soils and geology due to the potential for contamination of soils are **neutral**, **imperceptible** and **long term**.

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5.5.2.1 Potential Impacts on Human Health and Populations

There is no sensitive economic, or historical geology at the site. During the operational phase of the Proposed Development there is no potential for impact on human health and populations due to changes in land, soil, and geology.
Therefore, on this basis in the absence of mitigation measures the potential impacts during the operational phase on human health and populations due to the potential for contamination of soils are **neutral**, **imperceptible** and **long term**.

5.6 MITIGATION MEASURES

5.6.1 Construction Phase

In order to reduce impacts on the land, soils and geological environment, a number of mitigation measures will be adopted as part of the construction works on site. The measures will address the main activities of potential impact which include:

- Control of soil excavation and export from site;
- Sources of fill and aggregates for the Proposed Development;
- Fuel and chemical handling, transport and storage; and
- Control of water during construction.

5.6.1.1 Construction Environmental Management Plan

The main purpose of a CEMP is to provide a mechanism for implementation of the various mitigation and monitoring measures which are described in the EIAR. The CEMP demonstrates the applicant's commitment to implementing the Proposed Development in such a way as to avoid or minimise the potential environmental effects arising from construction activities. All personnel will be required to understand and implement the requirements of the plan.

Construction works and the proposed mitigation measures outlined in the CEMP are informed by best practice guidance on the prevention of pollution during development projects including but not limited to:

Construction Industry Research and Information Association (CIRIA), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532);

- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016);
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (4th edition), (C741);
- Enterprise Ireland Best Practice Guide, Oil Storage Guidelines (BPGCS005);
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board);
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers;

- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors;
- CIRIA C648 Control of Water Pollution from Constructional Sites;
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

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The CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works, where relevant. All personnel working on the Site will be trained in the implementation of the procedures.

The CEMP sets out the proposed procedures and operations to be utilised on the proposed construction site. All mitigation measures outlined here, and within the CEMP will be implemented during the construction phase, as well as any additional measures required pursuant to consent conditions which may be imposed.

During the project planning phase, a comprehensive emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. Furthermore, it's imperative to disseminate this emergency protocol to all site personnel during the site induction process. This plan will include for events such as:

- Pollution incidents: These may involve spillages, the malfunction of temporary structures, embankment collapse, acts of vandalism, fires, and other related events.
- Extreme weather occurrences: Events such as heavy rainfall, flooding, are important factors to consider due to their potential impact on the construction process.

The construction contractor will be required to implement emergency response procedures that align with industry best practice guidance. All personnel working on the site will be informed of the emergency procedures in place.

5.6.1.2 Soil Excavation, Removal and Infill

There will be soil and stones excavated to facilitate construction of foundations and the installation of underground services. The project engineers have estimated that c. 11,000 m3 of material will need to be excavated.

Material that is exported from site, if not correctly managed or handled, could impact negatively on human beings (onsite and offsite) as well as soil environments. All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. It is predicted that c. 11,000 m3 of soil will be excavated and 50% of it will be transported off site.

Contractors should prepare and adhere to a method statement indicating the extent of the areas likely to be affected and demonstrating that this is the minimum disturbance necessary to achieve the required works.

Stockpiles have the potential to cause negative impacts on air and water quality. The effects of soil stripping and stockpiling will be mitigated through the implementation of an appropriate earthworks handling protocol during construction.

Dust suppression measures (e.g. damping down during dry periods), vehicle wheel washes, road sweeping, and general housekeeping will ensure that the surrounding environment are free of nuisance dust and dirt on roads.

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5.6.1.3 Sources of Engineering Fill and Aggregates

All imported fill and aggregate that may be required for the Proposed Development will be sourced from reputable suppliers. All suppliers will be vetted for:

- Aggregate compliance certificates/declarations of conformity for the classes of material specified for the Proposed Development;
- Environmental Management status; and
- Regulatory and Legal Compliance status of the Company.

5.6.1.4 Cement/Concrete Works

Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil.

No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within any riparian or buffer zone. Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer subject to agreement with Uisce Éireann (Irish Water).

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures.

5.6.1.5 Fuel and Chemical Handling

The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or water quality impacts:

- Designation of a bunded refuelling areas on the site if refuelling cannot be undertaken off site;
- Provision of spill kit facilities across the site;
- Where mobile fuel bowsers are used, the following measures will be taken:
- Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
- The pump or valve will be fitted with a lock and will be secured when not in use;
- All bowsers to carry a spill kit and relevant operatives must have spill response training;
- Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

In the case of drummed fuel or other potentially polluting substances which may be used during construction the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside some concrete bunded area;
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
- All drums to be quality approved and manufactured to a recognised standard;
- If drums are to be moved around the site, they will be secured and on spill pallets; and
- Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.

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In addition to the measures above, all excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.

5.6.1.6 Environmental Procedures

There will be comprehensive emergency response procedures and standard operating procedures to respond to chemical spillage all types. All employees will be provided with such equipment, information, training and supervision as is necessary to implement the emergency response procedures and standard operating procedures.

5.6.2 Operational Phase

5.6.2.1 Increase in Hard Stand

A significant proportion of the development area will be covered in hardstand. This provides protection to the underlying soil and aquifer but also reduces local recharge in this area of the aquifer. Surface water and Ground water management and mitigation measure are discussed in further detail in Chapter 6 (Hydrology and Hydrogeology).

	Construction Phase
LS-C1	The CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works, where relevant. All personnel working on the Site will be trained in the implementation of the procedures.

LS-C2	During the project planning phase, a comprehensive emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. Furthermore, it's imperative to disseminate this emergency protocol to all site personnel during the site induction process.
LS-C3	The appointed contractor shall prepare and implement a soil excavation, stockpiling, removal and infill method statement.
LS-C4	No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within any riparian or buffer zone. Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer subject to agreement with Uisce Éireann (Irish Water).
LS-C5	The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or water quality impacts: • Designation of a bunded refuelling areas on the site if refuelling cannot be undertaken off site; • Provision of spill kit facilities across the site; • Where mobile fuel bowsers are used, the following measures will be taken: • Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use; • The pump or valve will be fitted with a lock and will be secured when not in use; • All bowsers to carry a spill kit and relevant operatives must have spill response training; • Portable generators or similar fuel containing equipment will be placed on suitable drip trays.
	Operational Phase
	N/A
	Monitoring
	N/A

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5.7 RESIDUAL EFFECTS OF THE PROPOSED DEVELOPMENT

5.7.1 Construction Phase

5.7.1.1 Land, Soils and Geology

The implementation of the mitigation measures detailed in Section 5.8, will ensure that the potential impacts on land, soils and geology during the construction phase are adequately mitigated. The residual effect on the soils and bedrock during the construction phase is considered to be **neutral**, **imperceptible** and **short-term**.

Following the TII criteria (refer to Appendix 5.1) for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

5.7.1.2 Human Health and Populations

The implementation of the mitigation measures detailed in Section 9.9, will ensure that the potential impacts on human health and populations during the construction phase are adequately mitigated. The residual effect on the soils and bedrock during the construction phase is considered to be **neutral, imperceptible and short-term**.

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5.8.2 Operational Phase

5.7.2.1 Land, Soils and Geology

The implementation of the mitigation measures detailed in section 9.9, will ensure that the potential impacts on land, soils and geology once the Proposed Development is constructed and operational are adequately mitigated. The residual effect on the soils and geology during the operational phase is considered to be **neutral**, **imperceptible** and **long-term**.
Following the TII criteria (refer to Appendix 9.1) for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

5.7.2.2 Human Health and Populations

The implementation of the mitigation measures detailed in Section 5.7, will ensure that the potential impacts on human health and populations once the Proposed Development is constructed and operational are adequately mitigated. The residual effect on human health and populations during the operational phase is considered to be **neutral**, **imperceptible** and **long-term**

5.8 INTERACTIONS & CUMULATIVE IMPACTS

5.8.1 Interactions

This EIAR addresses potential interactions and inter-relationships between the environmental factors discussed. This covers both the construction and operational phases of the proposed development. The EIAR must also consider in-combination effects, or the interactions between the different factors discussed.

The construction phase of the proposed development has the potential to result in increased sediment runoff which has the potential to interact negatively on surface water quality. The proposed construction phase mitigation, and the lack of a direct pathway means that the proposed development will not result in significant negative impact on surface water quality in the local area.

Taking into account the design and mitigation measures set out in Chapter 5 and 6 of this EIA Report, there is a residual negative interaction between Land and Soil with Hydrology during the construction phase. The interaction is considered to be neutral, not significant, and short term.

In the absence of mitigation measures to control the construction phase there is potential for silt laden material or pollution to enter the watercourse and impact on local biodiversity. Furthermore, dust emissions from exposed earthworks have the potential to settle on plants causing impacts to local ecology.

Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids having an effect on soil fertility and contamination. With the proposed

mitigation measures outlined in this chapter and in Chapter 6 of the EIAR (Water and Hydrology), the potential interaction between these is reduced to a short-term, imperceptible, neutral effect.

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During the construction phase, excavated soil will be generated from the excavations required to facilitate site levelling, construction of new foundations, installations of site service, etc. Approximately 50% of the soil stripped or excavated from the site will be re-used on site for backfill and landscaping with some export required. Any surplus topsoil material will be transported off site and disposed of at a fully authorised soil recovery site. It is predicted that all of the subsoil and stones will be removed from the Site and transported off site and disposed of at a fully authorised soil recovery site. When material has to be taken off-site, it will be taken for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 11, and the requirements of the RWMP, will ensure the effect is long-term, imperceptible and neutral.

This waste stream will be managed in accordance with the relevant legislation identified in Chapter 11 such that the effect of the waste generation will be long-term, imperceptible and neutral.

5.8.2 Cumulative Effects

Existing developments that are already built and in operation contribute to the characterisation of the baseline environment. As such any further environmental impacts that the Proposed Development may have in addition to these already constructed and operational developments has been assessed in the preceding sections of this chapter.

Any future application on these lands will be subject to planning approval and environmental assessment as required. Any new development proposed on the lands after the submission of the Proposed Development would be accompanied by an EIA, or EIA Screening as required and take into consideration the development of this site.

5.8.2.1 Construction Phase

In relation to the potential cumulative impact on hydrology during the construction phase, the construction works which would have potential cumulative impacts are as follows:

- Surface water run-off during the construction phase may contain increased silt levels or become polluted from construction activities. Run-off containing large amounts of silt can cause damage to surface water systems and receiving watercourses.
- Stockpiled material will be stored on hardstand away from surface water drains, and gullies will be protected during works to ensure there is no discharge of silt-laden water into the surrounding surface water drainage or to ground.
- Contamination of surface water from accidental spillage and leakage from construction traffic and construction materials is possible unless project-specific measures are put in place for each development and complied with.

The works contractors for other planned or permitted developments will be obliged to ensure that measures are in place to protect surface water and groundwater quality in compliance with legislative standards for receiving groundwater quality (European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and S.I. 266 of 2016) and surface water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019).

The implementation of mitigation and monitoring measures previously detailed above as well as the compliance of other developments with their respective planning conditions, will ensure there will be minimal cumulative potential for change to the hydrological and hydrogeological environment during the construction phase of the proposed development.

The residual cumulative impact of the proposed development in combination with other planned or permitted developments can therefore be considered to be neutral, imperceptible and short-term.

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5.8.2.2 Operational Phase

The proposed development and other permitted developments will result in an increase in hard standing which will result in localised reduced recharge to ground.

All developments are required to ensure they do not have an impact on the receiving water environment in accordance with the relevant legislative standards for receiving groundwater quality (European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and S.I. 266 of 2016) and surface water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019).

The implementation of mitigation and monitoring measures previously detailed above as well as the compliance of other developments with their respective planning conditions, will ensure there will be minimal cumulative potential for change to the hydrological and hydrogeological environment during the operational phase of the proposed development.

The residual cumulative impact of the proposed development in combination with other planned or permitted developments can therefore be considered to be neutral, imperceptible and long-term.

5.9 REFERENCES

CIRIA (2005). Environmental Good Practice on Site (C650).
CIRIA (2007). CIRIA 697: The SUDS Manual.
Enterprise Ireland (n.d.). Best Practice Guide BPGCS005: Oil Storage Guidelines.
EPA (2025). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
EPA (2025). EPA Maps.
GSI (2025). GSI Map Viewer.
Institute of Geologists of Ireland (2013). Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
NPWS (2025). Designations Viewer.
NRA (2009). Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
OPW (2025). Flood Maps.
OPW (2009). The Planning System and Flood Risk Management: Guidelines for Planning Authorities.
Institute of Geologists of Ireland (2013). Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
Teagasc (2025). Teagasc Map Viewer.
National Roads Authority (NRA) (2009). Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
POGA Consulting Engineers- Flood Risk Assessment (2025)

Swords GWB: Summary of Initial Characteristics (2004)
Dublin GWB: Summary of Initial Characteristics (2004)
Uisce Eireann Annual Environmental Report- Swords D0024-01 (2023)
Ground Investigation Report- Barrysparks Site Ground Investigation Ireland (GII) (2020)

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6. WATER AND HYDROLOGY

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6.1 INTRODUCTION

This chapter of the EIAR was prepared to assess the potential significant effects of the proposed development for Barrysparks, Swords, Co, Dublin. It evaluates the likely significant effects, if any, which the Proposed Development will have on hydrology (surface water) and hydrogeology (groundwater).

This chapter contains necessary information as defined in the Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022). Reference is made to geology, but this aspect is covered in more detail in Chapter 5 (Land, Soils and Geology).

The chapter initially provides a description of the receiving environment of the site and the potential impacts of the development. When assessing the potential impacts, this assessment considers the significance of the environmental attributes, and the predicted scale, and duration of the likely effects. The chapter also outlines the proposed mitigation and monitoring measures that will reduce or eliminate the identified potential impacts of the Proposed Overall Development (the effect after the implementation of mitigation measures).

This chapter should be read in conjunction with Chapter 5 (Land and Soils) and Chapter 4 (Biodiversity).

It also should be read in conjunction with Chapter 2 for the EIAR which does into further detail with regards to the site description.

6.2 EXPERTISE & QUALIFICATIONS

This chapter of the EIAR has been prepared by Marcelo Allende and Ana Keeley of AWN Consulting. Marcelo Allende (BSc, BEng) is a Principal Environmental Consultant (Hydrologist) with AWN Consulting with over 20 years of experience in water resources technical studies, conceptual and numerical hydrological/hydrogeological modelling and environmental consultancy. Marcelo holds a degree in Water Resource Civil Engineering (BEng, Hons) from the University of Chile and a Bachelor of Science in Engineering (BSc, Hons). He has worked on a wide of range of projects including multi-aspect environmental investigations, geo-environmental impact assessments, surface and groundwater resource management, hydrological and hydrogeological conceptual and numerical modelling, strategic and site specific flood risk assessments (Stage 1,2 and 3), Due Diligence reporting, baselines studies, soils, surface water and groundwater monitoring and field sampling programmes on a variety of brownfield and greenfield sites throughout Ireland as well as overseas in Chile, Argentina, Peru and Panama. He also has detailed knowledge of environmental guidance, legislation, regulations & standards and expertise in GIS (expert level) and MATTE studies at COMAH establishments. He is currently a member of the International Association of Hydrogeologists (IAH, Irish Group) and a member of Engineers Ireland (MIEI).

Ana Keeley is an Environmental Consultant with AWN Consulting with ongoing roles within the water department. Ana has a BSc in GeoScience from Trinity College Dublin. Ana has worked on a range of projects including environmental investigations, environmental impact assessment reports, hydrological risk assessments and ArcGIS mapping. Ana is a member of the International Association of Hydrogeologists (Irish Group).

6.3 PROPOSED DEVELOPMENT

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Refer to Chapter 2 for full details of the proposed development.

6.4 ASSESSMENT METHODOLOGY

6.4.1 Criteria for Rating of Effects

The section establishes the criteria, and guidance used to rate the significance of the potential impacts of the Proposed Development project on the hydrological and hydrogeological aspects of the site and surrounding area.

The document entitled 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the Transport Infrastructure Ireland (TII, 2009, previously NRA) is referenced where the methodology for assessment of impact is appropriate.

Furthermore, in line with this TII Guidelines, an assessment of the attribute importance has been undertaken in order to provide a basis for the assessment of impact provided. The attribute importance considers the potential as well as the existing use of the surface water features as a water resource (i.e., water supply, fisheries and other uses) as well as ecological habitat requirements. The TII criteria for rating the hydrological and hydrogeological related attributes are presented in Appendix 6.1 of this EIAR.

The quality, significance, and duration of the potential impacts, residual effects, and cumulative effects are described using standard EIA descriptive terminology set out in Chapter 1 of this EIAR.

The principal attributes (and effects) to be assessed include the following:

- Water Framework Directive (WFD) Status and potential for increased risk of deterioration of this status due to the activities of the site.
- River and aquifer water quality in the vicinity of the site (where available).
- Surface, transitional and coastal watercourses near the site and potential impact on surface water quality arising from Proposed Development related works including any discharge of surface water run-off.
- Localised flooding (potential increase or reduction) and floodplains including benefitting lands and drainage districts (if any); and
- Surface water features within the area of the site.
- High-yielding water supply springs/ wells in the vicinity of the site to within a 2km radius and the potential for increased risk presented by the Proposed Development.
- Classification (regionally important, locally important etc) and extent of aquifers underlying the site perimeter area and increased risks presented to them by the Proposed Development e.g. removal of subsoil cover, removal of aquifer (in whole or part), drawdown in water levels, alteration in established flow regimes, change in groundwater quality.
- Natural hydrogeological/ karst features in the area and potential for increased risk presented by the activities at the site; and,
- Groundwater-fed ecosystems and the increased risk presented by operations both spatially and temporarily.

6.4.2 Water Framework Directive (WFD) Status

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Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, commonly known as the Water Framework Directive (WFD) establishes a framework for community action in the field of water policy.

The WFD requires 'Good Water Status' for all European waters to be achieved through a system of river basin management planning and extensive monitoring by 2015 or, at the least, by 2027. 'Good status' means both 'Good Ecological Status' and 'Good Chemical Status'. In 2009 the first River Basin Management Plan (RBMP) 2009-2015 was published. The second cycle river basin management plan was carried out between 2018-2021 with the previous management districts now merged into one Ireland River Basin District (Ireland RBD). The third cycle river basin management plan namely, The Water Action Plan 2025 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024) is currently in place.

During the development of this Plan, a prioritisation exercise was undertaken by the local authorities, the EPA and other stakeholders to identify those water bodies that require immediate action within this plan cycle to 2021. During the catchment characterisation, the EPA identified those water bodies either 'At Risk' of not achieving their objectives or 'Under Review'. The outcome of this prioritisation process was the selection of 190 Areas for Action across the 5 Local Authority regions. Within these 190 areas, a total of 726 water bodies were selected for initial actions during this RBMP cycle. There are 832 water bodies identified as being 'At Risk' of not achieving their environmental objectives under this Plan that have not been included in the Areas for Action. For most of these water bodies, targeted actions will be undertaken in The Water Action Plan 2025. The Water Action Plan 2025 has been reviewed in the context of ensuring mitigation measures comply with current and expected future measures required to be implemented for protection of water body status within the context of the Proposed Development.

6.4.3 Relevant Legislation & Guidance

As outlined in Chapter 1 the information provided complies with all relevant EU and Irish legislation and includes consideration of the objectives as outlined in the Waterford County Development Plan 2022-2028. Relevant legislation includes:

- EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022).
- Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (TII, 2009, previously NRA). The TII criteria for rating the hydrogeological and hydrological related attributes are presented in Appendix 6.1 of this EIAR.
- Water Framework Directive 2000/60/EC.

The strategies and objectives of the WFD in Ireland have influenced a range of national legislation, regulations and guidelines. These include the following:

- European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003).
- European Communities (Drinking Water) Regulations 2023 (S.I. 99 of 2023).
- European Communities Environmental Objectives (Surface Waters); Regulations, 2009 (S.I. No. 272 of 2009 as amended SI No. 77 of 2019).
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010 S.I. No. 366 of 2016).

- European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2022.
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011).
- Statutory Instrument (SI) No. 293 of 1988 European Communities (Quality of Salmonid Waters) Regulations 1988.
- Local Government (Water Pollution) Acts 1977-2007.
- (European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and amendments) and European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and amendments).
- Water Services Guidelines for Planning Authorities Draft (Department of Housing, Planning and Local Government, 2018).
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board);
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers;
- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors;
- CIRIA C648 Control of Water Pollution from Constructional Sites;
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

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6.4.4 Sources of information

Desk-based hydrological information in the vicinity of the site was obtained through accessing databases and other archives where available. Data was sourced from the following:

- Latest EPA Envision water quality monitoring data for watercourses in the area.
- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1:100,000 mapping.
- River Basin Management Plan for Ireland 2022-2027 (Department of Housing, Planning and Local Government, 2018).
- Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW, 2009).
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie).
- Relevant Eastern Catchment Flood Risk Assessment and Management (CFRAM) Flood Reports.
- National Parks and Wildlife Services (NPWS) – Protected Site Register.
- Fingal County Development Plan 2022-2028 – Strategic Flood Risk Assessment (SFRA, 2023-2029).

- Site specific data was derived from the following sources:
- POGA Consulting Engineers- Engineering Planning Report (2025)
- POGA Consulting Engineers- Construction and Environmental Management Plan (2025)
- POGA Consulting Engineers- Flood Risk Assessment (2025)
- Swords GWB: Summary of Initial Characteristics (2004)
- Dublin GWB: Summary of Initial Characteristics (2004)
- Uisce Eireann Annual Environmental Report- Swords D0024-01 (2023)

6.5 RECEIVING ENVIRONMENT

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6.5.1 Site Description

The proposed development site is located at Barrysparks, Swords, Co. Dublin and covers an area of approximately 6.0 hectares (14.8 acres). Situated c. 10 km north of Dublin City Centre, the site lies on the outskirts of Swords and represents one of the principal undeveloped land parcels in the area. It is bounded to the north by the R132 regional road, while to the east the lands are largely unoccupied with portions adjoining existing residential properties. To the south, the site is bordered by predominantly greenfield lands and the Holywell Road roundabout, and to the west it is enclosed mainly by greenfield lands, with the north-western boundary adjoining an established industrial park.

The topography of the site is relatively uniform, the site moderately slopes from the East to West; levels of approximately 24.9m AOD to the west and 24.1m AOD to the east. The site at present is a greenfield site unoccupied by any structures or buildings, as shown in Figure 6.1 below.

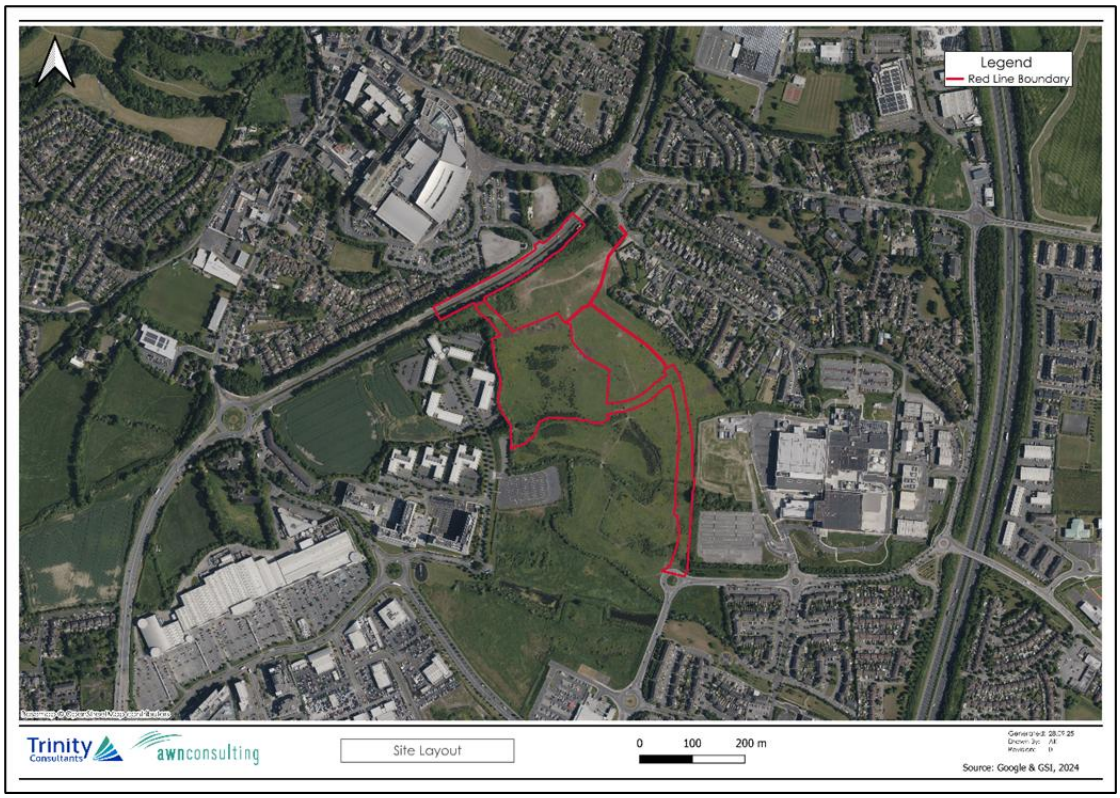

Figure 6.1 Site Layout

6.5.2 Hydrology

6.5.2.1 Hydrological Environment

The proposed development site is located within two different catchment areas; Nanny-Delvin (Catchment ID 08) and Liffey and Dublin Bay (Catchment ID 09) and within the Broadmeadown_SC_010 and Mayne_SC_010 WFD subcatchments (EPA, 2025). The Gaybrook Stream (EPA Code: IE_EA_08G080700) flows from the Airside Business Park, which is located to the west of the site, and flows along the western boundary towards the southern boundary. There is a central field drainage ditch which ultimately discharges into the Gaybrook Stream.

The Gaybrook Stream enters the Barrysparks lands at the western boundary from Airside Business Park. The stream turns south along the western boundary and then turns east across the site to divide it into north and south. The southern section of the site slopes to the north towards the water course. The northern section of the site is relatively flat with a slight slope to the stream. There is an unnamed watercourse on the western boundary of the site and a field ditch running west to east and then south east through the centre of the Barrysparks lands. From this point, the stream continues in an easterly direction before discharging into the Broadmeadow Water Transitional Waterbody (EPA Code: IE_EA_060_0100), which in turn connects to the Malahide Bay Coastal Waterbody (EPA Code: IE_EA_060_0000).

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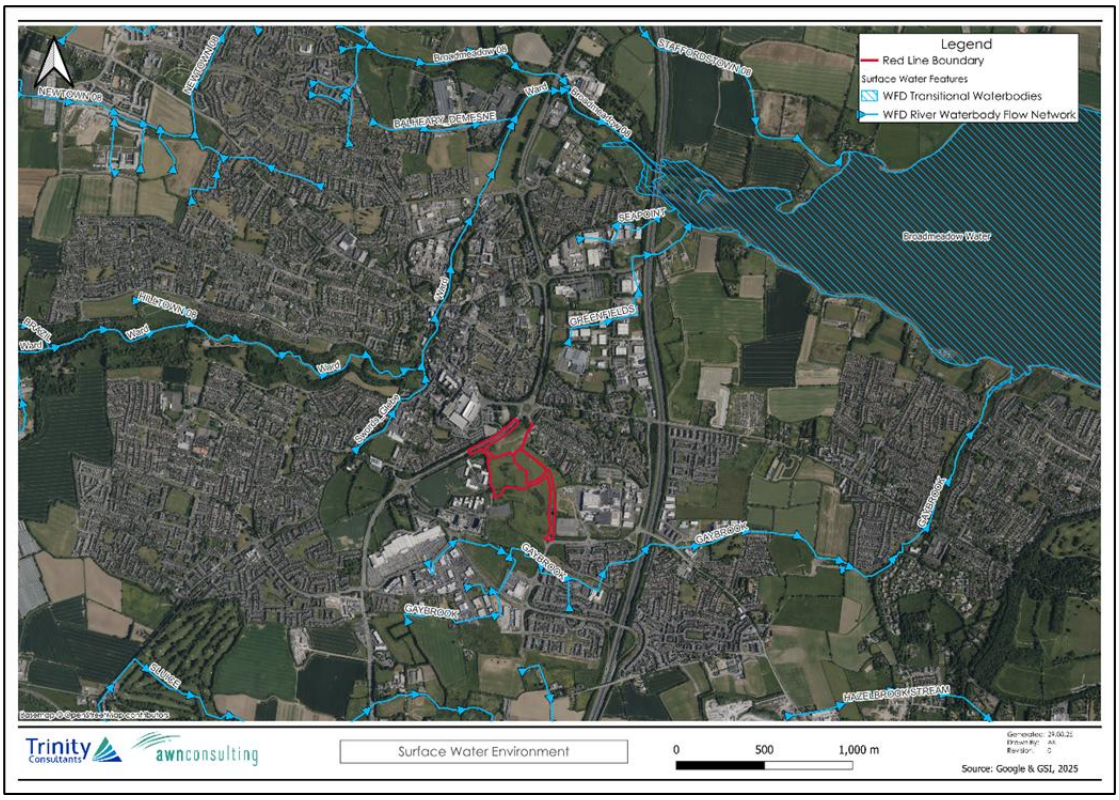

Figure 6.2 Surface Water Environment

6.5.3 Surface Water Quality

The Proposed Development is located within the Irish River Basin District, as defined under the European Communities Directive 2000/60/EC, establishing a framework for community action in the field of water policy – this is commonly known as the Water Framework Directive (WFD). The WFD requires 'Good Water Status' for all European waters to be achieved through a system of river basin management planning and extensive monitoring by 2015 or, at the least, by 2027. 'Good status' means both 'Good Ecological Status' and 'Good Chemical Status'. In 2009 the first River Basin Management Plan (RBMP) 2009-2015 was published. The second cycle river basin management plan was carried out between 2018-2021 with the previous management districts now merged into one Ireland River Basin District (Ireland RBD). The third cycle river basin management plan (2022-2027) i.e. Water Action Plan 2024 – A River Basin Management Plan for Ireland (Dept. of Housing Local Government & Heritage, Sept 2024) has since been published.

During the development of this plan, a prioritisation exercise was undertaken by the local authorities, the EPA and other stakeholders to identify those water bodies that require immediate action within this plan cycle to 2027. During the catchment characterisation, the EPA has carried out an analysis of the likely water quality outcomes that may be achieved as a result of the measures outlined in the third-cycle River Basin Management Plan. The analysis

forecasts the number of water bodies that are likely to achieve their 2027 status objectives, and those that are likely to show improvements, so that an assessment can be made of the gap to achieving Water Framework Directive (WFD) environmental objectives. The forecast analysis is a snapshot in time based on the best available information on the measures being implemented as of September 2023. It depends on assumptions being made about how the measures in the plan will be implemented, for example, where measures are voluntary. Improved information on the measures being implemented will allow the forecasts to be further refined over time. The 2021 characterisation assessment identified there were 2,610 water bodies, out of a total of 4,842 water bodies (54%), which had met their objectives. These water bodies require ongoing basic measures to protect water quality. Of the remainder, 1,649 (34% of the total) were categorised as being 'At Risk' of not achieving their objectives and had evidence available to determine the water quality issue(s) and the pressure(s) that needs to be addressed. These water bodies are prioritised in the Plan for measures to restore water quality. The other 583 water bodies are in 'Review', which means additional evidence is required to confirm the nature of any water quality issues and the impacts from any relevant pressures.

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The third cycle river basin management plan (2022-2027) i.e. "Water Action Plan 2024 – A River Basin Management Plan for Ireland" has been reviewed in the context of ensuring mitigation measures comply with current and expected future measures required to be implemented for protection of water body status within the context of the Proposed Development.

The strategies and objectives of the WFD in Ireland have influenced a range of national legislation and regulations. These include the following:

- European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003);
- European Communities (Drinking Water) Regulations 2014 (S.I. 122 of 2014);
- European Communities Environmental Objectives (Surface Waters); Regulations, 2009 (S.I. No. 272 of 2009 as amended SI No. 77 of 2019);
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010 S.I. No. 366 of 2016);
- European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2010 (S.I. No. 610 of 2010);
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011);
- Statutory Instrument (SI) No. 293 of 1988 European Communities (Quality of Salmonid Waters) Regulations 1988;
- Local Government (Water Pollution) Acts 1977-1990;
- SI No. 258 of 1988 Water Quality Standards for Phosphorus Regulations 1998;
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board);
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers;
- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors;
- CIRIA C648 Control of Water Pollution from Constructional Sites;
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

According to EPA (2025), Gaybrook Stream has a WFD status (2016-2021) of 'Poor' as shown in Figure 6.3 and a WFD risk score of 'Not achieving Good Status' by 2027. This 'Poor' status assigned to the Gaybrook Stream is due to its poor biological (invertebrate) status or potential. Both the Broadmeadow Water Transitional Waterbody and Malahide Bay Coastal Waterbody have a risk score of 'Moderate' and are 'At risk' of not achieving good status. This score is due to both its moderate Ecological Status however, for the Broadmeadow Water Transitional Waterbody is Failing to achieve good value for Chemical Surface Water Status.

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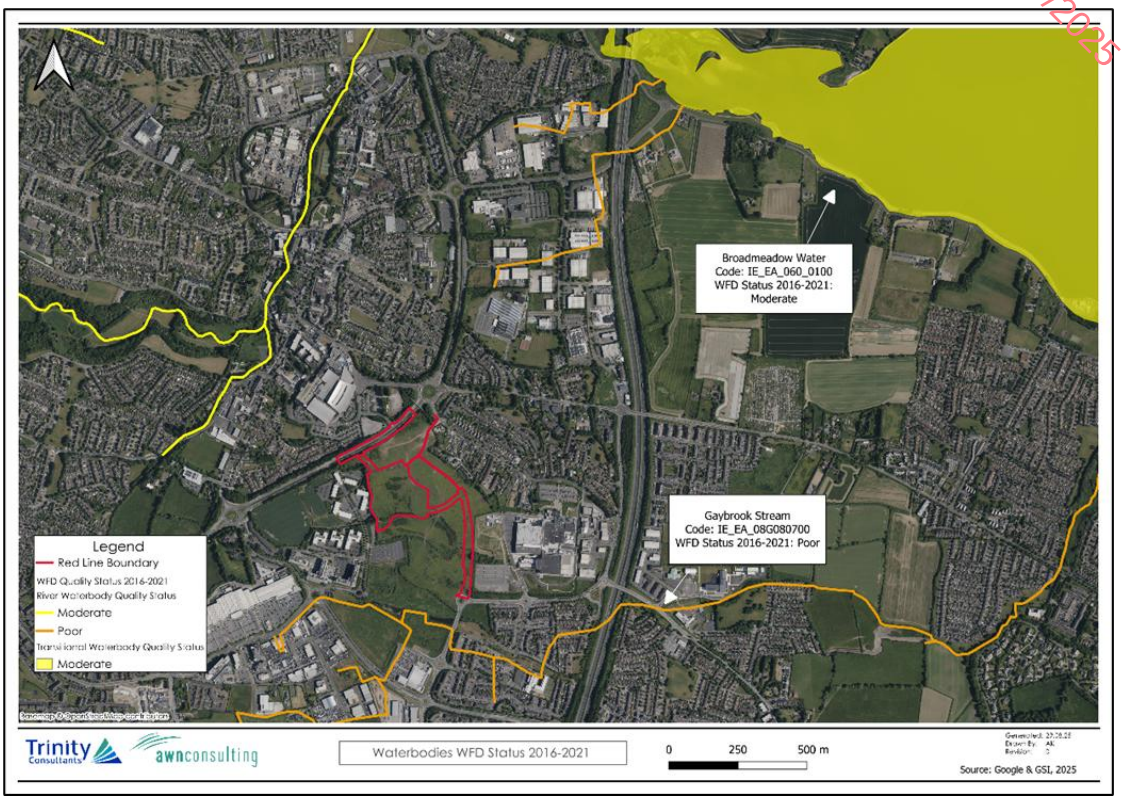

Figure 6.3 Surface Water Quality Status

Surface water quality is monitored periodically by the EPA at various regional locations along with principal and other smaller watercourses. The EPA assess the water quality of rivers and streams across Ireland using a biological assessment method, which is regarded as a representative indicator of the status of such waters and reflects the overall trend in conditions of the watercourse. The biological indicators range from Q5 - Q1. Level Q5 denotes a watercourse with good water quality and high community diversity, whereas Level Q1 denotes very low community diversity and bad water quality. In relation to the Proposed Development site, there are five (active) surface waterbody EPA monitoring stations within Gaybrook stream:

- GAYBROOK STREAM - Belfast Road (N1) (Station ID: RS08G080100)
- GAYBROOK STREAM - Feltrim Road (Station ID: RS08G080500)
- GAYBROOK STREAM - Swords Road Malahide (Station ID: RS08G080600)
- GAYBROOK STREAM - Barrack Bridge (Station ID: RS08G080700)
- Outfall to Sea d/s Barrack Br (Station ID: RS08G080800)

The most recent water quality status recorded by the EPA (2022) at this monitoring station (EPA Code: RS36D020700) is classified as Q3 Poor, which denotes moderately polluted waterbody. This Value is based primarily on the relative proportions of pollution sensitive to tolerant macroinvertebrates (the young stages of insects primarily but also snails, worms, shrimps etc.) resident at a river site.

6.5.3.1 Local Surface Water Quality and Hydrogeological Connectivity

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AWN carried out a site inspection on the 26th of May 2023. Several surface water ponds were recorded across the study area. Surface water in this area is present year-round and becomes more extensive following periods of heavy rainfall. The specific locations of the observed ponds are shown in Figure 6.4 below. The surface water ponds deposits are located in areas underlying by granular deposits possibly associated to man-made fills in the site and are confined by low permeable carboniferous tills (Clay). These ponds are believed to be associated with direct rainfall recharge over these granular deposits. As these deposits are confined by low permeable tills, it is believed that this recharge saturates these deposits and becomes perched/ standing waters within these gravels.

Figure 6.4 Surface Water Locations

The result of this monitoring shows that the contents of calcium, hardness, chloride, and sulphate recorded in SW2 and SW3 are significantly lower than the rest of the samples, especially SW5, SW6 and Holywell. It is expected that water from the Holywell has higher concentrations of these parameters as it is associated with waters in contact with carboniferous gravels/till derived from limestones. A conclusion of these results is the hydrological disconnection between the surface ponds SW2 and SW3 with the Gaybrook Stream (North and South) and Holywell.

6.5.4 Surface Water Flows and Levels

There are no gauging stations found within the Gaybrook Stream. There is one active nearby hydrometric (gauging) station currently in operation. Located on the Broadmeadow River (EPA Code: IE_EA_08B020800) the station Broadmeadow (Station No. 8008) lies approximately 2.0km north of the proposed site. According to available records, the Dry Weather Flow (DWF) for the Broadmeadow River at this location is 0.041 m^3/s, based on the 95-percentile low flow

statistic (i.e., the flow exceeded 95% of the time under baseline conditions or dry weather flow). This value is typically used in environmental assessments to represent low-flow scenarios when assimilative capacity for pollutants is at its most limited. Given that both monitoring points are located downstream, no direct upstream flow data is available for the proposed site.

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6.5.5 Bathing Waters and Recreational Waterbodies

The local environment also includes areas of natural resources that relate to populations and human health that may be impacted by the Proposed Development, this includes economic resources, recreational and bathing waters, and drinking water resources.

A review of Environmental Sensitivity Mapping online maps that includes the Register of Protected Areas (RPA) under the Water Framework Directive (WFD) has shown that there are no Recreational Waters, Bathing Waterbodies, or Surface Water Drinking RPA, within the proposed development or located near the Gaybrook Stream, or Broadmeadow Transitional Waterbody.

The nearest Recreational Waters, Bathing Waterbodies, or Surface Water Drinking RPA to the proposed development is Portmarnock, Velvet Strand Beach (Bathing Waters ID: IEEABWC070_0000_0200) located c. 5km east.

6.5.6 Water Supplies

A review of the Environmental Protection Agency (EPA) online mapping, which includes the Register of Protected Areas (RPA) established under the Water Framework Directive (WFD), indicates that there are no Nutrient Sensitive Area within the proposed development. The nearest Nutrient Sensitive Area is the Broadmeadow Estuary (Inner) (EPA Code: IE_EA_060_0100), as an Urban Waste Water Treatment Directive Sensitive Area located 2.1 km north east. These areas are designated in accordance with the Urban Wastewater Treatment (UWWT) Directive (91/271/EEC) and relevant national legislation, including S.I. 254/2001, S.I. 440/2004, and S.I. 48/2010. In this context, the identified waterbody is used to define the extent of the nutrient-sensitive designation.

6.5.7 Existing Water and Wastewater Utilities

There are no existing water or wastewater utilities located within the boundary of the proposed development site or in its immediate surrounding area. The nearest wastewater utility to the proposed development is Swords Uisce Éireann (Registration Code: D0024) located 1.4km north of the proposed site.

6.5.9 Flood Risk

A fluvial flood study undertaken by POGA Consulting Engineers as part of the Strategic Flood Risk Assessment (SFRA) for the Barrysparks and Crowscastle Masterplan assessed the potential flood risk associated with the Gaybrook Stream. The study included a hydrological analysis of the stream under 1-in-100 year and 1-in-1000-year flood events, along with two climate change scenarios (Mid-Range and High-End Future Scenarios). The results indicated that much of the site lies outside the 0.1% Annual Exceedance Probability (AEP) flood extent (1-in-1000-year event), even when accounting for climate change. On this basis, the site is classified as being within Flood Zone C, where the likelihood of fluvial flooding is considered to be low.

A small section of the proposed new road connecting to the existing Holywell Roundabout on the eastern boundary of the site intersects with an area designated as Flood Zone B, which corresponds to a 0.1% AEP fluvial flood risk. This area of overlap is minimal in both spatial extent and depth, and critically, it does not affect the primary development footprint.

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No past flood events have been recorded within the immediate vicinity of the proposed development site. However, two locations of historic flooding have been documented in the surrounding area. The closest recorded event occurred at Melrose Park, approximately 400 m southeast of the site, during October 2002. A second location of recurring flood events was identified at Pinnock Hill, Swords, situated about 600 m northwest of the site, where flooding was reported in 2001, 2002, and 2004.

6.5.9 Designated Areas

The NPWS (2025) on-line database have been reviewed to determine the location of areas of conservation within the Proposed Development site, and there are no Special Protected Areas (SPA) established under the EU Birds Directive (79/409/EEC), or Special Areas of Conservation (SAC) established under the Habitats Directive within the boundary of the Proposed Development site. Furthermore, there are no Natural Heritage Areas (NHA), or proposed Natural Heritage Areas (pNHA) established under the Wildlife Acts, 1976 and 2000 (as amended) within the boundary of the Proposed Development site. The European sites and pNHA in closest proximity to the Proposed Development are as follows:

Malahide Estuary SAC (Site Code 000205) c. 2.5km east.
Malahide Estuary SPA (Site Code 004025) c. 2.5km east;
North-West Irish Sea SPA (Site Code 004236) c. 6.1km east;
Feltrim Hill pNHA (Site Code 001208) c. 1.2 km southeast

According to NPWS (2025), there are no NPWS protected areas in the vicinity of the Proposed Development site. The nearest Natura 2000 Site is Malahide Estuary SAC/SPA located c. 2.5 km east of the proposed development as shown in Figure 6.5 below. The development site has a hydrological connection with this SAC/SPA as Gaybrook Stream, drain into the Broadmeadow Water Transitional Waterbody (EPA Code: IE_EA_060_0100) which is located within Malahide Estuary SAC/ SPA.

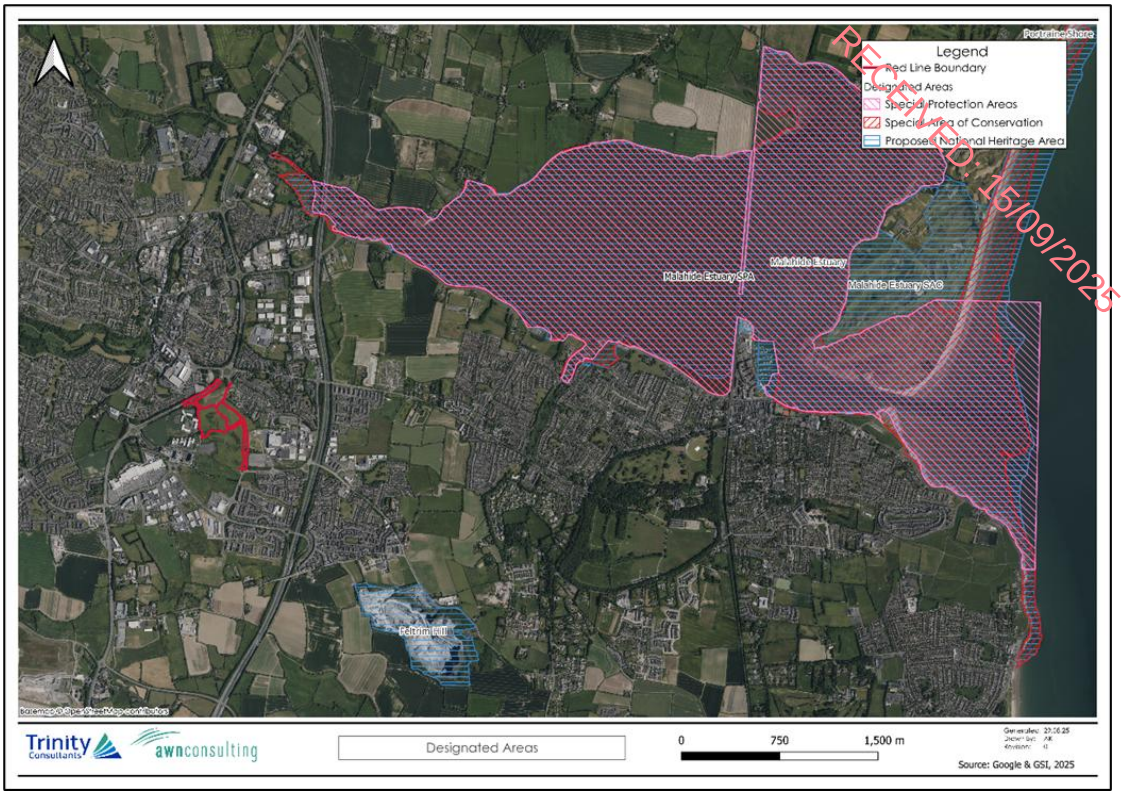

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Figure 6.5: Designated Areas and Hydrological Environment

6.5.10 Rating of Importance of Hydrological Attributes

Based on the TII methodology (2009) (See Appendix 6.1) the importance of the hydrological features at this site is rated as 'Low' importance based on the assessment that the attribute has a low-quality significance or value on a local scale, based on the fact that it is not an area of water supply, within a flood zone or an amenity area.

6.6 HYDROGEOLOGY

6.6.1 Aquifer Classification

The GSI has devised a system for classifying the bedrock aquifers in Ireland. The aquifer classification for bedrock depends on a number of parameters including, the area extent of the aquifer (km2), well yield (m3/d), specific capacity (m3/d/m) and groundwater transmissivity (mm3/d). There are three main classifications: regionally important, locally important and poor aquifers. Where an aquifer has been classified as regionally important, it is further subdivided according to the main groundwater flow regime within it. This sub-division includes regionally important fissured aquifers (Rf) and regionally important karstified aquifers (Rk). Locally important aquifers are sub-divided into those that are generally moderately productive (Lm) and those that are generally moderately productive only in local zones (Ll). Similarly, poor aquifers are classed as either generally unproductive except for local zones (Pl) or generally unproductive (Pu).

The GSI (2025) classifies the principal aquifer types in Ireland as:

Bedrock Aquifer

Rkc – Regionally Important Aquifer – Karstified (conduit)
Rkd – Regionally Important Aquifer – Karstified (diffuse)

RK – Regionally Important Aquifer – Karstified
Rf – Regionally Important Aquifer – Fissured bedrock
Lm – Locally Important Aquifer – Bedrock which is Generally Moderately Productive
Lk – Locally Important Aquifer – Karstified
LI – Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones
PI – Poor Aquifer – Bedrock which is Generally Unproductive except for Local Zones
PU – Poor Aquifer – Bedrock which is Generally Unproductive

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Gravel Aquifer
Lg - Locally Important Aquifer - Sand & Gravel
Rg - Regionally Important Aquifer - Sand & Gravel

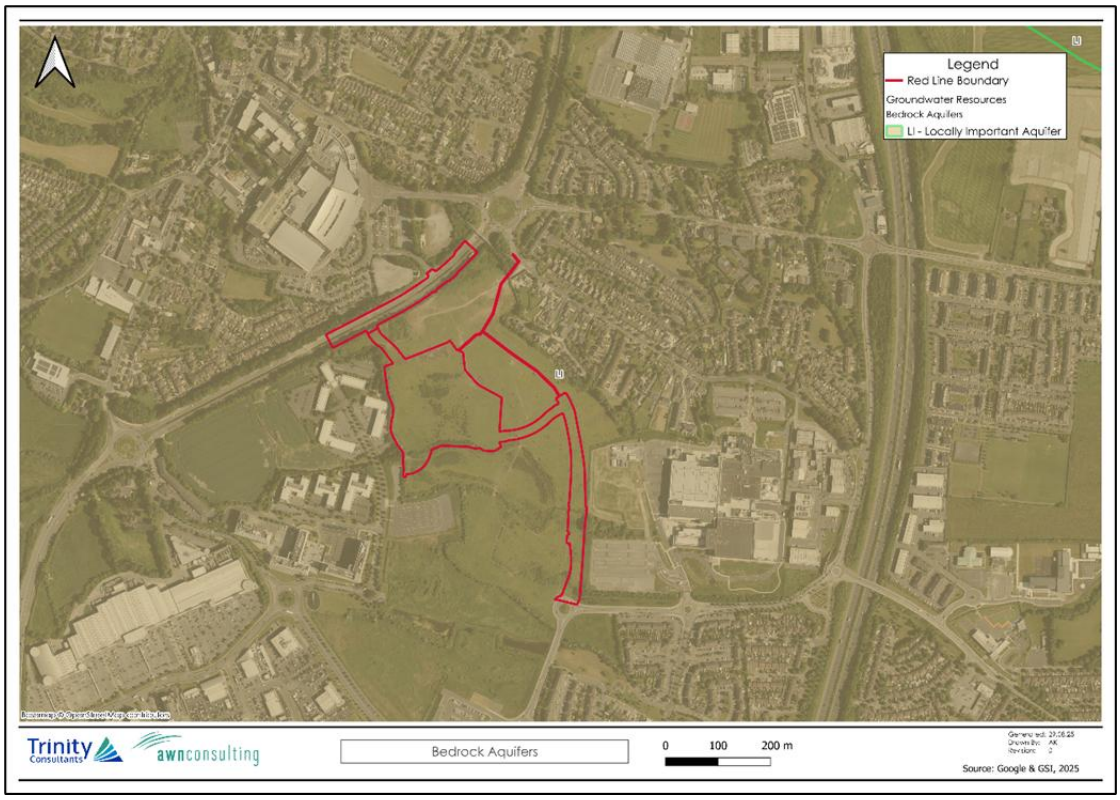

Figure 6.6 Bedrock Aquifer

According to GSI (2025), the bedrock aquifer underlying the site as a Locally Important Aquifer (LI), i.e. Bedrock which is Moderately Productive only in Local Zones as presented in Figure 6.6. The potential for local vertical or horizontal migration within this type of aquifer is moderate depending on the area but may not have extensive regional connectivity. As such the aquifer is not a significant pathway for off-site migration.

The site is divided into two groundwater bodies (GWB); Dublin GWB (Code: IE_EA_G_008) and Swords GWB (Code: IE_EA_G_011) both of which have been investigated by the GSI. With regards to the Dublin GWB is underlain primarily by a sequence of limestone bedrock formations, dominated by Dinantian Lower Impure Limestones, Dinantian Pure Bedded Limestones and Dinantian Upper Impure Limestones. These carbonate lithologies typically exhibit moderate to high transmissivity where extensive fracturing and karstification have developed, but transmissivity is lower in areas where the limestones are less fractured or are overlain by significant subsoil deposits. Overburden in the form of glacial tills is common across the region and generally has low permeability, restricting vertical infiltration in places and influencing groundwater recharge rates. Localised sand and gravel deposits, where present, enhance permeability and act as important conduits for groundwater flow.

In terms of hydrogeological properties, transmissivity within the Dublin Groundwater Body varies spatially, but in the Swords region it is generally considered moderate, reflecting the fractured and bedded nature of the underlying limestone. Groundwater movement within this setting is primarily controlled by structural features such as joints and bedding planes, which facilitate lateral flow, while vertical movement is more limited where thick glacial tills are present. Recharge to the groundwater body occurs through a combination of direct rainfall infiltration, preferential flow through higher-permeability subsoils, and localized inputs from losing streams. The recharge potential is therefore moderate, constrained in places by low-permeability overburden but enhanced where sand and gravel sequences occur.

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Groundwater movement is generally in an eastward direction towards the coast, with connectivity evident between the limestone aquifer units and local surface water features, including streams such as the Gaybrook Stream and ultimately the Broadmeadow Estuary. The degree of connectivity varies depending on local subsoil thickness and bedrock structure, but overall, the Dublin Groundwater Body demonstrates good hydraulic continuity. In the Swords area, this connectivity supports interactions between surface water and groundwater, with groundwater contributing to baseflow in nearby streams and transitional waters (GSI, 2004)

The Swords Groundwater Body is underlain predominantly by Dinantian Upper Impure Limestones and Dinantian Pure Bedded Limestones, with glacial tills forming the dominant overburden across much of the area. These limestone formations are typically moderately productive, with groundwater flow occurring primarily through fractures, joints, and bedding planes. In areas where karstification is more developed, transmissivity can be higher, although in the Swords region transmissivity is generally considered to be moderate rather than high. The overlying tills are generally of low permeability, limiting vertical recharge, although occasional pockets of higher-permeability sand and gravel deposits provide preferential pathways for infiltration.

Hydrogeological assessments indicate that transmissivity within the Swords Groundwater Body varies spatially but falls within a moderate range, reflecting the structural characteristics of the limestone aquifer. Groundwater recharge is derived primarily from rainfall infiltration, with effective recharge constrained in areas of thick, low-permeability subsoil. Localised zones of higher recharge occur where permeable subsoil deposits are present or where surface water features provide additional inputs. Groundwater movement within the aquifer is controlled by structural discontinuities, which direct flow laterally through the bedrock, while vertical movement is more limited by the glacial tills.

Groundwater in the Swords Groundwater Body generally flows eastwards towards the coast, contributing to baseflow in local rivers and streams, including the Gaybrook Stream, and eventually discharging to transitional and coastal waters at the Broadmeadow Estuary. The aquifer exhibits moderate hydraulic connectivity between the bedrock units and surface water systems, although the degree of interaction is locally variable and influenced by subsoil thickness and the presence of more transmissive zones within the limestone. Overall, the Swords Groundwater Body is considered to have moderate productivity, moderate recharge potential, and good local connectivity, supporting both groundwater supply and surface water baseflow contributions (GSI, 2004).

6.6.2 Aquifer Vulnerability

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated generally by human activities. Due to the nature of the flow of groundwater through bedrock

in Ireland, which is almost completely through fissures/ fractures, the main feature that protects groundwater from potential contamination, and therefore the most important feature in the protection of groundwater, is the subsoil (which can consist solely of or of mixtures of peat, sand, gravel, glacial till, clays or silts).

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Groundwater vulnerability is an indication of how easily the aquifer can become contaminated by human activity. It is dependent on the thickness and permeability of the overlying soils and depth to the water table. For example, a bedrock aquifer with minimal thickness of overburden or with a thin layer of permeable overburden will be more vulnerable to contamination than a bedrock aquifer which has a thick layer of low permeability overburden. Extreme groundwater vulnerability is also associated with karst landforms as these are a direct pathway for water and contaminants to enter the aquifer from the surface.

According to GSI regional mapping, the groundwater vulnerability rating is classified as having mainly 'Low' vulnerability which indicates a general overburden depth potential greater than 10m, indicating that the aquifer is naturally well protected by urban deposits and low permeability tills as shown in Figure 6.7 (GSI, 2025). It should be noted that aquifer vulnerability classifications are primarily based on the permeability and thickness of subsoils (refer to Table 6.1 below).

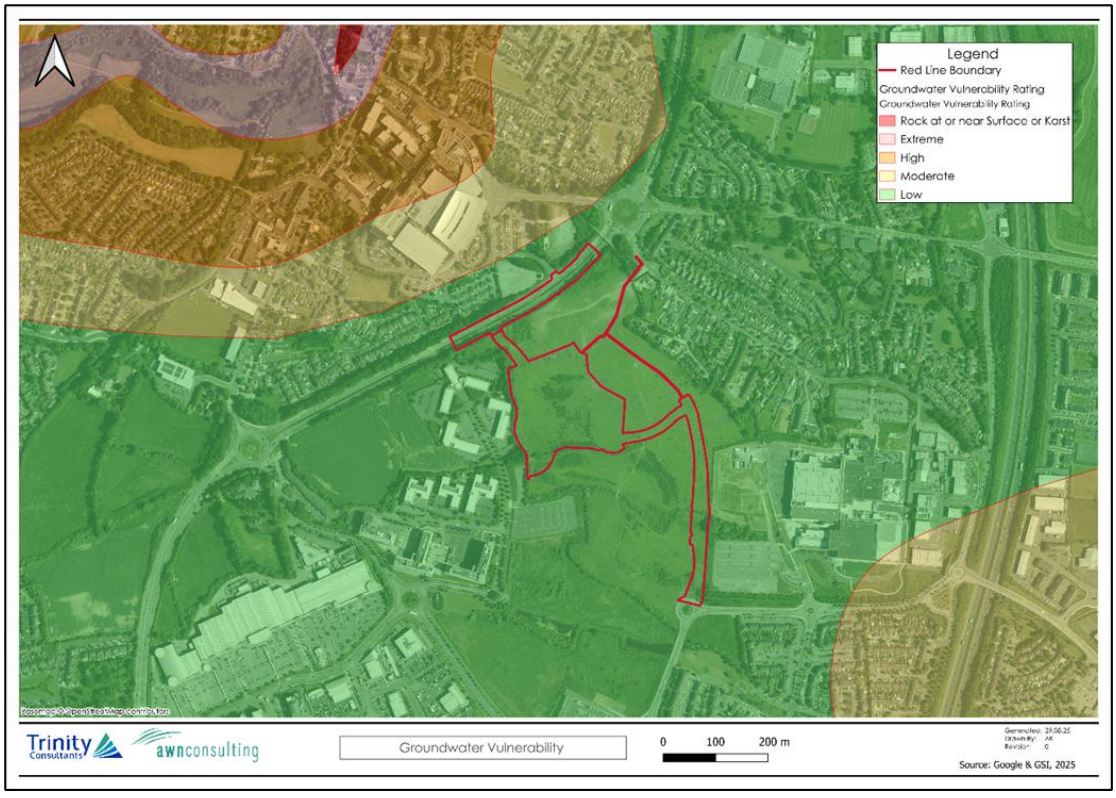

Figure 6.7: Aquifer Vulnerability Rating

Table 6.1 Vulnerability Mapping Guidelines (Source: DoELG, EPA, GSI, 1999)

Vulnerability Rating	Hydrogeological Condition				
	Subsoil Permeability (type) and Thickness			Unsaturated Zone	Karst Features
	High Permeability (sand/ gravel)	Moderate Permeability (e.g. sandy subsoil)	Low Permeability (e.g. clayey subsoil, clay, peat)	(Sand / gravel aquifers only)	(<30 m radius)
Extreme (E)	0 – 3 m	0 – 3 m	0 – 3 m	0 – 3 m	-
High (H)	>3 m	3 – 10 m	3 – 5 m	>3 m	n/a
Moderate (M)	n/a	>10 m	5 – 10 m	n/a	n/a
Low (L)	n/a	n/a	>10 m	n/a	n/a
Notes:(1) n/a: Not applicable (2) Precises permeability values cannot be given at present (3) Release point of contaminants is assumed to be 1 – 2 m below ground surface					

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6.6.3 Groundwater Wells

A search of the GSI groundwater well database was conducted to identify registered wells in the vicinity of the proposed development. It should be noted that not all wells are registered in Ireland. There are no. 7 registered wells within a 2km radius of the Development site (Table 6-2), also presented in Figure 6.8. The closest well is located c. 140m north of the proposed development site and the following uses are reported.

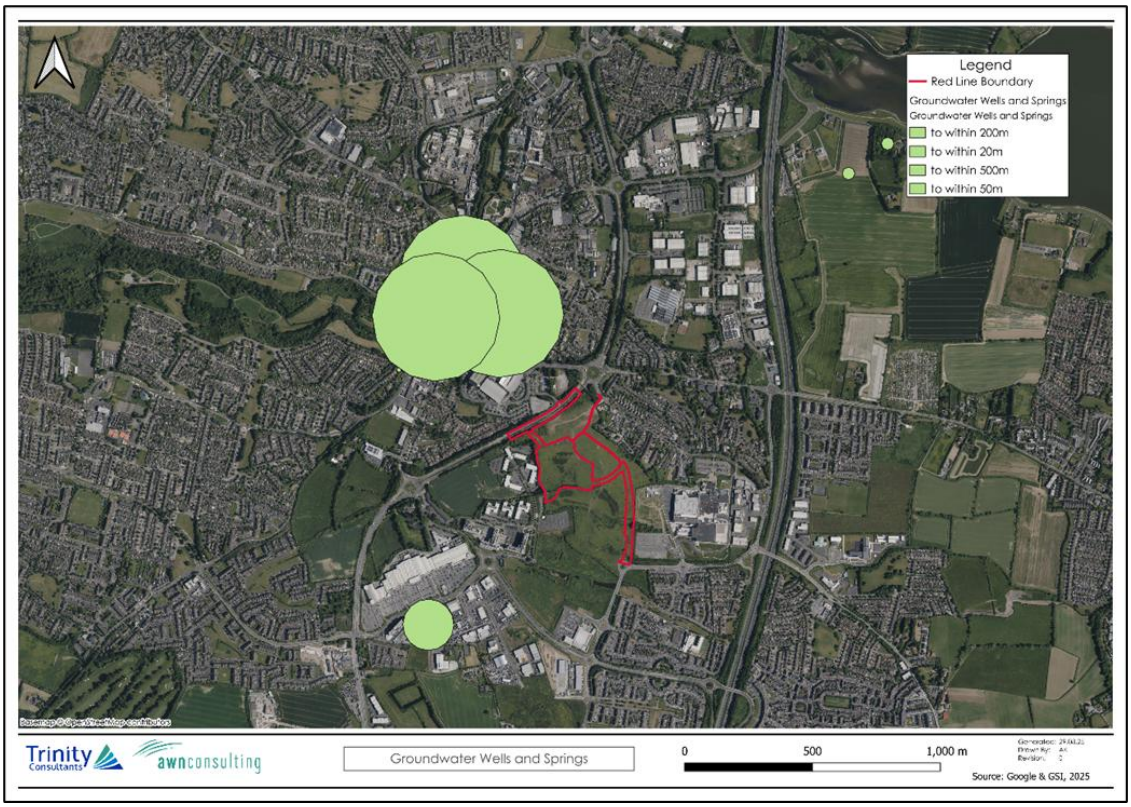

Figure 6.8 Groundwater Wells and Springs

Table 6.2 Summary of Nearby Wells

GIS Reference	Accuracy (m)	Reported Use	Depth (m)	Reported Yield (m3/day)	Yield Class
2923NEW019	500	Unknown	33.5	385	Good
2923NEW020	500	Unknown	27.4	220	Good
2923NEW018	500	Unknown	46.9	110	Good
2923NEW021	200	Agricultural and Domestic	36.6	38.2	Poor
2923NEW039	20	Unknown	N/A	N/A	N/A
2923NEW045	50	Agricultural and Domestic	33.5	381	Good
2923NEW044	50	Agricultural and Domestic	15.2	218	Good

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6.6.4 Groundwater Quality

The Water Framework Directive (WFD) 2000/60/EC was adopted in 2000 as a single piece of legislation covering rivers, lakes, groundwater, transitional (estuarine) and coastal waters. In addition to protecting said waters, its objectives include the attainment of 'Good Status' in water bodies that are of lesser status at present and retaining 'Good Status' or better where such status exists at present. The EPA co-ordinates the activities of the River Basin Districts, local authorities and state agencies in implementing the Directive, and operates a groundwater quality monitoring programme undertaking surveys and studies across the Republic of Ireland.

Presently, both groundwater bodies in the region of the site (Dublin and Swords GWB - European Code: IE_EA_G_008 and IE_EA_G_011) for which the site is located in, has a WFD status of "Good" (WFD Period: 2016-2021) and a WFD risk score (3rd Cycle) of "Not at Risk" of not achieving good status, meaning it has achieved its objectives (see Figure 6.9 below).

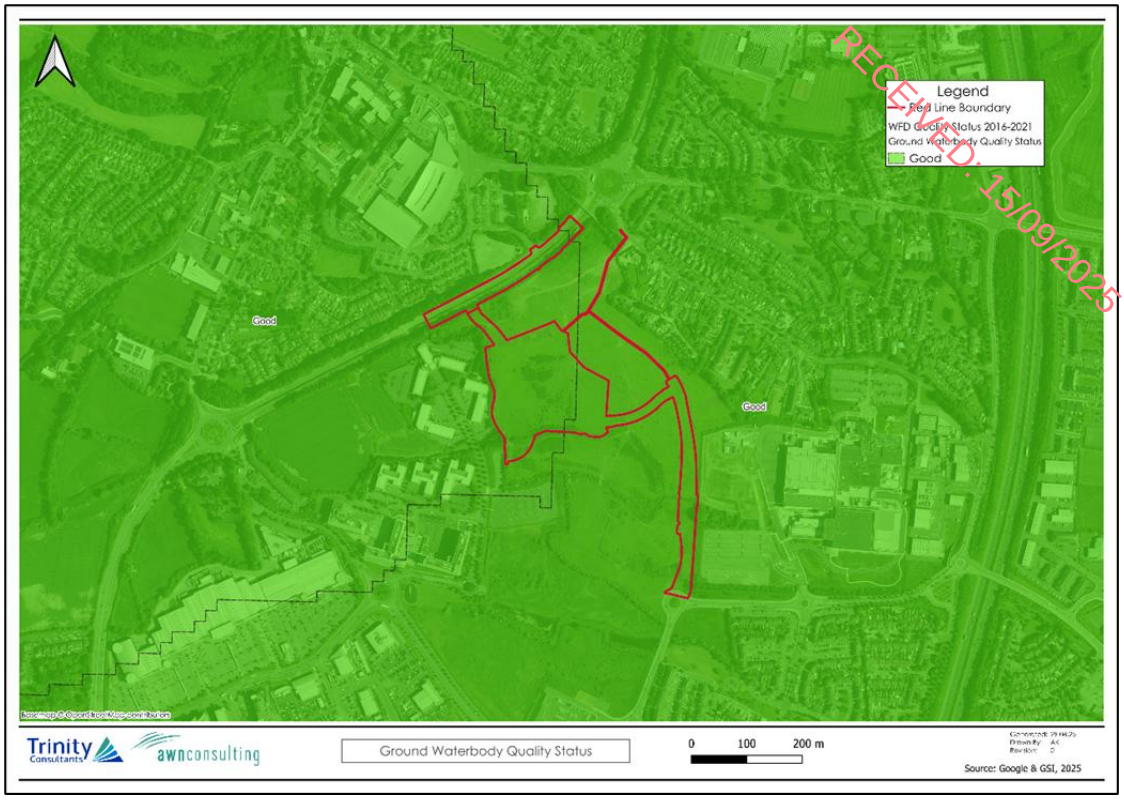

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Figure 6.9 Ground Waterbody WFD Quality Status 2016-2021

6.6.5 Groundwater Dependent Terrestrial Eco-Systems (GWDTEs)

Groundwater-dependent terrestrial ecosystems (GWDTEs) are defined as habitats/species that are dependent on groundwater to maintain the environmental supporting conditions required to sustain that habitat and/or species (EPA, 2008). Groundwater may provide either a direct input, such as in turloughs, fens and petrifying springs or, alternatively, the groundwater may have an indirect influence in maintaining high and stable water levels within the habitat, such as with raised bogs. Groundwater bodies are subject to a range of pressures which can result in significant damage to GWDTEs depending on the susceptibility of the pathway and the sensitivity of the receptor.

The are no identified GWDTE's in the vicinity of the proposed development.

According to an assessment carried out by AWN in 2023, observed seasonal water ponds within the site are fed by perched water associated with direct rainfall events and, in no case, from the underlying bedrock groundwater (i.e., similar to a 'petrifying spring'). This is consistent with surface water quality results obtained during that assessment at different surface water points. These results are not indicative of the presence of Tufa Springs and infer that there is no hydrological connection between surface water collected in these ponds and water in contact with carboniferous tills/gravels.

6.6.6 Rating of Site Importance of the Hydrogeological Features

Based on the TII methodology (2009) (See Appendix 6.1) the importance of the hydrogeological features at this site is rated as 'Medium' importance based on the assessment that the attribute has a low-quality significance or value on a local scale, based on the fact that the bedrock aquifer underlying the site as a Locally Important Aquifer. However, there are no

recorded Public Supply Source Protection Area or Group Scheme Preliminary Source Protection Areas in the vicinity of the Proposed Development site.

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6.6.7 Conceptual Site Model

The site is underlain by a 'Locally Important Aquifer' and in a regional scale, by the Swords and Dublin Groundwater Bodies, which have been investigated by the GSI and is described as having generally low permeable aquifers. The majority of these GWBs is overlain by limestone-derived till which came from the limestone expanses around Dublin.

The GSI/ Teagasc mapping shows that the natural soil type beneath the site is predominantly well drained soils. Alluvial deposits to the south of the site can be associated with historic deposition associated with the Gaybrook Stream riverbed. Glacial tills associated with low permeable cohesive soils are beneath the site, according to the GSI quaternary sediments mapping. This is consistent with the Site Investigations carried out in the site, in which no bedrock was encountered to a maximum depth of 4 m below ground level. The bedrock underlying the study area would be located at depths c. 10 m below ground level, according to the existing GSI characterisation of the site. Therefore, no significant groundwater movement is expected beneath the site.

The surface water ponds identified within the area would be associated with direct rainfall recharge over these granular deposits. As these deposits are confined by low permeable tills, it is believed that this recharge saturates these deposits and becomes perched/ standing waters within these gravels. This perched water is confined to the extent of these deposits (i.e., it would not infiltrate vertically into the underlying bedrock aquifer) and outcrops at their lowest points. During dry weather period, it is believed that this dynamic becomes stagnant and therefore no flow into these ponds is observed.

The surface water ponds occur in granular deposits, likely man-made fills, confined by low-permeability carboniferous tills. These ponds form from direct rainfall recharge, which saturates the confined deposits and creates perched water. The perched water is restricted to the extent of these deposits, outcrops at low points, and becomes stagnant during dry periods. Bedrock lies at approximately 10 m depth and is not hydraulically connected to the ponds. In conclusion, the seasonal ponds are sustained by perched rainfall recharge and not by groundwater from the underlying bedrock.

The site is hydrologically connected with the Malahide Estuary SAC/SPA located c. 2.5 km downstream of the proposed development through the natural surface water drainage, associated with Gaybrook Stream which drains into the Broadmeadow Water Transitional Waterbody.

Hydrogeological cross sections have been prepared to support the conceptual understanding of the conditions within the study area in relation to its interaction with the identified surface water ponds. These sections are based on trial pit data from the site investigations carried out in the area (GII, 2020) and are presented in Figure 6.10, 6.11 and 6.12 below.

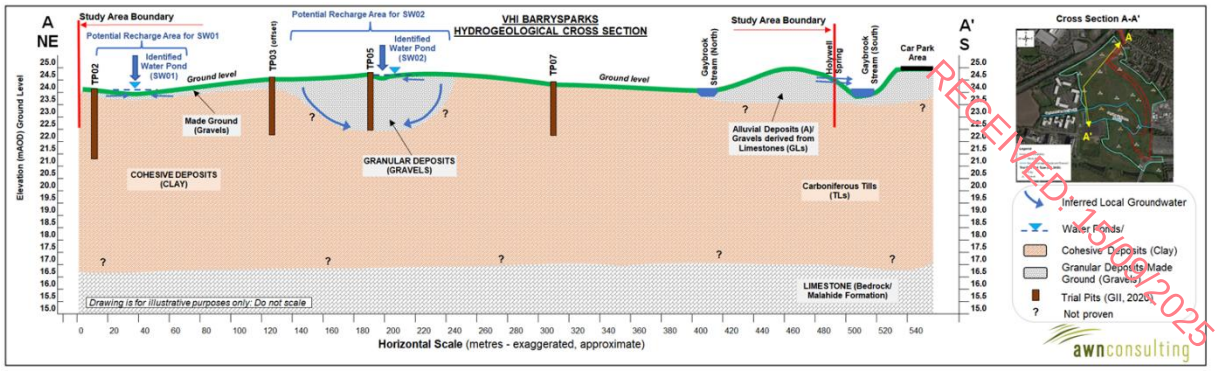

Figure 6.10 Hydrogeological cross section A-A'

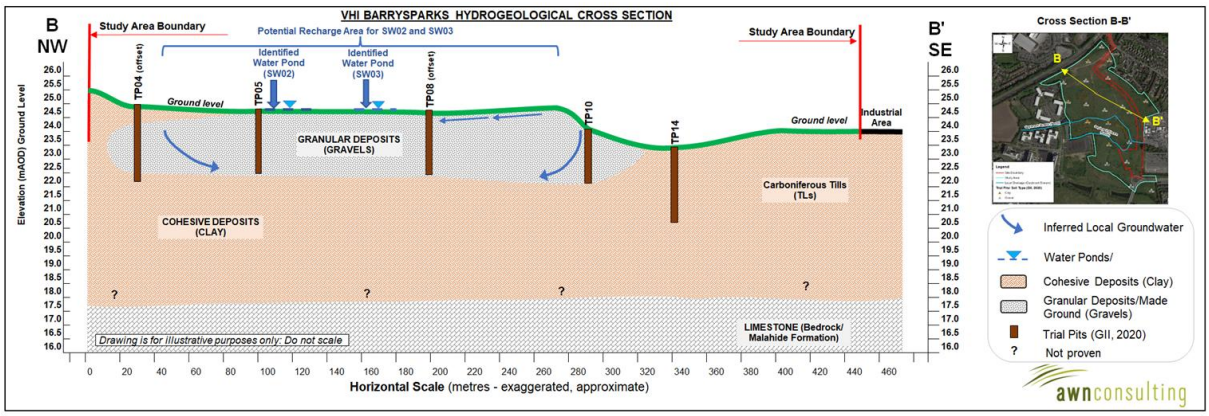

Figure 6.11 Hydrogeological cross section B-B'

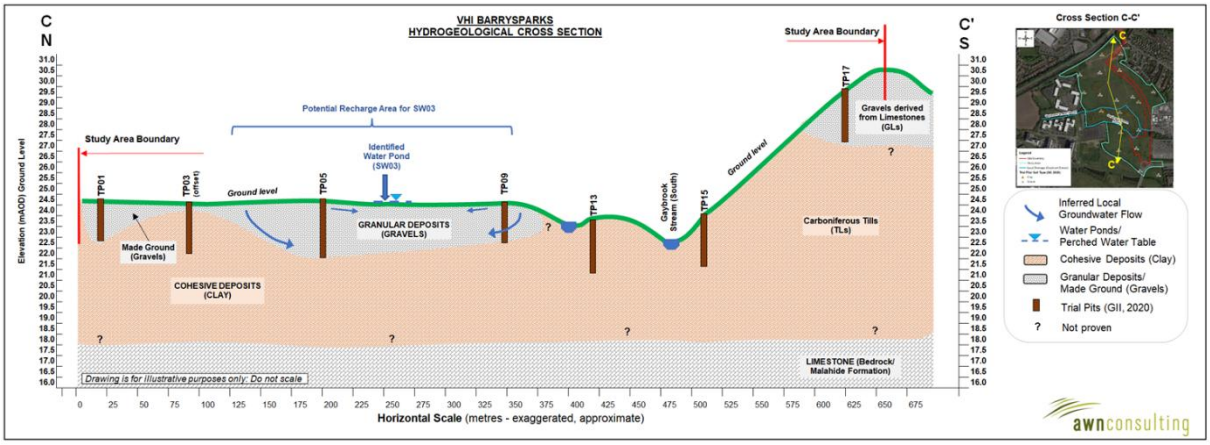

Figure 6.12 Hydrogeological cross section C-C

6.7 CHARACTERISTICS OF THE PROPPOSED DEVELOPMENT

The purpose of this section is to provide an overview of the key relevant details of the construction phase and operational phase of the Proposed Development. The information presented in this section is informed by the project design, but it is not a complete description of the Proposed Development. Therefore, it should be read in conjunction with the full development package. For a more comprehensive understanding of the Proposed Development, please refer to Chapter 2 'Description of the Proposed Development' of the EIA Report. Chapter 2 provides a detailed overview of the lifecycle of the project, including reference to the architectural and civil engineering, drawings, plans, reports, and other relevant document in order to define the Proposed Development.

6.7.1 Construction Impacts

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The activities required for the construction phase of the Proposed Development represent the greatest risks of potential impact on the hydrological and hydrogeological environment. These activities primarily pertain to the site preparation, excavation and infilling activities required to facilitate construction of the Proposed Development.

6.7.1.1 Site Levelling and Excavations

Removal of topsoil and subsoil cover across localised areas of the Proposed Development site will be undertaken during excavation. The Proposed Development requires soil and stones to be excavated to facilitate construction of foundations and the installation of underground services; the project engineers POGA Consulting Engineers have estimated that 11,000 m3 of material will need to be excavated to do so. It is currently envisaged that any excavated site material suitable for reuse will be redistributed throughout to maximise use and minimise import and export requirements. However, any excavated material that does not get reused will be removed from the site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

As outlined above, it is estimated that approximately 5,500m³ of material will be excavated and subsequently removed and transported off-site. While this activity may temporarily increase the vulnerability of the underlying aquifer, it is important to note that, as referenced in Section 6.6.2, the Geological Survey Ireland (GSI) has classified the vulnerability of the area encompassing the proposed development site as 'Low Vulnerability' (L). This classification reflects pre-development conditions, prior to the installation of paving, stormwater drainage infrastructure, and associated services.

Local minor dewatering may be required during excavation works and groundworks (depending on the time of year development works are carried out). However, there is no potential for change in groundwater levels as a result of local changes in the groundwater regime at the site due to the limited extent of dewatering activities and the natural recharge capacity of the underlying "Locally Important Aquifer", which allows for the maintenance of groundwater levels at a local scale. This ensures that the aquifer's integrity and functionality remain unaffected by any temporary dewatering measures.

6.7.1.2 Storage of soils/aggregates

The employment of good construction management practices and full adherence to a Construction Environmental Management Plan (CEMP) will minimise the risk of pollution of soil, storm water run-off, or groundwater. Such practices include the proper storage of spoil / loose materials on site, such as excavated materials to be used for landscaping purposes; Aggregate materials such as sands and gravels will be stored in clearly marked receptacles in a secure compound area within the contractors' compound on site.
Temporary storage of spoil will be managed to prevent accidental release of dust emissions and uncontrolled surface water run-off which may contain sediment and solid matter. Any excavated material temporarily stockpiled onsite for re-use during reinstatement will be managed to prevent accidental release of dust and uncontrolled surface water run-off which may contain sediment etc.

6.7.1.3 Storage of hazardous materials

Temporary storage of fuel will be required on site for construction traffic. Liquid materials i.e., fuel storage will be located within the site compound in temporary designated bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications - BS8007-1987) to prevent spillage.

Construction activities will necessitate storage of cement and concrete materials, temporary oils, and fuels on site. Small localised accidental releases of contaminating substances including hydrocarbons have the potential to occur from construction traffic and vehicles operating on site.

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6.7.1.4 Import/Export of Materials

There will be a requirement for deliveries and refuelling of imported engineering fill (sands and gravels), and other construction materials include steel structure, concrete, cladding, ducting and piping. Construction materials will be brought to site by road. Refuelling will be completed in accordance with the best standard practice refuelling procedure. To support the construction of proposed roads, car parks, and buildings, additional fill material may need to be imported.

A 'Just in Time' delivery system will operate to minimise storage of materials. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials and spoil to prevent the escape material along the public roadway. Where possible it is proposed to source general construction materials from the local area to minimise transportation distances.

Soil requiring removal offsite will be removed from site regularly to ensure there is minimal need for stockpiling. Some of the topsoil removed will be re-used on site for backfill. Any surplus topsoil, subsoil and bedrock material will be transported off site and disposed of at a fully authorised soil recovery site or licenced landfill based on the waste soil classification.

6.7.1.5 Collection and disposal of collected water (rainfall run-off and perched groundwater)

Localised perched groundwater within the cohesive deposits/ weathered bedrock, or pooling surface water during and after heavy rainfall events is expected. Dewatering (removing of perched groundwater) is necessary to create a dry working environment and prevent water from seeping into the excavation and flooding the construction site. If dewatering is necessary, it will occur via suitably installed dewatering wells/sumps containing pumps to abstract groundwater and surface water (rainfall landing on the site).

During construction water will discharge to the existing drainage ditch that flows in the centre of the site as well as the Gaybrook Stream located along the site's western boundary, continues towards the southern boundary. Where required, a wastewater discharge licence will be applied for to manage surface water on site during the construction phase. This shall permit the discharge of trade effluent arising from groundwater/surface water ingress on the construction site. In case of any exceedances of discharge permit conditions, water will be disposed of to a licenced facility. The treatment and monitoring of this water prior to disposal will occur outside the construction site in a regional facility north of the site.

6.8 OPERATIONAL IMPACTS

The Proposed Development characteristics which relate to the hydrological and hydrogeological environment during operation are summarised below.

6.8.1 Surface Water Infrastructure

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To ensure appropriate water quality treatment, a range of Sustainable Drainage System (SuDS) measures will be implemented across the site. These will include swale, filter drain, green roof, rain garden, permeable paving, and detention basins to limit the outflow from the site to green field runoff rates. Filtration units will be installed on both the inlet and outlet pipework associated with the two detention basins to serve as a final stage of treatment, reducing levels of total suspended solids, hydrocarbons, and heavy metals in the surface water runoff.

The treated surface water will ultimately discharge to the existing field ditch located to the southeast of the site, in compliance with sustainable drainage and water quality standards. For further technical details regarding the design, specification, and operation of the SuDS measures, reference should be made to the Engineering Planning Report prepared by POGA Consulting Engineers.

6.8.2 Wastewater Infrastructure

Wastewater from the facility is proposed to travel via gravity flow systems into proposed wastewater sewers (planning permission F23A/0727), this permission has been granted and is currently under construction. The proposed pipe to service this development will travel within the site in a 225Ømm pipe. The pipes have been sized for an additional 10% for infiltration as per UE requirements

Once these sewers have been constructed the wastewater would be conveyed to Swords Wastewater Treatment Plant (WWTP) (D0024) for full treatment. According to Uisce Eireann's 2023 Annual Environmental Report (AER), WWTP currently has adequate operational capacity to accommodate the additional flows generated by the proposed development. Following treatment, the final effluent from Swords WWTP is discharged into Broad Meadow River, which outfalls into a transitional waterbody located downstream in the estuarine system.

6.8.3 Water Supply

It is understood that the water supply to the proposed development will be provided via existing infrastructure 250Ømm main located at the south of the site. It is proposed a new 150Ømm diameter watermain traveling in loop within the site.

6.9 POTENTIAL IMPACTS

An analysis of the potential impacts of the Proposed Development on the hydrological and hydrogeological environment during the construction and operation is outlined below. Due to the inter-relationship between land, soils and geology with hydrogeology and surface water (hydrology) the following impacts discussed will be considered applicable to both Chapter 5 and 5 of the EIA Report. Mitigation measures included in the design of this project to address these potential impacts are presented in Section 6.8 of this EIA.

There is no likely potential impact on any protected habitat based on the design criteria and distance of any hydrological or hydrogeological pathways.

6.9.1 Construction Phase

6.9.1.1 Potential Impacts on Surface Water and Groundwater Quality

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There is potential for run-off water to become contaminated with pollutants released during construction activity. If not mitigated, contaminated water can pose a temporary risk to the Gaybrook Stream North, Gaybrook Stream, which discharges to the Broadmeadow Water Transitional Waterbody, and ultimately discharge to the Malahide Bay Coastal Waterbody and the underlying 'Locally Important Aquifer' i.e. Dublin and Swords groundwater bodies (GWB). During construction of the development, the potential of contamination is associated with the following sources:

- Suspended solids (muddy water with increased turbidity (measure of the degree to which the water loses its transparency due to the presence of suspended particulates)) – arising from excavation and ground disturbance;
- Excavations/ top and sub soil stripping- Increase sediment run off (erosion during rainfall periods), Pollutant mobilisation (heavy metal runoff), Loss of vegetation;
- Cement/concrete (increase turbidity and pH) – arising from construction materials;
- Hydrocarbons and other construction chemicals (ecotoxic) – accidental spillages from construction plant or onsite storage;
- Wastewater (nutrient and microbial rich) – arising from accidental discharge from on-site toilets and washrooms. Construction phase sewerage will be contained in a tank and taken by tanker off site for disposal at a licensed waste management facility.

In the absence of mitigation, rainfall run-off during the construction phase may contain increased silt levels or otherwise become polluted from construction activities. Suspended solids in runoff water may result in an increase in suspended sediment load, resulting in increased turbidity, which may in turn impact on local infiltration capacity, downstream infrastructure or watercourses. Concreting operations pose a potential risk of discharging concrete materials into exposed surfaces and percolate to the underlying groundwater. Concrete, especially the cement component, has a high alkalinity level. There is also the potential risk of unintentional discharge of stored materials like fuels, oils, and paints, which could have negative impacts on surface water bodies on-site and downstream, and the underlying groundwater.

There are no potential impacts from wastewater on the hydrological and hydrogeological environment as this will be discharged of appropriately.

In the absence of mitigation measures, the potential impacts during the construction phase on surface water quality and groundwater quality are **negative**, **slight** and **short term**.

6.9.1.2 Potential Impacts on Surface Water and Groundwater Flow and Quality

Surface water runoff during the construction phase may contain increased silt levels or become polluted from construction activities. Runoff containing large amounts of silt can cause damage to surface water systems and receiving watercourses. Silt water can arise from dewatering excavations, exposed ground, stockpiles and access roads.

The gradual introduction of impermeable surfaces and the compaction of soils across the construction site as a result of the land clearing and earthworks will reduce the infiltration capacity and increase the rate and volume of direct surface run-off. The potential impact of this is a possible increase in surface water run-off along with sediment loading, which could potentially impact local drainage if not adequately mitigated. This increase in the rate and volume of direct surface run-off can result in increased sediment loading, scouring impacts on local drainage and watercourses, and downstream impacts.

There are no surface water or groundwater abstractions proposed, therefore no potential impacts on the existing surface water and groundwater regime.

There are no proposed permanent diversions of any waterbodies as part of the Proposed Development.

In the absence of mitigation measures the potential impacts during the construction phase on surface water and groundwater quantity and flow are **negative**, **slight** and **short term**.

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6.9.1.3 Potential Impacts on Water Framework Directive Status

There is a potential of accidental discharges during the construction phase (as set out in Section 6.7.1.1). However, these are temporary short-lived events that will not impact on the status of the Gaybrook Stream North, Gaybrook Stream, Broadmeadow Water Transitional Waterbody, Malahide Bay Coastal Waterbody and Dublin and Swords groundwater bodies (GWB) in the long term. As such the Proposed Development will not cause any significant deterioration or change in water quality status or prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the third cycle river basin management plan (2022-2027) i.e. Water Action Plan 2025 - A River Basin Management Plan for Ireland.

In the absence of mitigation measures the potential impacts during the construction phase on the Water Framework Directive (WFD) status due to changes to the hydrological environment are **negative**, **slight** and **short term**.

6.9.2 Operational Phase

6.9.2.1 Potential Impacts on Surface Water and Groundwater Quality

As stated in Section 6.7.1.1 above, there is an indirect hydrological connection, to the Gaybrook Stream North, Gaybrook Stream, Broadmeadow Water Transitional Waterbody and Malahide Bay Coastal Waterbody during the construction and operational phase. Surface water runoff from roads, car parking, and hardstanding areas, can potentially contain minor levels of contaminants such as hydrocarbons from trafficked areas.

The surface water runoff during the operational phase will more likely impact stormwater drainage, rather than directly impact the water bodies i.e. Gaybrook Stream North, Gaybrook Stream, Broadmeadow Water Transitional Waterbody, Malahide Bay Coastal Waterbody and Dublin and Swords groundwater bodies (GWB) underlying the site, due to the hardstand and drainage infrastructure proposed.

The surface water drainage strategy includes the Proposed Development to be served by a SuDS that is to be integrated with the developments landscaping features and is typically to comprise a combination of multiple measures. Any surface water flows from the Proposed Development will be directed to underground attenuation system to the north of the Proposed Development which discharge to the new wastewater pumping station.

The foul water drainage strategy for the proposed development includes the development of a gravity flow system connecting into the existing foul pipes to the north of the proposed site development which will discharge to the new existing foul water pumping station. The proposed new foul sewer network will be located within the public road and green area. From

the pumping station, the wastewater will be conveyed through the foul sewer network to the Swords Wastewater Treatment Plant (WWTP) (D0033), where it will undergo full treatment before being discharged into Broadmeadow River, and then Broadmeadow transitional waterbody. According to its 2023 Annual Environmental Report (AER), WWTP currently has adequate operational capacity to accommodate the additional flows generated by the proposed development.

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In the absence of mitigation measures (or design measures) the potential impacts during the operational phase on surface water and groundwater quality are **negative**, **significant** and **short term**.

6.9.2.2 Potential Impacts on Surface Water and Groundwater Flow and Quality

The proposed incorporation of hardstand area and the use of SuDS design measures will have a minor effect on local recharge to ground and has the potential to result in increased run-off from the site if not adequately mitigated.

However, the impact on the overall groundwater regime will be maybe significant considering the site area is underlying "Locally Important'' Aquifer (LI), which may impact groundwater levels.

An increase in surface water runoff can have an adverse effect on the hydrological regime of downstream environments via flooding and inundation to downstream properties.

As described in Section 6.5.8 above, there are no recorded past flood events within the proposed site development. The closest recorded event occurred approximately 400 m southeast of the site. A small section of the proposed new road connecting to the existing Holywell Roundabout on the eastern boundary of the site intersects with an area designated as Flood Zone B, it does not affect the primary development footprint. Therefore, the is a low flood risk associated with the Proposed Development site.

The design of the Proposed Development and drainage infrastructure proposed will ensure that the run-off rate is restricted to greenfield run-off. The development includes the implementation of SuDS and an underground attenuation system. The design includes for a 100-year plus climate change allowance and discharge surface water to the downstream network at an appropriately determined rate. There are no surface water or groundwater abstractions proposed, therefore no potential impacts on the quantity of surface water or groundwater.

The proposed measures ensures that the Proposed Development will not be impacted by predicted flood events.

In the absence of mitigation measures (or design measures) the potential impacts during the operational phase on surface water and groundwater flow and quantity are **negative**, **slight**, and **short-term**.

6.9.2.3 Waste Water Discharge

As stated in Section 6.6.2 above, all foul water generated on the Proposed Development will be directed to gravity flow systems into proposed wastewater sewers which are currently under construction. the wastewater would be conveyed to Swords Wastewater Treatment Plant (WWTP) (D0024) for full treatment. Following treatment, the final effluent will be discharged into Broadmeadow River which outfalls as a transitional waterbody within the

estuarine system. According to its 2023 Annual Environmental Report (AER), WWTP currently has adequate operational capacity to accommodate the additional flows generated by the proposed development.

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Therefore, no potential impacts are anticipated on Gaybrook Stream North, Gaybrook Stream, Broadmeadow Water Transitional Waterbody, Malahide Bay Coastal Waterbody and Dublin and Swords groundwater bodies (GWB) underlying the site. The potential impacts on Natura 2000 sites located downstream of the Proposed Development site are further explained in Chapter 4 (Biodiversity).

On the basis of the design and characteristics of the Proposed Development, in the absence of mitigation measures (or design measures) the potential impacts during the operational phase on the foul water network, Gaybrook Stream North, Gaybrook Stream, Broadmeadow Water Transitional Waterbody, Malahide Bay Coastal Waterbody and Dublin and Swords groundwater bodies (GWB) from the proposed foul water drainage are **negative**, **significant** and **short-term**.

6.10 MITIGATION MEASURES

6.10.1 Construction Phase Mitigation

6.10.1.1 Construction & Environmental Management Plan

The CEMP outlines and explains the construction techniques and methodologies which will be implemented during construction of the proposed development.

Construction works and the proposed mitigation measures are informed by best practice guidance on the prevention of pollution during development projects including but not limited to:

- Construction Industry Research and Information Association (CIRIA), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532);
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016);
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (4th edition), (C741);
- Enterprise Ireland Best Practice Guide, Oil Storage Guidelines (BPGCS005).
- Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites (Eastern Regional Fisheries Board);
- Central Fisheries Board Channels and Challenges – The enhancement of Salmonid Rivers;
- CIRIA C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors;
- CIRIA C648 Control of Water Pollution from Constructional Sites;
- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008); and
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

The CEMP sets out the proposed procedures and operations to be utilised on the proposed construction site to protect water quality. The CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where

relevant. All personnel working on the site will be trained in the implementation of the procedures. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.

All mitigation measures outlined here, and within the CEMP will be implemented during the construction phase, as well as any additional measures required pursuant to planning conditions which may be imposed.

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6.10.1.2 Suspended Solids

As there is potential for run-off to indirectly discharge to a watercourse (Gaybrook Stream, Broadmeadow Water Transitional Waterbody and eventually Malahide Bay Coastal Waterbody), in order to manage the potential impact associated with sediment and sediment runoff the following mitigation measures will be implemented during the construction phase.

- During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the excavation site which limits the potential for any offsite impacts.
- Silt reduction measures on site will include a combination of silt traps and hydrobrakes measures.
- Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.
- Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination.
- Movement of material will be minimised to reduce the degradation of soil structure and generation of dust.
- Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations.
- Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site.

6.10.1.3 Cement/ Concrete Works

Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil and aquifer.

Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker.

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures.

6.10.1.4 Hydrocarbons and Other Construction Chemicals

The following mitigation measures will be implemented during the construction phase in order to prevent any spillages to ground of fuels and other construction chemicals and prevent any resulting to surface water (and groundwater) systems:

- Designation of bunded refuelling areas on the site;
- Provision of spill kit facilities across the site;
- Where mobile fuel bowsers are used, the following measures will be taken:
- Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
- The pump or valve will be fitted with a lock and will be secured when not in use;
- All bowsers to carry a spill kit and relevant operatives must have spill response training;
- Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

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In the case of drummed fuel or other potentially polluting substances which may be used during the construction phase, the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;
- Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be stored within temporary bunded areas, doubled skinned tanks or bunded containers to a volume of 110% of the capacity of the largest tank/container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal.
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
- All drums to be quality approved and manufactured to a recognised standard;
- If drums are to be moved around the Site, they will be secured and on spill pallets; and
- Drums will be loaded and unloaded by competent and trained personnel using appropriate equipment.

In addition to the measures above, all excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as “Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors” (CIRIA 532, 2001) will be complied with.

The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.

6.10.1.5 Wastewater Management

Foul wastewater arising from the site will be managed and controlled for the duration of the construction works.

Foul water from the offices and welfare facilities on the site will be collected in portable sanitary facilities and disposed of appropriately by licenced contractor.

The construction contractor will implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the site will be suitably trained in the implementation of the procedures.

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6.10.1.6 Surface Water and Ground Flow and Quality

Surface water discharge from the site will be managed and controlled for the duration of the construction works until the surface water drainage system of the Proposed Development is complete.

The construction contractor will be required to manage suspended solids during the construction phase and will be permitted to discharge treated construction water to the established stormwater network.

The construction activities will require surface water management to prevent pollution and degradation of habitats from a chemical spill or run off containing excessive suspended solids that complies with guidelines and best practices such as “Control of Water Pollution from Construction Sites and Guidance for Consultants and Contractors” (CIRIA 532, 2001)

6.10.2 Operational Phase Mitigation

6.10.2.1 Surface Water and Groundwater Quality

The design has taken account of the potential impacts of the development on surface water quality; measures have been incorporated in the design to mitigate these potential impacts. The proposed surface water management design establishes a direct hydrological connection to the Gaybrook Stream, located near the site, during the operational phase.

To mitigate potential contamination from surface water runoff, which may originate from roads and hardstanding areas, a sustainable drainage system (SuDS) is proposed to be implemented. This system is designed to minimize the risk of contaminants, such as hydrocarbons, entering the stormwater drainage network and subsequently impacting surface water bodies like the Gaybrook Stream North, Gaybrook Stream, which discharges to the Broadmeadow Water Transitional Waterbody, and ultimately discharge to the Malahide Bay Coastal Waterbody, as well as groundwater bodies, including the Dublin and Swords groundwater bodies GWB underlying the site.

The surface water drainage strategy integrates various measures, including attenuation ponds, green roofs, swales and filter drains. These features will effectively manage surface water flows, directing them to an attenuation system and infiltration tanks to maximize their storage potential. Flow control devices will be installed downstream of the pond outlet pipes to ensure that surface water runoff is stored efficiently before entering the receiving environment.

Refer to the Engineering Report, prepared by POGA Consulting Engineers submitted separately as part of the planning application for further information on the proposed storm water management and design.

6.10.2.2 Surface Water and Groundwater Flow and Quality

The proposed incorporation of hardstand areas and SuDS design measures may slightly reduce local groundwater recharge and increase runoff if not properly managed, potentially causing

flooding and affecting downstream environments. However, the overall impact on the groundwater regime is expected to be insignificant due to the site's small area relative to the total aquifer, and construction will avoid areas with localized flooding to mitigate flood risks.

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To mitigate these risks, the design of the development and its drainage infrastructure has ensured that runoff rates are restricted to those of greenfield conditions. The development will incorporate SuDS and an underground attenuation system, with a design that up to and including the 100-year plus climate change allowance and discharge surface water to the downstream network at an appropriately determined rate. The proposed surface water management strategy aims to prevent surcharging during a 1 in 2-year storm events up to and including the 1 in 100 years plus allowance for climate change.

Furthermore, there are no proposed surface water or groundwater abstractions, eliminating potential impacts on the quantity of surface water or groundwater resources.

6.10.3 Monitoring Measures

6.10.3.1 Construction Phase

During construction phase the following monitoring measures will be considered. Monitoring will be undertaken in accordance with planning conditions and undertaken by the contractor in compliance with the project CEMP.

Contractors will carry out regular inspections to confirm compliance with the CEMP. Daily inspections by contractors will address potential environmental impacts including dust, litter, waste management and general housekeeping.

Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items.

Regular inspection of surface water run-off and sediments controls (e.g., silt traps). Inspection and maintenance of the silt control measures during construction phase is crucial to ensuring that they work as intended.

6.10.3.2 Operational Phase

No future surface water monitoring is proposed for the Proposed Development due to the low hazard potential at the site.

Hydrocarbon interceptors will be maintained and cleaned out in accordance with the manufacturer's instructions.

Maintenance of the surface water drainage system and foul sewers as per normal urban developments is recommended to minimise any accidental discharges to surface water.

	Construction Phase
WH-C1	The CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the site will be trained in the implementation of the procedures and equipment.
WH-C2	To manage the potential impact associated with sediment and sediment runoff the following mitigation measures will be implemented during the construction phase.

	• During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the excavation site which limits the potential for any offsite impacts. • Silt reduction measures on site will include a combination of silt traps and hydrobrakes measures. • Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only. • Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination. • Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. • Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations. • Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site.
WH-C3	Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker. The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures.
WH-C4	To prevent any spillages to ground of fuels and other construction chemicals and prevent any resulting to surface water (and groundwater) systems: • Designation of bunded refuelling areas on the site; • Provision of spill kit facilities across the site; • Where mobile fuel bowsers are used, the following measures will be taken: • Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use; • The pump or valve will be fitted with a lock and will be secured when not in use; • All bowsers to carry a spill kit and relevant operatives must have spill response training; • Portable generators or similar fuel containing equipment will be placed on suitable drip trays.
WH-C5	All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.
WH-C6	Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains.
WH-C7	Foul water from the offices and welfare facilities on the site will be collected in portable sanitary facilities and disposed of appropriately by licenced contractor.

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WH-C8	Surface water discharge from the site will be managed and controlled for the duration of the construction works until the surface water drainage system of the Proposed Development is complete.
	Operational Phase
	None
	Monitoring
	None

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6.11 RESIDUAL IMPACT ASSESSMENT

6.11.1 Construction Phase

6.11.1.1 Surface Water and Groundwater Quality

The implementation of the mitigation and monitoring measures detailed in Section 6.7 and 6.8, will ensure that the potential impacts on surface water and groundwater quality during the construction phase are adequately mitigated. There will be no change to overall flow and quality within the hydrological and hydrogeological regime as a result of construction.

The residual effect on surface water and groundwater quality during the construction phase is considered to be **neutral**, **imperceptible** and **short-term**.

6.11.1.2 Surface Water and Groundwater Flow and Quantity

The implementation of the mitigation and monitoring measures detailed in Section 6.7 and 6.8, will ensure that the potential impacts on surface water and groundwater flow and quantity during the construction phase are adequately mitigated. There will be no change to overall flow and quality within the hydrological and hydrogeological regime as a result of construction.

The residual effect on surface water and groundwater flow and quantity during the construction phase is considered to be **neutral**, **imperceptible** and **short-term**.

6.11.2 Operational Phase

6.11.2.1 Surface Water and Groundwater Quality

The implementation of the mitigation and monitoring measures detailed in Section 6.7 and 6.8, will ensure that the potential impacts on surface water and groundwater quality once the Proposed Development is constructed and operational are adequately mitigated.

The residual effect on surface water quality during the operational phase is considered to be **neutral**, **imperceptible** and **short-term**.

6.11.2.2 Surface Water and Groundwater Flow and Quantity

The implementation of the mitigation and monitoring measures detailed in Section 6.7 and 6.8, will ensure that the potential impacts on surface water and groundwater flow and quantity once the Proposed Development is constructed and operational are adequately mitigated.
The residual effect on surface water and groundwater flow and quantity during the operational phase is considered to be **neutral**, **imperceptible** and **short-term**.

6.12 INTERACTIONS & CUMULATIVE IMPACTS

6.12.1 Interactions

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This EIAR addresses potential interactions and inter-relationships between the environmental factors discussed. This covers both the construction and operational phases of the proposed development.

The EIAR must also consider in-combination effects, or the interactions between the different factors discussed.

Dust emissions have the potential to settle on plants causing impacts to local ecology. Mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised and the effect on biodiversity will be short term, imperceptible and neutral. There is potential for impacts to biodiversity associated with uncontrolled discharges to surface waters during operational phase. With the implementation of mitigation measures outlined in this chapter and Chapter 4 of the EIAR, and in the CEMP, interactions between biodiversity and hydrology/hydrogeology will be **short-term, imperceptible, neutral**.

Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids having an effect on soil fertility and contamination. With the proposed mitigation measures outlined in this chapter and in Chapter 5 of the EIAR (Land and Soils), the potential interaction between these is reduced to a **short-term, imperceptible, neutral effect**.

6.12.2 Cumulative Effects

Existing developments that are already built and in operation contribute to the characterisation of the baseline environment. As such any further environmental impacts that the Proposed Development may have in addition to these already constructed and operational developments has been assessed in the preceding sections of this chapter.

Any future application on these lands will be subject to planning approval and environmental assessment as required. Any new development proposed on the lands after the submission of the Proposed Development would be accompanied by an EIA, or EIA Screening as required and take into consideration the development of this site.

6.12.2.1 Construction Phase

In relation to the potential cumulative impact on hydrology during the construction phase, the construction works which would have potential cumulative impacts are as follows:

- Surface water run-off during the construction phase may contain increased silt levels or become polluted from construction activities. Run-off containing large amounts of silt can cause damage to surface water systems and receiving watercourses.
- Stockpiled material will be stored on hardstand away from surface water drains, and gullies will be protected during works to ensure there is no discharge of silt-laden water into the surrounding surface water drainage or to ground.
- Contamination of surface water from accidental spillage and leakage from construction traffic and construction materials is possible unless project-specific measures are put in place for each development and complied with.

The works contractors for other planned or permitted developments will be obliged to ensure that measures are in place to protect surface water and groundwater quality in compliance with legislative standards for receiving groundwater quality (European Communities

Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and S.I. 266 of 2016) and surface water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019).

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The implementation of mitigation and monitoring measures previously detailed above as well as the compliance of other developments with their respective planning conditions, will ensure there will be minimal cumulative potential for change to the hydrological and hydrogeological environment during the construction phase of the proposed development.

The residual cumulative impact of the proposed development in combination with other planned or permitted developments can therefore be considered to be **neutral, imperceptible and short-term**.

6.12.2.2 Operational Phase

The proposed development and other permitted developments will result in an increase in hard standing which will result in localised reduced recharge to ground.

All developments are required to ensure they do not have an impact on the receiving water environment in accordance with the relevant legislative standards for receiving groundwater quality (European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and S.I. 266 of 2016) and surface water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019).

The implementation of mitigation and monitoring measures previously detailed above as well as the compliance of other developments with their respective planning conditions, will ensure there will be minimal cumulative potential for change to the hydrological and hydrogeological environment during the operational phase of the proposed development.

The residual cumulative impact of the proposed development in combination with other planned or permitted developments can therefore be considered to be **neutral, imperceptible and long-term**.

6.13 REFERENCES

- Environmental Protection Agency (EPA) – website mapping and database information. Envision water quality monitoring data for watercourses in the area;
- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1: 100,000 mapping;
- River Basin Management Plan for Ireland 2018-2021.
- Water Action Plan 2025 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW));
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie)
- Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors' (CIRIA 532, 2001); and
- National Parks and Wildlife Services (NPWS) – Protected Site Register.
- Hydrometric data (www.floodinfo.ie/map/floodmaps/), OPW CFRAM Flood Risk Mapping, www.epa.ie/hydronet.

- POGA Consulting Engineers- Engineering Planning Report (2025)
- POGA Consulting Engineers- Construction and Environmental Management Plan (2025)
- POGA Consulting Engineers- Flood Risk Assessment (2025)
- Swords GWB: Summary of Initial Characteristics (2004)
- Dublin GWB: Summary of Initial Characteristics (2004)
- Uisce Eireann Annual Environmental Report- Swords D0024-01 (2023)

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7. AIR AND CLIMATE

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7.1 INTRODUCTION

This chapter assesses the likely impacts to air quality and climate as a result of the proposed large scale residential development at Barrysparks, Swords, Co. Dublin. The development will consist of a Large-scale Residential development (LRD) comprising residential units and creche with associated ancillary accommodation, private balconies, communal amenity spaces, public open spaces and related services infrastructure all accessed from the Holywell Distributor Road and the R132. A full description of the development is available in Chapter 2.

7.2 AIR QUALITY

7.2.1 ASSESSMENT METHODOLOGY

7.2.1.1 RELEVANT LEGISLATION & GUIDANCE

The principal guidance and best practice documents used to inform the assessment of potential impacts on air quality are summarised below.

- Guidance on the Assessment of Dust from Demolition and Construction v2.2 (Institute of Air Quality Management [IAQM] (hereafter referred to as the IAQM Guidelines) (IAQM, 2024);
- A Guide To The Assessment Of Air Quality Impacts On Designated Nature Conservation Sites (Version 1.1) (IAQM, 2020); and
- PE-ENV-01106: Air Quality Assessment of Specified Infrastructure Projects (Transport Infrastructure Ireland [TII], 2022).

In addition to specific air quality guidance documents, the following guidelines were considered and consulted in the preparation of this chapter:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018); and
- Environmental Impact Assessment (EIA) Directive Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission, 2017).

7.2.1.2 CRITERIA FOR RATING OF IMPACTS

7.2.1.2.1 Ambient Air Quality Standards

National and European statutory bodies, the Department of the Environment, Heritage and Local Government in Ireland and the European Parliament and Council of the European Union, have set limit values in ambient air for a range of air pollutants to reduce the risk to health from poor air quality. These limit values or ”Air Quality Standards” are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set.

Air quality significance criteria are assessed on the basis of compliance with the appropriate standards or limit values. The applicable standards in Ireland are set out in *Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast)*. This directive supersedes *EU Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe* (CAFE Directive). It sets out new air quality standards for pollutants to be reached by 2030 which are more closely aligned with the World Health Organisation (WHO) air quality guidelines and also includes limit values applicable until 2030.

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The Ambient Air Quality Standards Regulations 2022 (S.I. 739 of 2022) (the Air Quality Standards Regulations 2022) further transposed the CAFE Directive and revoked the Air Quality Standards Regulations 2011, as amended. With the adoption of Directive (EU) 2024/2881, Ireland must similarly transpose this directive into national law, i.e. update the Air Quality Standards Regulations, before December 2026.

The ambient air quality limit values for pollutants are set out in Annex I of Directive (EU) 2024/2881. Table 1 of Annex I in Directive (EU) 2024/2881 sets out the updated air quality limit values for pollutants to be achieved by 1 January 2030, these are more closely aligned with the WHO air quality guidelines. Table 2 of Annex I in Directive (EU) 2024/2881 sets out the limit values for air pollutants which are to be achieved by 11 December 2026 and are also applicable up to 2030. The limit values in Table 2 of Annex I are the same as the limits set under Directive 2008/50/EC and the Air Quality Standards Regulations 2022.

In relation to the proposed development, the applicable limit values are for nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$). Table 7.1 outlines the limit values pre-2030 and post-2030 for the specified pollutants.

Table 7.1 Ambient Air Quality Limit Values

Pollutant	Directive (EU) 2024/2881 Table 2 of Annex I		Directive (EU) 2024/2881 Table 1 of Annex I	
	Limit Type	**Limit Value (to be achieved by 2026 and applicable until 2030)**	**Limit Type**	**Limit Value (to be attained by 2030)**
Nitrogen Dioxide (NO_2)	Hourly limit for protection of human health - not to be exceeded more than 18 times/year	200 µg/m³	Hourly limit for protection of human health - not to be exceeded more than 3 times/year	200 µg/m³
	N/A	N/A	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	50 µg/m³
	Annual limit for protection of human health	40 µg/m³	Annual limit for protection of human health	20 µg/m³
Particulate Matter (as PM_{10})	24-hour limit for protection of human health - not to be	50 µg/m³	24-hour limit for protection of human health - not to be	45 µg/m³

	exceeded more than 35 times/year		exceeded more than 18 times/year	
	Annual limit for protection of human health	40 µg/m³	Annual limit for protection of human health	20 µg/m³
Particulate Matter (as $PM_{2.5}$)	N/A	N/A	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	25 µg/m³
	Annual limit for protection of human health	25 µg/m³	Annual limit for protection of human health	10 µg/m³

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7.2.1.2.2 Who Air Quality Guidelines & Clean Air Strategy

The Government of Ireland published the Clean Air Strategy for Ireland in April 2023 (Government of Ireland, 2023), with a progress report published in July 2024. The Clean Air Strategy for Ireland provides a high-level strategic policy framework needed to reduce air pollution. The strategy commits Ireland to achieving the 2021 WHO Air Quality Guidelines Interim Target 3 (IT3) by 2026, the IT4 targets by 2030 and the final targets by 2040 (Table 7.2). The strategy notes that a significant number of EPA monitoring stations observed air pollution levels in 2021 above the WHO targets; 80% of these stations would fail to meet the final $PM_{2.5}$ target of 5 µg/m³. The strategy also acknowledges that "*meeting the WHO targets will be challenging and will require legislative and societal change, especially with regard to both $PM_{2.5}$ and NO_2".*

Annex II of Directive (EU) 2024/2881 gives assessment thresholds which align with the clean air strategy final 2040 WHO targets. Directive (EU) 2024/2881 states that "*Member States shall endeavour to achieve and preserve the best ambient air quality and a high level of protection of human health and the environment, with the aim of achieving a zero-pollution objective as referred to in Article 1(1), in line with WHO recommendations, and below the assessment thresholds laid down in Annex II*."

These assessment thresholds relate to monitoring of ambient air quality by Member States, where "*exceedances of the assessment thresholds specified in Annex II shall be determined on the basis of concentrations during the previous 5 years where sufficient data are available. An assessment threshold shall be deemed to have been exceeded if it has been exceeded during at least 3 separate years out of those previous 5 years*."

Table 7.2 WHO Air Quality Guidelines 2021

Pollutant	Limit Type	IT3 (2026)	IT4 (2030)	Final Target (2040)
NO_2	24-hour limit for protection of human health	-	-	25 µg/m³
	Annual limit for protection of human health	20 µg/m³	-	10 µg/m³
PM (as PM_{10})	24-hour limit for protection of human health	75 µg/m³	50 µg/m³	45 µg/m³

	Annual limit for protection of human health	30 µg/m³	20 µg/m³	15 µg/m³
PM (as $PM_{2.5}$)	24-hour limit for protection of human health	37.5 µg/m³	25 µg/m³	15 µg/m³
	Annual limit for protection of human health	15 µg/m³	10 µg/m³	5 µg/m³

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The applicable air quality limit values for the purposes of this assessment are those set out in Table 7.1. The limit values stipulated in Table 2 of Annex I of Directive (EU) 2024/2881 are applicable for the construction phase and Opening Year 2028 for the proposed development. The limit values stipulated in Table 1 of Annex I of Directive (EU) 2024/2881 are applicable for the Design Year 2043 for the proposed development.

7.2.1.2.3 Dust Deposition Guidelines

The concern from a health perspective is focused on particles of dust that are less than 10 microns (PM_{10}) and less than 2.5 microns ($PM_{2.5}$). The EU ambient air quality standards outlined in Table 7.1 have set ambient air quality limit values for PM_{10} and $PM_{2.5}$.

With regards to larger dust particles that can give rise to nuisance dust, there are no statutory guidelines regarding the maximum dust deposition levels that may be generated during the construction phase of a development in Ireland. Furthermore, no specific criteria have been stipulated for nuisance dust in respect of this development.

With regard to dust deposition, the German TA-Luft standard for dust deposition (non-hazardous dust) (German VDI, 2002) sets a maximum permissible emission level for dust deposition of 350 mg/m^2/day averaged over a one-year period at any receptors outside the site boundary. The TA-Luft standard has been applied for the purpose of this assessment based on recommendations from the EPA in Ireland in the document titled Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (EPA, 2006). The document recommends that the TA-Luft limit of 350 mg/m^2/day be applied to the site boundary of quarries. This limit value can be implemented with regard to dust impacts from construction of the proposed development.

7.2.1.2.4 Air Quality & Traffic Significance Criteria

The Transport Infrastructure Ireland (TII) guidance document Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022) details a methodology for determining air quality impact significance criteria for road schemes which can be applied to any project that causes a change in traffic. The degree of impact is determined based on the percentage change in pollutant concentrations relative to the Do-Nothing scenario. The TII significance criteria are outlined in Table 4.9 of Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022) and reproduced in Table 7.3 below. These criteria have been adopted for the proposed development to predict the impact of NO_2, PM_{10} and $PM_{2.5}$ emissions as a result of the proposed development.

Table 7.3 Air Quality & Traffic Significance Criteria

	% Change in concentration relative to Air Quality Limit Value (AQLV)

Long-term average concentration at receptor in assessment year	1%	2-5%	6-10%	>10%
75% or less of AQLV	Neutral	Neutral	Slight	Moderate
76 – 94% of AQLV	Neutral	Slight	Moderate	Moderate
95 – 102% of AQLV	Slight	Moderate	Moderate	Substantial
103 – 109% of AQLV	Moderate	Moderate	Substantial	Substantial
110% or more of AQLV	Moderate	Substantial	Substantial	Substantial

Source: Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022))

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As per Table 7.3 a neutral effect is one where a change in concentration at a receptor is:

5% or less where the Opening Year, without the proposed development, annual mean concentration is 75% or less of the standard; or
1% or less where the Opening Year, without the proposed development, annual mean concentration is 94% or less of the standard.

Where an effect does not meet the criteria for neutral, as described above, the effect can either be positive or negative. The TII guidance (TII, 2022) states that "the evaluation of significance of effects for the operational phase should be undertaken for the Opening Year only as the Design Year is likely to show lower total pollutant concentrations and changes in concentration" (TII, 2022).

Non-significant effects (i.e. of local importance only) are 'neutral' or 'slight' changes in concentrations while significant effects can be changes in pollutant concentrations that are either 'moderate' or 'substantial'. However, the TII guidance (TII, 2022) states that these must be considered in the context of the project and 'moderate' or 'substantial' increases are not necessarily always significant effects.

The impact descriptors in Table 7.3 are used to describe the impact at each modelled receptor location, and the significance of the impacts is then determined, aligning with the terminology in the EPA guidelines (EPA, 2022). Whilst it may be determined that there are 'slight', 'moderate' or 'substantial' impacts at one or more receptors, an overall judgement should be made of whether the proposed development is 'significant' or 'not significant' in terms of air quality. Factors to consider when determining the overall significance of a proposed development are provided in Table 4.10 of the TII guidance (TII, 2022).

7.2.1.3 CONSTRUCTION PHASE METHODOLOGY

7.2.1.3.1 CONSTRUCTION DUST ASSESSMENT

The Institute of Air Quality Management in the UK (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2024) outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. The IAQM methodology has been applied to the construction phase of this development to predict

the likely risk of dust impacts in the absence of mitigation measures and to determine the level of site-specific mitigation required. The use of UK guidance is recommended by Transport Infrastructure Ireland in their guidance document Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022).

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The major dust generating activities are divided into four types within the IAQM guidance (IAQM, 2024) to reflect their different potential impacts. These are:

Demolition;
Earthworks;
Construction; and
Trackout (transport of dust and dirt from the construction site onto the public road network).

The magnitude of each of the four categories is divided into Large, Medium or Small scale depending on the nature of the activities involved. The criteria for determining the category for the works involved are outlined in Table 7.4, these are based on the IAQM guidance (IAQM, 2024). The magnitude of each activity is combined with the overall sensitivity of the area to determine the risk of dust impacts from site activities. This allows the level of site-specific mitigation to be determined.

Table 7.4 IAQM Criteria to Determine Dust Emissions Magnitude

Dust Emission Magnitude		
Small	**Medium**	**Large**
Demolition		
Total building volume <12,000 m^3 Construction material with low potential for dust release (e.g. metal cladding or timber) Demolition activities <6 m above ground Demolition during wetter months	Total building volume 12,000 - 75,000 m^3 Potentially dusty construction material Demolition activities 6 – 12 m above ground level	Total building volume >75,000 m^3 Potentially dusty construction material (e.g. concrete) On-site crushing and screening Demolition activities >12 m above ground level
Earthworks		
Total site area <18,000 m^2 Soil type with large grain size (e.g. sand) <5 heavy earth moving vehicles active at any one time Formation of bunds <3 m in height Earthworks during wetter months	Total site area 18,000 m^2 - 110,000 m^2 Moderately dusty soil type (e.g. silt) 10 heavy earth moving vehicles active at any one time Formation of bunds 3–6 m in height	Total site area >110,000 m^2 Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) >10 heavy earth moving vehicles active at any one time Formation of bunds >6 m in height
Construction		

Total building volume <12,000 m^3 Construction material with low potential for dust release (e.g. metal cladding or timber)	Total building volume 12,000 - 75,000 m^3 Potentially dusty construction material (e.g. concrete) On-site concrete batching	Total building volume >75,000 m^3 On-site concrete batching Sandblasting
Trackout (Truck Movements)		
<20 HDV (>3.5 t) outward movements in any one day Surface material with low potential for dust release Unpaved road length <50 m	20 – 50 HDV (>3.5 t) outward movements in any one day Moderately dusty surface material (e.g. high clay content) Unpaved road length 50 – 100 m	>50 HDV (>3.5 t) outward movements in any one day Potentially dusty surface material (e.g. high clay content) Unpaved road length >100 m

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Once the dust emission magnitude has been determined the next step, according to the IAQM guidance (IAQM, 2024), is to establish the level of risk by combining the magnitude with the overall sensitivity of the area to dust soiling, human health and ecological effects. The level of risk associated with each activity is determined using the criteria in Table 7.5.

Table 7.5 IAQM Criteria to Determine Risk of Dust Impacts

Sensitivity of Area	Dust Emission Magnitude		
	Large	**Medium**	**Small**
Demolition			
High	High risk	Medium risk	Medium risk
Medium	High risk	Medium risk	Low risk
Low	Medium risk	Low risk	Negligible
Earthwork			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Construction			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Trackout			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible

7.2.1.3.2 Construction Phase Traffic Assessment

Construction phase traffic also has the potential to impact air quality. The TII guidance Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects, the approach can be applied to any development that causes a change in traffic.

Annual average daily traffic (AADT) changes by 1,000 or more.
Heavy duty vehicle (HDV) AADT changes by 200 or more;
Daily average speed change by 10 kph or more;
Peak hour speed change by 20 kph or more;
A change in road alignment by 5m or greater.

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ILTP Consulting have prepared a Traffic and Transport Impact Assessment for the proposed development enclosed separately and have prepared Chapter 10 Material Assets: Transportation of this EIAR. As per Chapter 10, it has been determined by ILTP Consulting that the construction stage traffic will not increase by 1,000 AADT, or 200 HDV AADT, or that the development will not result in speed changes or changes in road alignment. Therefore, the traffic does not meet the above scoping criteria. A detailed air quality assessment of construction stage traffic emissions has been scoped out from any further assessment as there is no potential for significant impacts to air quality with respect with human or ecological receptors.

7.2.1.4 OPERATIONAL PHASE METHODOLOGY

7.2.1.4.1 Operational Phase Traffic Assessment

Operational phase traffic has the potential to impact local air quality as a result of increased vehicle movements associated with the proposed development. The TII scoping criteria detailed in Section 7.2.1.2.4 were used to determine if any road links are affected by the proposed development and require inclusion in a detailed air dispersion modelling assessment. ILTP Consulting has prepared a Traffic and Transport Impact Assessment for the proposed development enclosed separately and have prepared Chapter 10 Material Assets: Transportation. The proposed development will result in a greater than 1000 AADT increase on a number of road links in the vicinity of the proposed development site. As a result, an assessment of traffic related emissions was conducted. Additionally, traffic associated with other cumulative developments in the vicinity of the proposed development was included in the figures supplied to ensure a full cumulative assessment was conducted. See Traffic and Transport Assessment and Chapter 10 Material Assets: Transportation for further details.

The impact of traffic emissions on air quality is assessed for both human and ecological receptors within 200 m of impacted roads as per the TII PE-ENV-01106 guidance (TII, 2022). The following sections describe the methodology for each assessment.

The impact to air quality as a result of changes in traffic is assessed at sensitive human receptors in the vicinity of affected roads. These are discussed in further detail within Section 7.2.6 and shown graphically in Figure 7.3.

The TII guidance (2022) states that modelling should be conducted for NO_2, PM_{10} and $PM_{2.5}$ for the Base, Opening and Design Years for both the Do Minimum (Do Nothing – i.e. assuming the proposed development is not in place) and Do Something (with the proposed development in place) scenarios. Modelling of operational NO_2, PM_{10} and $PM_{2.5}$ concentrations has been conducted for the Do Nothing and Do Something scenarios using the TII Road Emissions Model (REM) online calculator tool (TII, 2025).

The following inputs are required for the REM tool: receptor locations, light duty vehicle (LDV) annual average daily traffic movements (AADT), annual average daily heavy-duty vehicles (HDV AADT), annual average traffic speeds, road link lengths, road type, project county location and pollutant background concentrations. The *Default* fleet mix option was selected along with the *Intermediate Case* fleet data for cars, *ICE Sales Ban* for LGVs and *EU target projections* for

HGVs, as per TII Guidance (TII 2022, TII 2025). The Intermediate Case assumes a linear interpolation between the Business-as-Usual case – where current trends in vehicle ownership continue and the Climate Action Plan (CAP) case – where adoption of low emission light duty vehicles occurs. The ICE Sales Ban 2035 option for LGVs presents a sales ban on new combustion engine vehicles to be implemented by 2035. The EU Targets option for HGVs represents interim targets for emissions from sales of new HGVs. The TII REM uses county-based Irish fleet composition for different road types, for different European emission standards from pre-Euro to Euro 6/VI with scaling factors to reflect improvements in fuel quality, retrofitting, and technology conversions. The TII REM also includes emission factors for PM_{10} emissions associated with brake and tyre wear (TII 2025).

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Using this input data the model predicts the road traffic contribution to ambient ground level concentrations at the identified sensitive receptors using generic meteorological data. The predicted road contributions are then added to the existing background concentrations to give the predicted ambient concentrations. The ambient concentrations are then compared with the relevant ambient air quality standards to assess the compliance of the proposed development with these ambient air quality standards.

The TII guidance (2022) also states that impacts to sensitive ecology due to traffic emissions should be considered. Consideration should be given to designated sites within 2km of the proposed development. However, a detailed assessment is only required at a local level, where there is a designated site within 200m of impacted road links. The TII guidance (TII, 2022) notes that only sites that are sensitive to nitrogen and acid deposition need to be included in the assessment. It is not necessary to include sites, for example that have been designated as a geological feature or water course. There are no designated ecological sites within 200m of the site or impacted road links and therefore no assessment was required as there is no potential for significant impacts to the designated sites due to changes in air quality.

7.2.1.4.2 Traffic Data used in Modelling Assessment

Traffic flow information is detailed in Table 7.6 as obtained from ILTP Consulting for the purposes of this assessment. Data for the Base Year 2025 and the Do Nothing and Do Something scenarios for the Opening Year 2028 and Design Year 2043 were provided. The traffic data included traffic associated with the development site and other cumulative sites as relevant (see Chapter 10 Material Assets: Transportation for further details).

The modelling assessment has been undertaken for road links that were within 200 m of receptors. Background concentrations have been included as per Section 7.2.2.2 of this chapter based on available EPA background monitoring data (EPA, 2024).

Table 7.6 Traffic Data used in Operational Phase Air Quality Assessment

Road Name	Speed (kph)	Base Year	Opening Year		Design Year	
			Do Nothing	Do Something	Do Nothing	Do Something
		LDV AADT (HDV AADT)	LDV AADT (HDV AADT)	LDV AADT (HDV AADT)	LDV AADT (HDV AADT)	LDV AADT (HDV AADT)
R132 West of Proposed Access	80	27762 (744)	29111 (780)	26971 (723)	29111 (780)	28202 (756)
R132 Between Access and Pavilions	80	27762 (744)	29111 (780)	27580 (739)	29111 (780)	29483 (790)
R132 East of Pavilions	80	29440 (789)	30871 (827)	29341 (786)	30871 (827)	33089 (887)
R125 North of Lakeshore Drive	60	17800 (324)	18665 (340)	16148 (294)	18665 (340)	16328 (298)
R125 South of Lakeshore Drive	60	16787 (271)	17603 (284)	15156 (245)	17603 (284)	15571 (252)
R125 West of M1 Interchange	60	26786 (1318)	28088 (1382)	29192 (1436)	28088 (1382)	32404 (1595)
Holywell Link Road South of Tesco	50	21177 (401)	22206 (421)	23911 (453)	22206 (421)	28873 (547)
Holywell Link Road North of Tesco	50	14767 (515)	15485 (540)	17799 (621)	15485 (540)	22685 (791)

Holywell Link Road East of VHI	50	14767 (515)	15485 (540)	17672 (616)	15485 (540)	18486 (645)
Proposed Access Road Southern Section	30	0 (0)	0 (0)	5325 (165)	0 (0)	10107 (313)
Proposed Access Road Northern Section	30	0 (0)	0 (0)	4671 (144)	0 (0)	7123 (220)
Drynam	50	5434 (72)	5698 (76)	5698 (76)	5698 (76)	5698 (76)
R106 East of Roundabout	50	16073 (1189)	16854 (1247)	15629 (1157)	16854 (1247)	15629 (1157)
R132 North of R106 Roundabout	80	31127 (1089)	32640 (1142)	33059 (1156)	32640 (1142)	34281 (1199)

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7.2.2 RECEIVING ENVIRONMENT

7.2.2.1 METEOROLOGICAL DATA

A key factor in assessing temporal and spatial variations in air quality is the prevailing meteorological conditions. Depending on wind speed and direction, individual receptors may experience very significant variations in pollutant levels under the same source strength (i.e. traffic levels) (WHO, 2006). Wind is of key importance in dispersing air pollutants and for ground level sources, such as traffic emissions, pollutant concentrations are generally inversely related to wind speed. Thus, concentrations of pollutants derived from traffic sources will generally be greatest under very calm conditions and low wind speeds when the movement of air is restricted. In relation to PM_{10}, the situation is more complex due to the range of sources of this pollutant. Smaller particles (less than $PM_{2.5}$) from traffic sources will be dispersed more rapidly at higher wind speeds. However, fugitive emissions of coarse particles ($PM_{2.5}$ - PM_{10}) will actually increase at higher wind speeds. Thus, measured levels of PM_{10} will be a non-linear function of wind speed.

The nearest representative weather station collating detailed weather records is Dublin Airport meteorological station, which is located approximately 5 km south-west of the site. Dublin Airport met data has been examined to identify the prevailing wind direction and average wind speeds over a five-year period (see Figure 7.1). For data collated during five representative years (2020 – 2024), the predominant wind direction is westerly to south-westerly with a mean wind speed of 5.3 m/s over the 30-year period of 1991 – 2020 (Met Éireann, 2025).

Figure 7.1 Wind Roses for Dublin Airport Meteorological Station

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7.2.2.2 BASELINE AIR QUALITY

Air quality monitoring programs have been undertaken in recent years by the EPA. The most recent annual report on air quality in Ireland is 'Air Quality In Ireland 2023' (EPA, 2024). The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments.

As part of the implementation of the Air Quality Standards Regulations 2022 (S.I. No. 739 of 2022), as amended, four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA, 2024). Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000, is defined as Zone D.

In terms of air monitoring and assessment, the proposed development site is within Zone A (EPA, 2024). The long-term monitoring data has been used to determine background concentrations for the key pollutants in the region of the proposed development. The background concentration accounts for all non-traffic derived emissions (e.g. natural sources, industry, home heating etc.). Representative EPA monitoring stations have been used to determine an estimate of the background air quality in the region of the proposed development.

7.2.2.2.1 NO_2

Long-term NO_2 monitoring was carried out at the representative Zone A suburban background locations of Ballyfermot, Dun Laoghaire, Swords and Tallaght for the period 2019 – 2023 (Table 7.7) (EPA, 2024). Long-term average concentrations are significantly below the annual average limit of 40 µg/m^3. Average results range from 10 – 20 µg/m^3. The overall annual average

concentration for this 5-year period is 14 µg/m³. Additionally, there were no exceedances of the hourly limit value of 200 µg/m³. Based on the above information a conservative estimate of the current background NO_2 concentration for the region of the proposed development is 14 µg/m³.

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Table 7.7 Trends In Zone A Air Quality - Nitrogen Dioxide (NO_2)

Station	Averaging Period	Year				
		2019	2020	2021	2022	2023
Ballyfermot	Annual Mean NO_2 (µg/m³)	20	12	13	13	13
	1-hr Mean > 200 µg/m³ (days)	0	0	0	0	0
Dun Laoghaire	Annual Mean NO_2 (µg/m³)	15	13	16	16	13
	1-hr Mean > 200 µg/m³ (days)	0	0	0	0	0
Swords	Annual Mean NO_2 (µg/m³)	15	11	11	12	10
	1-hr Mean > 200 µg/m³ (days)	0	0	0	0	0
Tallaght	Annual Mean NO_2 (µg/m³)	-	14	13	14	14
	1-hr Mean > 200 µg/m³ (days)	-	0	0	0	0

7.2.2.2.2 PM_{10}

Continuous PM_{10} monitoring was carried out at seven representative Zone A locations from 2019 – 2023; Ballyfermot, Dun Laoghaire, Finglas, Marino, Phoenix Park, St. Anne's Park and Tallaght. Annual average PM_{10} concentrations across the sites ranged from 9 – 14 µg/m³ over the 2019 – 2023 period (Table 7.8). The overall annual average concentration for this 5-year period is 12 µg/m³. There were at most 4 exceedances of the daily limit of 50 µg/m³ in 2019 (at Marino). However, 35 exceedances are permitted per year (EPA, 2024). Based on the EPA data, a conservative estimate of the current background PM_{10} concentration in the region of the proposed development is 12 µg/m³.

Table 7.8 Trends In Zone A Air Quality - PM_{10}

Station	Averaging Period	Year				
		2019	2020	2021	2022	2023
Ballyfermot	Annual Mean PM_{10} (µg/m³)	14	12	12	13	11
	24-hr Mean > 50 µg/m³ (days)	7	2	0	1	0
Dun Laoghaire	Annual Mean PM_{10} (µg/m³)	12	12	11	12	12
	24-hr Mean > 50 µg/m³ (days)	2	0	0	1	0
Finglas	Annual Mean PM_{10} (µg/m³)	13	12	12	12	12
	24-hr Mean > 50 µg/m³ (days)	2	0	0	1	0
Marino	Annual Mean PM_{10} (µg/m³)	14	13	12	14	12
	24-hr Mean > 50 µg/m³ (days)	4	0	0	3	0
Phoenix Park	Annual Mean PM_{10} (µg/m³)	11	10	10	11	9
	24-hr Mean > 50 µg/m³ (days)	2	0	0	0	0
St. Anne's Park	Annual Mean PM_{10} (µg/m³)	12	11	11	13	11
	24-hr Mean > 50 µg/m³ (days)	1	0	0	1	0
Tallaght	Annual Mean PM_{10} (µg/m³)	12	10	10	11	11
	24-hr Mean > 50 µg/m³ (days)	3	1	0	1	1

7.2.2.2.3 $PM_{2.5}$

Average $PM_{2.5}$ levels in Ballyfermot, Dun Laoghaire, Finglas, Marino, Phoenix Park and St. Anne's Park over the period 2019 - 2023 ranged from 6 - 10 µg/m³ (EPA, 2024). The overall annual average concentration for this 5-year period is 8 µg/m³ (Table 7.9). Based on this information, an estimate of the background $PM_{2.5}$ concentration in the region of the proposed development is 8 µg/m³.

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Table 7.9 Trends In Zone A Air Quality - $PM_{2.5}$

Station	Averaging Period	Year				
		2019	2020	2021	2022	2023
Ballyfermot	Annual Mean $PM_{2.5}$ (µg/m³)	10	8	8	8	7
Dun Laoghaire	Annual Mean $PM_{2.5}$ (µg/m³)	10	8	8	8	7
Finglas	Annual Mean $PM_{2.5}$ (µg/m³)	9	7	8	7	7
Marino	Annual Mean $PM_{2.5}$ (µg/m³)	9	8	8	9	7
Phoenix Park	Annual Mean $PM_{2.5}$ (µg/m³)	8	7	6	6	6
St. Anne's Park	Annual Mean $PM_{2.5}$ (µg/m³)	8	7	7	8	7

7.2.2.2.4 SUMMARY

Based on the above information the air quality in the suburban Dublin area is generally good, with concentrations of the key pollutants generally well below the current limit values set out in Directive (EU) 2024/2881. The current pollutant concentrations at these monitoring sites are also in compliance with the 2030 limit values set out in Directive (EU) 2024/2881 and the clean air strategy, however, concentrations are approaching the limit values. Further measures will be needed at a national scale to reduce air pollution in future years. The EPA have indicated that road transport emissions are contributing to increased levels of NO_2 with the potential for breaches in the annual NO_2 limit value in future years at locations within urban centres and roadside locations. In addition, burning of solid fuels for home heating is contributing to increased levels of particulate matter (PM_{10} and $PM_{2.5}$). The EPA predict that exceedances in the particulate matter limit values are likely in future years if burning of solid fuels for residential heating continues (EPA, 2024).

7.2.2.3 SENSITIVITY OF THE RECEIVING ENVIRONMENT

7.2.2.3.1 Construction Phase

In line with the UK Institute of Air Quality Management (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2024) prior to assessing the impact of dust from a proposed development, the sensitivity of the area must first be assessed as outlined below. Both receptor sensitivity and proximity to proposed works areas are taken into consideration. For the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity. Table 7.10 outlines the criteria for determining the sensitivity of the area to dust soiling and dust-related human health effects as per the IAQM guidance (IAQM, 2024).

Table 7.10 Criteria for Determining the Sensitivity of the Area

Sensitivity of the Area to Dust Soiling Effects on People and Property					
Receptor Sensitivity	Number of Receptors	Distance from Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low

	1 - 10		**Medium**	Low	Low	Low
Medium	>1		Medium	Low	Low	Low
Low	>1		Low	Low	Low	Low
Sensitivity of the Area to Human Health Impacts						
Receptor Sensitivity	**Annual Mean PM_{10} Concentration**	**Number of Receptors**	**Distance from Source (m)**			
			<20	**<50**	**<100**	**<250**
High	< 24 µg/ m^3	>100	Medium	Low	Low	Low
		10 - 100	Low	Low	Low	Low
		1 - 10	**Low**	Low	Low	Low
Medium	< 24 µg/ m^3	>10	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Low	< 24 µg/ m^3	>1	Low	Low	Low	Low

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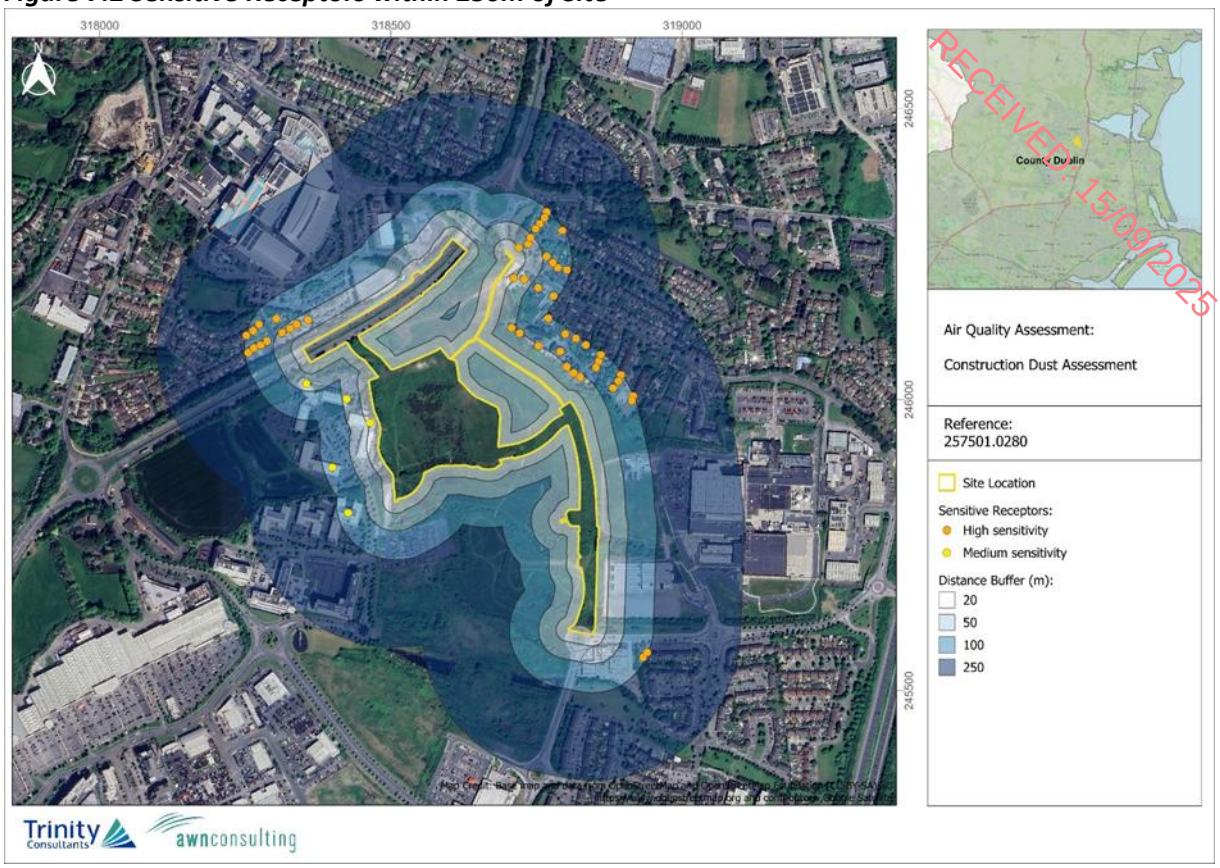
In terms of receptor sensitivity to dust soiling, there are a number of highly sensitive residential properties within 250 m of the proposed development boundary (Figure 7.2). There are 1-10 within 20m, 10-100 within 50m, 10-100 within 100m, and more than 100 properties within 250m, of the site boundary. Based on these receptor numbers and using the IAQM criteria in Table 7.10, the sensitivity of the area to dust soiling impacts from the proposed development is medium.

In addition to sensitivity to dust soiling, the IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to human health impacts. The criteria take into consideration the current annual mean PM_{10} concentration, receptor sensitivity based on type (residential receptors are classified as high sensitivity) and the number of receptors affected within various distance bands from the construction works. A conservative estimate of the current annual mean PM_{10} concentration in the vicinity of the proposed development is 12 µg/ m^3. There are 1-10 high sensitivity receptors within 20 m of the proposed development boundary (Figure 7.2). Based on the IAQM criteria outlined in Table 7.10, the worst-case sensitivity of the area to dust-related human health effects is low.

The IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to dust-related ecological impacts. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability of the plant, as well as other effects. The guidance states that dust impacts to vegetation can occur up to 50 m from the site, and 50 m from site access roads, up to 250 m for the site entrance. The sensitivity of the area is determined based on the distance to the source, the designation of the site, (European, National or local designation) and the potential dust sensitivity of the ecologically important species present. There are no sensitive ecological receptors that meet these criteria within the study area and there is no potential for impacts to sensitive ecology from construction dust emissions and no further assessment is required (Figure 7.2).

Figure 7.2 Sensitive Receptors within 250m of Site



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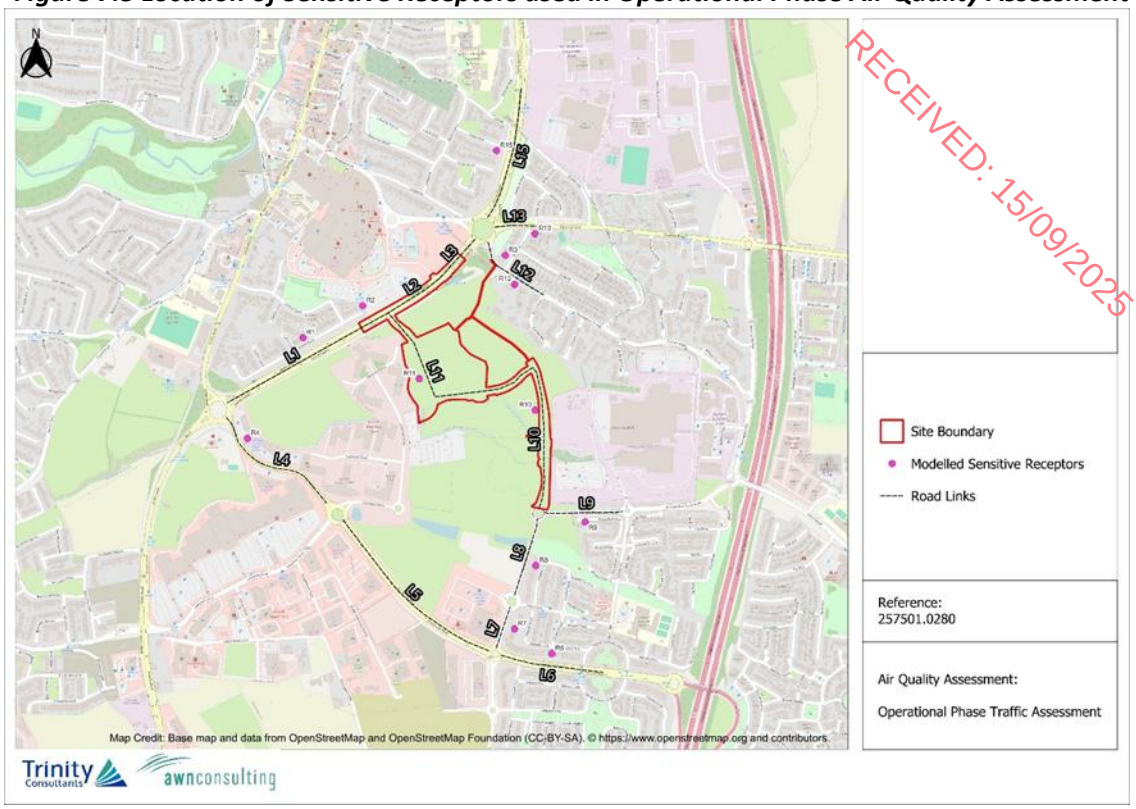
7.2.2.3.2 Operational Phase

The impact to air quality due to changes in traffic is assessed at sensitive receptors in the vicinity of affected roads. The TII guidance (2022) states that a proportionate number of representative receptors, which are located in areas which will experience the highest concentrations or greatest improvements because of the proposed development, are to be included in the modelling. The TII criteria state that receptors within 200 m of impacted road links should be assessed; roads which are greater than 200 m from receptors will not impact pollutant concentrations at that receptor (TII, 2022). The TII guidance (2022) defines sensitive receptor locations for the purposes of modelling annual mean pollutant concentrations as: residential housing, schools, hospitals, care homes and short term-accommodation such as hotels, i.e. locations where members of the public are likely to be regularly present for 24 hours. A total of 13 no. high sensitivity residential receptors (R) were included in the modelling assessment associated with the impacted road links (Link 1 -Link 15) (see Figure 7. 3).

Figure 7.3 Location of Sensitive Receptors used in Operational Phase Air Quality Assessment



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7.2.3 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

During the construction phase construction dust emission have the potential to impact air quality. Dust emissions will primarily occur as a result of site preparation works, earthworks and the movement of trucks on site and exiting the site. There is also the potential for engine emissions from site vehicles and machinery to impact air quality. Construction phase impacts will be short-term in duration.

Engine emissions from vehicles accessing the site have the potential to impact air quality during the operational phase of the development through the release of nitrogen dioxide (NO_2) and particulate matter (as PM_{10} and $PM_{2.5}$). Operational phase impacts will be long-term in duration.

7.2.4 DO-NOTHING IMPACT

In the Do-Nothing scenario, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).
The Do-Nothing scenario associated with the operational phase of the development is assessed within Section 7.2.6.1 and it was found to be direct, long-term, negative and slight which is overall not significant.

7.2.5 CONSTRUCTION IMPACTS

7.2.5.1 Construction Dust Assessment

The greatest potential impact on air quality during the construction phase of the proposed development is from construction dust emissions and the potential for nuisance dust. While

construction dust tends to be deposited within 250 m of a construction site, the majority of the deposition occurs within the first 50 m (IAQM, 2024). The extent of any dust generation depends on the nature of the dust (soils, peat, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction. A review of Dublin Airport meteorological indicates that the prevailing wind direction is westerly to south-westerly and wind speeds are generally moderate in nature (Section 7.2.2.1). In addition, dust generation is considered negligible on days where rainfall is greater than 0.2 mm. A review of historical 30-year average data for Dublin Airport indicates that on average 200 days per year have rainfall over 0.2 mm (Met Éireann, 2025a). Therefore, it can be determined that over 54% of the time dust generation will be reduced.

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To determine the level of dust mitigation required during the proposed works, the potential dust emission magnitude for each dust generating activity needs to be taken into account, in conjunction with the previously established sensitivity of the area (Section 7.2.2.3.1). The major dust generating activities are divided into four types within the IAQM (IAQM, 2024) guidance to reflect their different potential impacts. These are: demolition, earthworks, construction and trackout (movement of heavy vehicles).

Determining the Potential Dust Emission Magnitude

The magnitude of the works under each category can be classified as either small, medium or large depending on the scale of the works involved. The magnitude of each activity has been determined below for the proposed development using the criteria in Table 7.4.

Demolition: The dust emission magnitude for the demolition activities is not applicable as there is no demolition required as part of the proposed development.

Earthworks: The dust emission magnitude for the proposed earthwork activities can be classified as medium as the total site area is between 18,000 m^2-110,000 m^2.

Construction: The dust emission magnitude for the proposed construction activities can be classified as large as a worst-case as the total volume of buildings to be constructed will be greater than 75,000 m^3.

Trackout: The dust emission magnitude for the proposed trackout can be classified as medium, as there will be 20-50 outward HGV movements per day during the worst-case peak periods of the construction phase of the proposed development.

Determining the Risk of Dust Impacts

Once the dust emission magnitude has been determined the next step, according to the IAQM guidance (IAQM, 2024), is to establish the level of risk by combining the magnitude with the overall sensitivity of the area to dust soiling and dust-related human health effects (Section7.2.1.3.1). The level of risk associated with each activity is determined using the criteria in Table 7.5. The overall risk of dust impacts from the construction works is shown in Table 7.11 for each category.

Demolition: There is no demolition required as part of the proposed development.

Earthworks: As the overall sensitivity of the area to dust soiling is medium, when combined with a medium dust emission magnitude, this produces an overall medium risk of dust soiling impacts (as per the criteria in Table 7.5). As the overall sensitivity of the area to dust-related human health effects is low, this results in a low risk of dust-related human health effects (as per the criteria in Table 7.5).

Construction: Combining the large dust emissions magnitude for the construction activities with the medium sensitivity to dust soiling results in a medium risk of dust soiling impacts using

the criteria in Table 7.5. As the overall sensitivity of the area to dust-related human health effects is low, this results in a low risk of dust-related human health effects as a result of the proposed construction activities.

Trackout: Combining the medium dust emission magnitude for the trackout activities with the medium sensitivity to dust soiling results in a medium risk of dust soiling impacts using the criteria in Table 7.5. There is an overall low risk of dust-related human health impacts as a result of the proposed trackout activities.

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There is a medium risk of dust soiling impacts and at most low risk of dust-related human health impacts associated with the proposed works. As a result, best practice dust mitigation measures associated with medium-risk works will be implemented to ensure there are no significant impacts at nearby sensitive receptors. In the absence of mitigation, dust impacts are predicted to be ***direct, short-term, negative*** *and* ***slight***.

Table 7.11 Risk of Dust Impacts used to Define Site-Specific Mitigation

Category	Receptor Sensitivity	Dust Emission Magnitude	Risk of Dust-Related Impacts
Demolition			
Dust Soiling	Medium	n/a	n/a
Human Health	Low		n/a
Earthworks			
Dust Soiling	Medium	Medium	Medium Risk
Human Health	Low		Low Risk
Construction			
Dust Soiling	Medium	Large	Medium Risk
Human Health	Low		Low Risk
Trackout			
Dust Soiling	Medium	Medium	Medium Risk
Human Health	Low		Low Risk

7.2.5.2 Construction Phase Traffic Assessment

There is also the potential for traffic emissions to impact air quality with respect to human health in the short-term over the construction phase, particularly, due to the increase in HGVs accessing the site. The construction stage traffic has been reviewed, and a detailed air quality assessment has been scoped out as none of the road links impacted by the proposed development satisfy the TII assessment criteria in Section 7.2.1.2.4.

Therefore, it can be determined that the construction stage traffic will have a ***neutral, short-term and not significant impact on air quality***.

7.2.6 OPERATIONAL IMPACTS

7.2.6.1 Operational Phase Traffic Assessment

The potential impact of the proposed development has been assessed by modelling emissions from the traffic generated due to the development. The traffic data has included specific cumulative developments within the area to provide for a worst-case assessment and to assess potential cumulative impacts (see Transport Assessment and Chapter 10 Material Assets: Transportation, both prepared by ILTP Consulting for further details).

The traffic data includes the Do Nothing (DN) scenario and Do Something (DS) scenario. The impact of NO_2, PM_{10} and $PM_{2.5}$ emissions for the Opening and Design Years was predicted at the nearest sensitive receptors to the impacted road links. This assessment allows the significance of the development, with respect to both relative and absolute impacts, to be determined.

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The TII guidance PE-ENV-01106 (TII, 2022) details a methodology for determining air quality impact significance criteria for TII road schemes and infrastructure projects. However, this significance criteria can be applied to any development that causes a change in traffic. The degree of impact is determined based on both the absolute and relative impact of the proposed development. Results are compared against the 'Do Nothing' scenario, which assumes that the proposed development is not in place in future years, to determine the degree of impact.

Traffic related air emissions have the potential to impact air quality which can affect human health. The following details the results of the air dispersion modelling assessment of traffic emissions to determine the impact to human health. The predicted pollutant concentrations have been compared against the ambient air quality limit values set out in Table 7.1. The pre-2030 limit values are applicable to the Opening Year 2028 and the post-2030 limit values are applicable to the Design Year 2043 as the assessment year is post-2030.

7.2.6.1.1 NO_2

The results of the NO_2 modelling are shown in Table 7.12. In the Opening Year 2028, predicted annual mean concentrations of NO_2 are in compliance with the annual mean limit value of 40 µg/m^3, reaching at most 39% of the limit. In addition, the TII guidance (2022) states that the hourly limit value for NO_2 of 200 µg/m^3 is unlikely to be exceeded at roadside locations unless the annual mean is above 60 µg/m^3. As predicted NO_2 concentrations are significantly below 60 µg/m^3 (Table 7.12), it can be concluded that the short-term NO_2 limit value will be complied with at all receptor locations. Some increases in NO_2 concentrations are predicted at the worst-case receptors assessed in the Opening Year when compared with the Do-Nothing scenario (see Table 7.12). Concentrations are predicted to increase by at most 0.60 µg/m^3 at receptor R10. When comparing the change in concentration with the air quality limit value, it results in a maximum change of 1.50% at receptor R10. However, receptors R1, R13, R2, R3 and R4 will experience improvement, with decreases in annual mean NO_2 concentrations ranging from 0.02-0.18% due to the new link street. The other receptors in the area will experience similar or lesser impacts and all increases are considered 'neutral' as per the TII criteria in Table 7.3.

In the Design Year 2043, predicted annual mean NO_2 concentrations are in compliance of the limit value of 20 µg/m^3 at the worst-case receptors assessed, reaching at most 71% of the limit. The proposed development will result in a 'neutral' increase in NO_2 concentrations according to the TII significance criteria in Table 7.3, with concentrations increasing by at most 0.13 µg/m^3 as a result of the proposed development (at receptor R10, see Table 7.12), which is an increase of 0.65% when compared with the applicable annual mean limit value for NO_2. Therefore, the impact of the proposed development on NO_2 concentrations is neutral.

Table 7.12 Predicted Annual Mean NO_2 Concentrations (µg/ m^3)

Receptor	Impact Opening Year						
	DN	% of AQLV	DS	% of AQLV	DS-DN	% Change of AQLV	Description
R1	14.8	37%	14.8	37%	-0.02	-0.05%	Neutral

R10	14.0	35%	14.6	37%	0.60	1.50%	Neutral
R11	14.0	35%	14.5	36%	0.51	1.28%	Neutral
R12	14.6	36%	14.6	36%	0.00	0.00%	Neutral
R13	15.7	39%	15.6	39%	-0.05	-0.12%	Neutral
R15	15.2	38%	15.2	38%	0.00	0.00%	Neutral
R2	14.5	36%	14.5	36%	-0.01	-0.02%	Neutral
R3	14.2	36%	14.2	36%	-0.01	-0.03%	Neutral
R4	15.3	38%	15.2	38%	-0.07	-0.18%	Neutral
R6	15.2	38%	15.2	38%	0.02	0.05%	Neutral
R7	15.3	38%	15.4	38%	0.04	0.10%	Neutral
R8	15.2	38%	15.2	38%	0.06	0.15%	Neutral
R9	15.2	38%	15.3	38%	0.06	0.15%	Neutral
Receptor	**Impact Design Year**						
	DN	**% of AQLV**	**DS**	**% of AQLV**	**DS-DN**	**% Change of AQLV**	**Description**
R1	14.1	70%	14.1	70%	0.00	0.00%	Neutral
R10	14.0	70%	14.1	71%	0.13	0.65%	Neutral
R11	14.0	70%	14.1	70%	0.09	0.45%	Neutral
R12	14.1	70%	14.1	70%	0.00	0.00%	Neutral
R13	14.2	71%	14.2	71%	0.00	0.00%	Neutral
R15	14.1	70%	14.1	70%	0.00	0.00%	Neutral
R2	14.0	70%	14.0	70%	0.00	0.00%	Neutral
R3	14.0	70%	14.0	70%	0.00	0.00%	Neutral
R4	14.1	71%	14.1	71%	-0.01	-0.05%	Neutral
R6	14.1	71%	14.1	71%	0.01	0.05%	Neutral
R7	14.1	71%	14.1	71%	0.01	0.05%	Neutral
R8	14.1	71%	14.1	71%	0.02	0.10%	Neutral
R9	14.1	71%	14.1	71%	0.01	0.05%	Neutral

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7.2.6.1.2 PM_{10}

The results of the PM_{10} modelling can be seen in Table 7.13 for the Opening Year 2028 and Design Year 2043.

In the Opening Year 2028, annual mean PM_{10} concentrations are in compliance with the annual mean limit value of 40 µg/m^3 reaching at most 39% of the limit. In the Design Year 2043 annual mean PM_{10} concentrations are also in compliance with the annual mean limit value of 20 µg/m^3 reaching at most 76% of the limit. In addition, the proposed development will not result in any days of exceedance of the daily PM_{10} limit value (Table 7.2) in both the opening and design years.

The changes in PM_{10} concentrations as a result of the proposed development can be assessed relative to the 'Do Nothing' (DN) levels. In the Opening Year 2028 annual PM_{10} concentrations will increase by at most 1.07 µg/m^3 at receptor R10, this is a 2.68% increase when compared with the annual mean limit value of 40 µg/m^3. This is considered a 'neutral' impact as per the TII criteria in Table 7.3. Receptors R1, R2, R4 and R13 will experience an improvement in annual mean PM_{10} concentrations with concentrations decreasing by 0.08% - 0.32% when compared with the annual mean limit value. The other receptors in the area will experience similar or lesser impacts and all increases and decreases at other modelled receptors are considered 'neutral' as per the TII criteria in Table 7.3.

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In the Design Year 2043 the proposed development will result in a maximum annual mean PM_{10} increase of 1.85 µg/m^3 at receptor R10, which is a 9.25% increase when compared with the annual mean limit of 20 µg/m^3. Receptors R10 and R11 will experience 'slight adverse' increases in PM_{10} concentrations with all other receptors experiencing 'neutral' changes in concentrations based on the TII criteria in Table 7.3.

Table 7.13 Predicted Annual Mean PM_{10} Concentrations (µg/m^3)

Receptor	Impact Opening Year						
	DN	% of AQLV	DS	% of AQLV	DS-DN	% Change of AQLV	Description
R1	13.2	33%	13.2	33%	-0.03	-0.08%	Neutral
R10	12.0	30%	13.1	33%	1.07	2.68%	Neutral
R11	12.0	30%	12.9	32%	0.89	2.23%	Neutral
R12	13.1	33%	13.1	33%	0.00	0.00%	Neutral
R13	15.5	39%	15.4	39%	-0.10	-0.25%	Neutral
R15	13.8	35%	13.8	35%	0.01	0.02%	Neutral
R2	12.8	32%	12.7	32%	-0.02	-0.05%	Neutral
R3	12.3	31%	12.3	31%	0.00	0.00%	Neutral
R4	14.4	36%	14.2	36%	-0.13	-0.32%	Neutral
R6	14.3	36%	14.3	36%	0.03	0.07%	Neutral
R7	14.6	36%	14.7	37%	0.08	0.20%	Neutral
R8	14.4	36%	14.5	36%	0.13	0.33%	Neutral
R9	14.4	36%	14.5	36%	0.13	0.32%	Neutral
Receptor	**Impact Design Year**						
	DN	**% of AQLV**	**DS**	**% of AQLV**	**DS-DN**	**% Change of AQLV**	**Description**
R1	13.2	66%	13.2	66%	-0.01	-0.05%	Neutral
R10	12.0	60%	13.9	69%	1.85	9.25%	Slight Adverse
R11	12.0	60%	13.3	66%	1.25	6.25%	Slight Adverse
R12	13.0	65%	13.0	65%	0.00	0.00%	Neutral
R13	15.3	76%	15.2	76%	-0.10	-0.50%	Neutral
R15	13.7	69%	13.8	69%	0.03	0.15%	Neutral
R2	12.7	64%	12.7	64%	0.00	0.00%	Neutral
R3	12.3	61%	12.3	61%	0.00	0.00%	Neutral

R4	14.2	71%	14.1	70%	-0.11	-0.55%	Neutral
R6	14.1	71%	14.3	71%	0.13	0.65%	Neutral
R7	14.4	72%	14.6	73%	0.27	1.35%	Neutral
R8	14.2	71%	14.5	73%	0.36	1.80%	Neutral
R9	14.2	71%	14.4	72%	0.16	0.80%	Neutral

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7.2.6.1.2 $PM_{2.5}$

In relation to changes in $PM_{2.5}$ concentrations as a result of the proposed development, the results of the assessment can be seen in Table 7.14 for the modelled Opening Year 2028 and Design Year 2043.

In the Opening Year 2028, predicted annual mean concentrations of $PM_{2.5}$ are in compliance with the annual mean limit value of 25 µg/m^3 reaching at most 38% of the limit. There is predicted to be an increase in $PM_{2.5}$ concentrations at the worst-case receptors assessed in the Opening Year when compared with the Do-Nothing scenario (see Table 7.14). Concentrations are predicted to increase by at most 0.56 µg/m^3 at receptor R10. When comparing the change in concentration with the air quality limit value, it results in a maximum change of 2.24% at receptor R10. This is considered a 'neutral' impact as per the TII criteria in Table 7.3. The other receptors in the area will experience similar or lesser impacts and all increases at other modelled receptors are considered 'neutral' as per the TII criteria in Table 7.3.

In the Design Year 2043, predicted annual mean $PM_{2.5}$ concentrations are in compliance with the limit value of 10 µg/m^3 at all receptors assessed. Concentrations reach at most 97% of the annual mean limit value. Predicted changes in annual mean $PM_{2.5}$ concentrations are 'moderate adverse' are receptors R10 and R11; receptor R8 will experience a 'slight adverse' change in $PM_{2.5}$ concentrations. Receptor R13 is expected to experience a 'slight beneficial' change in $PM_{2.5}$ concentrations. The proposed development does not significantly increase or decrease $PM_{2.5}$ concentrations (see Table 7.14) with the primary contributor in the Design Year being the background levels.

Table 7.14 Predicted Annual Mean $PM_{2.5}$ Concentrations (µg/m^3)

Receptor	Impact Opening Year						
	DN	% of AQLV	DS	% of AQLV	DS-DN	% Change of AQLV	Description
R1	8.7	35%	8.7	35%	-0.02	-0.08%	Neutral
R10	8.0	32%	8.6	34%	0.56	2.24%	Neutral
R11	8.0	32%	8.5	34%	0.47	1.88%	Neutral
R12	8.6	34%	8.6	34%	0.00	0.00%	Neutral
R13	9.9	39%	9.8	39%	-0.05	-0.20%	Neutral
R15	9.0	36%	9.0	36%	0.00	0.00%	Neutral
R2	8.4	34%	8.4	34%	-0.01	-0.04%	Neutral
R3	8.2	33%	8.2	33%	0.00	0.00%	Neutral
R4	9.3	37%	9.2	37%	-0.07	-0.28%	Neutral
R6	9.2	37%	9.3	37%	0.02	0.08%	Neutral

R7	9.4	37%	9.4	38%	0.05	0.20%	Neutral
R8	9.2	37%	9.3	37%	0.07	0.28%	Neutral
R9	9.3	37%	9.3	37%	0.07	0.28%	Neutral
Receptor	**Impact Design Year**						
	DN	**% of AQLV**	**DS**	**% of AQLV**	**DS-DN**	**% Change of AQLV**	**Description**
R1	8.7	87%	8.7	87%	0.00	0.00%	Neutral
R10	8.0	80%	9.0	90%	0.98	9.80%	Moderate Adverse
R11	8.0	80%	8.7	87%	0.66	6.60%	Moderate Adverse
R12	8.6	86%	8.6	86%	0.00	0.00%	Neutral
R13	9.8	98%	9.7	97%	-0.05	-0.50%	Slight Beneficial
R15	9.0	90%	9.0	90%	0.02	0.20%	Neutral
R2	8.4	84%	8.4	84%	0.00	0.00%	Neutral
R3	8.2	82%	8.2	82%	0.01	0.10%	Neutral
R4	9.2	92%	9.1	91%	-0.06	-0.60%	Neutral
R6	9.2	92%	9.2	92%	0.07	0.70%	Neutral
R7	9.3	93%	9.4	94%	0.14	1.40%	Neutral
R8	9.2	92%	9.4	94%	0.19	1.90%	Slight Adverse
R9	9.2	92%	9.3	93%	0.08	0.80%	Neutral

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7.2.6.1.3 Significance of Predicted Changes in NO_2, PM_{10} and $PM_{2.5}$ Concentrations

As outlined in Section 7.2.1.2.4, the TII guidance (2022) states that the significance of effects should be assessed based on the opening year only. Non-significant effects are 'neutral' or 'slight' changes in concentrations while significant effects can be changes in pollutant concentrations that are either 'moderate' or 'substantial' however, the TII guidance (2022) states that these must be considered in the context of the project and 'moderate' or 'substantial' increases are not necessarily always significant effects.

In relation to NO_2, PM_{10} and $PM_{2.5}$ the predicted changes in concentrations are 'neutral' at the worst-case receptors assessed in the opening year. There will be improvements in air quality at some receptors. Therefore, according to the TII criteria as outlined in Section 7.2.1.2.4, the impact is not significant.

For the purposes of this assessment, it has been assumed that the current estimated background pollutant concentrations are applicable for both the opening and design years, with no decreases in future background concentrations allowed for. There will be some decreases in background concentrations in future years, however at present there is no guidance-based methodology available for estimating future year background concentrations and therefore, as a conservative approach, the current estimated background concentrations have been applied to future years.

Due to the large uncertainty in future improvements in fleet composition and emissions, such as projected changes to vehicle registration and electric vehicle uptake, the future year emission rates utilised by the REM do not account for the full implementation of these measures. Predicted design year concentrations are therefore currently overly conservative as

future emissions improvements are not fully taken into account, as well as no improvement in background concentrations being assumed.

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As a result, the opening year predicted concentrations are the most appropriate for determining the significance of effects as per Section 7.2.1.2.4.

It can be concluded that the impact of traffic emissions on air quality and human health during the operational phase is ***long-term, direct, localised, negative*** and ***not significant*** in EIA terms.

The measures set out in the Clean Air Strategy for Ireland (Government of Ireland 2023) aim to work towards solutions to ensure that air pollution concentrations are reduced in order to comply with the future changes in limit values. Ireland will need to continue to implement and develop measures to ensure continuing improvements in air quality in future years in order to meet the objectives of the Clean Air Strategy for Ireland (Government of Ireland, 2023) and to ensure the ambient air quality limit values set out in Directive (EU) 2024/2881 are achieved. The estimated background concentrations used in the assessment are the largest contribution to predicted pollutant concentrations, rather than pollutant contributions associated with the proposed development. Strategies to improve air quality at a national level in future years will contribute to reducing background concentrations and therefore it is envisioned that air quality will improve in the future.

7.2.7 MITIGATION & MONITORING MEASURES

7.2.7.1 CONSTRUCTION PHASE

The proposed development has been assessed as having a medium risk of dust soiling impacts and a low risk of dust related human health impacts during the construction phase as a result of demolition, earthworks, construction and trackout activities (see Section 7.2.5.2). Therefore, the following dust mitigation measures shall be implemented during the construction phase of the proposed development. These measures are appropriate for sites with a medium risk of dust impacts and aim to ensure that no significant nuisance occurs at nearby sensitive receptors. The mitigation measures draw on best practice guidance from Ireland (DCC (2018), DLRCC (2022)), the UK (IAQM (2024), BRE (2003), The Scottish Office (1996), UK ODPM (2002)) and the USA (USEPA, 1997). These measures will be incorporated into the Construction Environmental Management Plan (CEMP) prepared for the site. The measures are divided into different categories for different activities – see below.

7.2.7.2 OPERATIONAL PHASE

No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be not significant.

	Construction Mitigation
AQ-C1	The following dust mitigation measures shall be incorporated into the contractor's CEMP: <u>Communications</u> • Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. Community engagement includes explaining the nature and duration of the work to local residents and businesses.

- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details.

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Site Management

- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions. Dry and windy conditions are favourable to dust suspension therefore mitigations must be implemented if undertaking dust generating activities during these weather conditions.
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out.

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Fully enclose sites or specific operations where there is a high potential for dust production and the site is actives for an extensive period.

Operating Vehicles / Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

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<u>Waste Management</u>

- Avoid bonfires and burning of waste materials.

<u>Measures Specific to Earthworks</u>

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

<u>Measures Specific to Construction</u>

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials, ensure bags are sealed after use and stored appropriately to prevent dust.
- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

<u>Measures Specific to Trackout</u>

- A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent the escape of materials during transport.

	• Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. • Record all inspections of haul routes and any subsequent action in a site logbook. • Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit. • Access gates to be located at least 10 m from receptors where possible.
	Operational Mitigation
AQ-O1	No operational mitigation proposed
	Monitoring
AQ-M1	• Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary. • Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

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7.2.8 RESIDUAL IMPACTS

7.2.8.1 CONSTRUCTION PHASE

7.2.8.1.1 Air Quality

To minimise dust emissions during construction, a series of mitigation measures have been prepared as outlined in Section 7.2.7.1. Provided the dust minimisation measures are adhered to, the predicted residual air quality impacts during the construction phase are ***short-term, direct, negative, localised*** and ***not significant***.

7.2.8.1.2 Human Health

Best practice mitigation measures are proposed for the construction phase of the proposed development, which will focus on the proactive control of dust and other air pollutants, to minimise generation of emissions at source. The mitigation measures that will be put in place during construction will ensure that the impact complies with all EU ambient air quality legislative limit values which are based on the protection of human health (Table 7.1). Therefore, the predicted residual, dust-related, human health impact of the construction phase of the proposed development is ***short-term, direct, negative, localised and not significant***.

7.2.8.2 OPERATIONAL PHASE

7.2.8.2.1 Air Quality

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Air dispersion modelling of operational traffic emissions associated with the proposed development was carried out using the TII REM tool. The modelling assessment determined that the change in emissions of NO_2, PM_{10} and $PM_{2.5}$ at nearby sensitive receptors as a result of the proposed development in the opening year of 2028 will be 'neutral' in line with the TII assessment criteria (Table 7.3). Therefore, the operational phase impact to air quality is ***long-term, direct, localised, negative*** and ***not significant***.

The new link street will alter traffic distribution which will lead to some improvements in air quality at certain receptors assessed. However, these reductions in pollutant concentrations are not significant.

7.2.8.2.2 Human Health

Dispersion modelling of traffic emissions at sensitive receptors in proximity to impacted road links during the operational phase indicate pollutant emissions will be in compliance with the TII assessment criteria which is based on the impacts in the opening year. Section 7.2.5.3 determined that the impact to air quality as a result of increased traffic volumes during the operational phase of the proposed development will be ***localised, direct, long-term, negative*** and ***not significant*** for the opening year. However, Ireland will need to develop measures to ensure continuing improvements in air quality in future years in order to meet the objectives of the Clean Air Strategy for Ireland (Government of Ireland, 2023) and to ensure the ambient air quality limit values set out in Directive (EU) 2024/2881 are achieved.

7.2.9 INTERACTIONS

7.2.9.1 AIR QUALITY AND POPULATION & HUMAN HEALTH

7.2.9.1.1 Construction Phase

An adverse air quality impact during the construction phase can cause health and dust nuisance issues. There is a low risk of dust-related human health impacts during the construction phase of the proposed development. Best practice mitigation measures will be implemented during the construction phase to ensure that the impact of the proposed development complies with all ambient air quality legislative limits. Therefore, the predicted impact is direct, short-term, negative, localised and not significant with respect to Population and Human Health during the construction phase.

7.2.9.1.2 Operational Phase

Vehicles accessing the site will emit pollutants which may impact Air Quality and Human Health. However, the increased number of vehicles associated with the proposed development will not cause a significant change in air pollutant emissions in the locality. It has been assessed that emissions will be in compliance with the ambient air quality standards which are set for the protection of human health. Impacts will be long-term, localised, direct, negative and not significant.

7.2.9.2 AIR QUALITY AND CLIMATE

Air Quality and Climate have interactions as the emissions from the burning of fossil fuels during the construction and operational phases generate both air quality and climate impacts. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

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7.2.9.3 AIR QUALITY AND LAND & SOILS

7.2.9.3.1 Construction Phase

Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between Air Quality and Land & Soils in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils during the construction phase.

7.2.9.3.2 Operational Phase

There are no potentially significant interactions identified between Air Quality, and Land & Soils during the operational phase.

7.2.9.4 AIR QUALITY AND BIODIVERSITY

7.2.9.4.1 Construction Phase

Dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. There are no designated ecological sites within 250 m of the proposed development site area. Significant dust impacts are not predicted beyond this distance. Dust mitigation measures will be implemented on site as set out in Section 7.2.7.1. With the implementation of these mitigation measures dust emissions will be minimised and impacts will be direct, short-term, negative, localised and not significant with respect to biodiversity.

7.2.9.4.2 Operational Phase

There are no potentially significant interactions identified between Air Quality, and Biodiversity during the operational phase.

7.2.9.5 Air Quality and Material Assets – Traffic & Transport

7.2.9.5.1 Construction Phase

Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between Traffic and Air Quality are linked but there is no potential for significant impacts from traffic on air quality. The effects are considered to be direct, short-term, neutral, localised and not significant during the construction phase.

7.2.9.5.2 Operational Phase

The impact of the interactions between Traffic and Air Quality are considered to be long-term, direct, negative and not significant during the operational phase.

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7.2.10 CUMULATIVE IMPACTS

7.2.10.1 Construction Phase

According to the IAQM guidance (2024) should the construction phase of the proposed development coincide with the construction phase of any other developments within 500m then there is the potential for cumulative construction dust related impacts to nearby sensitive receptors.

A review of recent planning permissions for the area was conducted, in conjunction with the cumulative projects list included in Chapter 2 and it was found that there were a number of relevant sites for which cumulative impacts may occur should their construction phase and that of the proposed development overlap, these are listed below:

These include the following developments (planning reference):

- Application reference NA29N.314724: Metrolink from Estuary to Charlemont Co. Dublin.
- Application reference JP06F.310145: R132 Connectivity project.
- Application reference HA06D.317121: BusConnects - Swords to City Centre Core Bus Corridor Scheme(NTA).
- Application reference LH06F.32145 : LRD of 123 dwellings, Mountgorry, Swords, Co. Dublin
- Application reference F23A/0727 : Healthcare facility , Barrysparks and Crowcastle.
- Application reference F21A/0100: New road link from roundabout to the south of Lakeshore Drive, Crowcastle.

There is the potential for cumulative construction dust impacts should the construction phases overlap with that of the proposed development, however, provided the mitigation measures outlined in Section 7.2.7.1, are implemented throughout the construction phase of the proposed development significant cumulative dust impacts are not predicted. Impacts are predicted to be direct, short-term, negative, localised and not significant.

7.2.10.2 Operational Phase

Air dispersion modelling of operational traffic emissions associated with the proposed development and cumulative developments in the wider area was carried out using the TII REM tool. The modelling assessment determined that the change in emissions of NO_2, PM_{10} and $PM_{2.5}$ at nearby sensitive receptors as a result of the proposed development in combination with cumulative developments will be not significant. Therefore, the operational phase impact to air quality is long-term, direct, negative, and not significant.

7.3 CLIMATE

7.3.1 ASSESSMENT METHODOLOGY

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The climate assessment is divided into two distinct sections – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA).

Greenhouse Gas Emissions Assessment (GHGA) – Quantifies the GHG emissions from a project over its lifetime. The assessment compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude.
Climate Change Risk Assessment (CCRA) – Identifies the impact of a changing climate on a project and receiving environment. The assessment considers a projects vulnerability to climate change and identifies appropriate adaptation and mitigation measures to increase project resilience.

7.3.1.1 RELEVANT GUIDANCE, LEGISLATION & POLICY

7.3.1.1.1 Guidance

The principal guidance and best practice documents used to inform the assessment of potential impacts on climate are summarised below. In addition to specific climate guidance documents, the following guidelines were considered and consulted in the preparation of this chapter:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022); and
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017).

The assessment has referred to national guidelines where available, in addition to international standards and guidelines relating to the assessment of climate impacts. These are summarised below:

- Transport Infrastructure Ireland (TII) PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document (TII, 2022a);
- Transport Infrastructure Ireland (TII) GE-ENV-01106: TII Carbon Assessment Tool for Road and Light Rail Projects and User Guidance Document (TII, 2024);
- Institute of Sustainability and Environmental Professionals (ISEP) (formerly known as Institute of Environmental Management & Assessment (IEMA)) Environmental Impact Assessment Guide to: Assessing GHG Emissions and Evaluating their Significance (hereafter referred to as the ISEP 2022 GHG Guidance) (ISEP, 2022);
- ISEP Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation (hereafter referred to as the ISEP 2020 EIA Guide) (ISEP, 2020a);
- ISEP GHG Management Hierarchy (hereafter referred to as the ISEP 2020 GHG Management Hierarchy) (ISEP, 2020b);
- ISEP Principles Series: Climate Change Mitigation & EIA (ISEP, 2010);
- Carbon Management in Infrastructure and Built Environment - PAS 2080 (BSI, 2023); and
- Technical Guidance on the Climate Proofing of Infrastructure in the Period 2021-2027 (European Commission, 2021a).

7.3.1.1.2 Legislation

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In 2015, the Climate Action and Low Carbon Development Act 2015 (No. 46 of 2015) (as amended) (Government of Ireland, 2015) was enacted (the 2015 Act). The purpose of the 2015 Act was to enable Ireland "to pursue, and achieve, the transition to a low carbon, climate resilient and environmentally sustainable economy by the end of the year 2050" (3.(1) of No. 46 of 2015). This is referred to in the 2015 Act as the 'National Transition Objective'. The 2015 Act made provision for a national mitigation plan, and a national adaptation framework. In addition, the 2015 Act provided for the establishment of the Climate Change Advisory Council with the function to advise and make recommendations on the preparation of the national mitigation and adaptation plans and compliance with existing climate obligations.

The first Climate Action Plan (CAP) was published by the Irish Government in June 2019 (Government of Ireland, 2019). The Climate Action Plan 2019 outlined the current status across key sectors including Electricity, Transport, Built Environment, Industry and Agriculture and outlined the various broadscale measures required for each sector to achieve ambitious decarbonisation targets. The 2019 CAP also detailed the required governance arrangements for implementation including carbon-proofing of policies, establishment of carbon budgets, a strengthened Climate Change Advisory Council and greater accountability to the Oireachtas. The fifth and most recent climate action plan, CAP25, was published in April 2025 (Government of Ireland, 2025).

Following on from Ireland declaring a climate and biodiversity emergency in May 2019, and the European Parliament approving a resolution declaring a climate and environment emergency in Europe in November 2019, the Government approved the publication of the General Scheme in December 2019, followed by the publication of the Climate Action and Low Carbon Development (Amendment) Act 2021 (hereafter referred to as the 2021 Climate Act) in March 2021. The Climate Act was signed into Law on the 23rd of July 2021, giving statutory effect to the core objectives stated within the CAP.

In relation to carbon budgets, the 2015 Act (as amended) states "*a carbon budget, consistent with furthering the achievement of the national climate objective, shall be proposed by the Climate Change Advisory Council, finalised by the Minister and approved by the Government for the period of 5 years commencing on the 1 January 2021 and ending on 31 December 2025 and for each subsequent period of 5 years (in this Act referred to as a 'Budget Period')".*
A carbon budget is defined as the total amount of greenhouse gas emissions that are permitted during the budget period. The carbon budget is to be produced for 3 sequential budget periods (Table 7.15). The carbon budget can be revised where new obligations are imposed under the law of the European Union or international agreements or where there are significant developments in scientific knowledge in relation to climate change. In relation to the sectoral emissions ceiling, the Minister for the Environment, Climate and Communications (the Minister for the Environment) shall prepare and submit to government the maximum amount of GHG emissions that are permitted in different sectors of the economy during a budget period and different ceilings may apply to different sectors. The sectorial emission ceilings for 2030 were published in the Climate Action Plan 2025 (CAP25) (DECC, 2025) (Table 7.16).

Table 7.15 5-Year Carbon Budgets

Budget Period	Carbon Budget	Reduction Required
2021-2025	295 Mt CO_2e	Reduction in emissions of 4.8% per annum for the first budget period.
2026-2030	200 Mt CO_2e	Reduction in emissions of 8.3% per annum for the second budget period.

2031-2035	151 Mt CO_2e	Reduction in emissions of 3.5% per annum for the third provisional budget.

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Table 7.16 Sectoral Emission Ceilings 2030

Sector	Baseline ($MtCO_2e$)	Carbon Budgets ($MtCO_2e$)		2030 Emissions ($MtCO_2e$)	Indicative Emissions % Reduction in Final Year of 2025 – 2030 Period (Compared to 2018)
	2018	2021-2025	2026-2030		
Electricity	10	40	20	3	75
Transport	12	54	37	6	50
Built Environment – Residential	7	29	23	4	40
Built Environment – Commercial	2	7	5	1	45
Industry	7	30	24	4	35
Agriculture	23	106	96	17.25	25
Other (F-gases, waste, petroleum refining)	2	9	8	1	50
Land Use, Land-use Change and Forestry (LULUCF)	5	Reflecting the continued volatility for LULUCF baseline emissions to 2030 and beyond, CAP24 puts in place ambitious activity targets for the sector reflecting an EU-type approach.			
Total	68				
Unallocated Savings	-	-	26	-5.25	-
Legally Binding Carbon Budgets and 2030 Emission Reduction Targets	-	295	200	-	51

7.3.2.1.3 Policy

Greenhouse Gas Assessment Policy

In 2024, the Government published its Long-Term Strategy on Greenhouse Gas Emissions Reductions (DECC, 2024). This strategy provides a long-term plan on how Ireland will transition towards net carbon zero by 2050, achieving the interim targets set out in the CAP.

In December 2023, CAP24 was published, establishing key actions to deliver a 51% reduction in GHG emissions by 2030 (compared to 2018 levels) and achieve climate neutrality by 2050 (DECC, 2023a). The updated and current CAP25, published in April 2025, builds on the progress of the previous four iterations of the CAP, with CAP23 first publishing carbon budgets and sectoral emission ceilings. It also reaffirms Ireland's climate ambition, with a focus on delivery,

implementation and measurable outcomes, particularly ahead of the second carbon budget period (2026–2030). 2025 is the last year in the first 5-year carbon budget period. During the initial 5-year budget period the average annual reduction required was 4.8%, this increases to 8.3% in the second budget period (2026-2030). CAP25 retains the high-impact sectors where the biggest savings can be achieved, while emphasising public sector leadership and green procurement. These sectors include renewable energy, energy efficiency of buildings, transport, sustainable farming, sustainable business and land-use change.

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CAP25 also includes targeted actions to decarbonise industrial heat and support the transition to carbon-neutral manufacturing processes. Public sector leadership is strengthened through a new Buying Greener: Green Public Procurement Strategy and Action Plan (2024–2027), the development of mandatory Climate Action Roadmaps, and enhanced emissions monitoring and reporting across government operations. To support innovation and ensure future economic resilience, IDA Ireland continues to attract and support businesses investing in climate technologies and low-carbon solutions.

CAP25 highlights a significant 17% reduction in electricity emissions in early 2024, with wind power supplying nearly 40% of Ireland's total electricity demand and over 100,000 rooftop microgenerators connected to the grid. Investments are ongoing in grid reinforcement, offshore wind development, and interconnectors with France and the UK to enhance renewable generation capacity. EirGrid, Enterprise Ireland and IDA Ireland have recently signed an MoU to collectively support offshore wind development in Ireland.

CAP25 also reinforces targets first outlined in CAP24 to reduce the embodied carbon of construction materials, with a 10% reduction by 2025 and 30% reduction by 2030 for materials produced and used in Ireland. Cement and high embodied carbon construction materials can be reduced through product substitution, reduced clinker content in cement and uptake of low-carbon construction methods, including those outlined in the Construction Industry Federation 2021 report Modern Methods of Construction (Construction Industry Federation, 2021). There also remains scope for the construction industry to use more timber in construction. In 2022, 24% of new construction in Ireland was built using timber frames to satisfy the demand for housing. Public bodies are now required under the Public Sector Mandate to use best practice project design to reduce embodied carbon; procure concretes with clinker replacements (lower carbon); and require that large construction projects produce a whole life cycle GHG emissions assessment.

Furthermore, CAP25 advances sector-specific measures in green procurement, electrification of transport and heat, and just transition (with the introduction of a Just Transition Commission) to support vulnerable communities. Transport emissions increased by 0.3%. Electric vehicles and the use of biofuels are stated as the best means of transport emission reductions in the medium term.

Climate Change Adaptation Policy

The Dublin City Council Climate Change Action Plan 2024 - 2029 (Dublin City Council and Codema, 2024) outlines several goals and plans to prepare for and adapt to climate change. There are five key action areas within the plan: energy and buildings, transport, flood resilience, nature-based solutions and resource management. Some of the measures promoted within the Action Plan under the 5 key areas involve building retrofits, energy master-planning, development of segregated cycle routes, the promotion of bike share schemes, development of flood resilient designs, promotion of the use of green infrastructure and water conservation initiatives. The implementation of these measures will enable the

Dublin City Council area to adapt to climate change and will assist in bringing Ireland closer to achieving its climate related targets in future years.

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The Dublin City Council Climate Neutral Dublin 2030 Plan (Dublin City Council 2024) explains the 2030 vision that the Council have for the city. This is set around four foundations: a Creative City, a Resource-Full City, a Resilient City and a Social City. These foundations aim to deliver the overall target of a 51% reduction in greenhouse gas emissions in line with our National Climate Objective by 2030 (2018 baseline), while striving for neutrality before 2050 as per Dublin City's participation in the EU Mission for 100 Climate Neutral and Smart Cities (Net Zero Cities). Actions within the plan include the Networks for Knowledge Exchange with universities to develop creative solutions to battle climate change and Innovation Districts, where innovation projects are fast-tracked, and technology is used to help address climate change. The plan states that whole society behaviour needs to change towards more sustainable lifestyles and as part of that it has a focus on children's active travel.

Dublin City Development Plan 2022 – 2028 (DCC, 2022) reinforces the city's climate resilience objectives through a strong emphasis on integrating climate adaptation and mitigation across all new development. Climate Action Policy 5 (CA5) of the Plan specifically requires that "all new development including in Strategic Development and Regeneration Areas integrate appropriate climate mitigation and adaptation measures." These include flood risk management, green infrastructure, sustainable mobility, and the incorporation of nature-based solutions to address urban heat and biodiversity loss. The Plan acknowledges the increasing risks posed by climate change and highlights the need for climate-proofed urban design to protect future generations and ensure sustainable, resilient communities.

Climate Change Vulnerability Policy

The second National Adaptation Framework (NAF) (DECC, 2024) was published in June 2024 in line the five-year requirement of the 2015 Climate and Low Carbon Development Act. The plan provides a whole of government and society approach to climate adaptation in Ireland to reduce Irelands vulnerability to climate change risks including extreme weather events, flooding, drought, loss of biodiversity, sea level rise and increased temperatures. Like the "Just Transition" when considering carbon emissions, the NAF aims for "Just Resilience" stating that "a climate resilient Ireland will have a reduced reliance on fossil fuel; it will have widely accessible electrified public transport and will have transitioned towards sustainable agricultural practices such as agroforestry and organic farming".

In relation to the built environment the NAF states in Chapter 3 "deepening of adaptation considerations in the planning and building standards processes is considered the most appropriate way of increasing the resilience of the built environment". Within the NAF it mentions that there is a risk of damage to buildings and structures from severe weather events such as high winds and intense rainfall. New development should accommodate predicted future climate change impacts without requiring major redesign or redevelopment in the future which may be costly and inefficient. This will require facilitating innovative building design, new materials and standards (to accommodate hotter summers while withstanding changes in precipitation patterns and more intense storms for example) according to the NAF (DECC, 2024).

The National Climate Change Risk Assessment (NCCRA) was published in May 2024 (EPA, 2024a). The NCCRA was required to be developed under Action 457 from the 2021 CAP (Government of Ireland 2021). Action 457 seeks to "further develop Ireland's national climate change risk assessment capacity to identify the priority physical risks of climate change to

Ireland". The NCCRA uses definitions of the risk determinants from the Intergovernmental Panel on Climate Change (IPCC) Risk Framework (IPCC 2023):

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- Hazard - the potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources
- Exposure - the presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected
- Vulnerability - the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity
- Risk - the potential for adverse consequences for human or ecological systems.
- When considering risk, the NCCRA assesses exposure and vulnerability for two future climate change scenarios or Representative Concentration Pathways (RCPs):
- RCP4.5 was selected as it represents a scenario aligned with the global temperature trajectory
- RCP8.5 was selected as it represents a high-emissions scenario and achieves the highest level of modelled temperature increases by the end of the century. Consequently, this scenario will result in the highest level of physical risk for Ireland, and the greatest requirement for adaptation.

These scenarios align with a conservative approach to assess risks to Ireland and assumes global emission reduction targets are not met. This aligns with the principle of precaution as stated in the NAF (DECC 2024). In addition to the future climate scenarios, the NCCRA assesses the risk from the future climate during the following timeframes:

- Present (~2030)
- Medium term (~2050)
- Long term (~2100).

7.3.2.2 GREENHOUSE GAS ASSESSMENT

As per the EU guidance document Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013) the climate baseline is first established with reference to EPA data on annual GHG emissions (see Section 7.3.3.1).

7.3.2.2.1 Construction Phase

The GHG assessment accounts for various components relating to the project during different life stages to determine the total impact of the development on climate. The reference study period (i.e. the assumed building life expectancy) for the purposes of the assessment is 60 years. Embodied carbon emissions are attributed to four main categories, taken from BS EN 15978. The categories are:

- **Product Stages (Category A1 to A3)** The carbon emissions generated at this stage arise from extracting the raw materials from the ground, their transport to a point of

manufacture and then the primary energy used (and the associated carbon impacts that arise) from transforming the raw materials into construction products.

- **Construction (Category A4 to A5)** These carbon impacts arise from transporting the construction products to site, and their subsequent processing and assembly into the building.
- **Use Stage (Category B1 to B7)** This covers a wide range of sources from the GHG emissions associated with the operation of the building (B1), maintenance (B2), repair (B3), refurbishment (B4) and replacement (B5) of materials, and operational energy use (B6) and water use (B7).
- **End of Life Stages (Category C1 to C4)** The eventual deconstruction and disposal of the existing building at the end of its life takes account of the on-site activities of the demolition contractors. No 'credit' is taken for any future carbon benefit associated with the reuse or recycling of a material into new products.

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PE-ENV-01104 (TII, 2022a) recommends the calculation of the construction stage embodied carbon using an appropriate carbon tool (TII, 2022a). Embodied carbon refers to the sum of the carbon needed to produce a good or service. It incorporates the energy needed in the mining or processing of raw materials, the manufacturing of products and the delivery of these products to site. The purpose of the embodied carbon assessment is to engage the design team in the consideration of embodied carbon at an early stage in the development and mitigate embodied carbon. This engagement aims to ensure carbon savings are made and to assist in aligning the project to Ireland's CAP goal of Net Carbon Zero by 2050.

The TII Online Carbon Tool (TII, 2024a) has been commissioned by TII to assess GHG emissions associated with road or rail projects in Ireland. The TII Carbon Tool (TII, 2024a) uses emission factors from recognised sources including the Civil Engineering Standard Method of Measurement (CESSM) Carbon and Price Book database (CESSM, 2013), which can be applied to a variety of developments, not just road or rail. The tool aligns with PAS 2080.

For the building elements of the proposed development, the OneClick LCA 3D Designer tool was utilised. OneClick LCA is certified to EN 15978, EN 15978, ISO 21931 – 1 & ISO 21929, and data requirements of ISO 14040 & EN 15804, and is LEED, BREEAM and PAS 2080 aligned. It allows users to assess the carbon impact of buildings at various stages of design. The tool includes a detailed product and material list based on Irish materials as well as materials from the UK and Europe. The OncClick LCA 3D Designer option allows for a high-level assessment of the embodied carbon impact of a development at early design stages when specific detailed design information is not know and is suitable for EIAR stage assessments.

Inputs into the tool include gross floor areas for the building types (houses/duplexes/apartments), building frame type, number of above ground floors and building size and shape. The tool then makes necessary default assumptions based on these parameters and a typical build-up with the option to refine the default assumptions where project specific information is available. The tool allows for optioneering and optimization of the carbon impact, it highlights the key areas within the building with the highest carbon impact and provides options for lower carbon intensive materials.

The TII Carbon Tool was utilised to estimate the GHG emissions associated with the non-building elements of the proposed development including construction activities, land clearance activities and construction wastes.

Reasonable conservative estimates have been used in this assessment where necessary to provide an estimate of the GHGs associated with the proposed development.

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7.3.2.2.2 Operational Phase

Traffic Emissions

Emissions from road traffic associated with the proposed development have the potential to emit carbon dioxide (CO_2) which will impact climate.

The TII guidance Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2022), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment, and also the climate assessment.

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more;
- A change in road alignment by 5 m or greater.

While the guidance is specific to infrastructure projects the approach can be applied to any development that causes a change in traffic.

There are a number of road links that will experience a change of over 1,000 in the AADT during the operational phase due to the proposed development. As a result, a detailed assessment of traffic related carbon dioxide (CO_2) emissions was conducted.

PE-ENV-01104 (TII, 2022a) states that road traffic related emissions information should be calculated using the TII Road Emissions Model (REM) online calculator tool (TII, 2025). The TII guidance (TII, 2022) states that modelling should be conducted for the Base, Opening and Design Years for both the Do Nothing and Do Something scenarios. The output is provided in terms of CO_2e.

The following inputs are required for the REM tool: receptor locations, light duty vehicle (LDV) annual average daily traffic movements (AADT), annual average daily heavy-duty vehicles (HDV AADT), annual average traffic speeds, road link lengths, road type, project county location and pollutant background concentrations. The Default fleet mix option was selected along with the *Intermediate Case* fleet data base selection for cars, the *ICE Sales Ban* 2035 fleet data base for LGVs and the *EU Target* for the HGV fleet data base, as per TII Guidance (TII, 2025). The Intermediate Case assumes a linear interpolation between the Business-as-Usual case – where current trends in vehicle ownership continue and the Climate Action Plan (CAP) case – where adoption of low emission light duty vehicles occurs. The ICE Sales Ban 2035 represents a sales ban on new combustion engine vehicles to be implemented by 2035, and the EU Target for HGV represents interim targets for emissions from sales of new HGVs.

Traffic flow information was obtained from ILTP Consulting, the traffic engineers, for the purposes of this assessment. Data was provided for the Base Year 2025, Opening Year 2028 and Design Year 2043 (see Traffic and Transport Assessment for further details). Both the Do Nothing and Do Something scenarios are quantified to determine the degree of change in emissions due to the proposed development. A total of 2 no. scenarios were assessed, these include:

- The Do-Nothing scenario – this scenario assumes the proposed development is not in place in future years but includes traffic associated with cumulative developments in the wider area.
- The Proposed scenario – this is the "Do Something" scenario and includes traffic from the Do-Nothing scenario and traffic associated with the proposed development as well as traffic associated with cumulative developments in the wider area.

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Further detail on the modelling scenarios can be found in the Traffic and Transport Assessment prepared by ILTP Consulting and submitted with this planning application. The traffic data is detailed in Table 7.17. Only road links that met the TII scoping criteria were included in the modelling assessment. Inputs include light duty vehicle (LDV) annual average daily traffic movements (AADT), annual average daily heavy-duty vehicles (HDV AADT), annual average traffic speeds, road link lengths, road type and project county location.

Table 7.17 Traffic Data used in Operational Phase Climate Assessment

Road Name	Speed (kph)	Base Year	Opening Year		Design Year	
			Do Nothing	Do Something	Do Nothing	Do Something
		LDV AADT (HDV AADT)	LDV AADT (HDV AADT)	LDV AADT (HDV AADT)	LDV AADT (HDV AADT)	LDV AADT (HDV AADT)
R132 West of Proposed Access	80	27762 (744)	29111 (780)	26971 (723)	29111 (780)	28202 (756)
R132 Between Access and Pavilions	80	27762 (744)	29111 (780)	27580 (739)	29111 (780)	29483 (790)
R132 East of Pavilions	80	29440 (789)	30871 (827)	29341 (786)	30871 (827)	33089 (887)
R125 North of Lakeshore Drive	60	17800 (324)	18665 (340)	16148 (294)	18665 (340)	16328 (298)
R125 South of Lakeshore Drive	60	16787 (271)	17603 (284)	15156 (245)	17603 (284)	15571 (252)
R125 West of M1 Interchange	60	26786 (1318)	28088 (1382)	29192 (1436)	28088 (1382)	32404 (1595)
Holywell Link Road South of Tesco	50	21177 (401)	22206 (421)	23911 (453)	22206 (421)	28873 (547)
Holywell Link Road North of Tesco	50	14767 (515)	15485 (540)	17799 (621)	15485 (540)	22685 (791)
Holywell Link Road East of VHI	50	14767 (515)	15485 (540)	17672 (616)	15485 (540)	18486 (645)
Proposed Access Road Southern Section	30	0 (0)	0 (0)	5325 (165)	0 (0)	10107 (313)
Proposed Access Road Northern Section	30	0 (0)	0 (0)	4671 (144)	0 (0)	7123 (220)
Drynam	50	5434 (72)	5698 (76)	5698 (76)	5698 (76)	5698 (76)
R106 East of Roundabout	50	16073 (1189)	16854 (1247)	15629 (1157)	16854 (1247)	15629 (1157)
R132 North of R106 Roundabout	80	31127 (1089)	32640 (1142)	33059 (1156)	32640 (1142)	34281 (1199)

Operational Phase Energy Use

The EU guidance (European Commission, 2013) also states indirect GHG emissions as a result of a development must be considered, which includes emissions associated with energy usage. Information on the proposed energy strategy for the development was obtained from the building engineers on the project and used to inform this assessment. Several measures in relation to sustainable energy usage have been incorporated into the overall design of the development which will have the benefit of reducing the impact to climate where possible during operation.

7.3.2.2.3 Significance Criteria for GHGA

The Transport Infrastructure Ireland (TII) guidance document entitled PE-ENV-01104 Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) –

Overarching Technical Document (TII, 2022a) outlines a recommended approach for determining the significance of both the construction and operational phases of a development.

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The significance of GHG effects set out in PE-ENV-01104 (TII, 2022a) is based on ISEP guidance (ISEP, 2022) which is consistent with the terminology contained within Figure 3.4 of Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022). The 2022 ISEP Guidance (ISEP, 2022) sets out the following principles for significance:

- When evaluating significance, all new GHG emissions contribute to a negative environmental impact; however, some projects will replace existing development or baseline activity that has a higher GHG profile. Therefore, the significance of a project's emissions should be based on its net impact over its lifetime, which may be positive, negative or negligible;
- Where GHG emissions cannot be avoided, the goal of the EIA process should be to reduce the project's residual emissions at all stages; and
- Where GHG emissions remain significant, but cannot be further reduced, approaches to compensate the project's remaining emissions should be considered.

The criteria for determining the significance of effects are a two-stage process that involves defining the magnitude of the impacts and the sensitivity of the receptors (i.e. Ireland's National GHG targets). In relation to climate, there is no project specific assessment criteria, but the project will be assessed against the recommended TII significance determination. This takes account of any embedded or committed mitigation measures that form part of the design which should be considered.

TII (TII 2022a) states that professional judgement must be considered when contextualising and assessing the significance of a project's GHG impact. TII reference the IEMA guidance (ISEP, 2022) which states that the crux of assessing significance is "not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050".

Significance is determined using the criteria outlined in Table 7.18 (derived from PE-ENV-01104 (TII 2022a)) along with consideration of the following two factors:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

Table 7.18 Significance Criteria for GHGA

Effects	Significance Level	Description
Significant Adverse	Major Adverse	The project's GHG impacts are not mitigated. The project has not complied with do-minimum standards set through regulation, nor provided reductions required by local or national policies; and

		No meaningful absolute contribution to Ireland's trajectory towards net zero.
	Moderate Adverse	The project's GHG impacts are partially mitigated. The project has partially complied with do-minimum standards set through regulation, and have not fully complied with local or national policies; and Falls short of full contribution to Ireland's trajectory towards net zero.
Not Significant	Minor Adverse	The project's GHG impacts are mitigated through 'good practice' measures. The project has complied with existing and emerging policy requirements; and Fully in line to achieve Ireland's trajectory towards net zero.
	Negligible	The project's GHG impacts are mitigated beyond design standards. The project has gone well beyond existing and emerging policy requirements; and Well 'ahead of the curve' for Ireland's trajectory towards net zero.
Beneficial	Beneficial	The project's net GHG impacts are below zero and it causes a reduction in atmosphere GHG concentration. The project has gone well beyond existing and emerging policy requirements; and Well 'ahead of the curve' for Ireland's trajectory towards net zero, provides a positive climate impact.

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Ireland's carbon budgets can also be used to contextualise the magnitude of GHG emissions from the proposed development (TII, 2022a). The approach is based on comparing the net proposed development GHG emissions to the relevant carbon budgets (Government of Ireland, 2023a). With the publication of the Climate Action Act in 2021 and the Climate Action Plan 2025, sectoral carbon budgets have been published for comparison with the net GHG emissions from the proposed development over its lifespan. The aim of the carbon budgets is to ensure we are on a trajectory to meet the National Climate Objective of Net Zero by 2050.

7.3.2.3 CLIMATE CHANGE RISK ASSESSMENT (CCRA)

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The assessment involves determining the vulnerability of the proposed development to climate change. This involves an analysis of the sensitivity and exposure of the development to climate hazards which together provide a measure of vulnerability.
PE-ENV-01104 (TII, 2022a) states that the CCRA is guided by the principles set out in the overarching best practice guidance documents:

- Technical Guidance on the Climate Proofing of Infrastructure in the Period 2021-2027 (European Commission, 2021a); and
- The Institute of Environmental Management and Assessment, Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation (2nd Edition) (ISEP, 2020).

The baseline environment information provided in Section 7.3.3, future climate change modelling and input from other experts working on the proposed development (i.e. hydrologists) should be used to assess the likelihood of a climate risk.

First an initial screening CCRA based on the operational phase is carried out, according to the TII guidance PE-ENV-01104. This is carried out by determining the sensitivity of proposed development assets (i.e. receptors) and their exposure to climate change hazards.
The proposed development asset categories must be assigned a level of sensitivity to climate hazards. PE-ENV-01104 (TII, 2022a) provides the list of asset categories and climate hazards to be considered. The asset categories will vary for development type and need to be determined on a development-by-development basis.

- **Asset Categories Pavements**; drainage; structures; utilities; landscaping; signs, light posts, buildings, and fences.
- **Climate Hazards Flooding** (coastal, pluvial, fluvial); extreme heat; extreme cold; wildfire; drought; extreme wind; lightning and hail; landslides; fog.

The sensitivity is based on a High, Medium or Low rating with a score of 1 to 3 assigned as per the criteria below.

- **High Sensitivity**: The climate hazard will or is likely to have a major impact on the asset category. This is a sensitivity score of 3.
- **Medium Sensitivity**: It is possible or likely the climate hazard will have a moderate impact on the asset category. This is a sensitivity score of 2.
- **Low Sensitivity**: It is possible the climate hazard will have a low or negligible impact on the asset category. This is a sensitivity score of 1.

Once the sensitivities have been identified the exposure analysis is undertaken (European Commission, 2021a; TII, 2022a). The exposure analysis involves determining the level of exposure of each climate hazard at the project location irrespective of the project type. Current and future climate hazards are discussed in Section 7.3.4.3. For example, flooding could be a risk if the project location is next to a river in a floodplain. Exposure is assigned a level of High, Medium or Low as per the below criteria.

- **High Exposure**: It is almost certain or likely this climate hazard will occur at the project location, i.e. might arise once to several times per year. This is an exposure score of 3.
- **Medium Exposure:** It is possible this climate hazard will occur at the project location, i.e. might arise a number of times in a decade. This is an exposure score of 2.
- **Low Exposure:** It is unlikely or rare this climate hazard will occur at the project location, i.e. might arise a number of times in a generation or in a lifetime. This is an exposure score of 1.

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Once the sensitivity and exposure are categorised, a vulnerability analysis is conducted by multiplying the sensitivity and exposure to calculate the vulnerability.

7.3.2.3.1 Significance Criteria for CCRA

The CCRA involves an initial screening assessment to determine the vulnerability of the proposed development to various climate hazards. The vulnerability is determined by combining the sensitivity and the exposure of the proposed development to various climate hazards.

Vulnerability = Sensitivity x Exposure

The vulnerability assessment takes any proposed mitigation into account. Table 7.19 details the vulnerability matrix; vulnerabilities are scored on a high, medium and low scale.

TII guidance (TII, 2022a) and the EU technical guidance (European Commission, 2021a) note that if all vulnerabilities are ranked as low in a justified manner, no detailed climate risk assessment may be needed. Therefore, the impact from climate change on the proposed development is considered not significant.

However, where residual medium or high vulnerabilities exist the assessment may need to be progressed to a detailed climate change risk assessment and further mitigation implemented to reduce risks.

Table 7.19 Vulnerability matrix

		Exposure		
		High (3)	**Medium (2)**	**Low (1)**
Sensitivity	**High (3)**	9 - High	6 – High	3 - Medium
	Medium (2)	6 - High	4 - Medium	2 - Low
	Low (1)	3 - Medium	2 – Low	1 - Low

The screening CCRA, detailed in Section 7.3.4.3, did not identify any residual medium or high risks to the proposed development due to climate change. Therefore, a detailed CCRA for the construction and operational phase were scoped out.

While a CCRA for the construction phase was not required, best practice mitigation against climate hazards is still recommended in Section 7.3.5.

7.3.3 RECEIVING ENVIRONMENT

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PE-ENV-01104 (TII, 2022a) states that a baseline climate scenario should identify, consistent with the study area for the project, GHG emissions without the project for both the current and future baseline.

Ireland declared a climate and biodiversity emergency in May 2019 and in November 2019 there was European Parliament approval of a resolution declaring a climate and environment emergency in Europe. This, in addition to Ireland's current failure to meet its EU binding targets under Regulation 2018/842 (European Union, 2018) results in changes in GHG emissions either beneficial or adverse being of more significance than previously considered prior to these declarations.

Climate impacts are assessed at a national level and in relation to national targets and sectoral emission ceilings. The study area for climate is the Republic of Ireland and the baseline is determined in relation to this study area.

7.3.3.1 CURRENT GHG BASELINE

Data published in July 2025 (EPA, 2025a), indicates that Ireland exceeded, without the use of flexibilities, its 2024 annual limit set under EU's Effort Sharing Decision (ESD) (EU 2018/842) by 1.03 Mt CO_2e. However, the 2024 emissions represent the second consecutive year in which Ireland's emission were below (-4.2%) 1990 levels. ETS (Emissions Trading Scheme) emissions decreased (-7.4%) and ESR (Effort Sharing Regulation) emissions decreased (-0.5%). Ireland's target is an emission reduction of 626 kt of CO_2e by 2030 on an average baseline of 2016 to 2018.

The EPA estimate that 2024 total national GHG emissions, excluding LULUCF, have decreased by 2.0% on 2023 levels to 53.75 Mt CO_2e, with a 0.7 Mt CO_2e (-8.9%) reduction in electricity industries alone. This was driven by a 39.6% share of energy from renewables in 2024 and the complete phase-out of peat for electricity generation. Manufacturing combustion and industrial processes decreased by 4.6% to 6.0 Mt CO_2e in 2024 due to declines in fossil fuel usage. The sector with the highest emissions in 2024 was agriculture at 38% of the total, followed by transport at 21.7%. For 2024, total national emissions (including LULUCF) were 57.64 Mt CO_2e (EPA, 2025a) (Table 7.20).

The current estimates of National greenhouse gas emissions (including LULUCF) in 2024 are 12.0% below 2018, well off the National Climate ambition of a 51% reduction by 2030. The data indicate that from 2021- 2024 Ireland has used 82.5% of the 295 Mt CO_2e Carbon Budget for the five-year period 2021-2025. This leaves 17.5% of the budget available for 2025, requiring a substantial 10.3% annual emissions reduction for 2025 to stay within budget.

Table 7.20 Trends in Total National GHG Emissions 2021 – 2024

Sector [Note 1]	2021	2022	2023	2024	Total Budget (Mt CO_2e) (2021-2025)	% Budget 2021-2025 Used	Annual Change 2023 to 2024
Electricity	9.89	9.69	7.57	6.95	40	85.25%	-8.19%
Transport	11.09	11.76	11.80	11.65	54	85.74%	-1.27%
Buildings (Residential)	6.87	5.75	5.35	5.61	29	81.31%	4.86%
Buildings (Commercial and Public)	1.44	1.45	1.39	1.49	7	82.43%	7.19%
Industry	7.09	6.62	6.31	6.01	30	86.77%	-4.75%
Agriculture	21.94	21.78	20.72	20.41	106	80.05%	-1.50%
Other [Note 2]	1.86	1.93	1.81	1.63	9	80.33%	-9.94%
LULUCF	4.63	3.98	3.89	3.89	–	–	0
Total including LULUCF	64.82	62.99	58.83	57.64	295	82.81%	-2.04%

Note 1 Reproduced from latest emissions data on the EPA website July 2025 (EPA, 2025).
Note 2 Other includes Petroleum refining, F-Gases and Waste (emissions from solid waste disposal on land, solid waste treatment (composting and anaerobic digestion), wastewater treatment, waste incineration and open burning of waste).

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7.3.3.2 FUTURE GHG BASELINE

The future baseline with respect to the GHGA can be considered in relation to the future climate targets which the assessment results will be compared against. In line with TII (TII, 2022a) and ISEP Guidance (ISEP, 2022) the future baseline is a trajectory towards net zero by 2050, "whether it [the project] contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050".

The future baseline will be determined by Ireland meeting its targets set out in the CAP25, and future CAPs, alongside binding 2030 EU targets. The European Union (EU) enacted 'Regulation (EU) 2018/842 on binding annual GHG emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No. 525/2013' (hereafter referred to as the Regulation) (European Union, 2018) to meet the commitments under the Paris Agreement. The Regulation aims to deliver, collectively by the EU in the most cost-effective manner possible, reductions in GHG emissions from the Emission Trading Scheme (ETS) and non-ETS sectors amounting to 43% and 30%, respectively, by 2030 compared to 2005. The Regulation was amended in April 2023 and Ireland must now limit its ETS and non-ETS greenhouse gas emissions by at least 42% by 2030. The ETS is an EU-wide scheme which regulates the GHG emissions of larger industrial emitters including electricity generation, cement manufacturing and heavy industry. The non-ETS

sector includes all domestic GHG emitters which do not fall under the ETS scheme and includes GHG emissions from transport, residential and commercial buildings and agriculture.

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In May 2025, the EPA released the report Ireland's Greenhouse Gas Emissions Projections 2024-2055 (EPA, 2025b), which includes total projected emissions and a breakdown of projected emissions per sector under the 'With Existing Measures' and 'With Additional Measures' scenarios. The EPA projections indicate that currently implemented measures (With Existing Measures) will achieve a reduction of 10% on 2005 levels by 2030, significantly short of the 42% reduction target. If measures in the higher ambition (With Additional Measures) scenario are implemented, EPA projections show that Ireland can achieve a reduction of 22% by 2030, still short of the 42% reduction target.

7.3.3.3 CURRENT CCRA BASELINE

The region of the proposed development has a temperate, oceanic climate, resulting in mild winters and cool summers. The Met Éireann weather station at Dublin Airport is the nearest, representative, weather and climate monitoring station to the proposed development with meteorological data recorded for the 30-year period from 1991 to 2020. The historical regional weather data for Dublin Airport metrological station is representative of the current climate in the region of the proposed development. The data for the 30-year period from 1991 to 2020 indicates that the wettest months at Dublin Airport Metrological Station were January, October and December, and the driest month on average was May (Met Éireann, 2025a). July was the warmest month with a mean temperature of 15.4 Celsius. January was the coldest month with a mean temperature of 5.2 Celsius.

Met Éireann's 2023 Climate Statement (Met Éireann, 2024a) states 2023's average shaded air temperature in Ireland is provisionally 11.20°C, which is 1.65°C above the 1961-1990 long-term average. Before this, 2022 was the warmest year on record; however, 2023 was 0.38°C warmer (see Figure 7.4).

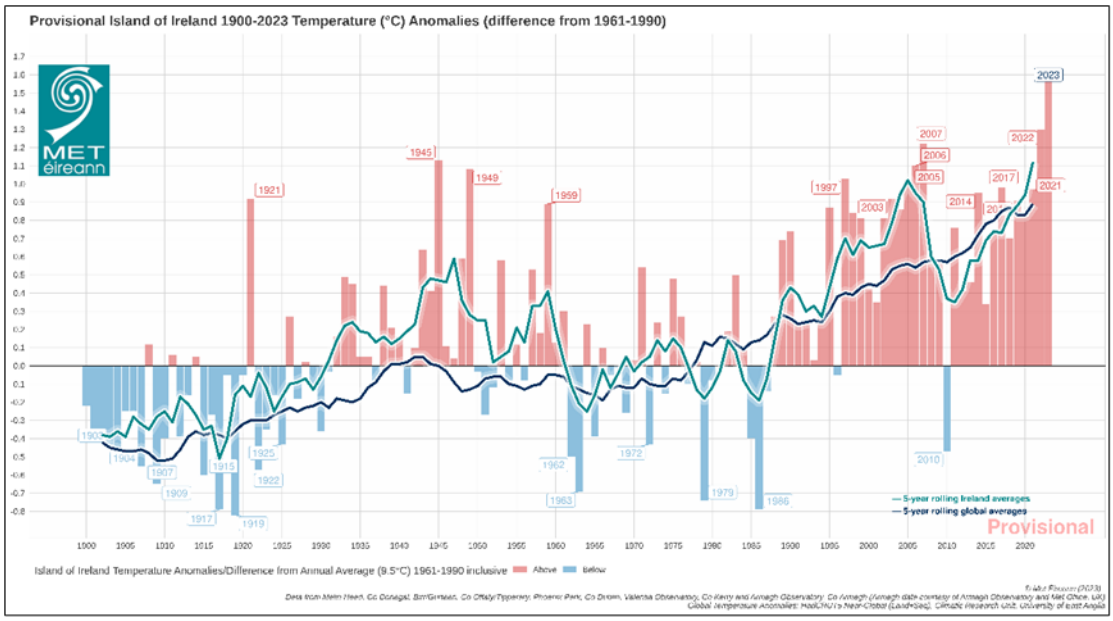

Figure 7.4 1900-2023 Temperature (°C) Temperature Anomalies(differences from 1961-1990)

2023 also had above average rainfall. This included the warmest June on record and the wettest March and July on record. Record high sea surface temperatures (SST) were recorded

since April 2023 which included a severe marine heatwave to the west of Ireland during the June 2023. This marine heatwave contributed to the record rainfall in July.

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Met Éireann's 2024 Climate Statement (Met Éireann 2025b) states 2024's average shaded air temperature in Ireland is provisionally 10.72°C, which is 1.17°C above the 1961-1990 long-term average or 0.55°C above the most recent 1991-2020 long-term average. This is the 4th warmest year on record with 2023 breaking previous records. Seven of the top ten warmest years have occurred since 2005. Record high sea surface temperatures (SST) were recorded in 2022, and in 2024 continued at or near record high levels. 2024 was overall drier than average; however, there were many instances of heavy or intense rainfall which led to flooding events. This trend is predicted to continue with climate change with an increase in both dry periods and heavy rainfall events. Considering the extraordinary data, Met Éireann states that the latest Irish climate change projections indicate further warming in the future, including warmer winters. The record temperatures mean that the likelihood of extreme weather events occurring has increased. This will result in longer dry periods and heavy rainfall events. Storm surges and coastal flooding due to sea level rise. Compound events, where coastal surges and extreme rainfall events occur simultaneously will also increase. Met Éireann has high confidence in maximum rainfall rates increasing but not in how the frequency or intensity of storms will change with climate change.

7.3.3.4 FUTURE CCRA BASELINE

Impacts due to climate change will evolve with a changing future baseline, changes have the potential to include increases in global temperatures and increases in the number of rainfall days per year. Therefore, it is expected that the baseline climate will evolve over time and consideration is needed with respect to this within the design of the proposed development.
Ireland has seen increases in the annual rainfall in the north and west of the country, with small increases or decreases in the south and east including in the region where the proposed development will be located (EPA, 2021b). The EPA have compiled a list of potential adverse impacts due to climate change including the following which may be of relevance to the proposed development (EPA, 2021b):

- More intense storms and rainfall events;
- Increased likelihood and magnitude of river and coastal flooding;
- Water shortages in summer in the east;
- Adverse impacts on water quality; and
- Changes in distribution of plant and animal species.

TII's Guidance document PE-ENV-01104 (TII 2022a) states that for future climate change a moderate to high Representative Concentration Pathways (RCP) should be adopted. RPC4.5 is considered moderate, while RPC8.5 is considered high. Representative Concentration Pathways (RCPs) describe different 21st century pathways of GHG emissions depending on the level of climate mitigation action undertaken.

National Framework for Climate Services (NFCS) was founded in June 2022 to streamline the provision of climate services in Ireland and will be led by Met Éireann. The aim of the NFCS is to enable the co-production, delivery and use of accurate, actionable and accessible climate information and tools to support climate resilience planning and decision making. In addition to the NFCS, further work has been ongoing into climate projects in Ireland through research under the TRANSLATE project. TRANSLATE (Met Éireann, 2023b) has been led by climate researchers from University of Galway – Irish Centre for High End Computing (ICHEC), and University College Cork – SFI Research Centre for Energy, Climate and Marine (MaREI), supported by Met Éireann climatologists. TRANSLATE's outputs are produced using a selection

of internationally reviewed and accepted models from both CORDEX and CMIP5. Representative Concentration Pathways (RCPs) provide a broad range of possible futures based on assumptions of human activity. The modelled scenarios include for "least" (RCP2.6), "more" (RCP4.5) or "most" (RCP8.5) climate change (Figure 7.5).

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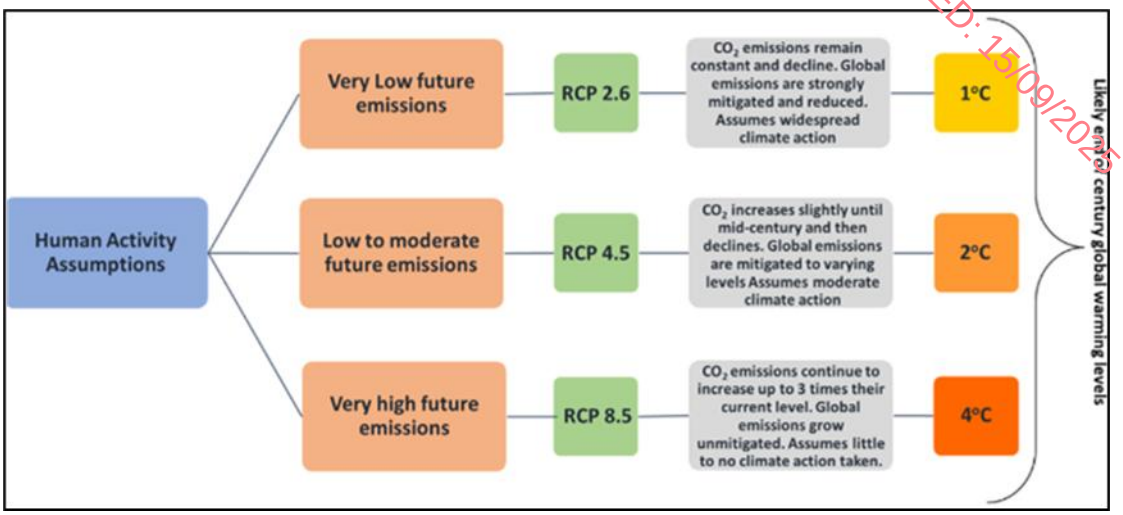

Figure 7.5 Representative Concentration Pathways associated emission levels
(Source: TRANSLATE Project Storymap, Met Éireann 2023)

TRANSLATE (Met Éireann, 2023b) provides the first standardised and bias-corrected national climate projections for Ireland to aid climate risk decision making across multiple sectors (e.g. transport, energy, water), by providing information on how Ireland's climate could change as global temperatures increase to 1.5˚C ,2˚C, 2.5˚C, 3˚C or 4˚C. Projections broadly agree with previous projections for Ireland. Ireland's climate is dominated by the Atlantic Meridional Overturning Circulation (AMOC), a large system of ocean currents, including the Gulf Stream, characterised by a northward flow of warm water and a southward flow of cold water. Due to the AMOC, Ireland does not suffer from the extremes of temperature experienced by other countries at a similar latitude. Recent studies have projected that the AMOC could decline by 30 – 40 % by 2100, resulting in cooler North Atlantic Sea surface temperatures (SSTs) (Met Éireann, 2023b). Met Éireann projects that Ireland will nevertheless continue to warm, although the AMOC cooling influence may lead to reduced warming compared with continental Europe. AMOC weakening is also expected to lead to additional sea level rise around Ireland. With climate change Ireland's temperature and rainfall will undergo more and more significant changes, e.g. on average summer temperature could increase by more than 2°C, summer rainfall could decrease by 9% while winter rainfall could increase by 24% (Figure 7.6). Future projects also include a 10-fold increase in the frequency of summer nights (values > 15°C) by the end of the century, a decrease in the frequency of cold winter nights and an increase in the number of heatwaves. A heatwave in Ireland is defined as a period of 5 consecutive days where the daily maximum temperature is greater than 25°C.

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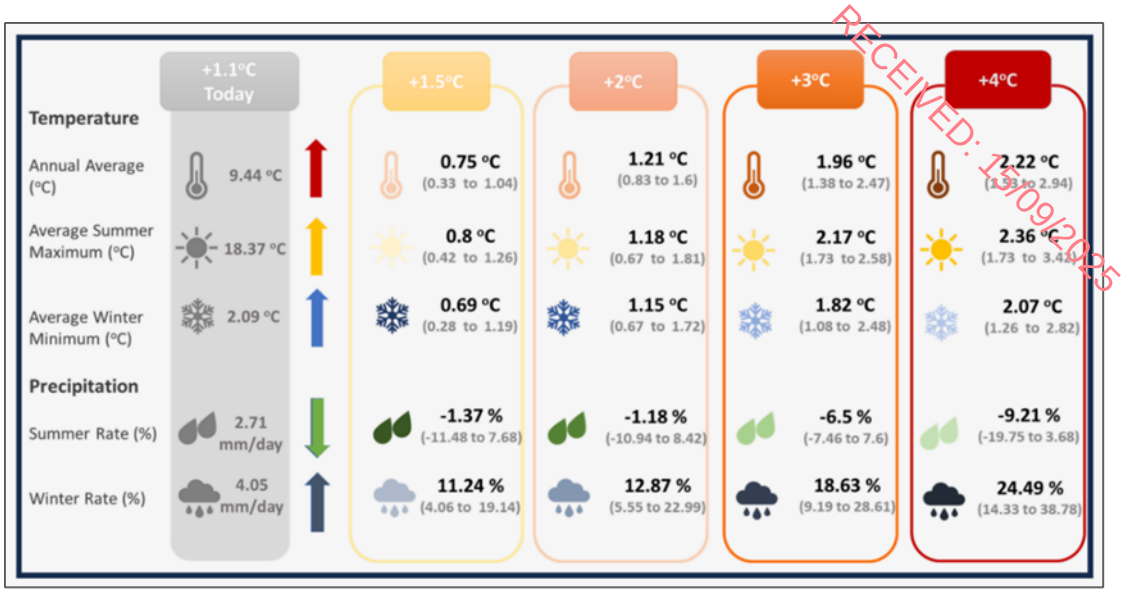

Figure 7.6 Change of climate variables for Ireland for different Global warming thresholds
(Source: TRANSLATE Project Storymap, Met Éireann, 2023b)

The TRANSLATE research report (Met Éireann, 2024d) finds that night-time temperatures will warm more than day-time temperatures, with temperatures increases across all seasons but the highest in the summer (with an increase of 0.5°C to 3.5°C). Autumn is projected to have the highest increase in average minimum temperatures (with an increase of 1.1°C to 4.4°C). The variance is dependent on the scenario that is being reviewed. While these temperatures are projected across all of Ireland, they increase most in the east of the country compared to the west. With respect to rainfall, increases of 4% to 38% are projected. However, this will not be spread across the year as during summer months there are projected decreases in rainfall beyond the 2°C warming scenario.

In January 2024 the EPA published Ireland's Climate Change Assessment Synthesis Report (EPA, 2024e) which contained four volumes:

- Volume 1: Climate Science: Ireland in a Changing World;
- Volume 2: Achieving Climate Neutrality by 2050;
- Volume 3: Being Prepared for Ireland's Future Climate; and
- Volume 4: Realising the Benefits of Transition and Transformation.

This report reinforces the existing and future risks arising from climate change. Volume 1 (EPA, 2024e) states that under Early action, the temperature increase averaged across the island of Ireland relative to the recent past (1976 to 2005) would reach 0.91°C (0.44 to 1.10°C) by mid-century before falling back to 0.80°C (0.34 to 1.07°C) at the end of the century. Whereas under Late action, by the end of the century it is projected that the temperature increases could be 2.77°C (2.02 to 3.49°C). Heat extremes will become more frequent and more severe and cold extremes will become less frequent and less severe with further warming.

Precipitation was 7% higher over the period 1991 to 2020 than over the 1961 to 1990 period. The average future predicted increase in precipitation is <10% in annual mean accumulated. By 2100 projected additional rises in sea level range from 0.32 to 0.6m under early action to 0.63 to 1.01m under late action scenarios, with greater storm surges potentially effecting critical infrastructure along the coastline. Projections of changes in storminess are highly uncertain and translate into large uncertainties in future frequency and intensity of extreme waves.

Volume 3 (EPA, 2024e) discusses how water supplies will face growing pressures resulting in increased water demand and how options need to be developed, including potential new sources. The report states the key role of critical infrastructure for delivering public services, economic development and a sustainable environment. These are exposed to a range of climate extremes. Failures in critical infrastructure can cascade across other sectors and present a multi-sector risk due to climate change.

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The report references the EPA's Critical Infrastructure Vulnerability to Climate Change report (EPA, 2021a) as the most substantial research project in Ireland to date on climate change and critical infrastructure which assesses the future performance of Ireland's critical infrastructure when climate is considered. The Critical Infrastructure Vulnerability to Climate Change report states with respect to water availability and quality, that flood risk and heatwaves have a medium vulnerability index and the underground supply network has a high vulnerability to snowstorms and cold spells. However, while the vulnerability is high, the exposure is likely to reduce due to future climate change resulting in less cold weather events. The risk assessment highlights the co-dependence of the water sector to the energy sector, and how vulnerability in the energy sector may have cascading impacts.

Volume 4 (EPA, 2024e) calls for system change, including a transformation of urban settings. Stating that meaningful urban transformation can create a better living environment while simultaneously reducing emissions.

The projections were echoed by the Updated High-resolution Climate Projections for Ireland Research Report: 471 (EPA, 2024f) which was in broad agreement with previous research. The future autumn and winter months are projected to be up to 10% wetter, while summer is projected to be up to 8% drier. This information has been used in determining the exposure analysis (see Section 7.3.5.3).

7.3.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

During the construction phase, engine emissions from site vehicles and machinery have the potential to impact climate through the release of CO_2 and to a lesser extent, other greenhouse gases (GHGs). Embodied carbon of materials used in the construction of the development along with site activities will impact climate. Impacts to climate are assessed against Ireland's obligations under the EU 2030 GHG targets and sectoral emissions ceilings.

Engine emissions from vehicles accessing the site have the potential to impact climate during the operational phase of the development through the release of CO_2. Operational phase impacts will be long-term in duration. In addition, the vulnerability of the proposed development in relation to future climate change must be considered during the operational phase. The proposed development has been designed to minimise the impact on climate where possible in line with the most recent development guidelines (Part L of the Building Regulations 2022) and in reference to measures within the Climate Action Plan 2025 (DECC, 2025).

In accordance with the Dublin City Development Plan, both climate change mitigation and adaptation measures have been integrated into the design and assessed within this chapter of the EIAR. Adaptation measures, such as sustainable drainage systems, flood resilience design, and increased planting to provide shading and reduce heat stress, have been incorporated to reduce the vulnerability of the development to future climate impacts. This ensures alignment with national policy and avoids any potential material contravention of the Dublin City Development Plan (DCC, 2022).

7.3.5 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

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7.3.5.1 DO-NOTHING IMPACT

In the Do-Nothing scenario, the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

As the site is zoned for development, it is likely that in the absence of the proposed development a development of a similar nature would occur. Therefore, the predicted climate impacts within this report are likely to occur even in the absence of the proposed development.

7.3.5.2 GREENHOUSE GAS ASSESSMENT

7.3.5.2.1 Construction Phase

The most significant proportion of GHG emissions tend to occur during the construction phase due to embodied carbon in construction materials and emissions from construction activities. Therefore, the assessment has been included in the construction phase assessment for the purposes of the EIAR. The assessment is broken down into the following stages as per Section 7.3.2.2.3:

- Product stage (A1 – A3);
- Transportation to site (A4);
- Site operations (construction activities) (A5); and
- Material replacement & refurbishment (B4 – B5).

The construction phase GHG emissions comprise stages A1 – A5 which includes the construction materials, the transport of the materials to site and the construction activities or site operations. Ongoing material refurbishment and replacement throughout the lifetime of the development is included within category B4 – B5, these are default values based on the typical maintenance requirements for the chosen material types over the assumed 60-year lifetime.

The carbon assessment highlights the areas where the highest embodied carbon emissions occur, specifically as a result of building materials based on a typical build-up for the building type (house; duplex; apartment, etc.).

The GHG emissions from the development as a total cannot be compared against one specific sector 2030 carbon budget. The emissions are broken down into different assessment categories and these must be compared separately to the relevant sectoral emissions budgets, which are detailed in Table 7.21. The relevant sectoral emissions for the proposed development comparison include the Industry sector, Transport sector, and Waste sector. The predicted emissions for the proposed development are annualised over the assumed 60-year lifespan and then compared to the relevant sector 2030 carbon budgets. Annualising the full carbon emissions over the lifetime of the development allows for appropriate comparison with annual GHG targets.

The results of the GHGA are shown in Table 7.21. This includes both the outputs from the OneClick LCA tool and the TII Carbon Tool. Construction materials make up the majority of GHG emissions for the proposed development, accounting for approximately 56% of the total construction phase GHG emissions. Construction water use makes up the second highest

contribution at 20% of the total. Material transport, waste and construction activities make up the remainder of the construction GHG emissions. The A5 and B4-B5 categories include carbon savings associated with waste material recycling or re-use.

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It has been calculated that the total construction phase embodied carbon (including maintenance and replacement of materials over the development lifetime) for the proposed development will be 31,909 tonnes CO_2e (see Table 7.21).

Table 7.21 GHG Assessment Results

Stage	GHG Assessment Category	Predicted GHG Emissions (tCO2e)	Predicted GHG Emissions as % of Project Total	Relevant Sector for Carbon Budget Comparison
A1-A3	Materials	17,864.10	56%	Industry
A4	Material Transport	300.61	1%	Transport
A5	Site Clearance and Demolition	2.33	0.01%	Industry
	Land Use Change and Vegetation Loss	41.80	0.13%	LULUCF
	Excavations	11.46	0.04%	Industry
	Construction water use	6,513.54	20%	Industry
	Construction site material waste	29.84	0.09%	Waste
	Construction site material waste transport	8.28	0.03%	Transport
	Construction site waste	100.71	0.32%	Waste
	Landscaping and Vegetation	-2.74	-0.01%	LULUCF
B4 - B5	Maintenance Material	6,446.40	20%	Industry
	Maintenance Material Transport	14.03	0.04%	Transport
	Maintenance Material Waste	579.11	1.8%	Waste
Total		**31,909**		

Figure 7.7 shows the GHG emissions for the proposed development per life-cycle stage based on the output from the OneClick LCA 3D Designer tool and the TII Carbon Tool combined.

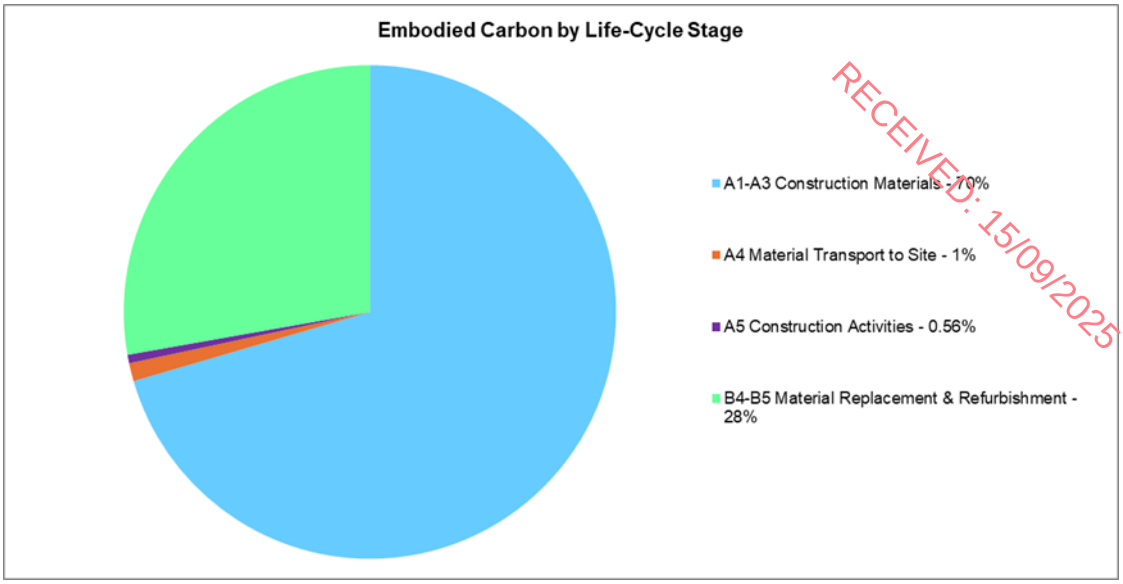

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Figure 7.7 Embodied Carbon by Life-Cycle Stage

The total predicted GHG emissions (as shown in Table 7.21) can be averaged over the full lifespan of the proposed development to give the predicted annual emissions to allow for direct comparison with national annual emissions and targets.

In Table 7.22, GHG emissions have been compared against the carbon budget for the industry, transport, and waste sectors in 2030 (Government of Ireland, 2024), against Ireland's total GHG emissions in 2024, and against Ireland's EU 2030 target of a 42% reduction in non-ETS sector emissions based on 2005 levels (27.7 Mt CO_2e) (set out in Regulation EU 2018/842).

The estimated total GHG emissions, when annualised over the 60-year proposed development lifespan, are equivalent to 0.0009% of Ireland's total GHG emissions in 2024 and 0.002% of Ireland's non-ETS 2030 emissions target. The estimated GHG emissions associated with transport-related activities are 0.0001% of the 2030 Transport budget, construction waste GHG emissions are 0.001% of the Waste budget, industry-related activities are 0.01% of the 2030 Industry budget.

Table 7.22 Estimated GHG Emissions Relative to Sectoral Budgets and GHG Baseline

Target/Sectoral Budget (tCO_2e)		**Annualised Development GHG Emissions**		**% of Relevant Target/Budget**
Ireland's 2024 Total GHG Emissions (existing baseline)	57,640,000	532	Total GHG Emissions	0.0009%
Non-ETS 2030 Target	27,722,000	532	Total GHG Emissions	0.002%
2030 Sectoral Budget (Industry Sector)	4,000,000	514	Total Industry Emissions	0.01%
2030 Sectoral Budget (Transport Sector)	6,000,000	5	Total Transport Emissions	0.0001%
2030 Sectoral Budget (Waste Sector)	1,000,000	12	Total Waste Emissions	0.001%

7.3.5.2.3 Operational Phase

Operational Energy Usage

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The proposed development has been designed to reduce the impact to climate where possible. Several measures have been incorporated into the design to ensure the operational phase emissions are minimised. The primary elements with respect to reducing climate impacts and optimising energy usage are summarised in Section 7.3.5 and are based on information provided by Varming Consulting Engineers in the Climate Action and Energy Statement Report.

Operational Traffic Emissions

There is the potential for increased traffic volumes to impact climate during the operational phase. To provide for a worst-case assessment and to assess potential cumulative impacts, the traffic data has included specific cumulative developments within the area (see Transportation Assessment prepared by ILTP Consulting, for further details).

The predicted concentrations of CO_2e for the future years of 2028 and 2043 are detailed in Table 2.23. These are significantly less than Ireland's national 2028 and 2030 targets set out under EU legislation (targets beyond 2030 are not available) and the 2030 sectoral emissions ceilings. It is predicted that in 2028 the proposed development will increase CO_2 emissions by 104 tonnes CO_2e. This equates to 0.0003% of the 2028 national emission ceiling or 0.002% of the 2030 Transport sector emissions ceiling (see Table 7.23). Similarly low increases in CO_2 emissions are predicted to occur in 2043 with emissions increasing by 290 tonnes CO_2e. This equates to 0.001% of the 2030 national emission ceiling or 0.005% of the 2030 Transport sector emissions ceiling (Table 7.23).

In addition, bicycle parking and electric vehicle parking and charging infrastructure will be provided as part of the parking requirements at the proposed development which will promote the use of more sustainable methods of transport.

Table 7.23 Traffic Emissions GHG Impact Assessment

Year	**Scenario**	**CO_2e (tonnes/annum)**
2028	Do Nothing	3,632
	Do Something	3,736
2043	Do Nothing	2,321
	Do Something	2,611
Increment Change in 2028		104
National Emission Ceiling 2028 (Tonnes) Note 1		37,869,352
Impact in 2028 (as % of national emissions ceiling)		0.0003%
Transport Sector 2030 Emission Ceiling		6,000,000
Impact in 2028 (as % of transport sector emissions ceiling)		0.002%

Increment Change in 2043	290
National Emission Ceiling 2030 (Tonnes) [Note 1]	27,722,000
Impact in 2043 (as % of national emissions ceiling)	0.001%
Impact in 2043 (as % of transport sector emissions ceiling)	0.005%

Note 1 Target under Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on setting out the annual emission allocations of the Member States for the period from 2021 to 2030 pursuant to Regulation (EU) 2018/842 of the European Parliament and of the Council.

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7.3.5.2.4 GHGA Significance Of Effects

The TII guidance states that the following two factors should be considered when determining significance:

The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and

The level of mitigation taking place.

The level of mitigation described in Section 7.3.6 has been considered when determining the significance of the proposed development's GHG emissions. According to the TII significance criteria described in Section 7.3.2.2.3 and Table 7.18, the significance of the GHG emissions during the construction and operational phase is minor adverse. The proposed development aligns with the following GHG significance criteria as per Table 7.18:

- The project's GHG impacts are mitigated through 'good practice' measures.
- The project has complied with existing and emerging policy requirements; and
- Fully in line to achieve Ireland's trajectory towards net zero.

In accordance with the EPA guidelines (EPA, 2022), the above significance equates to a significance of effect of GHG emissions during the construction and operational phase, which is ***direct, long-term, negative*** and ***slight***, which is overall ***not significant***.

7.3.5.3 CLIMATE CHANGE RISK ASSESSMENT

7.3.5.3.1 Construction Phase

A detailed CCRA of the construction phase has been scoped out as there are no residual medium or high-risk vulnerabilities to climate change hazards. Therefore, a detailed CCRA is not required (TII, 2022a). However, consideration has been given to the proposed development's vulnerability to the following climate change hazards with best practice mitigation measures proposed in Section 7.3.6:

- Flood Risk due to increased precipitation, and intense periods of rainfall. This includes fluvial and pluvial flooding;
- Increased temperatures potentially causing drought, wildfires and prolonged periods of hot weather;
- Reduced temperatures resulting in ice or snow; and
- Major Storm Damage including wind damage.

7.3.5.3.2 Operational Phase

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The sensitivity and exposure of the development to various climate hazards must first be determined to then determine the vulnerability of the proposed development to climate change. Flooding (coastal, pluvial, fluvial), extreme heat, extreme cold, wildfire, drought, extreme wind, lightning, hail, landslides and fog have been considered as climate hazards in the context of the proposed development.

The sensitivity of the proposed development to the climate hazards is assessed irrespective of the project location. Table 7.24 details the sensitivity of the proposed development on a scale of high (3), medium (2) and low (1). Once the sensitivity has been established the exposure of the proposed development to each of the climate hazards is determined, this is the likelihood of the climate hazard occurring at the project location and is also scored on a scale of high (3), medium (2) and low (1). The product of the sensitivity and exposure is then used to determine the overall vulnerability of the proposed development to each of the climate hazards as per Table 7.19. The results of the vulnerability assessment are detailed in Table 7.24.

Table 7.24 Climate Change Vulnerability Assessment

Climate Hazard	Sensitivity	Exposure	Vulnerability
Flooding (Coastal, Pluvial, Fluvial)	1 (Low)	2 (Medium)	2 (Low)
Extreme Heat	1 (Low)	2 (Medium)	2 (Low)
Extreme Cold	1 (Low)	2 (Medium)	2 (Low)
Wildfire	1 (Low)	1 (Low)	1 (Low)
Drought	1 (Low)	1 (Low)	1 (Low)
Extreme Wind	1 (Low)	1 (Low)	1 (Low)
Lightning & Hail	1 (Low)	1 (Low)	1 (Low)
Landslides	1 (Low)	1 (Low)	1 (Low)
Fog	1 (Low)	1 (Low)	1 (Low)

The sensitivity and exposure of the area was determined with reference to several online tools and with input from the various discipline specialists on the project team. It was concluded that the proposed development does not have any significant vulnerabilities to the identified climate hazards as described in the below sections. All vulnerabilities are classified as ***low***.

<u>Flooding</u>

A Flood Risk Assessment (FRA) was undertaken by POGA Consulting Engineers and is submitted separately as part of this planning application. This document was reviewed to inform the climate change vulnerability assessment and assess the potential for flooding at the proposed development site.

The majority of the proposed development lies outside the 0.1% Annual Exceedance Probability (AEP) flood extent (1-in-1000-year event), placing it within Flood Zone C, where the likelihood of riverine flooding is considered low. A small portion of the proposed access road

intersects with Flood Zone B, this is a minor encroachment and does not pose a significant risk. In relation to pluvial (surface water) flood risk, only a few localised areas within the site fall within the 1-in-100-year pluvial flood extent under a high-end future climate scenario. However, there have been no recorded incidents of surface water flooding on-site or in its immediate surroundings. The risk remains "low" as the development has been designed to accommodate this through appropriate flood-resilient measures.

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Incorporation of good building practice in design and construction of appropriate ground floor levels and associated drainage systems, and by maintenance and management of the property will further reduce any residual flood risk.

The proposed development incorporates robust mitigation strategies in accordance with the Greater Dublin Strategic Drainage Study (GDSDS), including permeable paving, swales, interception storage, and attenuation systems controlled by hydrobrakes. These Sustainable Drainage Systems (SuDS) are designed to manage and attenuate runoff effectively, reducing the risk of pluvial flooding to an acceptable level.

Extreme Wind, Fog, Lightning & Hail

In relation to extreme winds, the building shall be designed to the appropriate standards to account for the relevant wind loadings events for RCP4.5 and RCP8.5. If required as part of the building design, lightning protection shall be provided for. Hail and fog are not predicted to significantly affect the building due to its design.

It can be concluded that overall, the proposed development has low vulnerability to extreme wind, fog, lightning and hail.

Wildfires

In relation to wildfires, the Think Hazard! tool developed by the Global Facility for Disaster Reduction and Recovery (GFDRR, 2025), indicates that the wildfire hazard is classified as low for the Dublin area. This means that there is between a 4% to 10% chance of experiencing weather that could support a hazardous wildfire that may poses some risk to life and property loss in any given year. Future climate modelling indicates that there could be an increase in the weather conditions which are favourable to fire conditions. These include increases in temperature and prolonged dry periods. However, due to the project location in a built-up, sub-urban area the risk of wildfire is significantly lessened, and it can be concluded that the proposed development is of low vulnerability to wildfires.

Landslides

The Geological Society of Ireland (GSI) landslide susceptibility mapping database (GSI, 2025) was reviewed to inform the risk from landslides at the proposed development. There have not been any historical landslide events in the vicinity of the proposed development, and the area is of low susceptibility to future landslides. Therefore, the vulnerability of the proposed development to landslides is classed as low.

Extreme Temperatures (Heat & Cold) & Drought

Extreme temperatures, both extreme heat and extreme cold, have the potential to impact the building materials and some related infrastructure and potentially landscape planting. However, the building materials selected at the detailed design and will be done with

consideration of the likely future temperature ranges Ireland will experience under RCP4.5 and RCP8.5 up to 2100. Therefore, extreme temperatures are not considered a significant risk.

Throughout detailed design phase, the architects will be using guidance documents to inform with design detail decisions including the EU Commission Technical Guidance on Adapting Buildings to Climate Change (European Commission (2021a), LETI emergency design guide (LETI, 2020), and the latest available IPCC report. In addition, should updated Eurocodes be published prior to completion of detailed design, which will include consideration for climate impacts, these design standards will be considered.

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Summary

Overall, the proposed development has at most low vulnerabilities to the identified climate hazards. Therefore, no detailed risk assessment is required.

7.3.5.3.3 CCRA Significance Of Effects

With design mitigation in place, there are no significant risks to the proposed development due to climate change. In accordance with the EPA Guidelines (EPA, 2022), the significance of effect of the impacts to the proposed development due to climate change during the operational phase are ***direct, long-term, negative*** and ***imperceptible,*** which is overall ***not significant*** in EIA terms.

7.3.6 MITIGATION MEASURES

7.3.6.1 INCORPORATED DESIGN MITIGATION

A number of measures have been incorporated into the design of the development to mitigate against the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated into the design of the development to avoid potential flooding impacts as a result of increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the proposed development to climate change (Section 7.3.5).

In relation to operational energy usage information from the Climate Action and Energy Statement prepared for the proposed development has been used to inform this assessment. The proposed development complies with, or exceeds, the requirements stipulated within both TGD Part L: 2022 (dwellings) and TGD Part L: 2022 (buildings other than dwellings) in regard to renewable allowance, U-values, air tightness, energy performance and carbon performance.

As per the Climate Action and Energy Statement, following are the principal services strategy and design proposals for the development:

- Provision of a suitably sized and efficient air source heat pump unit suitable for each apartment to meet NZEB requirements with panel radiators throughout each apartment.
- Provision of Solar photovoltaic panels necessary to meet the NZEB Renewable Energy Ratio (RER) requirement for the apartments and landlord areas.
- Provision of electrical panel heaters in the Landlord common/circulation spaces to satisfy BER and Part L requirements.

- Provision of Mechanical Heat Recovery Ventilation (MHRV) within each Apartment.
- All main Landlord / common areas of the building will be naturally ventilated.
- Provision of centrally stored mains and cold water at basement levels to serve each Block and each apartment.
- Hot water generation shall be via the local heat pump unit.
- Provision of energy efficient light fittings and controls throughout.
- Provision of an air tightness level minimum of 3.0m³/ m²/ hr @ 50 Pa for all Apartments.
- All selected materials will be cost effective, robust, energy efficient and ozone friendly.
- All services will be designed & installed in a manner to facilitate NZEB compliance.
- Provision of a Building Energy Management System (BeMS) to control all Landlord mechanical plant items and optimise energy performance.

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These identified measures will aid in reducing the impact to climate during the operational phase of the proposed development in line with the goals of the Climate Action Plan.

The proposed development incorporates robust mitigation strategies to avoid flooding in accordance with the Greater Dublin Strategic Drainage Study (GDSDS), including permeable paving, swales, interception storage, and attenuation systems controlled by hydrobrakes. These Sustainable Drainage Systems (SuDS) are designed to manage and attenuate runoff effectively, reducing the risk of pluvial flooding to an acceptable level.

7.3.6.2 CONSTRUCTION PHASE MITIGATION

Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. The following measures to reduce the embodied carbon of the construction works are:

- Appointing a suitably competent contractor who will undertake waste audits detailing resource recovery best practice and identify materials can be reused/recycled.
- Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- Ensure all plant and machinery are well maintained and inspected regularly.
- Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.
- Sourcing materials locally where possible to reduce transport related CO2 emissions.
- Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible. For example a 30% minimum clinker replacement in cement may be utilised in line with the requirements for public bodies.

In terms of impact on the proposed development due to climate change, during construction the Contractor will be required to mitigate against the effects of extreme rainfall/flooding through site risk assessments and method statements. The Contractor will also be required to mitigate against the effects of extreme wind/storms, temperature extremes through site risk assessments and method statements. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures. Temperatures can affect the performance of some materials, and this will require

consideration during construction. During construction, the Contractor will be required to mitigate against the effects of fog, lighting and hail through site risk assessments and method statements.

Throughout detailed design and construction phase, guidance documents to inform with design detail decisions shall be reviewed e.g. the EU Commission Technical Guidance on Adapting Buildings to Climate Change (European Commission (2021a), LETI emergency design guide (LETI, 2020), and the latest IPCC report.

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7.3.6.3 OPERATIONAL PHASE MITIGATION

The proposed development has been designed to reduce the impact on climate as a result of energy usage during operation. These measures are outlined in Section 7.3.6.1 above as incorporated design mitigation. No further operational phase mitigation is proposed.

7.3.7 RESIDUAL IMPACTS

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII reference the ISEP guidance which states that the crux of assessing significance is "not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050". The proposed development has proposed some best practice mitigation measures and is committing to reducing climate impacts where feasible. As per the assessment criteria in Table 7.18 the residual impact of the proposed development in relation to GHG emissions is considered minor adverse, this equates to a ***direct, long-term, negative*** and ***slight,*** impact which is ***overall not significant*** in EIA terms.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change. The residual effect of climate change on the proposed development is considered ***direct, long-term, negative*** and ***imperceptible***, which is overall ***not significant*** in EIA terms.

7.3.8 Monitoring

Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts. Monitoring will include contractual obligations, in line with the most recent Climate Action Plan and sectoral targets, for the successful tenderer to ensure that the proposed development stays in line with updated aims. Commitments to monitor GHG emissions during the construction phase will also be secured through the final Construction Environmental Management Plan (CEMP). Monitoring will include embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates). Where monitoring shows that the proposed development is not meeting its targets, further mitigation will be put in place.

Monitoring should also include reviewing potential for extreme weather events which may cause damage during construction. Contractors' Environmental Management System (EMS) will include measures to address risks during such events i.e. flooding.

	Construction Mitigation
C-C1	Appointing a suitably competent contractor who will undertake waste audits detailing resource recovery best practice and identify materials can be reused/recycled.
C-C2	Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
C-C3	Ensure all plant and machinery are well maintained and inspected regularly.
C-C4	Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.
C-C5	Sourcing materials locally where possible to reduce transport related CO2 emissions.
C-C6	Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible. For example a 30% minimum clinker replacement in cement may be utilised in line with the requirements for public bodies.
C-C7	The Contractor is required to mitigate against the effects of climate hazards (extreme rainfall/flooding, extreme winds/storms, fog, lighting, hail and extreme temperatures) through site risk assessments and method statements.
	Operational Mitigation
C-O1	No operational phase mitigation is proposed other than the incorporated design mitigation in relation to operational energy usage as set out in the Climate Action Energy Statement.
	Monitoring
C-M1	Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts. Monitoring will include contractual obligations, in line with the most recent Climate Action Plan and sectoral targets, for the successful tenderer to ensure that the proposed development stays in line with updated aims. Commitments to monitor GHG emissions during the construction phase will also be secured through the final Construction Environmental Management Plan (CEMP). Monitoring will include embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates). Where monitoring shows that the proposed development is not meeting its targets, further mitigation will be put in place. Monitoring should also include reviewing potential for extreme weather events which may cause damage during construction. Contractors' Environmental Management System (EMS) will include measures to address risks during such events i.e. flooding

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7.3.9 REINSTATEMENT

This is not applicable to the climate assessment.

7.3.10 INTERACTIONS

Climate has the potential to interact with several other environmental attributes.

7.3.10.1 Land, Soils, Geology and Hydrology

The impact of flood risk has been assessed, and the surface water drainage network has been designed to cater for increased rainfall in future years due to climate change. The effect of the interactions between climate and land, soils, geology and hydrology are direct, short-term, negative and imperceptible during the construction phase and *direct, long-term, negative and imperceptible* during the operational phase, which is overall *not significant* in EIA terms.

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7.3.10.2 Air Quality

Air quality and climate have interactions due to the emissions from the burning of fossil fuels during the construction and operational phases generating both air quality and climate impacts. Air quality modelling outputs are utilised within the Climate Chapter. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

7.3.10.3 Traffic and Transportation

During the construction and operational phase, there is the potential for interactions between climate and traffic. Vehicles accessing the site will result in emissions of CO_2, a greenhouse gas. The effects of the proposed development on climate are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the effects of the interactions between traffic and climate are *direct, short-term, negative and not significant* during the construction phase and *direct, long-term, negative and not significant* during the operational phase, which is overall not significant in EIA terms.

7.3.10.4 Waste

Waste management measures (detailed in Ch. 11 Material Assets – Waste) will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as recycling. The effect of the interactions between waste and climate are considered direct, short-term, negative and not significant during the construction phase and *direct, long-term, negative and not significant* during the operational phase, which is overall *not significant* in EIA terms.

7.3.11 CUMULATIVE IMPACTS

With respect to the requirement for a cumulative assessment the ISEP (ISEP, 2022) and TII (TII, 2022a) guidance on which the assessment is based states that "*the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative*".

The traffic data used for the operational phase assessment included cumulative traffic from existing and permitted developments in the surrounding area. Therefore, this impact assessment is cumulative.

As per the above, the cumulative impact of the proposed development in relation to GHG emissions is considered *direct, long-term, negative* and *slight,* which is overall *not significant* in EIA terms.

7.4 REFERENCES

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BRE (2003) Controlling Particles, Vapours & Noise Pollution from Construction Sites.
Civil Engineering Standard Method of Measurement (CESSM) (2013) Carbon and Price Book database.
Construction Industry Federation (2021) Modern Methods of Construction
Department of Environment, Climate and Communications (DECC) (2024) National Adaptation Framework (NAF)
Department of the Environment Heritage and Local Government (DEHLG) (2004) Quarries and Ancillary Activities, Guidelines for Planning Authorities
Dublin City Council (2018) Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition
Environmental Protection Agency (2006) Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals)
Environmental Protection Agency (2020a) State of the Irish Environment Report (Chapter 2: Climate Change)
Environmental Protection Agency (2020b) Research 339: High-resolution Climate Projections for Ireland – A Multi-model Ensemble Approach'
Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
Environmental Protection Agency (2024) Air Quality in Ireland 2023 (& previous annual reports)
Environmental Protection Agency (2024b) National Climate Change Risk Assessment (NCCRA)
Environmental Protection Agency (2024c) Ireland's Climate Change Assessment Synthesis Report
Environmental Protection Agency (2024d) Updated High-resolution Climate Projections for Ireland Research Report: 471
Environmental Protection Agency (2025a) Ireland's Provisional Greenhouse Gas Emissions 1990-2024
Environmental Protection Agency (2025b) Ireland's Greenhouse Gas Emissions Projections 2024-2055
Environmental Protection Agency (EPA) (2021a) Critical Infrastructure Vulnerability to Climate Change Report No. 369
European Commission (2013) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment
European Commission (2014) 2030 Climate and Energy Policy Framework
European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report
European Commission (2021a) Technical guidance on the Climate Proofing of Infrastructure in the Period 2021-2027
European Commission (2021b) 2030 EU Climate Target Plan
European Commission (2021b) Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change.
European Union (2018) Regulation 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No. 525/2013
German VDI (2002) Technical Guidelines on Air Quality Control – TA Luft
Global Facility for Disaster Reduction and Recovery (GFDRR) (2025) Think Hazard!
Government of Ireland (2015) Climate Action and Low Carbon Development Act
Government of Ireland (2019) Climate Action Plan 2019
Government of Ireland (2020) Climate Action Plan 2021
Government of Ireland (2021) Climate Action and Low Carbon Development (Amendment) Act

2021 (the 2021 Climate Act) (No. 32 of 2021)
Government of Ireland (2022) Climate Action Plan 2022
Government of Ireland (2023) Clean Air Strategy for Ireland
Government of Ireland (2023) Long-term Strategy on Greenhouse Gas Emissions Reductions
Government of Ireland (2023a) Climate Action Plan (CAP) 2024
Government of Ireland (2023b) Long-term Strategy on Greenhouse Gas Emissions Reductions (draft)
Government of Ireland (2025) Climate Action Plan (CAP) 2025
Institute of Air Quality Management (IAQM) (2020) A Guide To The Assessment Of Air Quality Impacts On Designated Nature Conservation Sites (Version 1.1)
Institute of Air Quality Management (IAQM) (2024) Guidance on the Assessment of Dust from Demolition and Construction (Version 2.2)
Institute of Sustainability and Environmental Professionals (ISEP) (formerly known as Institute of Environmental Management & Assessment (IEMA)) (2020a) Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation
Institute of Sustainability and Environmental Professionals (ISEP) (formerly known as Institute of Environmental Management & Assessment (IEMA)) (2020b) GHG Management Hierarchy
Institute of Sustainability and Environmental Professionals (ISEP) (formerly known as Institute of Environmental Management & Assessment (IEMA)) (2022) Environmental Impact Assessment Guide to: Assessing GHG Emissions and Evaluating their Significance
LETI (2020) Climate Emergency Design Guide
Met Éireann (2023b) TRANSLATE: One Climate Resource for Ireland. [Online] Available at: https://www.met.ie/science/translate
Met Éireann (2025) Met Éireann website: https://www.met.ie/
Met Éireann (2025a). Ireland's 30-year Climate Averages. Available from: https://www.met.ie/climate/30-year-averages
Met Éireann (2025b) Met Éireann's 2024 Climate Statement Available at: https://www.met.ie/annual-climate-statement-for-2024
The Geological Society of Ireland (GSI) (2025) Landslide Susceptibility Mapping Database
The Scottish Office (1996) Planning Advice Note PAN50 Annex B: Controlling The Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings
Transport Infrastructure Ireland (2022) Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106
Transport Infrastructure Ireland (2022a) PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document
Transport Infrastructure Ireland (2024) GE-ENV-01106: TII Carbon Assessment Tool for Road and Light Rail Projects and User Guidance Document
Transport Infrastructure Ireland (2025) TII Road Emissions Model (REM): Model Development Report – GE-ENV-01107
UK Office of Deputy Prime Minister (2002) Controlling the Environmental Effects of Recycled and Secondary Aggregates Production Good Practice Guidance
USEPA (1997) Fugitive Dust Technical Information Document for the Best Available Control Measures
World Health Organisation (2021) Air Quality Guidelines (and previous Air Quality Guideline Reports 1999 & 2000 & 2006)

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8. NOISE AND VIBRATION

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8.1 INTRODUCTION

AWN Consulting Ltd. has been appointed by Bovale Developments Unlimited Company to undertake a noise and vibration impact assessment in support of a planning application for a proposed large scale residential development (LRD) and crèche at Barrysparks and Crowscastle, Swords, Co. Dublin.

Robert Holohan (BA, MSc) is an Acoustic Consultant who holds a certificate from the Institute of Acoustics in environmental noise monitoring and building acoustics testing. He has 2 years of experience contributing to numerous projects related to environmental surveying, noise modelling, and impact assessment for various sectors including industrial, commercial, and residential.

The assessment has been reviewed by Alistair Maclaurin, Senior Acoustic Consultant at AWN, who holds a BSc in Creative Music and Sound Technology and a Diploma in Acoustics and Noise Control. He is a member of the Institute of Acoustics. Alistair has worked in the field of acoustics since 2012. He has been the lead noise consultant across various sites on major infrastructure projects such as Crossrail and Thames Tideway Tunnel, specialising in construction noise assessment and control. Additionally, he has undertaken various other environmental noise assessments for infrastructure developments and planning reports across the UK and Ireland.

This chapter includes a description of the receiving ambient noise climate in the vicinity of the Proposed Development site and an assessment of the potential noise and vibration impact associated with the Proposed Development, during both the short-term construction phase and the long-term operational phase, on its surrounding environment. The assessment of direct, indirect and cumulative noise and vibration impacts on the surrounding environment has been considered as part of the assessment.

Mitigation measures are included, where relevant, to ensure the Proposed Development is constructed and operated in an environmentally sustainable manner in order to ensure minimal impact on the receiving environment.

The development will consist of a Large-scale Residential development (LRD) of 530no. residential units and crèche in 4no. blocks (Blocks A to D) with associated ancillary accommodation, private balconies, communal amenity spaces, public open spaces and related services infrastructure all accessed from the Holywell Distributor Road and the R132. The development is described in full within the submitted public notices.

Figure 8.1 presents the approximate outline of the proposed development site.

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Fig. 8.1: Location of Proposed Development.

8.2 ASSESSMENT METHODOLOGY

The assessment of impacts has been undertaken with reference to the most appropriate guidance documents relating to environmental noise and vibration, which are set out within the relevant sections of this chapter. In addition to specific guidance documents for the assessment of noise and vibration impacts which are discussed further in the relevant sections, the following guideline was considered and consulted for the purpose of this chapter:

EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports May 2022.

The study has been undertaken using the following methodology:

- An environmental noise survey has been undertaken in the vicinity of the Proposed Development site in order to characterise the existing baseline noise environment.
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the Proposed Development.
- Predictive calculations have been performed during the construction phase of the project at the nearest sensitive locations to the development site.
- Predictive calculations have been performed to assess the potential impacts associated with the operation of the development at the most sensitive locations surrounding the development site.
- An inward noise assessment was undertaken to evaluate the suitability of the Proposed Development for its intended use. Predicted internal noise levels, derived from the

measured and modelled baseline environment, were compared with the relevant guideline values (e.g. BS 8233:2014).

- Where required, mitigation measures have been proposed to reduce the identified potential impacts relating to noise and vibration from the proposed development.

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8.3 RECEIVING ENVIRONMENT

8.3.1 Noise Survey

An environmental noise survey has been conducted at the site to assess the existing noise environment. The survey was conducted in general accordance with ISO 1996: 2017: *Acoustics – Description, measurement and assessment of environmental noise.*

8.3.2 Survey Locations

The following attended and unattended survey locations were selected, as presented in Figure 8.2 and Figure 8.3. These locations were selected to capture noise levels experienced across the site for the purposes of the inward impact assessment.

UN1 – Located near the proposed building locations to capture a representative measurement of the existing noise environment in the area where construction is planned.

Fig. 8.2: Unattended Noise Survey Location.

AT1 – Located near the proposed building locations and existing commercial buildings to the west of the site to capture a representative measurement of the existing noise environment in the area where construction is planned.

AT2 – Located near the proposed building locations and the existing residential properties to the east of the site to capture a representative measurement of the existing noise environment

in the area where construction is planned.

AT3 – Located near the existing residential properties to the south of the site to capture a representative measurement of the existing noise environment in the area where construction is planned.

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Fig. 8.3: Attended Noise Survey Locations.

8.3.3 Survey Periods

The attended noise survey was carried out on 18th June 2025. Short measurements were undertaken to capture the noise impact of the R132 and aircraft flyovers, as these were determined to be the main noise contributors within the site.

The weather during the survey period was dry with cloud coverage. Wind speeds were noted to be low; they were not considered to have had a detrimental effect on the noise measurements.

Unattended noise measurements were carried out between 18th June 2025 and 20th June 2025.

8.3.4 Personnel and Instrumentation

AWN installed and collected the noise monitoring equipment. The following instrumentation was used in conducting the noise and surveys:

Table 8.1: Instrumentation Details.

Equipment	Type	Serial Number	Calibration Date
Sound Level Meter	Rion NL-52	186672	17 June 2024

8.3.5 Noise Measurement Parameters

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The noise survey results are presented in terms of the following parameters: -

- L_{Aeq} is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period.
- L_{AFmax} is the instantaneous maximum sound level measured during the sample period using the 'F' time weighting which samples over a 125 ms period.
- L_{A10} is the sound level that is exceeded for 10% of the sample period. It is typically used as a descriptor for traffic noise.
- L_{A90} is the sound level that is exceeded for 90% of the sample period. It is typically used as a descriptor for background noise.

The "A" suffix denotes the fact that the sound levels have been "A-weighted" in order to account for the non-linear nature of human hearing. All sound levels in this chapter are expressed in terms of decibels (dB) relative to 2x10-5 Pa.

8.3.6 Survey Results

Attended Noise Measurements

15 minute attended measurements were taken at AT1, AT2 and AT3 to obtain samples of maximum sound levels across the site from the main contributors, in this instance, road traffic from R132 and the aircraft flyovers, to be compared with the unattended measurements.

The survey results for the attended monitoring are given in Table 8.2 to Table 8.4.

Table 8.2: AT1 Attended Noise Survey Results.

Location	Start Time	Measured Noise Levels (dB re. 2x10-5 Pa)		
		L_{Aeq}	L_{AFmax}	L_{A90}
AT1	10:13	46	56	44
	10:59	46	52	45
	11:38	48	55	46

The noise environment was dominated by distant road traffic along R132. Road traffic from R106 and R125 was also audible. In addition to these dominating factors, there were aircraft flyovers at the southern end of the site, foliage rustling and activity from the nearby commercial buildings to the west.

Table 8.3: AT2 Attended Noise Survey Results.

Location	Start Time	Measured Noise Levels (dB re. 2x10-5 Pa)		
		L_{Aeq}	L_{AFmax}	L_{A90}
AT2	10:34	47	63	44
	11:19	44	59	43
	11:58	50	68	46

The noise environment was dominated by distant road traffic along R132. Road traffic from R106 was also audible. In addition to these dominating factors there were aircraft flyovers at the southern end of the site, foliage rustling and brief gardening activity at the residential properties to the east.

Table 8.4: AT3 Attended Noise Survey Results.

Location	Start Time	Measured Noise Levels (dB re. 2x10-5 Pa)		
		L_{Aeq}	L_{AFmax}	L_{A90}
AT3	12:30	51	63	49
	12:45	51	63	49
	13:00	52	63	50

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The noise environment was dominated by distant road traffic on Holywell Road and aircraft flyovers. Road traffic from the R125 and the M1 was also audible. In addition to these dominating factors there was construction works across from the southern end of the site and foliage rustling.

Unattended Noise Measurements

The results of the unattended monitoring survey at Location UN1 are summarised for daytime periods in Table 8.5 and for night-time periods in Table 8.6.

Table 8.5: Summary of Daytime Unattended noise measurements at UN1.

Monitoring Period / Range		Measured Noise Levels (dB re. 2x10-5 Pa)	
		L_{Aeq}	L_{A90}
18/06/2025	Average	52	49
19/06/2025	Average	54	51
20/06/2025	Average	55	52

Table 8.6: Summary of Night-time Unattended noise measurements at UN1.

Monitoring Period / Range		Measured Noise Levels (dB re. 2x10-5 Pa)	
		L_{Aeq}	L_{A90}
18/06/2025	Average	48	41
19/06/2025	Average	51	46

During daytime periods, average noise levels were in the range 52 to 55 dB L_{Aeq} and 49 to 52 dB L_{A90}. During night-time periods, average noise levels were in the range 48 to 51 dB L_{Aeq} and 41 to 46 dB L_{A90}.

L_{Aeq} and L_{AFMax} values were measured at 10-minute intervals over the duration of the survey. Figure 8.4 presents the number of measured L_{Aeq} and L_{AFMax} events for each decibel level during the day and night periods.

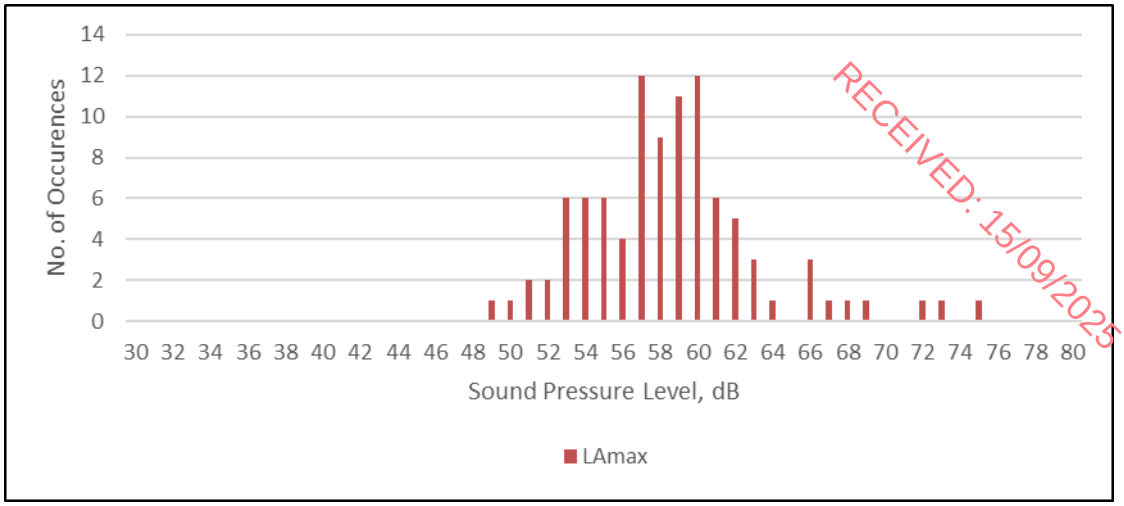

Fig. 8.4: LAFmax events at each decibel level measured during the night period at location UN1

Following guidance in ProPG, the 10 highest night-time L_{AFmax} events per night were excluded. Therefore, the representative external L_{AFmax} adopted for assessment is 62 dB L_{Amax}.

8.3.7 Desk Based Assessment of EPA Maps

In addition to the survey discussed above reference has also been made to the noise maps prepared by the Dublin Airport Authority (DAA).

The following noise maps have been referred to when assessing the baseline noise environment:

Dublin Airport Aircraft Noise Annual Contours

The above noise maps are provided for the overall day, evening, night period in terms of L_{den} and for the night-time period in terms of L_{night}.

All data has been taken from the EPA Mapping website, Dublin Airport aircraft noise annual contours.

Figure 8.5 and Figure 8.6 present the predicted noise levels across the development site for airport traffic in terms of L_{den} and L_{night}.

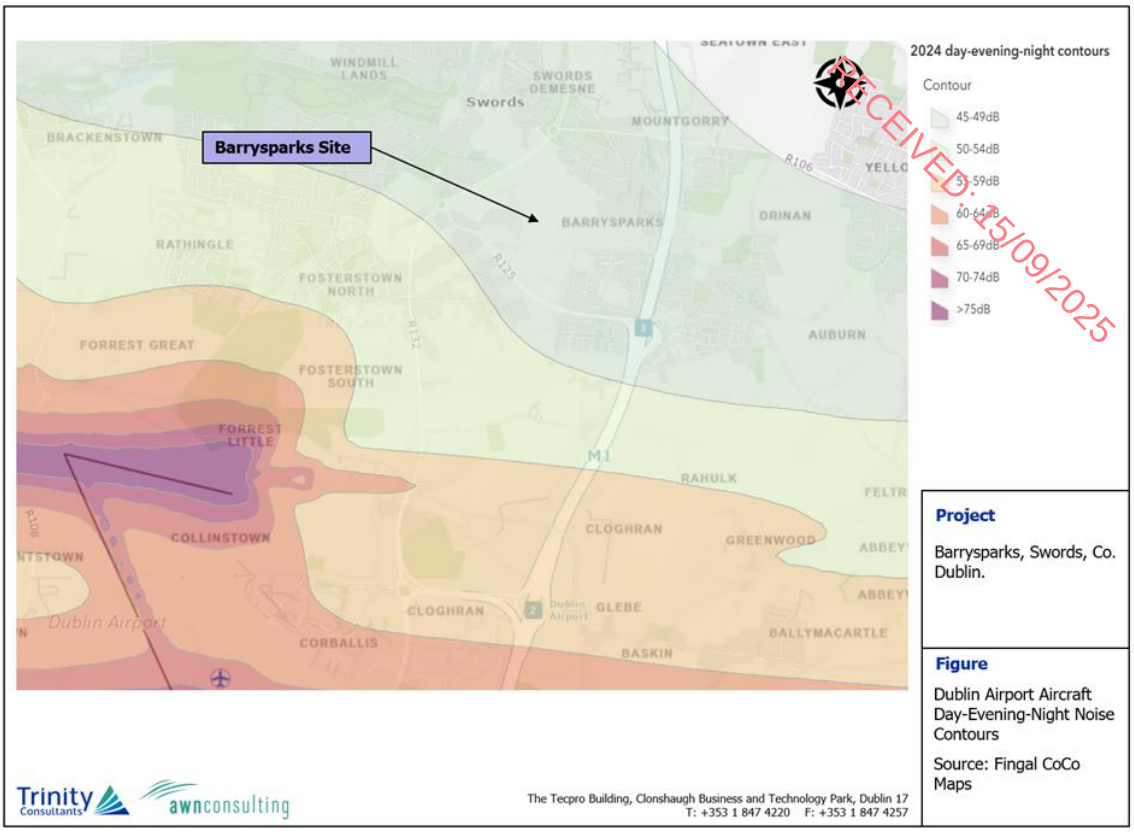

Fig. 8.5: Lden Dublin Airport Aircraft Noise Levels

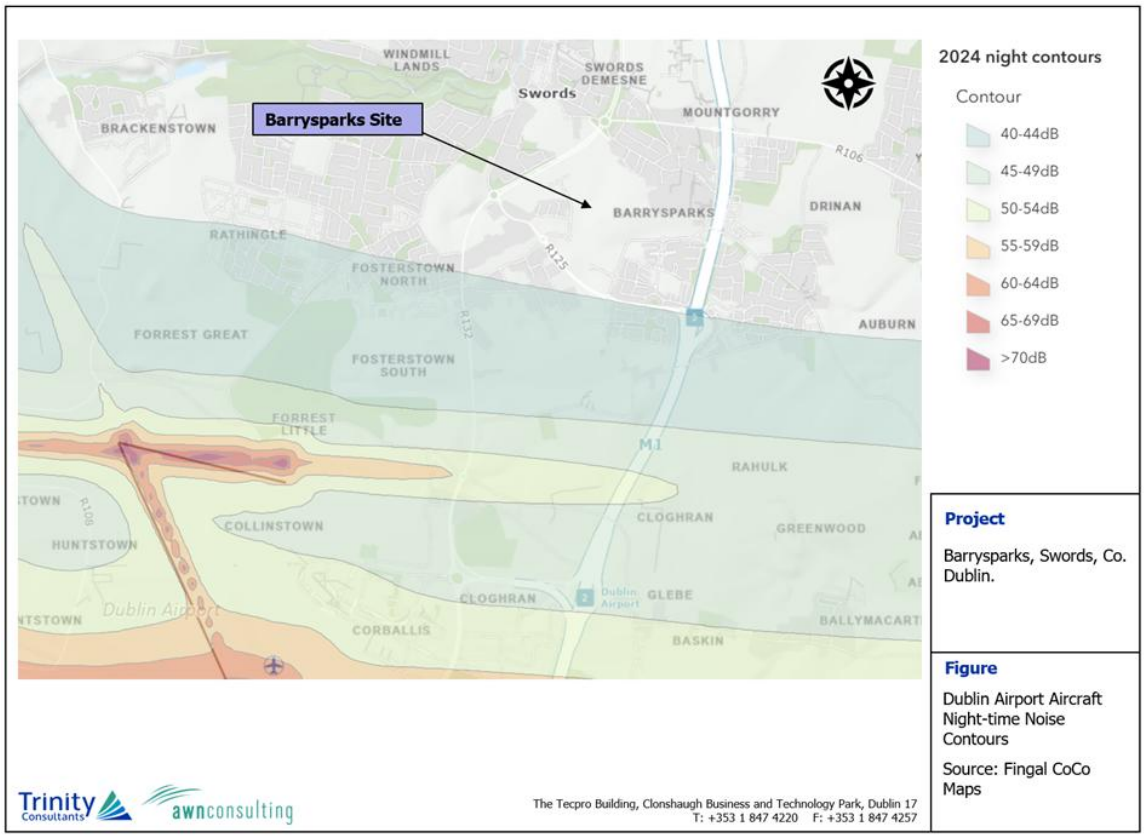

Fig. 8.6: L_{night} Dublin Airport Aircraft Noise Levels

Table 8.7 summarises the desk based assessment of noise levels across the site for road traffic noise.

Table 8.7: Dublin Airport Aircraft Contour Noise Levels at Development Site

Noise Source	L_{den}, dB	L_{night}, dB
Airport Traffic	<45 - 49	<40

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8.4 LEGISLATION AND DESIGN GUIDANCE

8.4.1 Construction Phase – Noise

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local Authorities typically control construction activities by imposing limits on the hours of operation and by considering noise limits at their discretion.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale may be found in the British Standard BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise*.

The approach adopted here calls for the designation of an NSL into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. A threshold noise value is applied to each category. Exceedances (construction noise only) of the threshold value, at the facade of a sensitive receptor during construction, indicates a potential significant noise impact associated with the construction activities. The threshold values recommended by BS5228-1 are set out in Table 8.8.

Table 8.8: Example Threshold of Significant Effect at Dwellings.

Assessment category and threshold value period (L_{Aeq})	Threshold value, in decibels (dB)		
	Category A Note A	Category B Note B	Category C Note C
Night-time (23:00 to 07:00hrs)	45	50	55
Evenings and weekends Note D	55	60	65
Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)	65	70	75

Note A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.
Note B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.
Note C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A values.
Note D) 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

For the appropriate period (e.g. daytime) the ambient noise level is determined and rounded to the nearest 5dB. Based on review of existing noise levels obtained from the noise survey, relevant BS5228-1 threshold values at the various assessment locations are presented in the Table 8.9.

Table 8.9: Rounded Baseline Noise Levels and Associated Categories.

Period	Construction Noise Threshold Value $L_{Aeq,1hr}$ (dB)	Baseline Noise Category
Daytime (07:00 – 19:00) and Saturdays(07:00 – 13:00)	65	A
Evening(19:00 to 23:00hrs)	55	A
Night time (23:00 to 07:00hrs)	45	A

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See Section 8.9 for the assessment in relation to this development. If the construction noise level exceeds the appropriate category value, then a potential significant effect is deemed to occur.

Guidance on the degree of significance is presented in the UK document Design Manual for Roads and Bridges (2020) LA 111 Sustainability & Environmental Appraisal. Noise and Vibration Rev 2. The approach is as follows:

- To determine the threshold value for construction noise according to the method from BS5228 described above.
- To compare the predicted construction noise level with the existing noise levels and the threshold value according to the criteria in the table below.

Potentially this procedure is to be followed separately for each noise-sensitive location, however, in this instance as the existing noise levels at all survey locations correspond to Category A according to the table above, all noise-sensitive locations are considered together.

Similarly, for this Proposed Development, the vast majority of construction works will take place within the 'Daytime' period, i.e. 07:00 – 19:00 on Mondays to Fridays and 07:00 – 13:00 on Saturdays.

The magnitude of the construction noise impact according to the DMRB is mapped to the EPA significance terms as detailed in Table 8.10:

Table 8.10: Description of Construction Noise Impacts based on DMRB.

Construction Noise Level	Magnitude of Impact (DMRB)	EPA Significance of Effect
Below or equal Baseline Noise Level	Negligible	Not Significant
Above Baseline and below or equal to threshold	Minor	Slight – Moderate
Above threshold and below or equal to threshold + 5dB	Moderate	Moderate – Significant
Above threshold + 5dB	Major	Significant – Very Significant

It should be noted that this assessment method is only valid for residential properties.

For less sensitive commercial receptors, BS 5228-1 gives several examples of acceptable limits for construction noise, the most simplistic being based upon the exceedance of fixed noise limits. For example, paragraph E.2 states:

"Noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut."

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Paragraph E.2 goes on to state:

"Noise levels, between say 07.00 and 19.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed: -

70 decibels (dBA) in rural, suburban areas away from main road traffic and industrial noise;
75 decibels (dBA) in urban areas near main roads in heavy industrial areas".

Therefore, based on the above, the following construction noise thresholds are proposed for the site:

65dB $L_{Aeq,1hr}$ at any residential noise sensitive location.
75dB $L_{Aeq,1hr}$ at commercial properties.

8.5 CONSTRUCTION PHASE VIBRATION

8.5.1 Building Damage Criteria

Vibration standards come in two varieties: those dealing with human comfort and those dealing with cosmetic or structural damage to buildings. In both instances, it is appropriate to consider the magnitude of vibration in terms of Peak Particle Velocity (PPV).

Guidance relevant to acceptable vibration within buildings from a building damage perspective is contained in the following documents: -

British Standard BS 7385: 1993: Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration.
British Standard BS 5228-2: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Vibration.

BS 7385 states that there should typically be no cosmetic damage if transient vibration does not exceed 15 mm/s at low frequencies rising to 20 mm/s at 15 Hz and 50 mm/s at 40 Hz and above. These guidelines relate to relatively modern buildings and should be reduced to 50% or less for more critical buildings.

BS 5228 recommends that, for soundly constructed residential property and similar structures that are generally in good repair, a threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak component particle velocity (in frequency range of predominant pulse) of 15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz and 50 mm/s at 40 Hz and above. Below these values minor damage is unlikely. Where continuous vibration is such as to give rise to dynamic magnification due to resonance, the guide values may need to be reduced by up to 50%. BS 5288-2 also comments that important buildings which are difficult to repair might require special consideration on a case by case basis.

The TII document Guidelines for the Treatment of Noise and Vibration in National Road Schemes also contains information on the permissible construction vibration levels as follows:

Table 8.11: Allowable Vibration during Construction Phase.

Allowable Vibration (in Terms of Peak Particle) at the Velocity Closest Part of Sensitive Property to the Source of Vibration, at a Frequency of		
Less than 10 Hz	10 to 50 Hz	50 to 100 Hz (and above)
8 mm/s	12.5 mm/s	20 mm/s

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8.5.2 Human Response Criteria

Humans are sensitive to vibration stimuli, and perception of vibration at high magnitudes may cause concern to building occupants. BS 5228 – 2 notes that vibration typically becomes perceptible at around 0.15 mm/s to 0.3 mm/s and may become disturbing or annoying at higher magnitudes. During surface construction works associated with breaking of ground, piling, and excavation, depending on the methodologies involved have the potential to be perceptible to building occupants and have the potential to cause significant effects.

Higher levels of vibration are however typically tolerated for single events or events of temporary duration, particularly during construction projects and when the origin of vibration is known. For example, piling can typically be tolerated at vibration levels up to 2.5 mm/s during the daytime and the evening if those affected are aware of the time-frame and origin of the vibration, and if they have been informed about the limit values relating to the structural integrity of neighbouring properties. Table 8.12 presents the significance table relating to potential impacts to building occupants during construction based on guidance from BS 5228 – 2 and reference to the Association of Noise Consultants (ANC) Measurement and Assessment of Groundborne Noise and Vibration (ANC, 2020).

Table 8.12: Human Response to Vibration Significance Ratings

Criteria	Impact Magnitude	Significance Rating
≥10 mm/s PPV	Very High	Very Significant
≥1 mm/s PPV	High	Moderate to Significant
≥0.3 mm/s PPV	Medium	Slight to Moderate
≥0.14 mm/s PPV	Low	Not significant to Slight
Less than 0.14 mm/s PPV	Very Low	Imperceptible to Not significant

Notes from BS5228-2:

- The magnitudes of the values presented apply to a measurement position that is representative of the point of entry into the recipient.
- A transfer function (which relates an external level to an internal level) needs to be applied if only external measurements are available.
- Single or infrequent occurrences of these levels do not necessarily correspond to the stated effect in every case. The values are provided to give an initial indication of potential effects, and where these values are routinely measured or expected then an assessment in accordance with BS 6472 (BS1 2008), and/or other available guidance, might be appropriate to determine whether the time varying exposure is likely to give rise to any degree of adverse comment.

8.6 OPERATIONAL PHASE – NOISE

8.6.1 Additional Traffic on Surrounding Roads

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There are no specific guidelines or limits relating to traffic related sources along the local or surrounding roads. Given that traffic from the development will make use of existing roads already carrying traffic volumes, it is appropriate to assess the calculated increase in traffic noise levels that will arise because of vehicular movements associated with the development. In order to assist with the interpretation of the noise associated with additional vehicular traffic on public roads, Table 8.13, taken from Design Manual for Roads and Bridges (DMRB), LA 111 Noise and vibration Revision 2 (UK Highways Agency et al, 2020) offers guidance as to the likely degree of impact associated with any long-term change in traffic noise level.

Table 8.13: Significance in Change of Noise Level.

Change in Sound Level (dB)	Subjective Reaction	DMRB Magnitude of Impact	EPA Significance of Effect
0.0 – 0.9	Inaudible	Negligible	Imperceptible
0.9 – 2.9	Barely Perceptible		Not significant
3 – 4.9	Perceptible	Minor	Slight, Moderate
5 – 9.9	Up to a doubling of loudness	Moderate	Significant
10+	Doubling of loudness and above	Major	Very significant

The guidance outlined in Table 8.13 will be used to assess the predicted increases in traffic levels on public roads associated with the Proposed Development and comment on the likely long-term impacts during the operational phase.

8.6.2 Building Services Noise

The standard used to assess the impact of a new continuous source (i.e. plant items) to a residential environment and that often applied by local authorities is BS 4142 *Methods for Rating and Assessing Industrial and Commercial Sound* (2014). This standard describes a method for assessing the impact of a specific noise source at a specific location with respect to the increase in "background" noise level that the specific noise source generates. The standard provides the following definitions that are pertinent to this application:

- Specific sound level, $L_{Aeq,\ Tr}$ is equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T. This level has been determined with reference to manufacturers information for specific plant items.

- Rating level $L_{Ar,T}$ is the specific noise level plus adjustments for the character features of the sound (if any).

- Background noise level is the sound A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T. This level is expressed using the L_{A90} parameter. These levels were measured as part of the baseline survey.

The assessment procedure in BS4142: 2014 is outlined as follows: -
Determine the specific noise level.
Determine the rating level as appropriate.

Determine the background noise level.
Subtract the background noise level from the specific noise level in order to calculate the assessment level.

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The lower the rating level is relative to the measured background sound level, the less likely it is that the specific source will have an adverse impact or a significant adverse impact. A difference of +10dB or more is a likely to be an indication of a significant adverse impact. A difference of around +5dB is likely to be an indication of a significant impact, dependent on the context. Where the rated plant noise level is equivalent to the background noise level, noise impacts are typically considered to be neutral.

Note that for receptors that are a part of the Proposed Development it is more appropriate to set thresholds based on internal noise guidelines contained within British Standard BS 8233 (BSI 2014c). The logic being that there will be no change in noise levels for the future receptors and, hence, impacts cannot be assessed as a change. Absolute noise levels are based on those defined within BS8233 and presented below.

Table 8.14: Guidance on Indoor Ambient Noise Levels for Dwellings.

Activity	Location	Daytime (07:00 to 23:00hrs)	Night (23:00 to 07:00hrs)	Derived External Levels
Resting	Living room	35 dB $L_{Aeq, 16hr}$	-	50 dB $L_{Aeq, 16hr}$
Dining	Dining room	40 dB $L_{Aeq, 16hr}$	-	55 dB $L_{Aeq, 16hr}$
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq, 16hr}$	30 dB $L_{Aeq, 8hr}$	50 dB $L_{Aeq, 16hr}$ 45 dB $L_{Aeq, 8hr}$ at night

The derived external levels are based on the approximate attenuation provided by a partially open window of 15 dB, as advised in BS 8233 (BSI 2014c), and represent the appropriate noise level at the external façade of the building.

8.6.3 Operational Vibration

There are no expected sources of vibration associated with the operational phase, therefore, vibration criteria have not been specified for this phase.

8.7 INWARD NOISE ASSESSMENT

8.7.1 Fingal Development Plan 2023 – 2029

Objective DA011 of the Fingal Development Plan 2023 – 2029 is relevant to the Proposed Development. The Proposed Development is located within Zone D. Certain specific residential developments located in Zone D may be required to demonstrate that aircraft noise intrusion has been considered in the design. The objective states the following:

> *"Strictly control inappropriate development and require noise insulation where appropriate in accordance with Table 8.1 above within Noise Zone B and Noise Zone C and where necessary in Assessment Zone D, and actively resist new provision for residential development and other noise sensitive uses within Noise Zone A, as shown on the Development Plan maps, while recognising the housing needs of established families farming in the zone. To accept that time based operational restrictions on usage of a second runway are not unreasonable to minimize the adverse impact of noise on existing housing within the inner and outer noise zone."*

Table 8.15 outlines the objectives to be adhered to by applicants for developments in zone D. The Proposed Development is situated in Zone D and, hence, a noise assessment is required to demonstrate that good acoustic design has been followed.

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Table 8.15: Aircraft Noise Zone D.

Zone	Indication of Potential Noise Exposure during Airport Operations	Objective
D	≥ 50 dB and < 54 dB L_{Aeq}, 16hr and ≥ 40 dB and < 48 dB L_{night}	To identify noise sensitive developments which could potentially be affected by aircraft noise and to identify any larger residential developments in the vicinity of the flight paths serving the Airport in order to promote appropriate land use and to identify encroachment. All noise sensitive development within this zone is likely to be acceptable from a noise perspective. An associated application would not normally be refused on noise grounds, however where the development is residential-led and comprises non-residential noise sensitive uses, or comprises 50 residential units or more, it may be necessary for the applicant to demonstrate that a good acoustic design has been followed. Applicants are advised to seek expert advice.
Notes: - 'Good Acoustic Design' means following the principles of assessment and design as described in ProPG: Planning & Noise – New Residential Development, May 2017. Internal and External Amenity and the design of noise insulation measures should follow the guidance provided in British Standard BS8233:2014 'Guidance on sound insulation and noise reduction for buildings'.		

8.7.2 Childcare Facility Criteria

BS 8233 also sets out recommended internal noise levels for several different non-domestic building types from external noise sources such as road and air traffic.

The recommended indoor ambient noise levels in non-domestic buildings are as follows:

Table 8.16 Typical noise levels for acoustic privacy in shared spaces

Objective	Typical Situations	Design range dB $L_{Aeq,T}$
Typical noise levels for acoustic privacy in shared spaces	Restaurant	40 – 55
	Open plan office	45 – 50
	Night club, public house	40 – 45
	Ballroom, banqueting hall	35 – 40
	Living room	35 – 40

Table 8.17 Typical Noise Levels in Non-Domestic Buildings from BS8233

Objective	Typical Situations	Design range dB $L_{Aeq,T}$
Study and work requiring concentration	Department Store Cafeteria, canteen, kitchen	50 – 55
	Concourse Corridor, circulation space	45 – 55
Listening	Library, gallery, museum	40 – 50
	Staff/meeting room, training room	35 – 45
	Executive office	35 – 40
	Place of worship, counselling, meditation, relaxation	30 – 35

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Based on a review of the BS 8233 standard and considering the proposed usage of the proposed development, a criterion for internal noise levels for the childcare facility has been identified for each of the following rooms:

Table 8.18 Typical noise levels for acoustic privacy in shared spaces

Room	Activity	Design Criterion dB $L_{Aeq,T}$
Quiet Rooms	Daytime Resting & Sleeping	35
Preschool Rooms	Study and Work requiring concentration	40
Offices		40

8.7.3 Dublin Agglomeration Environmental Noise Action Plan (NAP)

The Dublin Agglomeration Environmental Noise Action Plan (NAP) 2024 – 2028 was published in July 2024. The NAP indicates that guidance within the *ProPG Planning and Noise: Professional Practice Guidance on Planning and Noise* document should be referred to:

> *"Applications for new residential developments in the Agglomeration will be assessed in accordance with the policies and goals outlined in the relevant City and County Development Plans. Where applicable, these include adoption of the principles of Professional Planning Guidance (ProPG) on Planning & Noise: New Residential Development, as described in Section 7.5.1.*
>
> *Where the assessment outcome determines the likelihood of an adverse noise impact, planning applications should be supplemented by an Acoustic Design Statement carried out by appropriately qualified acousticians and competent persons. The Acoustic Design Statement should demonstrate that all facets of ProPG have been followed."*

In accordance with this NAP policy, the following Acoustic Report has been prepared to comply with the ProPG requirements of this NAP policy.

8.7.4 Professional Guidance on Planning & Noise (ProPG)

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The *Professional Practice Guidance on Planning & Noise* (ProPG): New Residential Document and Supplementary Documents[1] was published in May 2017. The document was prepared by a working group comprising members of the Association of Noise Consultants (ANC), the Institute of Acoustics (IOA) and the Chartered Institute of Environmental Health (CIEH). Although not a government document, since it's adoption it has been generally considered as a best practice guidance and has been widely adopted in the absence of equivalent Irish guidance.

The ProPG outlines a systematic risk based 2 stage approach for evaluating noise exposure on prospective sites for residential development. The two primary stages of the approach can be summarised as follows:

- Stage 1 - Comprises a high level initial noise risk assessment of the proposed site considering either measured and or predicted noise levels; and,
- Stage 2 – Involves a full detailed appraisal of the proposed development covering four "key elements" that include:

- Element 1 - Good Acoustic Design Process;
- Element 2 - Noise Level Guidelines;
- Element 3 - External Amenity Area Noise Assessment
- Element 4 - Other Relevant Issues

A key component of the evaluation process is the preparation and delivery of an Acoustic Design Statement (ADS) which is intended for submission to the planning authority. This document is intended to clearly outline the methodology and findings of the Stage 1 and Stage 2 assessments, so as the planning authority can make an informed decision on the permission. ProPG outlines the following possible recommendations in relation to the findings of the ADS:

Planning consent may be granted without any need for noise conditions;
Planning consent may be granted subject to the inclusion of suitable noise conditions;
Planning consent should be refused on noise grounds in order to avoid significant adverse effects ("avoid"); or,
Planning consent should be refused on noise grounds in order to prevent unacceptable adverse effects ("prevent").

Section 3.0 of the ProPG provides a more detailed guide on decision making to aid local authority planners on how to interpret the findings of an accompanying Acoustic Design Statement (ADS).

A summary of the ProPG approach is illustrated in Figure 8.7.

[1] PropG Supplementary Document 1 (May 2017) on Planning and Noise Policy and Guidance and PropG Supplementary Document 2 (May 2017) on Good Acoustic Design for Residential Development

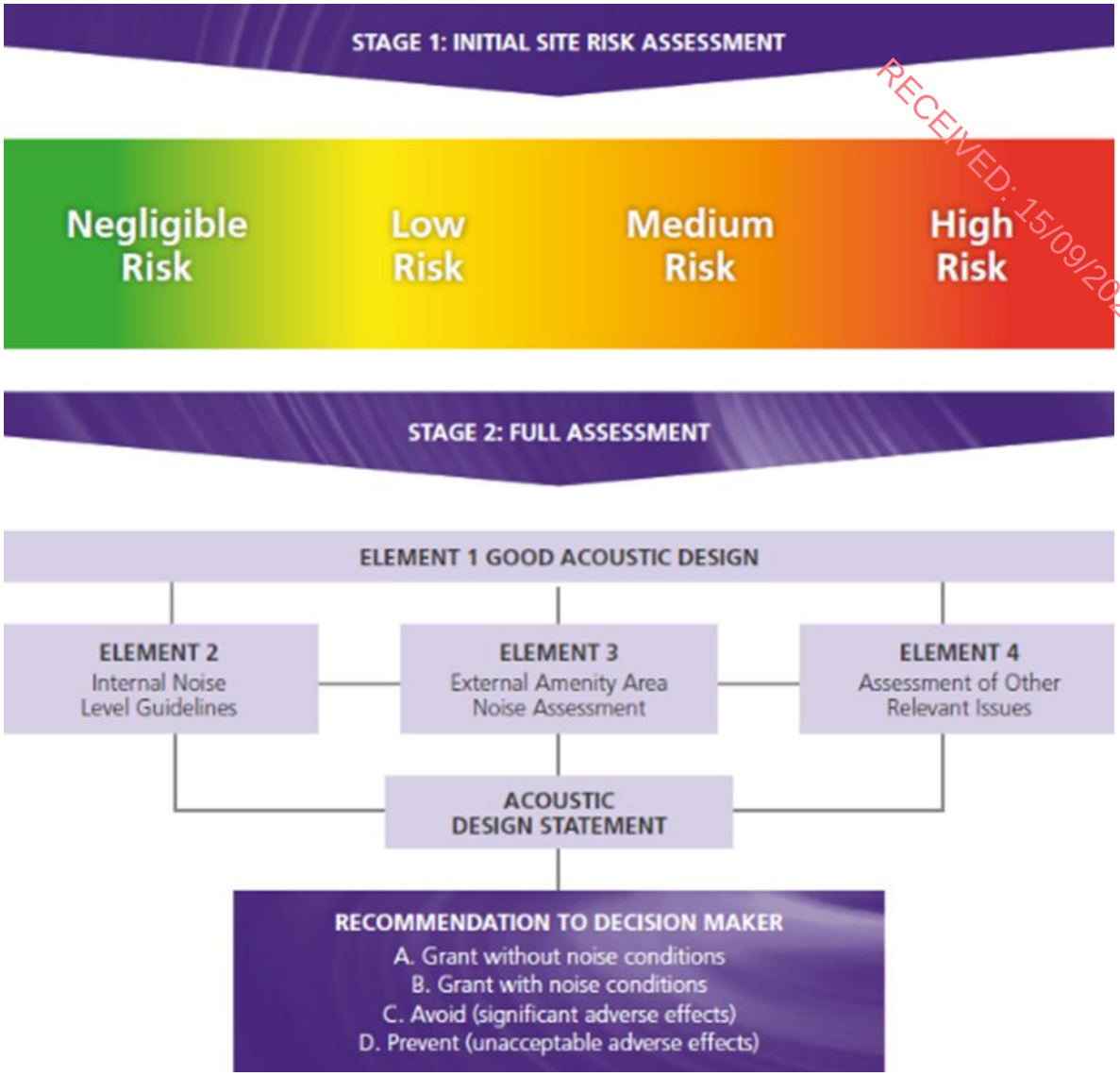

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Fig. 8.7: ProPG Approach (Source: ProPG)

8.7.5 BS8233

In accordance with Element 2 of the ProPG document the building will be designed to achieve the internal noise level criteria outlined in the British Standard BS 8233: 2014: Guidance on sound insulation and noise reduction for buildings. The recommended indoor ambient noise levels are set out in Table 8.19 and are based on annual average data, that is to say they omit occasional events where higher intermittent noisy events may occur.

Table 8.19: ProPG Internal Noise Levels - Extracted from BS 8233:2014

Activity	Location	(07:00 to 23:00hrs)	(23:00 to 07:00hrs)
Resting	Living Room	35 dB $L_{Aeq,\ 16hr}$	-
Dining	Kitchen/Dining Room Area	40 dB $L_{Aeq,\ 16hr}$	-
Sleeping (Daytime Resting)	Bedroom	35 dB $L_{Aeq,\ 16hr}$	30 dB $L_{Aeq,\ 8hr}$ 45 dB L_{AFmax*}

*Note - The document comments that the internal $L_{AFmax,T}$ noise level may be exceeded no more than 10 times per night without a significant impact occurring.

In addition to these absolute internal noise levels ProPG provides guidance on flexibility of these internal noise level targets. For instance, in cases where the development is considered

necessary or desirable, and noise levels exceed the external noise guidelines, then a relaxation of the internal L_{Aeq} values by up to 5 dB can still provide reasonable internal conditions.

ProPG provides the following advice with regards to external noise levels for amenity areas in the development:

> *"The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$."*

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8.8 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

8.8.1 Noise Sensitive Locations

A number of noise sensitive locations have been considered in relation to the Proposed Development, as illustrated in Figure 8.8 and described in Table 8.20. The locations have been selected as the closest sensitive residential receptors to the development, hence, they are the most at risk of being impacted by any noise or vibration.

Table 8.20: Noise Assessment Locations.

Ref	Description
NSL1	Residential properties along Drynam Rd, to the east of the proposed site.
NSL2	Commercial buildings to the west of the proposed site.
NSL3	Residential properties on Carlton Ct, facing R132 and north west of the proposed site.
NSL4	Residential properties along Holywell Ave, to the south of the site, with another residential block under construction nearby.

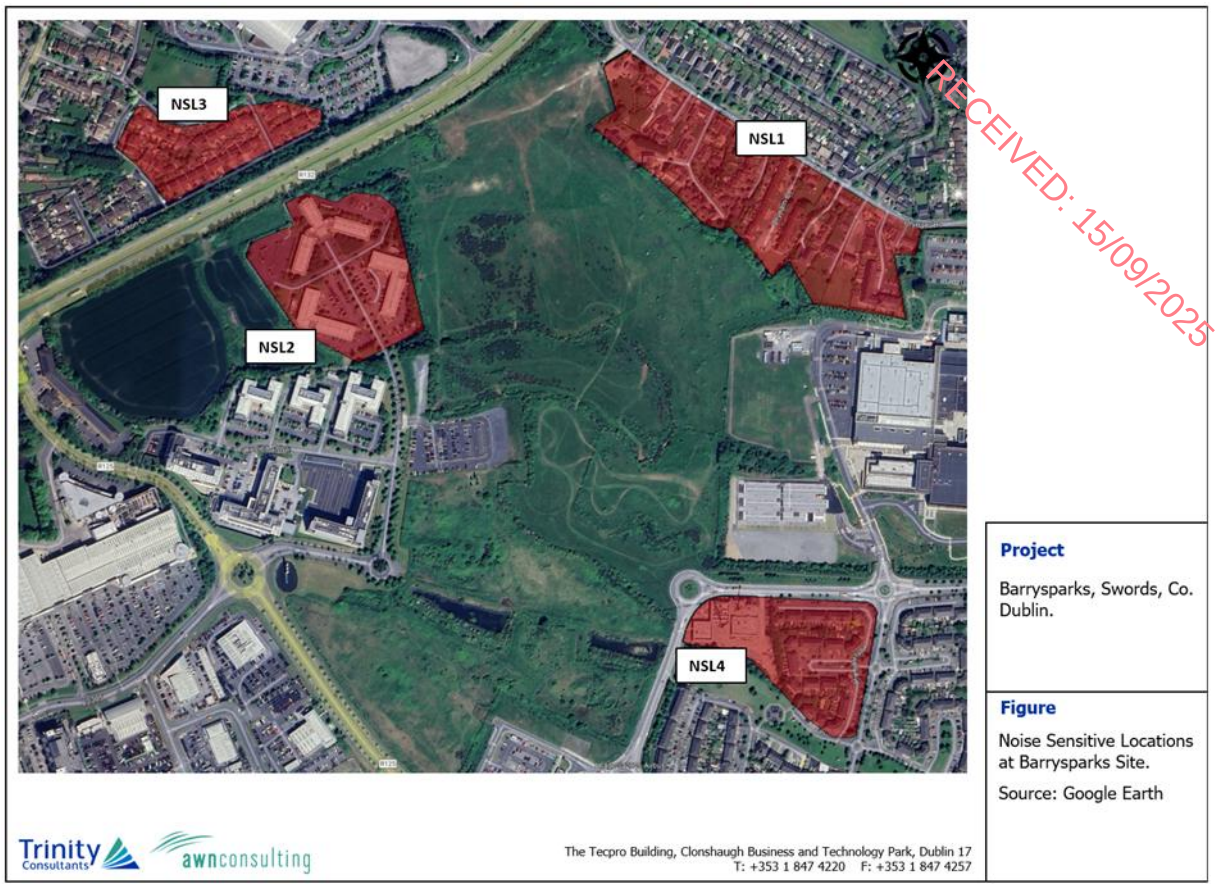

Fig. 8.8: ProPG Approach (Source: ProPG)

8.8.2 Proposed Threshold Levels for Noise

By reference to the noise baseline survey results (Section 3.0) and guidance contained in BS 5228 Part 1 for construction noise levels discussed in Table 8.8, the following threshold for significance from construction activities are set as follows:

For the residential NSLs it is considered appropriate to adopt the 65 dB(A) threshold level, given the baseline monitoring carried out, it would indicate that Category A values are appropriate using the ABC method.
For commercial NSLs it is considered appropriate to adopt the 75 dB(A) threshold level, given the urban environment in which the closest commercial properties reside, in line with BS 5228-1:2009+A1:2014.

8.9 CONSTRUCTION PHASE

8.9.1 Construction Noise Impacts

A variety of items of plant will be in use for the purposes of site clearance and construction. The type and number of equipment will vary between the construction phases depending on the phasing of the works. There will be vehicular movements to and from the site that will make use of existing roads. Due to the nature of these activities, there is potential for the generation of elevated levels of noise.

The overall phasing of the construction is set out in the OCEMP, with site clearance expected to be completed in six months and the LRD development constructed over two years.

Therefore, the proximity of the nearest noise sensitive locations will also vary during construction as the construction activities migrate.

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Due to the fact that the construction programme has been established in outline form only, it is difficult to calculate the actual magnitude of noise emissions to the local environment. However, it is possible to predict typical noise levels using guidance set out in BS 5228-1: 2009 +A1 2014. This standard sets out sound power and sound pressure levels for plant items normally encountered on construction sites, which in turn enables the prediction of noise levels.

Given that the construction stage is highly transient in nature and involves a number of various stages which will encompass a range of different activities on a day to day and week to week basis, it is not possible to calculate with a high degree of accuracy the specific levels of noise associated with each stage. The construction stage will be undertaken over a number of stages from site preparation through to building construction and internal fit out. Expected typical levels of noise associated with the key stages of work are discussed below.

Site Clearance and Ground Preparation Works

For site clearance works, typical plant items will include excavators, loaders, dozers, concreting works, mobile cranes and generators. Noise source levels are quoted in the range of 70 to 80 dB L_{Aeq} at distances of 10 m within BS 5228-1. For the purposes of this assessment, a combined sound pressure level of 85 dB $L_{Aeq,T}$ at 10 m has been used for construction noise calculations. This would include, for example, 2 no. items of construction plant with a sound pressure level of 80 dB L_{Aeq} at 10 m and 3 no. items of plant with a sound pressure level of 75 dB L_{Aeq} at 10 m, resulting in a total noise level of 85 dB L_{Aeq} at 10m along the closest works boundary.

Given the nature of the proposed works, which will include standard house and apartment building techniques across the site, a cumulative construction noise level of 85 dB L_{Aeq} at 10 m represents a conservative noise level used to assess construction activities associated with the earlier stages of construction when site clearance, excavation, and foundation work will be employed. This worst-case scenario is a robust assumption made for developments of this size, on the basis that it is unlikely that more than 5 no. items of such plant/equipment would be operating simultaneously in such close proximity to each other at any given time. In reality, items of construction plant and machinery will be operating at varying distances from any one NSL.

Piling

BS 5228 provides reference source noise levels for piling activities. For this activity a construction noise level of 83 dB L_{Aeq} at 10m has been used as referenced from BS 5228-1:2009 Table C.3:14. This noise level will inform calculations of piling noise at receptor locations.

General Construction

Once the ground preparation and foundation works have been completed, a large portion of the work will involve manual labour and cranes with lower overall noise levels. For the purpose of this assessment, a combined sound pressure level of 78 dB $L_{Aeq,T}$ at 10 m has been used for construction noise calculations during ongoing site works and compounds, once site clearance and excavation works are completed. This would include, for example, one item of plant at 75 dB L_{Aeq} and three items of plant at 70 dB L_{Aeq} operating simultaneously within a work area, resulting in a total noise level of 78 dB L_{Aeq} along the closest works boundary.

Predictions have been presented for construction works associated with the key phases of the proposed development at a selection of set distances, to reflect the variability in the phased construction programme. Predictions are based on the utilisation of plant for 66% of a working day. Although there will be screening from newly constructed buildings during the latter phases of the construction, no such screening has been assumed between the works and the calculated locations in the results presented in Table 8.21. For the purpose of the assessment, a standard site hoarding of 2.4 m high has been included in the calculations for noise sensitive boundaries.

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Table 8.21: Review of Potential Construction Noise Impacts

Activity	Predicted Construction Noise Level L_{Aeq} (1hour) (dB)				
	10 m	**20 m**	**35 m**	**45 m**	**65 m**
Site clearance/ preparation	78	72	67	65	62
Piling	76	70	65	63	60
General Construction	71	65	60	58	55

The worst-case predicted noise levels detailed in the Table 8.21 above indicate that, during the main building works, noise sensitive locations at distances greater than 45 m from the site would not be expected to exceed the significant residential threshold of 65 dB $L_{Aeq,1hr}$. At commercial NSLs overlooking the R132 (NSL2) locations at distances greater than 20 m would not be expected to exceed the significance threshold of 75 dB $L_{Aeq,1hr}$.

Comment on Outward Construction Noise for Residential NSLs

Based on the set distances calculated in Table 8.21 the following comments are made:

- NSL1 and NSL4 are the closest residential receptors to the development, located 35 m from the site boundary. During site clearance works the predicted noise levels are 1 to 2 dB above the significance threshold of 65 dB $L_{Aeq,1hr}$ based on this worst case assessment. It should be noted that this exceedance only relates to the first phase of construction works (site clearance and preparation), which is temporary in nature and limited to a duration of approximately six months. For the remainder of the site works, construction noise impacts are predicted to be lower, and the threshold of 65 dB $L_{Aeq,1hr}$ is not expected to be exceeded at these closest residential receptor locations.

- NSL3 (residential properties) is located 50 m from the site boundary. The predicted noise levels are below the significance threshold of 65 dB $L_{Aeq,1hr}$ for the duration of the construction works.

Given the variations of on-site activities and number of plant items during any one phase and the location of works only operating along the closest boundaries for a limited duration of the works, the calculated noise levels presented are considered to present a worst-case scenario.

Comment on Outward Construction Noise for Commercial NSLs

Based on the set distances calculated in Table 8.21 the following comments are made:

- NSL2 (commercial buildings) are located 10 m from the site boundary. The predicted noise levels are between 1-3 dB above the significance threshold of 75 dB $L_{Aeq,1hr.}$

Given the variations of on-site activities and number of plant items during any one phase and the location of works only operating along the closest boundaries for a limited duration of the works, the calculated noise levels presented are considered to present a worst-case scenario. The majority of works will take place at distances greater than 15 m where the significance threshold of 75 dB $L_{Aeq,1hr}$ will not be exceeded.

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8.9.2 Construction Phase Vibration

Potential for vibration impacts during the construction phase programme are likely to be limited, given that rock breaking is not expected. In terms of piling, this activity is not expected to occur within 20 m distance to the nearest noise sensitive property. Expected vibration levels during piling, assuming augured or bored piles have been determined through reference to published empirical data. The British Standard BS 5228 – Part 2: Vibration, publishes the measured magnitude of vibration of rotary bored piling using a 600mm pile diameter for bored piling into soft ground over rock, (Table D.6, Ref. No. 106):

0.54mm/s at a distance of 5 m, for auguring;
0.22mm/s at a distance of 5 m, for twisting in casing;
0.42mm/s at a distance of 5 m, for spinning off, and;
0.43mm/s at a distance of 5 m, for boring with rock auger.

Taking into account the distance to the receptors vibration emissions from this activity will be significantly reduced. Vibration levels at the closest buildings are expected to be orders of magnitude below the limits set out in Table 8.11 to avoid any cosmetic damage to buildings.

Vibration levels at residential NSL's are expected to be below a level that would cause disturbance to building occupants. The impacts are predicted to be **temporary, imperceptible to not significant.**

Similarly, vibration levels at commercial NSL's are expected to be below a level that would cause disturbance to building occupants. There is potential during the closest works for vibration to be perceptible, however, the impacts are predicted to be **temporary, not significant to slight.**

8.9.3 Construction Traffic

Traffic data provided by the traffic consultants indicates that the additional construction traffic on local roads will have a minimal impact. An increase in traffic volumes of around 25 % would be needed to raise noise levels by just 1 dB. Based on this, and with reference to Table 8.13, the impact is considered **negative, imperceptible, and short-term.**

8.10 OPERATIONAL BUILDING SERVICES NOISE

The development will be served by mechanical and electrical plant once operational. It is assumed, for the purposes of this assessment all plant will operate on a continual basis over day and night-time periods.

At this stage, the specific details of the mechanical plant are unknown. Notwithstanding this, it is possible to specify an appropriate noise limit to be achieved from plant noise sources once the development is operational.

The majority of building services plant serving the development is located internally, where the enclosed nature of the plantrooms will control noise transfer to the local environment. All heat pumps and other significant plant elements are located at ground level. Solar panels are proposed at roof level.
Making reference to the measured background noise levels on site for the most sensitive night-time period it can be seen that the existing background noise level is of the order of 41dB L_{A90}.

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Following the methodology outlined in BS4142 the cumulative plant noise emissions from the development should be no greater than the existing background noise in order to ensure that any new mechanical plant serving the development does not generate a significant noise impact. Therefore, the cumulative plant noise level at the NSLs external to the site should be less than or equal to 41dB $L_{Ar,T}$.

Taking into account that sensitive receivers within the development are much closer than off-site sensitive receivers, once the relevant noise criteria is achieved within the development, it is expected that there will be no negative impact at sensitive receivers off site.

8.11 CRECHE PLAYGROUND

Measurement of noise levels generated by children playing outdoors at several crèches and kindergartens, indicate typical noise levels in the order of 56 dB $L_{Aeq,1hr}$ at a distance of 5 metres. The nearest existing off-site noise sensitive locations to the west are approximately 60 m from the Crèche play area. Considering the distance and screening from existing boundary treatments, activities from the crèche are calculated to be below 40 dB $L_{Aeq,1hr}$ and hence is well below the range of baseline noise levels recorded to the north of the site at Location UN1, representative of properties set back from road traffic. The resultant noise impact is therefore **neutral, not significant and long-term.**

8.12 ADDITIONAL VEHICUALR TRAFFIC ON SURROUNDING ROADS

During the operational phase of the proposed development, there will be a small increase in vehicular traffic on surrounding roads associated with the proposed development and other planned developments. Details of the traffic assessment are included in Chapter 10 of this EIAR.

For the purposes of assessing the associated potential noise impact, it is appropriate to consider the relative increase in noise level associated with traffic movements on existing roads surrounding the site, with and without the proposed development. Using the AADT information provided by traffic consultants, the impact from the increase in traffic from the proposed development has been assessed for the year of 2028 and the year of 2043, relative to the Do Nothing scenario along the sections of road detailed in Table 8.22.

In terms of the overall traffic data as described by peak hour vehicle flows, in order to increase traffic noise levels by 1 dB, traffic volumes would need to increase by the order of 25%, approximately. A review of the potential traffic flow increases attributable to the proposed development indicates that the proposal will give rise to increases of this magnitude on 2 surrounding roads during the operational phase.

Table 8.22: Predicted Change in Noise Level associated with Vehicular Traffic

	Year 2028	Year 2043

Road Link	Percentage Increase in traffic flow	Increase in noise level (dB)	Increase in traffic flow	Increase in noise level (dB)
R132 West of Proposed Access	-7.4%	-0.3	-3.1%	-0.1
R132 Between Access and Pavilions	-5.3%	-0.2	1.3%	0.1
R132 East of Pavilions	-5.0%	-0.2	7.2%	0.3
R125 North of Lakeshore Drive	-13.5%	-0.6	-12.5%	-0.6
R125 South of Lakeshore Drive	-13.9%	-0.7	-11.5%	-0.5
R125 West of M1 Interchange	3.9%	0.2	15.4%	0.6
Holywell Link Road South of Tesco	7.7%	0.3	30.0%	1.1
Holywell Link Road North of Tesco	14.9%	0.6	46.5%	1.7
Holywell Link Road East of VHI	14.1%	0.6	19.4%	0.8
Drynam	0.0	0.0	0.0	0.0
R106 East of Roundabout	-7.3%	-0.3	-7.3%	-0.3
R106 West of Roundabout	-4.4%	-0.2	0.0%	0.0
R132 North of R106 Roundabout	1.3%	0.1	5.0%	0.2

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The predicted increase in traffic flows associated with the proposed Project in 2028 and 2043 will result in an increase in noise levels of more than 1 dB along 2 roads receiving traffic from the proposed development. With reference to Table 8.13, the likely effect is therefore **negative, not significant and long-term.**

8.13 PROPG STAGE 1 – NOISE RISK ASSESSMENT

8.13.1 Methodology

The initial noise risk assessment is intended to provide an early indication of any acoustic issues that may be encountered. It calls for the categorisation of the site as a negligible, low, medium or high risk based on the pre-existing noise environment. Figure 8.9 presents the basis of the initial noise risk assessment; it provides appropriate risk categories for a range of continuous noise levels either measured and/or predicted on site.

It should be noted that a site should not be considered a negligible risk if more than 10 L_{AFmax} events exceed 60 dB during the night period and the site should be considered a high risk if the L_{AFmax} events exceed 80 dB more than 20 times a night.

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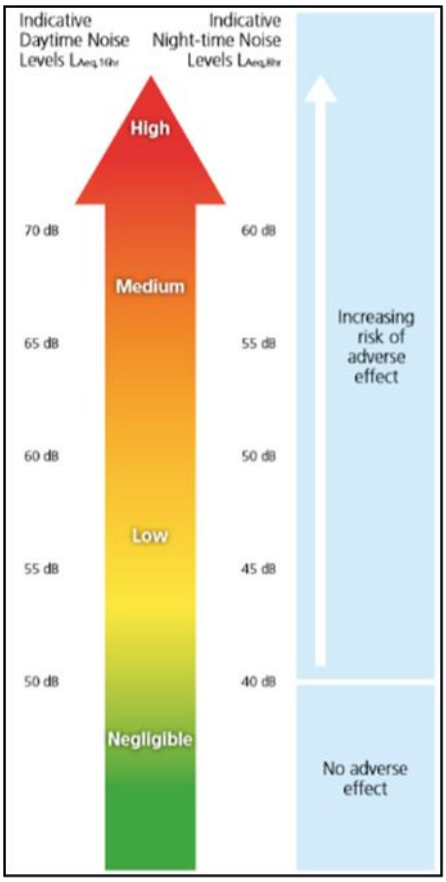

Fig 8.9: ProPG Stage 1 - Initial Noise Risk Assessment

8.13.2 Modelled Noise Levels

Predicted external noise levels across the site have been calculated using the noise model, which incorporates traffic flows from both the existing road network and the proposed new road scheme. The results indicate daytime and night-time noise levels at the external façades of the proposed site. The day-time and night-time noise contours can be seen below in Figures 8.10 and 8.11.

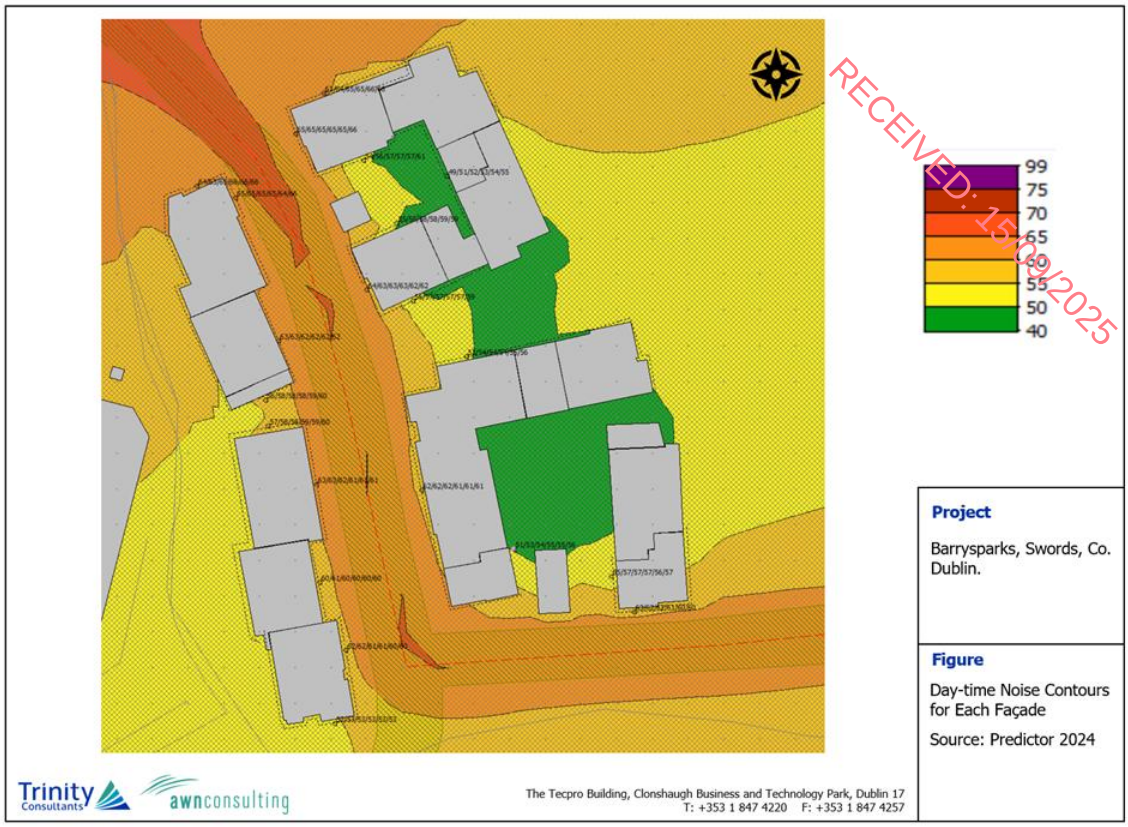

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Fig 8.10: Day-time Noise Contours

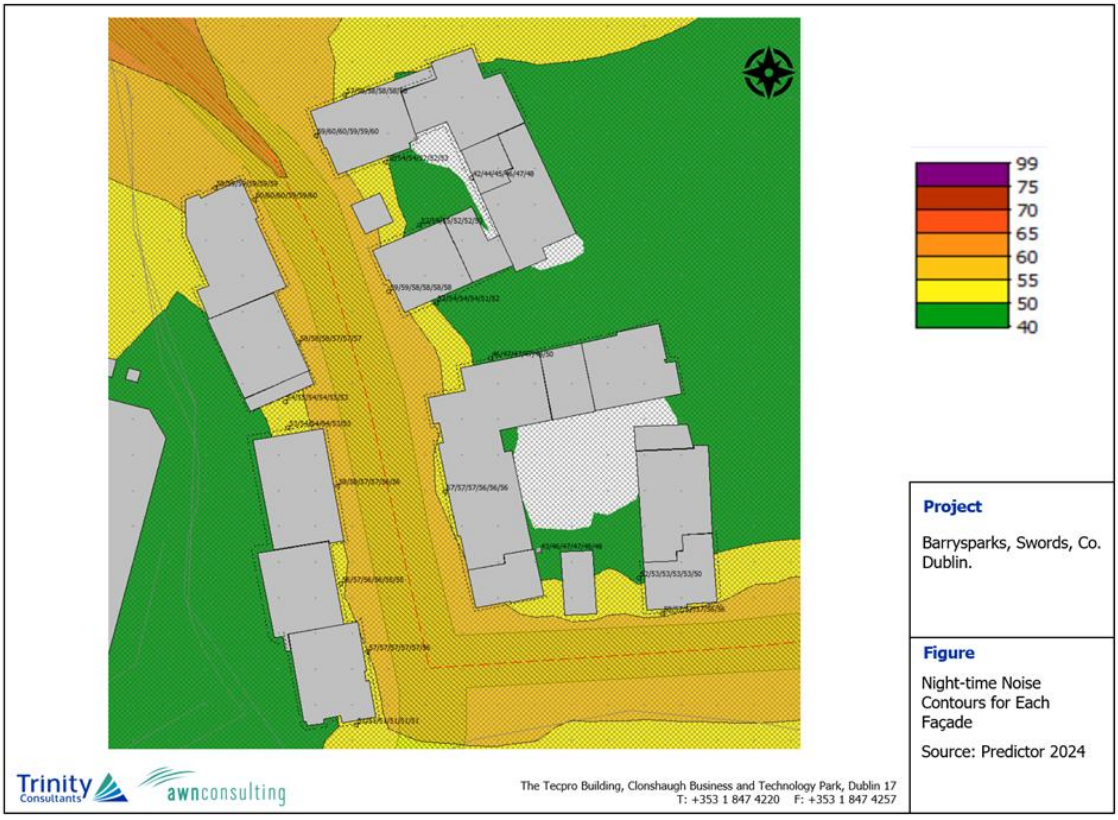

Fig 8.11: Night-time Noise Contours

8.13.3 Noise Risk Assessment Conclusion

Considering the calculated noise levels presented in Section 8.13.2 and applied to Figure 8.9, the initial site noise risk assessment has concluded that the level of risk varies from low to medium at the south, east and west boundaries and across the centre of the site. The north boundary of the site facing the R132 has been categorised as medium to high risk.

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Additionally, the Stage 1 Noise Risk Assessment requires analyses of the L_{AFmax} noise levels. The L_{AFmax} results indicate that there is the potential for L_{AFmax} noise levels to exceed 60 dB more than 10 times per night on facades exposed closer to the northern R132 site boundary, for which ProPG recommends that the site is considered as medium risk for L_{AFmax} values.

ProPG states the following with respect to medium and high risks:

> *Low Risk At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.*
>
> *Medium Risk As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.*
>
> *High Risk High noise levels indicate that there is an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS. Applicants are strongly advised to seek expert advice.*

Given the above it can be concluded that parts of the development site may be categorised as *Medium to High Risk*, principally due to the higher levels at the northern boundary due to the R132 and the proposed road running through the centre of the site, and as such an ADS will be required to demonstrate that suitable care and attention has been applied in mitigating and minimising noise impact to such an extent that an adverse noise impact will be avoided in the final development. It should be noted that ProPG states the following with regard to how the initial site noise risk is to be used,

> *"2.12 It is important that **the assessment of noise risk at a proposed residential development site is not the basis for the eventual recommendation to the decision maker**. The recommended approach is intended to give the developer, the noise practitioner, and the decision maker an early indication of the likely initial suitability of the site for new residential development from a noise perspective and the extent of the acoustic issues that would be faced. Thus, a site considered to be high risk will be recognised as presenting more acoustic challenges than a site considered as low risk. A site considered as negligible risk is likely to be acceptable from a noise perspective and need not normally be delayed on noise grounds. A potentially problematical site will be flagged at the earliest possible stage, with an increasing risk indicating the increasing importance of good acoustic design."*

Therefore, following the guidance contained in ProPG does not preclude residential development on sites that are identified as having medium or high-risk noise levels. It merely identifies the fact that a more considered approach will be required to ensure the

developments on the higher risk sites are suitably designed to mitigate the noise levels. The primary goal of the approach outlined in ProPG is to ensure that the best possible acoustic outcome is achieved for a particular site.

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8.14 PROPG STAGE 2 – ACOUSTIC DESIGN STATEMENT

8.14.1 Element 1 – Good Acoustic Design Process

In practice, good acoustic design should deliver the optimum acoustic design for a particular site without adversely affecting residential amenity or the quality of life of occupants or compromising other sustainable design objectives. It is important to note that ProPG specifically states that good acoustic design is not equivalent to overdesign or "*gold plating"* of all new development but that it seeks to deliver the optimum acoustic environment for a given site.

Section 2.23 of the ProPG outlines the following checklist for Good Acoustic Design (GAD):

- Check the feasibility of relocating, or reducing noise levels from relevant sources;
- Consider options for planning the site or building layout;
- Consider the orientation of proposed building(s);
- Select construction types and methods for meeting building performance requirements;
- Examine the effects of noise control measures on ventilation, fire regulation, health and safety, cost, CDM (construction, design and management) etc;
- Assess the viability of alternative solutions; and,
- Assess external amenity area noise.

8.14.2 Application of GAD Process to Proposed Application

Relocation or Reduction of Noise from Source

The R132 is located outside the redline boundary of the site and therefore it is beyond the scope of this development to introduce any noise mitigation at source.

Planning, Layout and Orientation

Consideration has been given to the location of both the buildings and external amenity areas. In the first instance, a primary consideration was to ensure that buildings are located as far as possible from the road.

The orientation of the site is such that the buildings themselves screen the common external amenity areas associated with the development.

Selection of Construction Types for Meeting Building Regulations

Masonry constructions will be used in constructing the external walls of the development. This construction type offers high levels of sound insulation performance. However, as is typically the case the glazed elements and ventilation will be the weakest elements in the façade in terms of sound insulation performance.

Consideration will therefore be given to the provision of upgraded glazing and mechanical ventilation. The proposal here will be to provide dwelling units with glazed elements that have

good acoustic insulation properties so that when the windows are closed the noise levels internally are good.

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In order to ensure indoor air-quality, a mechanical ventilation system with heat recovery will be utilised as per Part F of the Building Regulations, providing the requisite air changes per hour. The fresh air provided to all the apartments is tempered and filtered as part of the delivery process. Residents will not need to open their windows in terms of providing fresh air. In terms of extract, all of the bathrooms, kitchens and utility spaces will be exhausted to the outside via the mechanical ventilation system on a continuous basis. Inhabitants will be able to open the windows if they wish, however, doing so will increase the internal noise level. This approach to mitigation is supported in ProPG where it states the following:

"2.22 *Using fixed unopenable glazing for sound insulation purposes is generally unsatisfactory and should be avoided; occupants generally prefer the ability to have control over the internal environment using openable windows, even if the acoustic conditions would be considered unsatisfactory when open. Solely relying on sound insulation of the building envelope to achieve acceptable acoustic conditions in new residential development, when other methods could reduce the need for this approach, is not regarded as good acoustic design. Any reliance upon building envelope insulation with closed windows should be justified in supporting documents* "

Note 5 *Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the "open" position and, in this scenario, the internal L_{Aeq} target levels should not normally be exceeded*

2.34 *Where the LPA accepts that there is a justification that the internal target noise levels can only be practically achieved with windows closed, which may be the case in urban areas and at sites adjacent to transportation noise sources, special care must be taken to design the accommodation so that it provides good standards of acoustics, ventilation and thermal comfort without unduly compromising other aspects of the living environment. In such circumstances, internal noise levels can be assessed with windows closed but with any façade openings used to provide "whole dwelling ventilation" in accordance with Building Regulations Approved Document F (e.g. trickle ventilators) in the open position (see Supplementary Document 2). Furthermore, in this scenario the internal L_{Aeq} target noise levels should not generally be exceeded*."

Impact of Noise Control Measures on Fire, Health and Safety etc

The good acoustic design measures that have been implemented on site, e.g. locating properties away from the road and placing outdoor space on the quiet side of buildings do not have any significant impact on other issues.

Assess the Viability of Alternative Solutions

Due to the height and location of the proposed buildings it is considered that any acoustic screens along the boundary of the site to attenuate traffic noise would be ineffective.

Assess External Amenity Area Noise

ProPG provides the following advice with regards to external noise levels for amenity areas in the development:

> *"The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$."*

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The assessment of external amenity area noise for the Proposed Development is presented in Section 8.17.

Summary

Considering the constraints of the site, in so far as possible and without limiting the extent of the development area, the principles of Good Acoustic Design have been applied to the development.

In terms of viable alternatives to acoustic treatment of façade elements, there are no further options for mitigation outside of proprietary acoustic glazing and mechanical ventilation. Further specification of suitable glazing options will be outlined in the following sections.

8.14.3 Element 2 – Internal Noise Guidelines

8.14.3.1 Internal Noise Criteria

Element 2 of the ProPG document sets out recommended internal noise targets derived from BS 8233 and World Health Organisation *Community Noise Guidelines*. The recommended indoor ambient noise levels are set out in Table 8.23 and are based on annual average data, that is to say they omit occasional events such as New Year's Eve.

Table 8.23: ProPG Internal Noise Levels

Activity	Location	(07:00 to 23:00hrs)	(23:00 to 07:00hrs)
Resting	Living Room	35 dB $L_{Aeq, 16hr}$	-
Dining	Kitchen/Dining Room Area	40 dB $L_{Aeq, 16hr}$	-
Sleeping (Daytime Resting including Bedrooms)	Bedroom	35 dB $L_{Aeq, 16hr}$	30 dB $L_{Aeq, 8hr}$ 45 dB L_{AFmax}*

*Note The document comments that the internal $L_{AFmax,T}$ noise level may be exceeded no more than 10 times per night without a significant impact occurring.

Giving consideration to the external noise levels, particularly along the northern site boundary and along the centre of the site, in line with the ProPG guidelines it may be necessary to use acoustic glazing and mechanical ventilation to meet the recommended internal noise levels. The need for enhanced glazing is assessed in further detail in the following sections of the report.

In terms of the ventilation strategy it is understood that the air supply will be via mechanical ventilation which typically provides a sound insulation performance substantially improved over passive in-frame or wall vents.

8.14.3.2 Façade Levels

Table 8.23 along with Figure 8.12, present the noise levels calculated to be incident on the various façades during day and night-time periods respectively.

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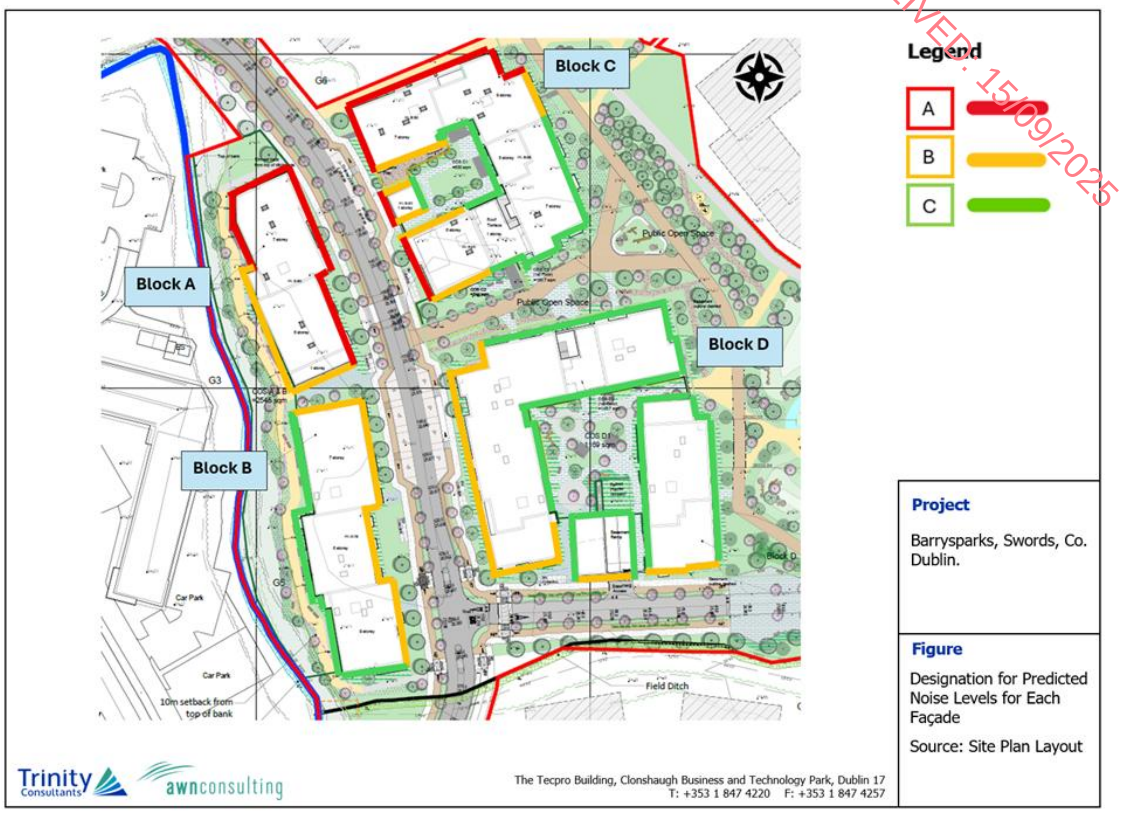

Figure 8.12: Designation of Predicted Noise Levels for Each Façade

Based on the results presented in Table 8.24 overleaf and the noise contours presented in Figure 8.10 and 8.11, the façade assessment has predicted the following noise levels at external facades:

Table 8.24: Summary of Predicted Façade Noise Levels

Ref	Period (T)	$L_{Aeq,T}$ dB	Octave Band Centre Frequency (Hz)					
			125	250	500	1k	2k	4k
A	Day (16hr)	66	66	65	61	63	56	50
	Night (8hr)	60	60	59	55	57	50	44
B	Day (16hr)	63	63	62	58	60	53	47
	Night (8hr)	57	57	56	52	54	47	41
C	Day (16hr)	55	55	54	50	52	45	39
	Night (8hr)	48	48	47	43	45	38	32

As indicated by the predicted values in Table 8.24, certain façades of the Proposed Development may require enhanced acoustic glazing in order to achieve the internal noise criteria set out in Table 8.23. The specific glazing and ventilation specifications are provided in Section 8.15.4 and 8.15.5.

8.14.3.3 Proposed Façade Treatment

The British Standard BS EN 12354-3: 2000: Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 3: Airborne sound

insulation against outdoor sound provides a calculation methodology for determining the sound insulation performance of the external envelope of a building. The method is based on an elemental analysis of the building envelope and can take into account both the direct and flanking transmission paths.

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The Standard allows the acoustic performance of the building to be assessed taking into account the following:

Construction type of each element (i.e. windows, walls, etc.);
Area of each element;
Shape of the façade, and;
Characteristics of the receiving room.

The principals outlined in BS EN 12354-3 are also referred to in BS8233 and Annex G[1] of BS8233 provides a calculation method to determine the internal noise level within a building using the composite sound insulation performance calculated using the methods outlined in BS EN 12354-3. The methodology outlined in Annex G of BS8233 has been adopted here to determine the required performance of the building facades.

8.14.3.4 Glazing

As is the case in most buildings, the glazed elements of the building envelope are typically the weakest element from a sound insulation perspective. In this instance it has been calculated that the various facades are to be provided with glazing that, when closed, achieve the minimum sound insulation performance as set out in Table 8.25 (and assigned to each façade in Figure 8.12).

Table 8.25: Sound Insulation Performance Requirements for Glazing, SRI (dB)

Façade	Nominal Rw (dB)	SRI (dB) per Octave Band Centre Frequency (Hz)					
		125	250	500	1k	2k	4k
Red	37	26	27	34	40	38	46
Orange	34	29	25	32	34	36	38
Green[1]	31	24	20	25	35	38	35

Note 1: For façades outlined in green, standard double glazing will be sufficient to meet the required acoustic performance criteria.

Test data should be sought from the supplier of the glazing at detailed design stage to ensure that the acoustic specification is met.

It is important to note that the acoustic performance specifications detailed herein are minimum requirements which apply to the overall glazing system. In the context of the acoustic performance specification the 'glazing system' is understood to include any and all of the component parts that form part of the glazing element of the façade, i.e. glass, frames, seals, openable elements etc.

The assessment has demonstrated that the recommended internal noise criteria can be achieved through consideration of the proposed façade elements at the design stage. The calculated glazing specifications are preliminary and are intended to form the basis for noise mitigation at the detailed design stage, hence it is possible that glazing systems with differing noise insulation specifications may still be suitable to control noise to the internal guidance thresholds. For façades outlined in green, standard double glazing will be sufficient to meet the required acoustic performance criteria.

Wall Construction

In general, all wall constructions (i.e. block work or concrete) offer a high degree of sound insulation, much greater than that offered by the glazing systems. Therefore, noise intrusion via the wall construction will be minimal. The calculated internal noise levels across the building façade have assumed a minimum sound reduction index of 54 dB R_w for this construction.

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8.14.3.4 Ventilation

The ventilation strategy for the development is for mechanical ventilation. Mechanical ventilation systems typically offer a high performance in terms of preventing sound intrusion from external sources, consequently there is no assessment of the ventilation system required for this noise impact assessment.

Internal Noise Levels

Taking into account the external façade levels and the specified building envelope, the internal noise levels have been calculated. In all instances the good internal noise criteria are achieved for daytime and night-time periods *i.e.* at or below the internal noise level thresholds outlined in Table 8.23.

8.14.4 Element 3 – External amenity area noise assessment

Environmental noise surveys conducted at the development site confirm that the pre-existing ambient noise level at the location in question is of the order of <55 dB L_{Aeq}, although this will fall post-construction due to the influence of screening provided by the buildings themselves.

Whilst the external areas at the eastern and northern site boundary are unlikely to be below the 50 – 55 dB $L_{Aeq,16hr}$, the majority of the amenity areas across the development are expected to be comparable to the existing ambient noise levels on site and as such will be within the recommended range of noise levels from ProPG of between 50 – 55 dB $L_{Aeq,16hr}$. It is considered that the objectives of achieving suitable external noise levels is achieved within the overall site.

8.14.5 Element 4 – assessment of other relevant issues

Element 4 gives consideration to other factors that *may* prove pertinent to the assessment, the items that are defined in the document that are relevant here are:

4(i) compliance with relevant national and local policy
4(ii) magnitude and extent of compliance with ProPG

Each is discussed in turn in the following sections.

8.14.5.1 Compliance with Relevant National and Local Policy

There are no National policy documents relating to the acoustic design of residential dwellings. Locally the Dublin Agglomeration Noise Action Plan specifies that the guidance contained within ProPG should be used in assessing the noise impact on new residential developments.

This Acoustic Design Statement has been prepared in compliance with the requirements of ProPG and therefore complies with the requirements of local policy.

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8.14.5.2 Magnitude and Extent of Compliance with ProPG

As discussed within this report the following conclusions have been drawn with regards to the extent of compliance with ProPG:

- All dwellings as part of the development have been designed to achieve the good level of internal noise levels specified within ProPG.
- All shared external amenity areas have been shown to have an external noise level that complies with the recommended criterion set out in ProPG.

Based on the preceding it is concluded that the proposed development is in full compliance with the requirements of ProPG.

8.15 ACOUSTIC DESIGN STATEMENT CONCLUSION

An initial site noise risk assessment has been carried out on the proposed residential development and crèche at Barrysparks and Crowscastle, Swords, Co. Dublin. The assessment has classified the northern boundary of the site, which faces the R132, and the central area of the site, where the newly proposed road is located, as being at medium to high risk. This was determined through a combination of measurements of noise levels on site and through the prediction of noise levels on the site. Mitigation measures for enhanced façade treatment are outlined in Section 8.16.4.

Further discussion is presented in terms of the likely noise impact of both the external and internal areas of the proposed development. It has been found that all the inhabitants will have access to a quiet external area that is screened by the development itself from road traffic noise. In compliance with the relevant standards detailed in this report all habitable rooms will achieve a good internal noise environment with the enhanced acoustic glazing and mechanical ventilation.

8.16 PROPOSED MITIGATION MEASURES

8.16.1 Construction and Vibration

Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228 (2009 +A1 2014) Parts 1 and 2 will be complied with. This includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- selection of quiet plant;
- noise control at source;
- screening, and;
- liaison with the public.

Further comment is offered on these items in the following paragraphs. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise monitoring, where required.

8.16.2 Selection of Quiet Plant

Where practicable static plant items such as compressors and generators will be selected with lower noise emissions and supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item should be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action should be to identify whether or not said item can be replaced with a quieter alternative.

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8.16.3 Noise Control at Source

If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control "at source". This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact.

The following best practice migration measures should be considered:

- Site compounds should be located away from noise sensitive boundaries within the site constraints. The lifting of bulky items, dropping and loading of materials within these areas should be restricted to normal working hours.
- For mobile plant items such as cranes, dump trucks, excavators and loaders, maintaining enclosure panels closed during operation can reduce noise levels over normal operation. Mobile plant should be switched off when not in use and not left idling.
- For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system.
- For percussive tools such as pneumatic breakers, noise control measures include fitting muffler or sound reducing equipment to the breaker 'tool' and ensure any leaks in the air lines are sealed. Localised screens should be erected around breaker or drill bits when in operation in close proximity to noise sensitive boundaries.
- For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.
- Compressors, generators and pumps should be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.
- All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

8.16.4 Screening

Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Standard construction site hoarding (2.4 m in height) with a mass per unit of surface area greater than 7 kg/m^2 can provide adequate sound insulation. Where practicable hoarding should be located at the site perimeter.

8.16.5 Liaison with the Public

A designated noise liaison officer will be appointed to site during construction works. Any noise complaints should be logged and followed up in a prompt fashion by the liaison officer.

8.17 MECHANICAL AND ELECTRICAL PLANT

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At the design stage plant will be designed and selected to ensure that the criteria detailed in Section 8.10 is achieved.

The following practices are required for all plant items in order to minimise potential noise disturbance for neighbours:

- all mechanical plant items shall be regularly maintained to ensure that excessive noise generated by any worn or rattling components is minimised;
- any new or replacement mechanical plant items, including plant located inside new or existing buildings, shall be designed so that all noise emissions from site do not exceed the noise limits outlined in this document.
- Installed plant will have no tonal or impulsive characteristics when in operation.

8.18 RESIDENTIAL FAÇADE TREATMENT

To achieve the internal residential noise levels outlined in Table 8.23 of this report, the mitigation regarding enhance façade treatment seen in Figure 8.12 and Table 8.24 and 8.25 is recommended.

NOISE AND VIBRATION	
	Construction Mitigation Measures
NV-C1	Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228 (2009 +A1 2014) Parts 1 and 2 will be complied with. This includes guidance on several aspects of construction site mitigation measures, including, but not limited to: selection of quiet plant; noise control at source; screening, and; liaison with the public.
NV-C2	The following best practice migration measures should be considered: • Site compounds should be located away from noise sensitive boundaries within the site constraints. The lifting of bulky items, dropping and loading of materials within these areas should be restricted to normal working hours. • For mobile plant items such as cranes, dump trucks, excavators and loaders, maintaining enclosure panels closed during operation can reduce noise levels over normal operation. Mobile plant should be switched off when not in use and not left idling. • For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system. • For percussive tools such as pneumatic breakers, noise control measures include fitting muffler or sound reducing equipment to the breaker 'tool' and ensure any leaks in the air lines are sealed. Localised screens should be erected around breaker or drill bits when in operation in close proximity to noise sensitive boundaries.

	• For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials. • Compressors, generators and pumps should be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation. • All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.
NV-C3	Standard construction site hoarding (2.4 m in height) with a mass per unit of surface area greater than 7 kg/m^2 can provide adequate sound insulation. Where practicable hoarding should be located at the site perimeter.
NV-C4	A designated noise liaison officer will be appointed to site during construction works. Any noise complaints should be logged and followed up in a prompt fashion by the liaison officer.
	Operational Mitigation Measures
NV-O1	At the design stage plant will be designed and selected to ensure that the criteria detailed in Section 8.10 is achieved.
NV-02	The following practices are required for all plant items in order to minimise potential noise disturbance for neighbours: • all mechanical plant items shall be regularly maintained to ensure that excessive noise generated by any worn or rattling components is minimised; • any new or replacement mechanical plant items, including plant located inside new or existing buildings, shall be designed so that all noise emissions from site do not exceed the noise limits outlined in this document. • Installed plant will have no tonal or impulsive characteristics when in operation.
	Monitoring
-	NA

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8.19 PREDICTED RESIDUAL IMPACTS OF THE PROPOSED DEVELOPMENT

8.19.1 Construction Phase

During the construction phase of the project there is the potential for temporary noise impacts on nearby noise sensitive properties due to noise emissions from site activities. The application of binding noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum as far as practicable.

Two receptor types are relevant in this context:

Residential receptors – The closest receptors are approximately 35 m from the site boundary, exceedances of the residential Construction Noise Threshold (CNT) may occur here, resulting in **short-term, negative and moderate to significant** noise impact. These exceedances are associated with the initial site clearance and preparation phase, which is temporary in nature and limited to a duration of approximately six months. For the remainder of the site works, predicted noise levels are lower, and within the CNT at the closest residential receptors located

35 m from the site boundary. At greater distances, predicted noise levels reduce below the CNT and noise impacts are expected to be **short-term, negative and slight to moderate.**

Commercial receptors – Given the higher CNT applicable to commercial properties, exceedances are only expected where works occur within approximately 10 m of the site boundary. In such cases, noise impacts are predicted to be **short-term, negative and moderate to significant.** Beyond this distance, predicted noise levels fall below the CNTs, and noise impacts are expected to be **short-term, negative and slight to moderate.**

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8.19.2 Construction Vibration

Taking into account the distance to the receptors, vibration emissions from any construction activity will be significantly reduced. Vibration levels at the closest buildings are expected to be orders of magnitude below the limits set out in Table 8.11 to avoid any cosmetic damage to buildings.

Residential receptors – Vibration levels at residential NSL's are expected to be below a level that would cause disturbance to building occupants. The impacts are predicted to be **temporary, imperceptible to not significant.**

Commercial receptors – Vibration levels at commercial NSL's are expected to be below a level that would cause disturbance to building occupants although it may be perceptible. The impacts are predicted to be **temporary, not significant to slight.**

8.19.3 Operational Phase

Noise levels associated with building services plant are expected to be well within the adopted day and night-time noise limits at the nearest noise sensitive properties taking into account the site layout, the nature and type of units proposed and distances to nearest residences. Assuming the operational noise levels do not exceed the adopted design goals, the resultant residual noise impact from this source will be of **neutral, not significant, long term impact.**

A traffic assessment has been conducted, as detailed in Section 8.13, and the results indicate a **negative, not significant and long-term increase in traffic noise.**

Mitigation measures have been recommended to address the inward impact, and once implemented, internal noise levels will be of neutral, not significant and long-term impact, complying with the criteria set out in Table 8.23.

8.20 INTERACTIONS

There are interactions between the noise and vibration assessment, traffic assessment and the population and human health assessment. With increased traffic movements, the noise levels in the surrounding area increase. The impacts of the proposed development on the noise environment are assessed by reviewing the change in traffic flows on roads close to the site. In this assessment, the impact of the interactions between traffic and noise are considered to be **negative, not significant and long-term** due to the low-level changes in traffic flows associated with the proposed development.

8.20.1 Indirect and / or Secondary Impacts

There are no indirect and or secondary impacts from noise and vibration in relation to this proposed development.

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8.21 CUMULATIVE IMPACTS

8.21.1 Construction Stage

In terms of construction noise, it is recognised that other development projects may be underway in the wider area during the same period (i.e. F18A/0335 at Holywell Road, Fingal, Dublin and F19A/0386 at R125, Airside Business Park, Fingal, Dublin). While no significant cumulative impacts are anticipated given the separation distances to other major sites, there remains potential for some overlap in construction activity. In such instances, cumulative construction noise emissions could occur at sensitive receptors located in proximity to the Proposed Development. These impacts are expected to be **short-term and negative, ranging from slight to moderate** depending on the location and timing of works.

8.21.2 Operational Stage

There are no likely cumulative noise impacts associated with the proposed development and other developments in the areas. The noise limits set for off-site noise sensitive locations are designed to avoid any significant increase in the prevailing background noise environment. Operational noise limits included in this report refer to cumulative noise from all fixed installations on site. The design of plant and other fixed installations will be progressed during the design stage to ensure the noise limits at offsite noise sensitive locations are not exceeded. In terms of increased traffic noise, the traffic noise assessment within this chapter takes into account the overall masterplan for Barrysparks and, hence, is a cumulative prediction.

8.21.3 Do-Nothing Impact

In the absence of the proposed development being constructed, the noise environment at the nearest noise sensitive locations and within the development site will remain unchanged. The noise levels recorded during the baseline noise environment are considered representative of the Do-Nothing scenario.

8.22 REFERENCES

- BS 8233: 2014: Guidance on sound insulation and noise reduction for buildings.
- British Standard BS 4142: 2014+A1:2019: Methods for Rating and Assessing Industrial and Commercial Sound
- British Standard BS 5228 (2009 +A1 2014): Code of Practice for Control of Noise and Vibration on Construction and Open Sites Part 1: Noise & Part 2: Vibration.
- British Standard BS 7385 (1993): Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration.
- ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.
- EPA Advice Notes for Preparing Environmental Impact Statements, (May 2022).
- Professional Guidance on Planning & Noise (ProPG), (IoA, 2017).

9.0 MATERIAL ASSETS: BUILT SERVICES

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9.1 INTRODUCTION

This chapter evaluates the impact of the proposed development on the existing services and material assets of the subject site and its surrounding. Material assets relate to the infrastructure and services alongside the subject site and are either human or natural in nature, a value may arise from either human or cultural reasons. This chapter deals mainly with physical assets from human origin; natural assets are addressed elsewhere in the EIAR.

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9.2 ASSESSMENT METHODOLOGY

This section outlines the methodology used to assess the likely effects of the proposed 530-residential apartment development at Barrysparks, Swords, Co. Dublin, on material assets.

Material assets in this context include utilities, transport infrastructure, land use, and services that support economic and social functioning.

The assessment has been undertaken in accordance with relevant legislation and guidelines, including the European Union's EIA Directive and guidance from the Environmental Protection Agency (EPA).

9.2.1 Legislative and Guidance Framework

The assessment follows:

- EU EIA Directive 2014/52/EU amending Directive 2011/92/EU
- EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2017)
- EPA Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (2003)
- Fingal County Development Plan 2023–2029
- Transport Infrastructure Ireland (TII) Guidelines for Traffic and Transport Assessments
- Uisce Eireann Codes of Practice and Standard Details

9.2.2 Scope of Material Assets Assessed

The material assets considered in this assessment include:

- Utilities Infrastructure: Water supply, waste and stormwater drainage, electricity, gas, and telecommunications.
- Transport infrastructure: Bus and rail connections
- Land Use: Current and zoned land use within the site and surrounding area.
- Community Infrastructure: Access to schools, healthcare, recreational facilities, and emergency services

9.2.3 Baseline Data Collection

Baseline information was compiled using the following sources:

- Desktop Review: Ordnance Survey mapping, Uisce Éireann records, ESB network plans, Gas Networks Ireland, and Communications providers.
- Site Surveys: topographical and geotechnical surveys, and road safety audits.
- Consultation: Engagement with Fingal County Council, Irish Water, TII, ESB, and other service providers.
- Policy Review: Review of regional and local development plans and strategic planning documents.

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9.2.4 List of Abbreviations

The following abbreviations are specific to this chapter of the EIAR.

UE	Uisce Éireann
FCC	Fingal County Council
ESB	Electrical Supply Board
GNI	Gas Networks Ireland
ICT	Information and Communications Technology
SuDS	Sustainable urban Drainage Systems
TTA	Traffic and Transport Assessment

9.2.5 Impact Assessment Methodology

Impacts on material assets were assessed using a structured approach as follows:

Type of Impact

Direct or indirect
Temporary or permanent
Cumulative (in combination with other developments)
Positive or negative

Assessment Criteria
Each potential impact was evaluated using the following criteria:

Criteria	Description
Magnitude	The scale of change to existing infrastructure or services
Duration	Time period over which the impact occurs (short, medium, long term)
Extent	The geographical area affected
Sensitivity	Sensitivity of the asset or service to the proposed change
Reversibility	Whether the impact can be reversed or restored over time
Likelihood	Probability of the impact occurring
Significance	Overall judgement of importance based on the above criteria

Significance
Eash significance are ratings follow EPA terminology:

Imperceptible	Not noticeable or measurable
Not Significant	Slight change with no lasting impact
Slight	Minor change, easily absorbed
Moderate	Noticeable impact but limited in scope or duration

Significant	Major impact requiring mitigation
Very Significant	Widespread or long-lasting impact
Profound	Irreversible impact with serious consequences

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9.2.6 Cumulative Impact Assessment

The cumulative impact assessment considered:

Other residential and mixed-use developments in the Barrysparks area. Planned upgrades to the Metrolink and surrounding road infrastructure, Uisce Éireann and ESB network development plans.

Interaction with other environmental topics (e.g., population, human health, noise, traffic) was also reviewed to identify potential indirect or combined effects.

9.2.7 Mitigation Measures and Monitoring

Where significant effects are identified (e.g., peak load on water supply, localised congestion during construction), mitigation measures are proposed. These include:

Infrastructure upgrades in coordination with Uisce Éireann
Phased construction and traffic management plans
Utility diversion and reinforcement work
Integration with public transport (Metrolink, bus routes)

A monitoring programme will be developed where necessary to ensure infrastructure performs as intended during and after construction.

9.3 CONSULATIONS

Consultations were held with the following for the purposes of preparing this chapter:

A pre-application enquiry was made to Uisce Éireann in January 2025 and a response was received in February 2025 stating that *"Water is Feasible Subject to upgrades"*

The proposed Development is Phase 1 of Barrysparks Development.

The proposed connection to the existing 300mm main will be a temporary connection and made secondary post completion of overall development. Approximately 120m of new 300mm ID pipe is required for the temporary connection.

For permanent connection, serving all phases, approximately 130m of new 300mm ID pipe, from the existing 500mm DI main at Malahide Road-Drynam Road Roundabout, will be required.

The Developer will be required to fund the network extension works. The fee will be calculated at a connection application stage.

Please note the main connection point and network layout must be in line with works on Metro Link Swords Central Station.

Wastewater Connection - Feasible without infrastructure upgrade by Uisce Éireann

The existing 600mm Concrete sewer in Drynam Road has capacity to serve the proposed Development. Please note the connection point and network layout has to be in line with works on Metro Link Swords Central Station.

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The applicant met with Fingal County Council (FCC) in formal pre-application meetings and at a number of other in person and online meetings to discuss the proposed scheme in terms of drainage, services and road access.

The applicant consulted with ESB Networks and Gas Networks Ireland to agree the strategy to serve the development.

Details of existing Telecoms services were also obtained from Eir and Virgin Media to plan the incoming ICT and Telecoms connections.

9.3.1 List of Abbreviations

The following abbreviations are specific to this chapter of the EIAR.

UE	Irish Water
FCC	Fingal County Council
ESB	Electrical Supply Board
GNI	Gas Networks Ireland
ICT	Information and Communications Technology
SuDS	Sustainable urban Drainage Systems
TTA	Traffic and Transport Assessment

9.3.2 Built Environment / Land

The development spans 6.0 hectares and will include 4 multistorey apartment blocks with 530 units and a small creche at Barrysparks, Swords, Co Dublin.

The proposed development is divided into 4 blocks; Block A includes 6-9 storey with 72 apartments. Block B is divided into 6-storey and 9-storey sections with 96 apartments. Block C includes 4-storey, 6-storey, and 9-storey sections with 124 apartments. Block D features 4-storey, 6-storey, and 9-storey sections with 158 apartments.

9.3.3 Access

The planned development will be accessed from the existing R132 Road to the north of the site. Additionally, it is proposed to allow for a future connection to Lakeshore Drive on the western side of the site. The site will also be connected to the Holywell Distributor Road via a new link road that will extend from Holywell Roundabout to the subject site and link with 150m permitted under planning ref F23A/0727.

The TTA prepared by ILTP Consulting Engineers which is submitted with this application addresses the impact of the proposed development on the surrounding road network.

9.3.4 Wastewater Disposal

There is an existing 600mm diameter wastewater sewer located on Drynam Road. It is proposed to use this sewer to provide for a connection to site. The wastewater sewers within

this development will traverse the site and connect into the sewer at this location. The pipes will be sized to cater for the development flows from future phases.

The site was subject to a Pre-Connection Enquiry to IW, and the response from IW has indicated that a connection is possible at this location. This response is included in the Engineering Report submitted with the application.

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9.3.5 Surface Water Disposal

There is an existing fields ditch drain and traverses the site which in turn outfalls to the Gaybrook stream close to the eastern boundary of the site, it is proposed to discharge the surface water from this development into the open ditch at two locations, the first using a 900mm diameter pipe close to the centre of the site and the second using a 450mm diameter pipe close to the junction of the ditch with the Gaybrook Stream on the eastern side of the site.

It is proposed to intercept the surface water from this proposed development and discharge via new SuDS nature-based solutions, such as green roofs (60% of all roofs) rain gardens, preamble paving, swales, tree pits, and finally into an attenuation basin before discharging into the central ditch via a flow control devise and bypass separator.

9.3.6 Potable Water Supply

It is proposed to connect to an existing 300mm diameter watermain located at the Southern end of the site at Holywell Roundabout. A new 300mm diameter 300mm diameter HDPE will be provided through the site, this pipe will be blanked offed to allow for a further connection to the Dryman Rd for future phases. A bulk flow meter will be fitted at the connection to the main development site, the commercial and Creche building will be fitted with individual meters, and each of the 4 blocks will have their own separate meters. Several storage tanks with will be provided for storage of potable water and the water will be pumped to the individual units from there.

The site was subject to Pre Connection Enquiry to IW, and the response from IW indicated that a connection is possible at this location; this response is included in the Engineering Report submitted with the application.

9.3.7 Natural Gas Supply

The residential element of the development energy requirement will be wholly supplied by electricity and natural gas will not be brought onto the site. There is an existing 250 PE 4 bar gas main located on the R132 (refer to Gas Networks Ireland Drawing) which runs adjacent to the proposed entrance of the development.

9.3.8 Electrical Supply

The electricity supply will originate from the main ESBN underground distribution network located on Holywell View to service the site with four new ESBN substations and one ESBN double substation proposed to service the proposed developments electricity demand and EV Charging provision.

9.3.9 Waste Management

Fingal County Council is the Local Authority responsible for administering waste management

activities in this area. As part of the 2024–2030 National Waste Management Plan Ireland is moving away from the traditional linear 'take-make-use-dispose' model towards a 'circular economy' regenerative growth model where resources are reused or recycled as much as possible and the generation of waste is minimised.

The transition to a circular economy requires a collaborative national response across all sectors of the economy through the lifecycle of products and materials.

This plan covers the period 2024 – 2030. Further information on waste management is included in Chapter 11.

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9.4 CHARACTERISTICS OF PROPOSED DEVELOPMENT

The development spans 6.0 hectares and will include 4 multistorey apartment blocks with 530 units and a small creche at Barrysparks, Swords, Co Dublin.

The proposed development is divided into 4 blocks; Block A includes 6-storey with 72 apartments. Block B is divided into 6-storey and 9-storey sections with 96 apartments. Block C includes 4-storey, 6-storey, and 9-storey sections with 124 apartments. Block D features 4-storey, 6-storey, and 9-storey sections with 158 apartments.

The planned development will be accessed from the existing R132 Road to the north of the site. Additionally, it is proposed to allow for a connection to Lakeshore Drive on the western side of the site. The site will also be connected to the Holywell Distributor Road via a new link road that will extend from Holywell Roundabout to the subject site and link with 150m permitted under planning ref F23A/0727.

9.5 POTENTIAL IMPACTS

The potential impacts of the proposed development are assessed below with respect to the impacts of the criteria set out in 9.2.5.

The potential impacts are addressed under the following headings:

- Built Environmental/Land
- Access & Ownership
- Water Supply, Wastewater and Surface Water
- Natural Gas Supply
- Electrical Supply
- Information and Communications Technology (ICT)
- Waste Management

9.5.1 Built Environment/Land

Construction Phase

Construction activities may cause some temporary local impacts including increase in noise, traffic, dust etc. to the surrounding built environment. The site is relatively remote from any residential areas. Providing a 2.4m high fence with a mesh screen along the southern and Eastern boundary will reduce the impact of construction activities on the adjacent community. The existing tree and hedge row on the Northern and Western Southern boundary, will mitigate the impacts on the McKelvey estate to the south.

These construction impacts will be localized and can be further mitigated appropriately as per the measures outlined in this EIAR. In constructing the development, the existing land will be subject to topsoil removal, basement excavation as outlined and mitigated for in Chapter 5 of this EIAR. Where possible all areas will be left intact until construction is ready to begin. Stripping of existing surfaces will not be undertaken until absolutely necessary to avoid any uncontrolled surface water runoff. Where possible all topsoil strips and demolitions will not take part during extreme dry or windy weather to aid with dust control.

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As a result of the above the impact can be assessed as follow:

Type	Temporary impact and likely to occur
Significance	The overall significance of the development will be not significant with no lasting impact
Cumulative	The construction activity will likely to be finished prior to the Metrolink project starting

Operational Phase

The proposed development of 530 units is divided into 4 blocks; Block A includes 6-storey with 72 apartments. Block B is divided into 6-storey and 9-storey sections with 96 apartments. Block C includes 4-storey, 6-storey, and 9-storey sections with 124 apartments. Block D features 4-storey, 6-storey, and 9-storey sections with 158 apartments.

Under the Fingal Development Plan 2023-2029, the site is zoned MRE, Metro and Rail Economic Corridor. The zone aims to support employment-generating activities and commercial projects, while also allowing for an appropriate amount of residential development along metro and rail routes

As a result of the above the impact can be assessed as follow:

Type	Permanent impact with positive outcome to provide high density and high quality development to benefit of the local community
Significance	The overall significance of the development will be not significant with no lasting impact
Cumulative	The cumulative impact will be positive

9.5.2 Access & Ownership

Construction Phase

The development site will remain in the ownership of the applicant/developer during the construction phase. A road opening license will be utilised to carry out the road works and connections to public water services, modification to the junction on the R132 and at Holywell, provided new pedestrian and cycle facilities and all works outside the site boundary.

Construction access to the site will be provided to the southern access from the Holywell Roundabout. This access will be managed in accordance with the Construction Management Plan (CMP) as submitted in outline with this application.

As a result of the above the impact can be assessed as follow:

Type	Temporary in nature
Significance	The overall significance of the access from the Holywell roundabout will be not significant with no lasting impact
Cumulative	There is no cumulative impact

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Operational Phase

The completed development will be accessed by vehicular, pedestrian and bicycle connection from the existing R132 Road to the north of the site. Additionally, it is proposed to allow for a connection to Lakeshore Drive on the western side of the site. The site will also be connected to the Holywell Distributor Road via a new link road that will extend from Holywell Roundabout to the subject site and link with 150m permitted under planning ref F23A/0727.

The internal streets in the development have been designed in accordance with DMURS (Design Manual for Urban Roads and Streets) and pedestrian and cycle permeability through the site has been at the forefront of the design.

The internal roads and open spaces within the development will be completed to 'taking in charge' standard and will come under the control of the Local Authority as indicated on the drawings submitted with the planning application.

As a result of the above the impact can be assessed as follow:

Type	Permanent in nature and positive as it will allow better connectivity from surrounding areas.
Significance	The overall significance of the access from the lands will be not significant with no lasting impact
Cumulative	There is no cumulative impact

9.5.3 Water Supply, Wastewater and Surface Water

Construction Phase

The water supply, wastewater connections are available just outside the site boundary, therefore a road opening license will be required to make these connections. The surface waste connection is available within the site boundary, so no license is required for this. These services connection will be controlled and managed by Uisce Éireann and FCC.

Temporary water services on site to facilitate the construction of the development (i.e. water supply and toilets) will be provided by temporary connection to the available service. Temporary connection will be applied for to Uisce Éireann by the contractor. The low volumes associated with temporary construction connection are unlikely to have any impact on the public network. These services will also be properly managed in accordance with the CMP.

As a result of the above the impact can be assessed as follow:

Type	Temporary in nature
Significance	The overall significance of the temporary service will be not significant with no lasting impact
Cumulative	There is no cumulative impact

Operational Phase

The demand on water services from the proposed residential development has been detailed and the PCE application has confirmed services connection are available. Connection to the public network is subject to final agreement from FCC and Uisce Eireann subject to the additional works required as included in this application.

As a result of the above the impact can be assessed as follow:

Type	Permanent and indirect
Significance	The overall significance of the permanent service connection will be not significant with minor changes easily absorbed into the wider water and wastewater networks.
Cumulative	There is no cumulative impact

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9.5.4 Natural Gas Supply

Construction Phase
It is not proposed to connect to the gas network in the wider area. Therefore, there is no impact on the overall gas network.

Operation Phase
It is not proposed to connect to the gas network in the wider area. Therefore, there is no impact on the overall gas network.

9.5.5 Electrical Supply

Construction Phase
Temporary local suspension of the power will occur in the short term when power is provided to the site. However, this will be controlled ESB Networks as the statutory undertaker and in accordance with standard protocols.

As a result of the above the impact can be assessed as follow:

Type	Temporary and indirect
Significance	The overall significance of the electrical connection at construction will be not significant and have no impact on the wider network
Cumulative	There is no cumulative impact

Operational phase
The Operation Phase of the development will see an increase in demand and usage of electricity supply, but it is anticipated that this can be facilitated by the local network.

As a result of the above the impact can be assessed as follow:

Type	Permanent and indirect
Significance	The overall significance of the electrical connection at the operational phase will be not significantly impact on the wider network
Cumulative	There is no cumulative impact

9.5.6 Information and Communications Technology (ICT)

Construction Phase
Fixed telecoms will not be operational during the construction phase.

As a result of the above the impact can be assessed as follow:

Type	Temporary and indirect
Significance	The potential impact from the construction phase of the proposed development on the local telecoms / broadband network is likely to be negative, slight and short term.

Cumulative	There is no cumulative impact

Operational phase

The Operation Phase of the development will see an increase in demand and usage of local telecoms and broadband network, but it is anticipated that this can be facilitated by the local network.

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Type	Permanent and indirect
Significance	The potential impact from the operational phase of the proposed development on the local telecoms / broadband network is likely to be not significant on the wider network
Cumulative	There is no cumulative impact

9.6 MITIGATION MEASURES

Construction Phase

A range of construction related mitigation measures are outlined within other chapters of the EIAR with respect to various aspects of the built environment.

As noted above, connections to the existing electricity, water services, and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors under the control of the service provider.

Operational Phase

No additional mitigation measures to those outlined in other chapters are considered necessary during the operational phase of the development as it is considered to have a neutral to positive effect on material assets including services and infrastructure.

	Construction Mitigation
MA:BS-C1	Connections to the existing electricity, water services, and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors under the control of the service provider.
	Operational Mitigation
	None
	Monitoring
	None

9.7 PREDICTED IMPACTS

Construction Phase

On the basis that the specified mitigation measures are incorporated during the construction of the proposed development, the predicted impact will be neutral.

Operational Phase

Whilst the demand on water services, power, telecommunications and transport

Infrastructure will all increase due to the development, on the basis that the specified mitigation measures are incorporated the operation of the proposed development is predicted to have a neutral-long term impact on material assets.

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9.8 "DO NOTHING" SCENARIO

A 'Do nothing' scenario will result in the subject site remaining undeveloped and remain a green field zoned land.

9.9 WORSE CASE SCNARIO

Worst case scenarios for individual material assets are outlined in individual chapters of the EIAR. In relation to power and telecommunications the worst-case scenario would be if the works involved in the construction phase resulted in an extended outage for existing properties in the area due to unforeseen delays on site.

9.10 MONITORING & REINSTATMENT

No monitoring is required in addition to those specifically noted in other chapters of the EIAR.

9.11 DIFFICULTIES IN COMPLING INFORMATION

There were no significant difficulties in compiling the information.

10. MATERIAL ASSETS: TRANSPORTATION

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10.1 INTRODUCTION

This Chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by ILTP Consulting (ILTP) and assesses any likely and significant impacts associated with traffic due to the proposed development. Mitigation measures are proposed where negative effects are identified.

This Material Assets chapter has been prepared by Christy O'Sullivan and Ben Waite of ILTP. Christy O'Sullivan is the Managing Director of ILTP and qualified as a Civil Engineer (BEng.) from University College Cork (UCC) in 1982. He is a Chartered Engineer (CEng.) with 30+ years of experience in traffic and transport engineering and planning and is a Fellow of the Chartered Institution of Highways and Transportation (FCIHT).

Ben Waite is a Senior Transport Analyst; he holds a BA (Hons.) in Geography and an MSc. (Hons) in Geographic Information Science and a Member of the Chartered Institution of Highways and Transportation (MCIHT) and has over 15 years' experience in traffic and transport design, analysis and planning.

10.2 ASSESSMENT METHODOLOGY

The following methodology has been adopted for this assessment:

ILTP coordinated traffic count surveys undertaken on 15th May 2025 in order to collate the full set of traffic and public transport data considered necessary to support the planning application for the proposed development.

All traffic surveys were carried out in accordance with the Transport Infrastructure Ireland's (TII) Project Appraisal Guidelines Unit 5.2 - Data Collection (PE-PAG-02016) Dec 2023.

ILTP conducted an assessment of available information on projected traffic trends, including the Greater Dublin Area Transport Strategy 2022-2024, the current Fingal County Development Plan 2023-2029 and the National Sustainable Mobility Policy (2022) document.

ILTP calculated the estimated trip rates from the proposed development and added these figures to the base flows. A LinSig analysis was also undertaken to assess the capacity of the proposed new signalised access onto the R132.

Picady, Arcady and LinSig Traffic Signal Junction modelling software was also utilised to assess the capacity of the adjacent junctions with the proposed development in place. The Picady and Arcady software packages were used to calculate RFC (ratio of flow to capacity) factors for the approaches to a junction. This industry standard software is often used to assess the capacity of priority junctions and roundabouts, respectively. This measures the observed flow of a link against the theoretical capacity of the link. RFC is calculated thus;-

In transport Terms, RFC values of 85% or less are considered satisfactory, meaning at levels of RFC below 85% the junction is normally deemed to be operating within the design capacity and that no significant delays or queues arise.

LinSig is an industry standard software which allows the modelling traffic signals and their

effect on traffic capacities and queuing. As well as modelling the effects of traffic signals LinSig also optimises signal timings to reduce delay or increase capacity at a junction or group of interlinked junctions.

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The results of LinSig models are presented in terms of Degree of Saturation (the proportion of how saturated a lane is compared to its capacity), which for an urban signalised junction should be below 90%.

From the results of the traffic modelling a conclusion could be drawn as to the impact that the development will have on the overall traffic flows. Once modelling results were available ILTP then assessed what impact the development had on the road network.

An assessment of public transport provisions in the area was also carried out to determine the existing public transport capacity in the area and the likely usage of public transport services by residents and visitors to the new development.

The Traffic & Transport Assessment (TTA) undertaken included a Mobility Management Plan (MMP) for the proposed development, with the specific objectives of reducing in overall terms both the number of trips generated by the development and ensuring that greater numbers use the extensive public transport services and sustainable travel in the immediate area. The MMP is a live document that is periodically updated to ensure that the mitigation measures are monitored and updated as appropriate over time.

ILTP also assessed the construction stage traffic impacts of the proposed development on the wider road network.

In terms of projecting future year traffic scenarios beyond the 2025 Base Year, the assumed Opening Year of the proposed development was taken to be 2028, with the Design Year taken as 2043. The Opening Year refers to the anticipated year of first occupation of the development, and the Design Year is 15 years post Opening Year. This is in accordance with TII's *Traffic and Transport Assessment Guidelines* (PE-PDV-02045), May 2024. Future year traffic growth was calculated using the central growth rates as specified in *TII's Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections* (PE-PAG-02017), October 2021.

10.2.1 Study Area

The study area for this Chapter is shown in Figure 10-1, it consists of the major regional routes surrounding the application site as well some other key local and distributor roads. Figure 10-1 also shows the junctions and bus stops where data was collected.

The junctions surveyed were as follows:

- R132 – R106 (Malahide Road) Roundabout
- R132 – Pavilions Shopping Centre Access (Left In-Left Out)
- R132 - R836 – R125 (Pinnock Hill) Roundabout
- R125 – Lakeshore Drive Roundabout
- R125 – L2065 (Holywell Distributor Road) Roundabout
- L2065 (Holywell Distributor Road) – Feltrim Hill Roundabout

In addition, boarding and alighting data was obtained at the following bus stops:

- Stop ID: 5074, Swords Pavilions, Swords (R132 Eastbound)
- Stop ID: 5079, Swords Pavilions, Swords (R132 Westbound
- Stop ID: 6310, Holywell Crescent, Drinan (R125 Eastbound)

- Stop ID: 6312, Holywell Crescent, Drinan (R125 Westbound)

The data collected included the following:

- Route Number
- Passengers Alighting
- Passengers Boarding
- Estimated Bus Occupancy
- Number of passengers waiting at stop after bus departure

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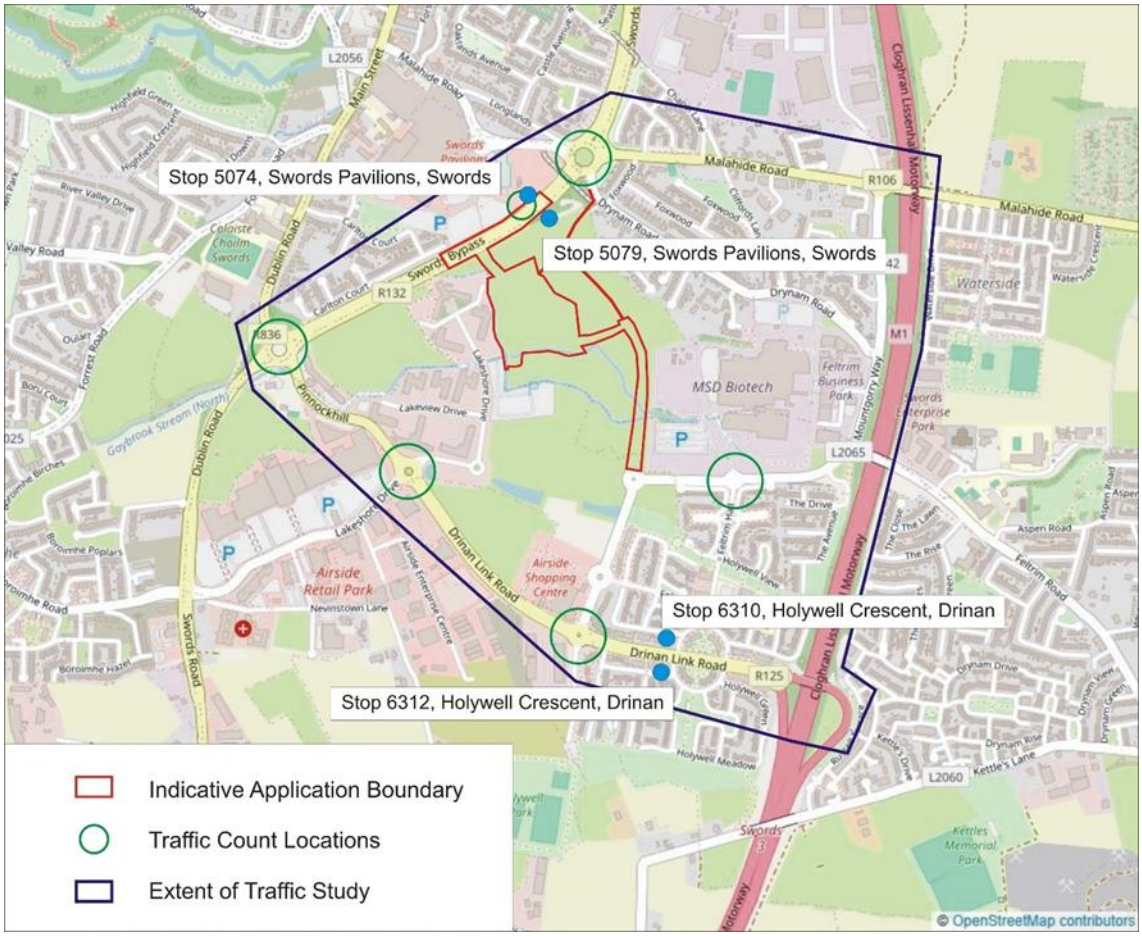

Figure 10.1: Traffic and Transportation Study Area

10.3 RECEIVING ENVIRONMENT

This section considers the baseline conditions, providing background information for the site in order to determine the significance of any traffic implications. This section also considers the existing accessibility of the site by sustainable modes of transport.

10.3.1 Existing Road Network

The Barrysparks lands are bounded by the R132 to the north, current access is via an existing entrance off Drynam Road in the northeast of the site. The adjoining road network includes the Holywell Link Road to the southeast of the lands and Lakeshore drive near the western boundary.

10.3.2 Existing Public Transport

The Swords Area is served by several bus routes provided by various operators:

- Route 33/E Dublin Bus Balbriggan to City Centre 2 buses per hour
- Route 41 Dublin Bus Swords to City Centre 3 buses per hour
- Route 41X Dublin Bus Swords to UCD Belfield 1 bus per hour
- Route 142 Dublin Bus Portmarnock to UCD Belfield 5 buses per hour
- Route 500 Swords Express Abbeyvale to City Centre 4 buses per hour
- Route 501 Swords Express Pavilions to City Centre 4 buses per hour
- Route 502 Swords Express Highfields to City Centre 2 buses per hour
- Route 505 Swords Express Highfields to City Centre 2 buses per hour

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10.3.3 Proposed Metrolink

MetroLink is a proposed high-capacity, high-frequency rail line designed to connect Swords in north Dublin to Charlemont in the south, passing through Dublin Airport and the City Centre. The project aims to enhance public transportation in the Greater Dublin Area by integrating with existing services like Irish Rail, Dublin Bus, and Luas. The planned route spans approximately 18.8 kilometres and includes 16 new stations, with 11 situated underground. The Swords Central Metrolink Station is proposed to be located near the northwestern boundary of the subject site, located directly adjacent to the R132.

10.3.4 R132 Connectivity Scheme

Fingal County Council is working in conjunction with the National Transport Authority to improve connectivity for the town of Swords and this includes a renewed focus on safe facilities for pedestrians and cyclists on the R132. The R132 Connectivity Project will improve the connectivity and safety of pedestrians and cyclists moving along, and across, the R132 and enhance facilities for all road users with particular benefits for those choosing sustainable modes of transportation such as bus users, cyclists and pedestrians.

Works will focus on the section of the R132 which runs east of Swords Town Centre, from Pinnock Hill to the Estuary Roundabout. The project is comprised of:

- Carriageway changes from north of Pinnock Hill Roundabout to north of Estuary Roundabout including the establishment of designated bus lanes, cycle lanes and pedestrian walkways along each side of the carriageway, with a new reduced speed limit of 50km/h.

- Conversion of three existing roundabouts along the R132 (Estuary, Seatown and Malahide Road roundabouts) to signalised intersections with pedestrian and cyclist crossing points.

- Reconfiguration of the Drynam Road arm of the Malahide Road Roundabout to link directly to Malahide Road as a one-way road.

10.3.5 Bus Services, New Bus Network and Bus Connects Corridors

Existing QBCs are proposed to be upgraded to “next generation” bus corridors as part of the overall BusConnects project. This NTA project includes both a New Bus Network and Bus

Connect Corridor improvements. These projects propose to create continuous dedicated bus lanes along the city's busiest bus corridors.

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This will further enhance public transport in the area and reduce traffic flows from the proposed development by increasing the attractiveness of mode shift from private car to public transport.

The Swords to City Centre Core Bus Corridor Scheme (the Proposed Scheme) will support integrated sustainable transport usage through infrastructure improvements for active travel (both walking and cycling), and the provision of enhanced bus priority measures for existing (both public and private) and all future services that will use the corridor.

It will commence south of Swords at the Pinnock Hill Junction, travelling in a southerly direction along the R132 Swords Road, towards Dublin Airport and eventually Dublin City Centre.

10.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The development will consist of a Large-scale Residential development (LRD) of 530no. residential units and creche (462.5sq.m), with associated ancillary accommodation, private balconies, communal amenity spaces and public open spaces.

A total of 163no. car parking spaces are provided in a combination of surface spaces and at basement level.

The development will be accessed from the south via a connection to the existing roundabout on the Holywell Distributor Road and from the north via a fully signalised junction with the R132 including works to the north and south bound carriageways and central median of the R132 to provide for the fully signalised junction with associated turning lanes and a separate pedestrian and cycle crossing on the R132.

10.5 CONSTRUCTION IMPACTS

10.5.1 Construction Activity

The likely traffic impacts associated with the construction phase of the proposed development are assessed in this section.

A separate Outline Construction & Environmental Management Plan (OCEMP) report, prepared by POGA Consulting Engineers and sets out the construction programme and estimates HGV anticipated movement and staff number on site during construction.

The works will be phased in such a way as to allow the road network to remain open with existing capacity maintained at all times. Any short-term road closures or traffic management measures required to facilitate construction or services provision will need to be agreed in advance with FCC's Roads & Traffic Department.

The following assumptions were made as part of the evaluation process:

- 08:00 to 19:00 operation per day Monday - Friday
- 08:00 to 14:00 operation on Saturday

10.5.2 Construction Program and Sequencing

The overall phasing of the construction is set out in the OCEMP, with site clearance expected to be completed in six months and the LRD development construction over two years. The proposed LRD development is planned to be delivered in a single phase. This means that all construction traffic impacts will arise in advance of the occupation of the proposed development.

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In terms of traffic management, the proposed new access road through the lands will be constructed as part of the overall development and will be built to the FCC Taking In Charge standards prior to the occupation of the proposed LRD development.

10.5.3 Construction Traffic Haul Routes

Various construction traffic routes proposals for accessing the site during construction were considered. It was decided that a construction access route with the least impact on the adjoining R132 and the proposed upgrade to same, and on the planned Metrolink scheme construction, currently awaiting approval from An Coimisiún Pleanála, formally An Bord Pleanála, would be preferable.

To achieve this, it is proposed that construction traffic associated with the proposed LRD development and construction traffic associated with R132 Connectivity and Metrolink schemes would be segregated in as far as practicable. The proposed Haul Route for the construction works for the proposed development is shown in Figure 10-2.

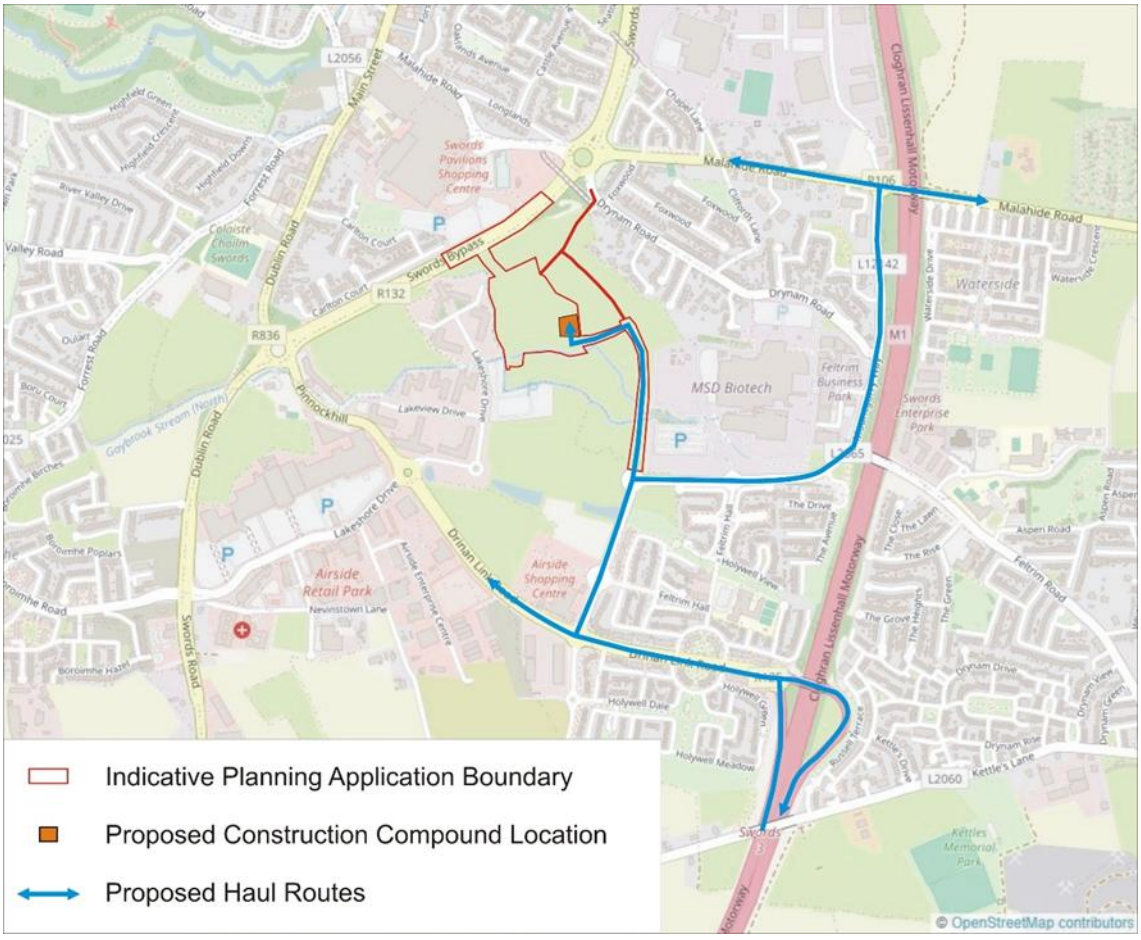

Figure 10.2: Proposed Haul Routes for Construction Works for Proposed Development

All traffic associated with LRD construction will be required to use the new link road that connects to the Holywell Distributor Road to the south of the proposed site. Construction-related traffic will then be able to access the regional and national road network from that point.

No construction related traffic will be permitted to use the proposed new signalised junction onto the R132 until the proposed development is ready for occupation. Therefore, the LRD construction traffic will not directly impact on the R132 Connectivity Scheme or the Metrolink Scheme during the construction phase.

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10.5.4 Waste Removal to Facilitate the Development

The OCEMP states that approximately 41,760 tonnes of waste is proposed to be removed from the site over the course of construction. The typical carrying capacity of the HGVs used to remove this material from the site is typically 20 tonnes.

Therefore, the removal of the 41,760 tonnes of waste would require approximately 2,090 trips. Each trip requires 2 movements (one loaded and one unloaded). This equates to 4,180 total HGV movements.

It is proposed that the site clearance will take place over the course of 26 weeks, the removal of the waste material will require an average of 16 additional HGV trips, or 32 total movements, per day. It is proposed to limit these movements to times outside the AM and PM peak hours. These HGV movements would be required to use the proposed haul route.

A maximum of 40 HGV trips per day is estimated during the peak construction period as set out in the OCEMP, with a maximum of 20 HGV trips occurring during the AM and PM peak hours.

10.5.5 Construction Workers Traffic Estimates

Excluding HGV drivers, it is estimated that the construction works would require personnel parking on site, including full-time construction workers and contractors.

It is projected that the works will result in approximately 150 to 200 construction workers on site during the typical construction period of 2 years, with a maximum of 300 to 400 construction personnel on site concurrently during the period of peak construction activity as set out in the OCEMP. Given typical construction working hours the majority of these personnel are expected to arrive to site in advance of the 08:00 – 09:00 morning peak hour and depart after the 17:00 - 18:00 evening peak hour periods.

Some construction workers will arrive on foot, by cycle, or use public transport. In addition, many construction workers come to the site in groups by car or van, meaning that vehicle occupancy for construction traffic is greater than average car occupancy rates. Based on the estimates set out in the OCEMP, vehicular movements carrying construction personnel can be broken down as follows:

400 peak staff working on site (Max):

- 40% arrive during AM Peak Hour — 160
  - 30% arrive via public transport, walk or cycle — 48
  - 70% arrive via car/van — 112
- Average Car Occupancy = 2.2 (including driver) — 2.2
- Maximum additional movements AM Peak (400 staff) — 51 cars/vans

With up to 200 staff normally on site:

- Normal additional movements AM Peak 26 cars/vans

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Based on the peak construction workers numbers on site a maximum of 127 on-site car parking spaces will be required to meet the peak construction period. These will be located within the site compound area as shown in Figure 10-3.

Cycle and pedestrian access to the existing bus services to the south of the proposed development will also be provided along the haul route during construction stage. On site cycle parking and shower facilities will also be provided to encourage construction staff to consider sustainable travel modes to and from work where possible.

Figure 10.3: Pedestrian Routes to Bus Stops from Construction Compound

10.5.6 Overall Construction Traffic Impact

The traffic movements for construction-related traffic and construction workers at the peak stage of construction would equate to approximately 71 (20 + 51) movements during the AM peak traffic hours, with a similar number in the PM peak hour. This equates to less than 2 vehicles every minute arriving or departing the site during the morning or evening peak hours. This level of traffic will have no material traffic impact on the local road network.

This volume of construction traffic during peak traffic hours is lower than the peak volumes projected for the operational phase of the development, and therefore construction-related traffic has no material additional impact on existing levels of traffic on the surrounding road network.

In terms of traffic impact, the most onerous scenario to assess in terms of capacity and traffic impact is the operational stage of the development.

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10.5.7 Cumulative Construction Traffic Impact

As the construction traffic for the proposed LRD development will be fully segregated from the construction traffic associated with the R132 Connectivity Scheme and/or the Metrolink Scheme, there will be no cumulative construction stage traffic impact with these other proposed developments along the R132.

In the vicinity of the proposed development the traffic associated with the operation stage traffic impact of the proposed LRD development, as set out elsewhere in this report, will be less than the construction traffic impact. As the proposed LRD development is planned to be completed in a single construction phase, the operational stage traffic will occur post-construction, so the cumulative traffic impact for the proposed LRD development does not arise.

10.5.8 Systematic Definition of Effects

The likely effect of the proposed development during the construction phase will be:

1. Additional HGV traffic along the proposed designated haul route will have a slight medium-term adverse effect on the local road network during the construction works.

2. Additional construction personnel car / light vehicle movements which will have a slight medium-term adverse effect on the local road network during the construction works.

3. Construction vehicle movements associated the proposed development when undergoing service connections on the public road, which will have a slight short-term adverse effect on traffic movements on these roads in the vicinity of the proposed development.

4. Construction vehicle movements and works will have a slight short-term adverse effect on pedestrian and cycle movements on roads in the vicinity of the proposed development, for example due to pedestrians and cyclists having to give way at the construction access to the site and/or divert around construction works.

10.6 OPERATIONAL IMPACTS

10.6.1 Traffic Projections for Proposed Development

ILTP prepared estimates of the overall Traffic increases that would result from the proposed development.

ILTP have estimated trip generation figures for the proposed development based on their experience in Ireland and having regard to the range of trip rates from the Trip Rate Information Computer System (TRICS) database. The traffic impact from other planned and committed developments in the area were also assessed using the data contained in the planning application documentation accompanying these relevant developments. Each individual planning application contained a Traffic and Transport Assessment (TTA) report and the projections used in these reports were used in ILTP's cumulative impact calculations.

10.6.2 Future Year Scenarios – Without and With Proposed Development

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No further growth in background traffic is assumed between the 2028 Opening Year and 2043 Design Year. For the purposes of traffic assessments, background traffic can be defined as the existing traffic volume on the road network. It serves as a baseline to assess what impacts the proposed development may have on the existing road network.

The assumption that there will be no further background traffic beyond the 2028 Opening Year is consistent with the overall transport trends and strategy for the Dublin area and other national and local policy objectives such as the Climate Action Plan 2024 (CAP). CAP targets include a 20% reduction in total vehicle kilometres travelled by 2030.

Therefore, for the 2043 Design Year, it was assumed that the 2028 traffic volumes estimated without and with the proposed development would persist, which would represent a worse-case scenario.

10.6.3 Projected Trip Generation for Proposed Development

For EIAR and TTA evaluation purposes, ILTP have, however, assumed that some growth in background traffic would arise over the short term and that the development itself will generate additional traffic movements on the road network, which represents a worse-case scenario in terms of evaluation methodology. The proposed development will generate an increased level of traffic on the local road network and demand for public transport.

To calculate the likely increase in traffic volumes trip rates were established for each proposed land use type and quantum with reference to the TRICS database which is an industry standard. Using TRICS, ILTP estimated the total number of trips each element of the development is likely to produce and combined to produce gross trip rates.

It should be noted that the additional trips used in the traffic assessments can more accurately be defined as trip ends, as each trip has both an origin and a destination. If all trip ends were assumed to be new trips and these were applied to all developments, this would result in a doubling of forecasted trips on the wider network. The traffic assessment assumed all the trips to and from the proposed development were additional trips which represent a very robust assessment of traffic movements.

10.6.4 Development of LRD Phase 1 Lands – Trip Rates

The proposed LRD Phase 1 lands to be brought forward for development prior to the delivery of Metrolink are summarised in Table 6.1 along with the estimated vehicular trips that would be generated by the proposed 530 residential units and the proposed creche.

Table 10.1: Vehicular Trip Generation for LRD Lands

Type	Rate Type	Quantumn		AM Rate		PM Rate		AM Trips		PM Trips	
				Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
Phase 1 - Barrysparks LRD (RMEC Zoned Lands)											
Residential Units	per Unit	530	units	0.047	0.138	0.126	0.07	25	73	67	37
Creche	per 100sqm	463	sqm	3.585	2.95	2.885	3.585	17	14	13	17
Total LRD Phase 1								42	87	80	54

Based on our professional experience, mixed use developments or ones that are near to other facilities such as the proposed development tend to generate a larger number of local walk or cycle trips.

Overall, the Trip Generation assessment of the LRD lands yielded an estimate of an additional 42no. inward and 87 no. outward trips for the AM peak hour (08:00 – 09:00). An additional 80 no. inward trips and 54 no. outward public transport trips were estimated for the PM peak hour (17:00 – 18:00).

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10.6.5 Development of All Bovale Lands

It is anticipated that over time all the remaining lands will be developed. This includes the VHI, lands, the 1.3ha of temporary land take for Metrolink construction and the balance of the lands zoned high technology.

The lands subject to the temporary land take are zoned as Metro Economic Corridor and are anticipated to be made up of town centre development, possibly including a hotel. Table 6-2 shows the estimated trip generation for the full extent of the Bovale lands.

Table 10.2: Estimated Trip Generation for Full Extent of Bovale Lands

Type	Rate Type	Quantumn		AM Rate		PM Rate		AM Trips		PM Trips	
				Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
Phase 1 - Barrysparks LRD (RMEC Zoned Lands)											
Residential Units	**per Unit**	530	units	0.047	0.138	0.126	0.07	25	73	67	37
Creche	**per 100sqm**	463	sqm	3.585	2.95	2.885	3.585	17	14	13	17
Phase 2A - Barrysparks LRD (RMEC Zoned Lands)											
Residential Units	**per Unit**	488	units	0.047	0.138	0.126	0.07	23	67	61	34
Phase 2B - HT Lands (east)											
HT3	**per 100sqm**	15300	sqm	0.818	0.117	0.092	0.638	125	18	14	98
HT4	**per 100sqm**	8600	sqm	0.818	0.117	0.092	0.638	70	10	8	55
Phase 3 - HT Lands (west)											
HT1	**per 100sqm**	8600	sqm	0.818	0.117	0.092	0.638	70	10	8	55
HT2	**per 100sqm**	5950	sqm	0.818	0.117	0.092	0.638	49	7	5	38
Phase 4 - RMEC lands (metro station & environs)											
Hotel	**per Bedroom**	400	rooms	0.05	0.06	0.1	0.09	20	24	40	36
Residential	**per Unit**	250	units	0.047	0.138	0.126	0.07	12	35	32	18
Office	**per 100sqm**	1781	sqm	0.746	0.1	0.083	0.717	13	2	1	13
Retail	**per 100sqm**	594	sqm	0.25	0.083	2.49	1.81	1	0	15	11
VHI Site											
VHI Site - Permitted	as per Planning Application							57	35	35	57
VHI Site - Balance of Lands								114	70	70	114
Total LRD Phase 1								42	87	80	54
Full Site Total								596	365	370	581

The trip generation for the proposed LRD development and the High Technology zoned lands are based on TRICS database, post Metrolink in place. The VHI trip rates are as per the approved planning application for same.

The trip rates for the balance of the temporary land take are based on a likely estimate of mixed use town centre development that will be integrated with the overall Metrolink station development once same is completed.

It should be noted that the planned investment in public transport in the area is also likely to see reductions in existing traffic along the R132 and in the wider area over time. Therefore a likely worse-case scenario would be to test the proposed new access on to the R132 using existing traffic flows on the R132 and the proposed trip estimated included in this assessment.

10.6.6 Junction Capacity Assessments

A LinSig traffic modelling analysis was undertaken for AM and PM peak weekday periods to assess the capacity of the proposed new signalised access junction onto the R132 with the proposed development traffic in place.

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The LinSig analysis found that the approach arms of the proposed access junction will operate at or below 75% capacity with the peak hour development traffic in place. This confirms the proposed access junction has more than adequate capacity for the proposed development. Further details of the LinSig traffic modelling analysis are included in the Traffic and Transport Assessment & Mobility Management Plan report, included separately.

10.6.7 Through Traffic Estimates with R132 to Holywell Distributor Road Link in Place

With the completion of the LRD development the associated internal street will be constructed to the taking in charge standards of FCC. Assuming the new link is open to through traffic at the completion of the proposed LRD development some traffic using existing route in the area will divert through the development using the new link connecting the R132 with the Holywell Distributor Road.

Three main traffic movements were identified, some of which would divert through the new development, and these are illustrated in Figure 10-4. The dashed black line for example, represents the existing allowed movements to and from the Drynan Interchange, with the solid black line showing the potential alternative route through the proposed LRD development. Note, not all the movements will divert but for analysis purposes, ILTP have assumed 50VPH in each direction would divert via the proposed new link street.

Similarly with the green and red routes also illustrated in Figure 10-4. This would result in approximately 150VPH additional trips diverting from existing routes and using the new link in each direction or a total of 300VPH using the new link in both the AM and PM traffic peaks.

Figure 10-4 shows ILTPs through traffic redistribution estimates.

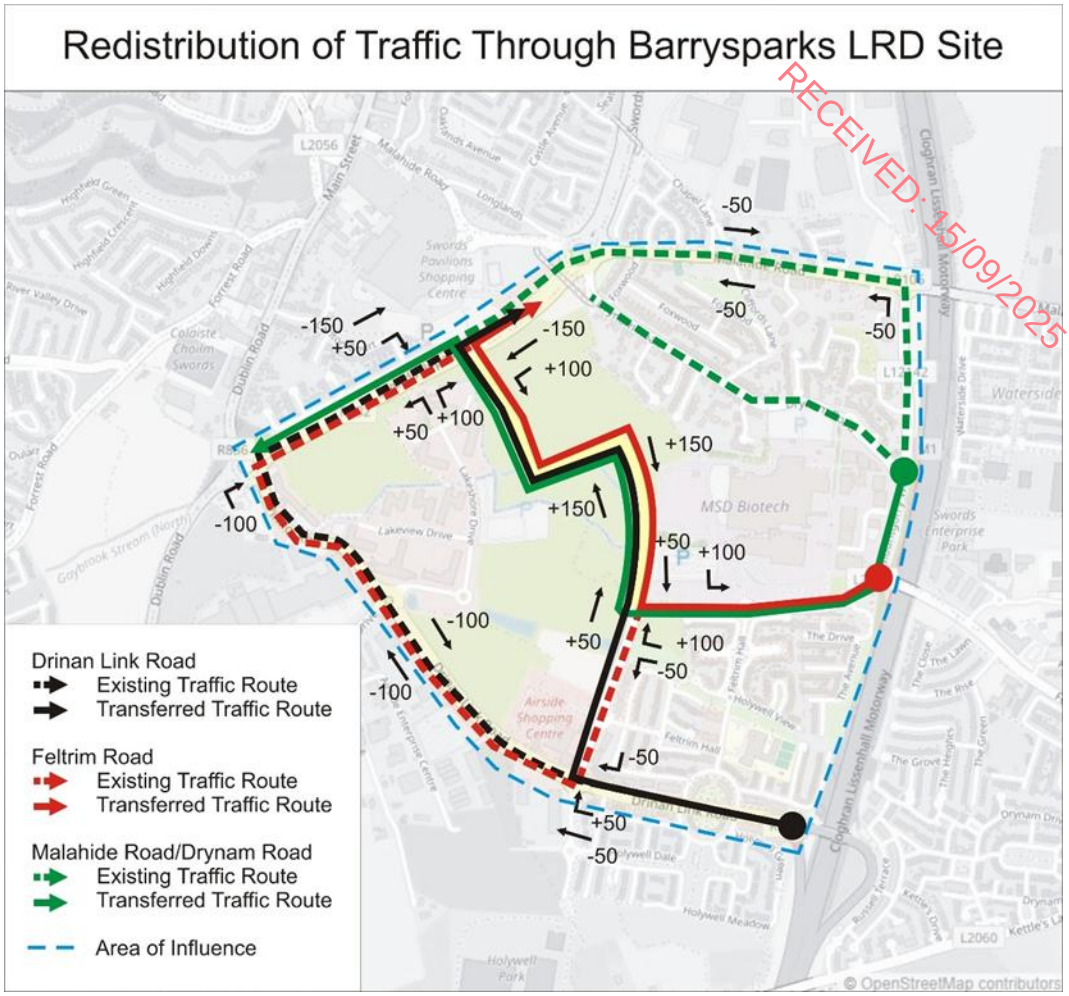

Figure 10.4: Redistribution of Traffic with Link Road in Place

This would result in a reduction in traffic on some of the existing routes. The traffic on the R125 between Hollywell and Pinnock roundabout would see a reduction in traffic of 100VPH in each direction in both the AM and PM traffic peaks. Therefore, there would be wider network benefits by allowing some traffic to use this new link road. It would, however, increase the use of the new link road.

10.6.7 Systematic Definition of Effects

The projected increases in traffic as a result of the proposed development have been assessed with regard to the vehicle movement threshold levels above which a Transport Assessment is automatically required, as defined in the TII Traffic and Transport Assessment Guidelines (May 2014), which include:

"Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.

Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive."

For the purposes of this assessment, traffic impacts of less than 5% are defined as having a slight traffic impact. Traffic increased of 5% to 10% are defined as moderate traffic impact, which traffic greater that 10% increase defined as a significant traffic impact.

The new signalised junction on the R132 will have a significant long-term impact in the immediate vicinity of the proposed development on the R132.

Traffic flows along the R132 and the Holywell Distributor Road in the immediate vicinity of the proposed accesses are estimated to increase by over existing levels which will have a moderate long-term effect on the adjoining section of public road. Traffic flows on the wider road network are estimated to increase by less than 5% and will therefore have a slight traffic impact on the wider road network.

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However, these traffic increases will be offset by the redistribution of some existing traffic through the Barrysparks LRD site via the new link road. This will have a long term positive traffic impact on the wider road network.

The improved walk and cycle facilities included in the development including a new pedestrian and cycle route link through the site would further improve connectivity to the bus and the Proposed Metrolink service in the area for both new and existing residents of the area.

The proposed pedestrian and cycle routes through the proposed development would have significant long-term positive effects regarding reduced walking and cycling travel times to public transport services and improved permeability and connectivity to amenities in the area.

10.7 MITIGATION & MONITORING MEASURES

	Construction Mitigation
MA:T-C1	Tracked excavators will be moved to and from the Site on low-loaders and will not be permitted to drive onto the adjacent roadway. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
MA:T-C2	The applicant shall at all times keep all public and private roads and footpaths entirely free of excavated materials, debris and rubbish. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
MA:T-C3	Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris. **In order to reduce the impact of additional traffic along the proposed dedicated haul route.**
MA:T-C4	The applicant shall be responsible for and make good any damages to existing roads or footpaths caused by his own contractors or suppliers transporting to and from the Site. **In order to reduce the impact on pedestrian and cycle movements on roads in the vicinity of the proposed development.**
MA:T-C5	All construction workers will be encouraged to use public transport, and also to car share where appropriate. On site staff car parking can also be provided to ensure no construction workers will be required to park on adjacent roads or streets. **In order to reduce the impact of additional construction personnel car / light vehicle movements on the local road network.**
MA:T-C6	No daytime or night-time parking of site vehicles or construction staff vehicles will be permitted outside agreed areas. **In order to reduce the impact of additional construction personnel car / light vehicle movements on the local road network.**

MA:T-C7	Construction work will be limited to normal working hours; that are 08.00 – 19.00 on weekdays and 08.00 – 14.00 on Saturdays. All deliveries of materials, plant and machinery to the Site and removals of waste or other material will take place within the permitted hours of work. Vehicle movements will be planned to ensure arrival and departure times are maintained inside the agreed working hours. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
MA:T-C8	Deliveries will be co-ordinated to prevent queuing of vehicles adversely affecting traffic flow and to minimise disruption to local traffic. They will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly to adjoining owners), and rush hour traffic. Large deliveries will be scheduled outside peak traffic hours to minimise disruption. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
MA:T-C9	Properly designed and designated access and egress points to the construction site will be used to minimise impact on external traffic. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
MA:T-C10	Firm, level, and well-drained pedestrian walkways will be provided. **In order to reduce the impact on pedestrian and cycle movements on roads in the vicinity of the proposed development.**
MA:T-C11	Adequate visibility will be provided at the proposed access point to the proposed development. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
MA:T-C12	Footpaths will not be blocked resulting in pedestrians having to step onto the carriageway. **In order to reduce the impact on pedestrian and cycle movements on roads in the vicinity of the proposed development.**
MA:T-C13	The final Construction Traffic Management Plan with be submitted and agreed with the planning department prior to the commencement of any development. **In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.**
	Operational Mitigation
MA:T-O1	A Mobility Management Plan has been prepared for the proposed development which includes recommended mitigation measures to reduce usage of private cars and increase the use by residents and patrons within the development of more sustainable modes of travel, such as including good cycle parking provision, will further promote the greater use of sustainable travel modes. It is projected that successful implementation of the mobility management plan measures included will reduce the vehicular trip generation from the proposed development below that included for in the Traffic Impact Assessment for the proposed development. **In order to reduce the impact of additional traffic on roads in the vicinity of the proposed development.**
MA:T-O2	The MMP is a live document and is intended to be reviewed and updated on an annual basis. Post occupation the Management Company will appoint a Mobility Manager responsible for the delivery

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	of the programme and to act as an interface between the various stakeholders. **In order to reduce the impact of additional traffic on roads in the vicinity of the proposed development.**
MA:T-O3	A Stage 2 Road Safety Audit (RSA) will be undertaken at the detailed design stage to ensure that the final design is in accordance with the TII Road Safety Audit Guidelines (December 2017) prior to the commencement of construction. A Stage 3 post-construction and pre-opening of the proposed development in accordance with RSA guidelines to address any potential road safety issues related to the completed scheme. **In the interest of Road Safety and in order to reduce the impact of additional traffic on roads in the vicinity of the proposed development.**
	Monitoring
MA:T-M1	A Construction & Environmental Management Plan (CEMP) has been prepared and will be submitted with the application. The CEMP sets out the overarching vision of how the construction of the project will be managed in a safe and organised manner by the Contractor with the oversight of the Developer. The CEMP is a living document, and it will go through a number of iterations before works commence and during the works. It will set out requirements and standards that must be met during the construction stage and will include the relevant mitigation measures outlined in the EIAR and any subsequent conditions relevant to the project. Further specific monitoring measures are set out below: 1. A site liaison officer will be identified as a single contact point for the planning authority and local community to deal in a prompt and efficient manner with any issues that may arise in relation to construction traffic and activity on the public road. 2. Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
MA:T-M2	As part of the Mobility Management Plan for the proposed development a Mobility Manager will be appointed by the Management Company. The Mobility Manager will also be involved in monitoring of the modes of travel to and from the proposed development. This ideally will be done on an annual basis. Monitoring of travel patterns will facilitate the provision of sustainable transport modes and ensure that modal targets are met and improved upon over time.

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10.8 RESIDUAL IMPACTS

10.8.1 Construction Phase

Due to the proposed mitigation measures outlined above, the impact of the proposed development will be temporary and slight during the construction stage.

10.8.2 Operational Phase

There will be a moderate long-term increase in the use of the road network by private vehicles in the immediate vicinity of the proposed development. A mobility management plan will promote more sustainable forms of transport and will mitigate some of these impacts. In addition, the implementation of policy at national (Climate Action Plan) and local levels will reduce traffic levels on the surrounding road network in the future, which will in turn further lessen the impact of the traffic generated by the proposed development.

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The impact of the additional through traffic diverting through the subject lands was also assessed and was shown not to have a significant impact on the overall traffic on the local road network. As the new link through the subject land provide an alternative route for some existing traffic movements, it does not generate any overall additional traffic movements on the road network. The new link will, if anything, result in some reductions in traffic flows.

There will be an increase in the number of pedestrians and cyclists in the surroundings of the development. However, footpaths and cycling paths are provided as part of the development, thus, the impact should be minimal.

10.9 INTERACTIONS & CUMULATIVE IMPACTS

10.9.1 Construction Phase Interactions

A Construction Traffic Management Plan will be put in place and agreed with the planning authority which will minimise the traffic impact during construction stage. This will be coordinated with the wider Construction Environmental Management Plan to minimise Noise, Air Quality and Human Health impacts.

The traffic impacts, which would also be temporary in duration during construction are not considered to be significant due to the implementation of the mitigation measures identified in Section 10.7.

10.9.2 Operational Phase Interactions

The estimated 2025 Base Year, 2028 Opening Year and 2043 Design Year traffic volumes were provided to the EIAR Noise and Air Quality consultants as an input to their own separate EIAR assessments. Therefore, additional traffic from the proposed development may potentially have associated Noise and Air Quality impacts.

A series of mitigation measures will be implemented to minimise the operational stage traffic impact of the proposed development, which includes the implementation of effective Mobility Management Plan measures. Further details of the Noise and Air Quality assessments are set out in the respective EIAR chapters.

With regard to potential interactions with Human Health, the overall development has been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS). In addition, significant improvements to the public realm are included in the overall design. The proposed pedestrian and cycle links through the proposed development would have significant long-term positive effects with regard to reduced walking and cycling travel times to public transport services and improved permeability and connectivity to amenities in the area.

A Quality Audit *(Stage 1 Road Safety Audit and Cycle and Pedestrian Audit)* will be undertaken

and will accompany the proposed planning application. Stage 2 - Detailed Design and Stage 3 - Post Construction Road Safety Audits will also be undertaken to ensure that road safety remains part of the overall design and delivery process up to scheme completion.

A Mobility Management Plan will also be agreed and implemented to encourage more sustainable travel modes. Further details of the Human Health assessment are set out in Chapter 3 of this EIAR.

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10.9.3 Construction and Operational Phase Cumulative Impacts *(Requires Review and Further Discussion)

The potential cumulative impacts of the proposed development on Traffic and Transportation have been considered having regard to the overall transport policy at national and local levels.

On its own, the proposed development would have a sub-threshold traffic impact on the adjacent access roads as set out in the TTA report.

In terms of cumulative traffic impacts, the proposed LRD and creche development is self-mitigating in that the overall traffic generated by the proposed development, which includes the new link road that will, is more than offset by the reductions in traffic that will occur on other existing roads in the vicinity as such as the R132 and R125 routes.

As a result, the matter of cumulative traffic impact with other planned developments as listed in the EIAR does not arise since the proposed development will result in an overall reduction in traffic flows on the surrounding road network.

In addition, the proposed development also includes a new cycle and pedestrian link between the R132 and the Holywell roundabout which will further promote walking and cycling and will also serve existing and planned development in the area.

The proposed development, if permitted, is intended to be constructed in a single phase. As the projected construction traffic impacts are less than the operation phase traffic, the construction traffic impacts will be less than the operation stage traffic impacts.

10.10 REFERENCES

Glossary of Terms

AADT	Annual Average Daily Traffic
CDP	County Development Plan
CEMP	Construction & Environmental Management Plan
FCC	Fingal County Council
GFA	Gross Floor Area
HGVs	Heavy Goods Vehicles
ILTP	ILTP Consulting
LAP	Local Area Plan
MMP	Mobility Management Plan
NTA	National Transport Authority
LinSig	Traffic Signal Modelling and Optimisation Software
PICADY	Priority Intersection Capacity and Delay
RSA	Road Safety Audit
TRICS	Trip Rate Information Computer System

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Bibliography

Canal Cordon Report 2019 - Report on Trends in Mode Share of Vehicles and People Crossing the Canal Cordon 2006 to 2019, National Transport Authority / Dublin City Council, December 2020

Cycle Design Manual, National Transport Authority, 2023

Fingal County Development Plan 2023 – 2029, Fingal County Council

TII Traffic Data – TII web site

Greater Dublin Area Transport Strategy 2022 - 2042, National Transport Authority, 2022

Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft), Environmental Protection Agency, August 2017

National Climate Action Plan 2024, Department of the Environment, Climate and Communications, updated August 2024

National Development Plan 2018 – 2027, Department of Finance and Public Expenditure and Reform

Project Ireland 2040 - National Planning Framework, Department of Housing, Planning and Local Government

Project Appraisal Guidelines for National Roads, Transport Infrastructure Ireland, 2016

Regional Spatial & Economic Strategy

National Sustainable Mobility Policy, Department of Transport, 2022

Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities, Government of Ireland, 2024

Swords Masterplans - Part B: Barrysparks & Crowscastle, Fingal County Council, 2019

Planning Design Standards for Apartments Guidelines for Planning Authorities, Government of Ireland, 2025

Traffic & Transport Assessment and Mobility Management Plan (for Proposed Development), ILTP Consulting, September 2025

Traffic and Transport Assessment Guidelines, Transport Infrastructure Ireland, May 2014

Transport in the Urban Environment, The Institution of Highways & Transportation

11. MATERIAL ASSETS: RESOURCE AND WASTE MANAGEMENT

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11.1 INTRODUCTION

This chapter is prepared by Sara Ryan of AWN Consulting, a Trinity Consultants Team and evaluates the likely impacts, if any, which the proposed development may have on Material Assets (related to waste management) as defined in the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) and the Environmental Protection Agency (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022).

This chapter has also been prepared to address the issues associated with waste management during the construction & operational phases of the proposed development as described in **Chapter 2 (Description of Project and Alternatives)**. The receiving environment is defined by Fingal County Council (FCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

A site-specific Resource & Waste Management Plan (RWMP) has been prepared by AWN to outline how waste and resources generated during the excavation & construction phases of the proposed development will be managed and has been included as **Appendix 11A** of the EIAR. The RWMP was prepared in accordance with the Environmental Protection Agency's (EPA) document *Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects* (2021).

A site-specific Operational Waste Management Plan (OWMP) has also been prepared by AWN to detail the procedures for managing waste generated during the operational phase of the proposed development and is included as **Appendix 11B** of the EIAR.

The chapter has been prepared in accordance with European Commissions Guidelines, Guidance on the preparation of the *Environmental Impact Assessment Report (2017)* and the *EPA Guidelines on the Information to be contained in EIAR (2022)*.

These documents will ensure the management of wastes arising at the proposed development site in accordance with legislative requirements and best practice standards.

11.2 ASSESSMENT METHODOLOGY

The assessment of the impacts of the proposed development, arising from the consumption of resources and the generation of waste materials, was carried out taking into account the methodology specified in relevant guidance documents, along with an extensive document review to assist in identifying current and future requirements for waste management; including national and regional waste policy, waste strategies, management plans, legislative requirements and relevant reports.

This chapter is based on the proposed development, as described in Chapter 2 (Description of Project and Alternatives) and considers the following aspects:

- Legislative context;
- Construction phase (including site preparation and excavation)
- Operational phase.

11.2.1 Study Area

A desktop study was carried out which included the following:

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- Review of applicable policy and legislation which creates the legal framework for resource and waste management in Ireland.
- Description of the typical waste materials that will be generated during the construction & operational phases.
- Identification of mitigation measures to prevent waste generation and promote management of waste in accordance with the waste hierarchy.

Estimates of waste generation during the construction phase of the proposed development have been calculated and are included in **Section 11.4** of this chapter. The waste types and estimated quantities are based on published data by the EPA in the National Waste Reports and National Waste Statistics, data recorded from similar previous developments, Irish and US EPA waste generation research.

Mitigation measures are proposed to minimise the effect of the proposed development on the environment during the construction & operational phases, to promote efficient waste segregation and to reduce the quantity of waste requiring disposal. T
his information is presented in **Section 11.7**.

A detailed review of the existing ground conditions on a regional, local and site-specific scale are presented in **Chapter 5 (Land & Soils)** and **Chapter 6 (Water & Hydrogeology)** of this EIAR.

11.2.2 Legislation and Guidance

Waste management in Ireland is subject to EU, national and regional waste legislation, which defines how waste materials must be managed, transported and treated. The overarching EU legislation is the 'Waste Framework Directive (2008/98/EC)' as amended, which is transposed into national legislation in Ireland. The cornerstone of Irish waste legislation is the 'Waste Management Act 1996 (as amended)'. European and national waste management policy is based on the concept of 'waste hierarchy', which sets out an order of preference for managing waste (prevention > preparing for re-use > recycling > recovery > disposal) (**Figure 11.1**).

Figure 11.1 Waste Hierarchy (Source: European Commission)

EU and Irish national waste policy also aims to contribute to the circular economy by extracting high-quality resources from waste as much as possible. Circular Economy (CE) is a sustainable alternative to the traditional linear (take-make-dispose) economic model, reducing waste to a minimum by reusing, repairing, refurbishing and recycling existing materials and products (**Figure 11.2**).

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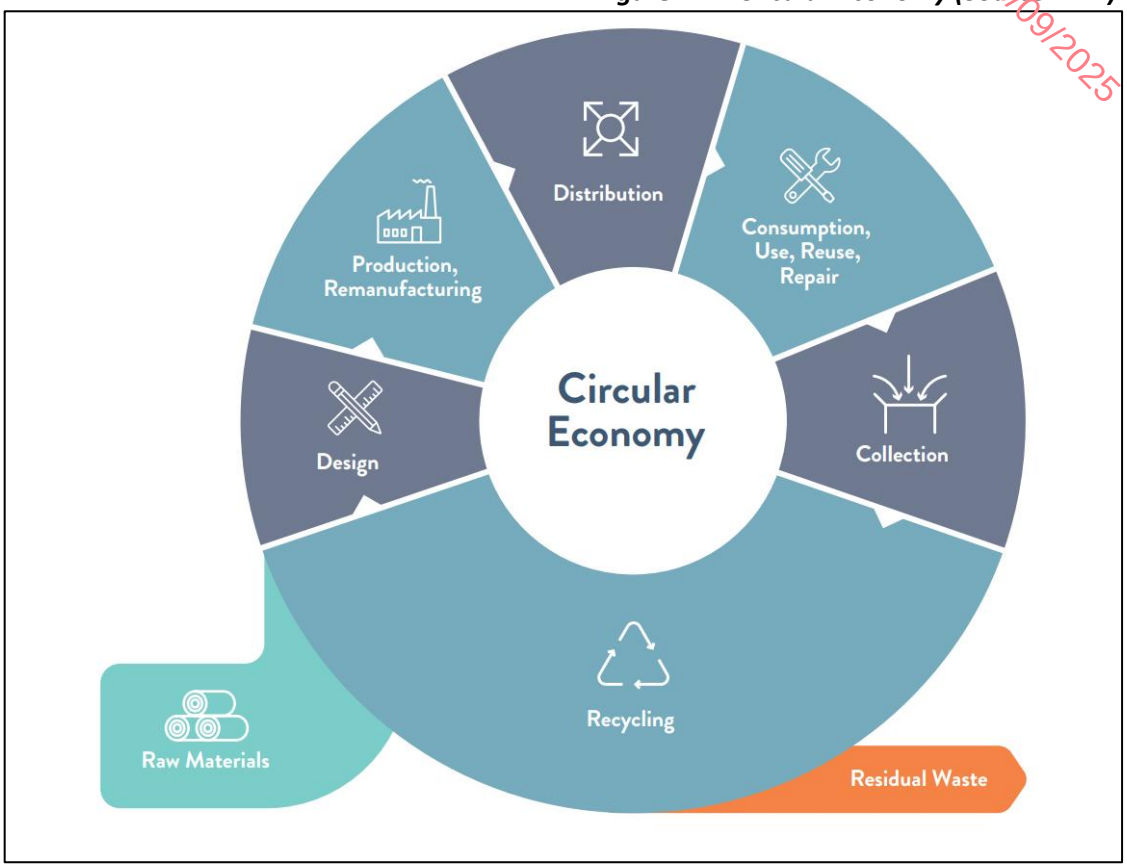
Figure 11.2 Circular Economy (Source: EPA)



The Irish Government issues policy documents which outline measures to improve waste management practices in Ireland and help the country to achieve EU targets in respect of recycling and disposal of waste. The policy document, 'Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland' (WAPCE), was published in 2020 and shifts focus away from waste disposal and moves it back up the production chain. The move away from targeting national targets is due to Irish and international waste context changing in the years since the launch of the previous waste management plan, 'A Resource Opportunity', in 2012.

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One of the first actions to be taken from the WAPCE was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021) to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021.

The Circular Economy and Miscellaneous Provisions Act 2022 was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste and streamlines the national processes for End-of-Waste and By-Products decisions.

The National Waste Management Plan for a Circular Economy 2024-2030 (2023) has been published and replaces the Regional Waste Management Plans. The Plan sets out a framework for the prevention and management of waste in Ireland for the period 2024 to 2030.

This Plan recognises Climate Change as a key driver for both behavioural change and improved waste management practices. The ambition of this Plan is 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This ambition is underpinned with a comprehensive series of targets, policies, actions and a suite of key deliverables.

The strategy for the management of waste from the construction phase is in line with the requirements of the '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects'* document, produced by the EPA in November 2021. The guidance document '*Construction and Demolition Waste Management: A Handbook for Contractors and Site Managers*' (FÁS & Construction Industry Federation 2002) was also consulted in the preparation of this assessment.

The strategy for the management of waste from the construction phase is in line with the requirements of the EPA's *'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects'* (2021). The guidance documents, *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects (2006) and Construction and Demolition Waste Management: A Handbook for Contractors and Site Managers* (FÁS & Construction Industry Federation, 2002), were also consulted in the preparation of this assessment.

There are currently no Irish guidelines on the assessment of operational waste generation, and guidance is taken from industry guidelines, plans and reports including:

- The National Waste Management Plan for a Circular Economy 2024 – 2030 (NWMPCE) (2024),

- BS 5906:2005 Waste Management in Buildings – Code of Practice,
- Fingal County Council (FCC) 'Segregation, Storage and Presentation of Household and Commercial Waste Bye-Laws' (2020),
- EPA National Waste Database Reports 1998 – 2020, and
- The Circular Economy and National Waste Database Report 2021-2022 (2024) and the EPA National Waste Statistics Web Resource.

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11.2.3 Terminology

Note that the terminology used herein is consistent with the definitions set out in Article 3 of the Waste Framework Directive. Key terms are defined as follows:

- **Waste:** Any substance or object which the holder discards or intends or is required to discard.
- **Prevention:** Measures taken before a substance, material or product has become waste, that reduce:
  - the quantity of waste, including through the re-use of products or the extension of the life span of products;
  - the adverse impacts of the generated waste on the environment and human health; or
  - the content of harmful substances in materials and products.
- **Reuse:** Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.
- **Preparing for Reuse:** Checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing.
- **Treatment:** Recovery or disposal operations, including preparation prior to recovery or disposal.
- **Recovery:** Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II of the Waste Framework Directive sets out a non-exhaustive list of recovery operations.
- **Recycling:** Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.
- **Disposal:** Any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations.

11.3 RECEIVING ENVIRONMENT

In terms of waste management, the receiving environment is defined by FCC as the local authority responsible for setting and administering waste management activities in the area. This is governed by the requirements set out in the NWMPCE 2024 – 2030 and the Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland.
The waste management plans set out the following targets for waste management in the region:

- Achieve a recycling rate of 55% of managed municipal waste by 2025; and

- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

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The Regional Waste Management Planning Offices have issued the National Waste Management Plan for a Circular Economy 2024 - 2030 in March 2024, which supersedes the Eastern Midlands Region (EMR) waste management plan and the two other regional waste management plans. The NWMPCE does not however dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

The FCC, *Fingal Development Plan 2023 -2029* also sets out a number of objectives for the FCC area which reflect those set out in the NWMPCE and can be found in **Appendix 11A (RWMP) & 11B (OWMP)**.

In terms of physical waste infrastructure, FCC no longer operates any municipal waste landfills in the area.There are a number of waste permitted and licensed facilities located in the Eastern Midlands Region (EMR), in the surrounding counties and over Ireland and Northern Ireland, for management of waste from the construction industry as well as municipal sources. These include soil recovery facilities, inert C&D waste facilities, hazardous waste treatment facilities, municipal waste landfills, material recovery facilities, waste transfer stations and two waste-to-energy facilities.

However, these sites may not be available for use when required or may be limited by the waste contractor selected to service the development in the appropriate phase. In addition, there is potential for more suitably placed waste facilities or recovery facilities to become operational in the future which may be more beneficial from an environmental perspective.
The ultimate selection of waste contractors and waste facilities would be subject to appropriate selection criteria proximity, competency, capacity and serviceability at the time of works being undertaken.

11.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

A full description of the proposed development can be found in Chapter 2 (Description 0f Project and Alternatives). The characteristics of the proposed development that are relevant in terms of waste management are summarised below. The project will involve the construction of 530 new apartment units with associated ancillary accommodation and a creche.

11.4.1 Demolition Phase

There is no demolition associated with the proposed development and as such there will be no demolition waste generated.

11.4.2 Construction Phase

During the construction phase, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete, tiles, bricks, etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials may also be generated. The construction contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

In addition, There will be soil and stones excavated to facilitate construction of new foundations, and underground services. The development quantity surveyors have estimated that 11,038 m^3 of material will need to be excavated to do so. It is currently envisaged that 5,500 m^3 of excavated material will be able to be retained and reused onsite for landscaping and fill, the remaining 5,538 m^3 of material, will need to be removed offsite due to the limited opportunities for reuse on site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

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When material requires removal from the site is deemed to be a waste, removal and reuse / recycling / recovery / disposal of the material will be carried out in accordance with the Waste Management Act 1996 (as amended), the Waste Management (Collection Permit) Regulations 2007 (as amended) and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended). The volume of waste requiring recovery / disposal will dictate whether a Certificate of Registration (COR), permit or licence is required for the receiving facility. Alternatively, the material may be classed as by-product under Regulation 27 (By-products), as amended, of S.I. No. 323/2020 - European Union (Waste Directive) Regulations 2011-2020, (previously Article 27 of the European Communities (Waste Directive)). For more information in relation to the envisaged management of by-products, refer to the **RWMP (Appendix 11A).**

In order to establish the appropriate reuse, recovery and / or disposal route for the soils and stones to be removed off-site, it will first need to be classified. Waste material will initially need to be classified as hazardous or non-hazardous in accordance with the EPA publication Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous (2018).

Waste will also be generated from construction workers e.g. organic/food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided onsite during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

Further detail on the waste materials likely to be generated during the excavation and construction works are presented in the project-specific **RWMP (Appendix 11A)** included in the planning submission. The RWMP provides an estimate of the main waste types likely to be generated during the construction phase of the proposed development and these are summarized in **Table 11.1**

Table 11.1: Estimated off-site reuse, recycle and disposal rates for construction waste

Waste Type	Tonnes	Reuse		Recycle/Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	967.4	10	96.7	80	773.9	10	96.7
Timber	820.8	40	328.3	55	451.5	5	41.0
Plasterboard	293.2	30	87.9	60	175.9	10	29.3
Metals	234.5	5	11.7	90	211.1	5	11.7
Concrete	87.9	30	26.4	65	57.2	5	4.4
Other	439.7	20	87.9	60	263.8	20	87.9
Total	**2843.6**		**639.1**		**1933.4**		**271.2**

It should be noted that until final materials and detailed construction methodologies have been confirmed it is difficult to predict with a high level of accuracy the construction waste that will be generated from the construction of the proposed development as the exact materials and quantities may be subject to some degree of change and variation during the construction process. However, the above estimates are considered to be the worst-case scenario.

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11.4.3 Operational Phase

As noted in Section 11.1, an OWMP has been prepared for the development and is included in the planning submission. The OWMP provides a strategy for segregation (at source), storage and collection of all wastes generated within the building during the operational phase including dry mixed recyclables, organic waste and mixed non-recyclable waste as well as providing a strategy for management of waste glass, batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil and furniture.

The total estimated waste generation for the Proposed Development for the main waste types, based on the AWN waste generation model (WGM), is presented in **Table 11.2**, below, and is based on the predicted occupancy of the residential units. While the floor area usage (m^2) has been used to estimate the waste arising from the crèche, (commercial units). Further unit breakdowns can be found in **Appendix 11B.**

Table 11.2: Estimated waste generation for the proposed development for the main waste types

Waste type	Waste Volume (m^3/week)	
	Residential Units (Combined)	Crèche Unit
Organic Waste	7.80	0.04
DMR	55.30	1.50
Glass	1.51	0.01
MNR	29.08	0.82
Total	93.70	**2.37**

The residents, the crèche tenant and facilities management will be required to provide and maintain appropriate waste receptacles within their units to facilitate segregation at source of these waste types. As required, the residents, and the tenant will need to bring these segregated wastes from their units to their allocated Waste Storage Areas (WSAs). The locations of WSAs can be viewed on the plans submitted with the application under separate cover and in **Appendix 11B**.

The OWMP seeks to ensure the development contributes to the targets outlined in the NWMPCE, the FCC waste Bye-Laws.

11.5 CONSTRUCTION IMPACTS

If waste materials are not managed and stored correctly, it is likely to lead to litter, odour or pollution issues at the Proposed Development site and in adjacent areas. The indirect effect of litter issues is the presence of vermin/flies in areas affected. In the absence of mitigation, the effect on the local and regional environment is likely to be ***short-term, significant*** and ***negative***.

The use of non-permitted waste contractors or unauthorised waste facilities could give rise to inappropriate management of waste, resulting in indirect negative environmental impacts, including pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices. In the absence of mitigation, the effect on the local and regional environment is likely to be ***long-term, significant*** and ***negative***.

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C&D wastes arising will need to be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate. There are numerous licensed waste facilities in the EMR and across the island of Ireland which can accept hazardous and non-hazardous waste materials, and acceptance of waste from the Proposed Development site would be in line with daily activities at these facilities. At present, there is sufficient capacity for the acceptance of the likely C&D waste arisings at facilities in the region. The majority of construction materials are either recyclable or recoverable. However, in the absence of mitigation, the effect on the local and regional environment is likely to be ***short-term, significant*** and ***negative.***

There is a quantity of material that will need to be excavated to facilitate the Proposed Development. A detailed review of the existing ground conditions on a regional, local and site-specific scale are presented in Chapter 5 (Land and Soils). Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers, or on the water and soil environments, both on and off-site. However, in the absence of mitigation, the effect on the local and regional environment is likely to be ***short-term, significant*** and ***negative***.

11.6 OPERATIONAL IMPACTS

The potential impacts on the environment of improper, or a lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy, which would lead to small volumes of waste being sent unnecessarily to landfill and diverted from reuse or recycling. In the absence of mitigation, the effect on the local and regional environment is likely to be ***long-term, significant*** and ***negative*.**

The nature of the Proposed Development means the generation of waste materials during the operational phase is unavoidable. Networks of waste collection, treatment, recovery and disposal infrastructure are in place in the region to manage waste effectively from this type of development. Waste unsuitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables, which is typically exported as a raw material for the production of recycled products (e.g. paper mills and glass recycling).

If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development site and in adjacent areas. The knock-on effect of litter issues is the presence of vermin in affected areas. In the absence of mitigation, the effect on the local and regional environment is likely to be ***long-term, significant*** and ***negative***.

Waste contractors will be required to service the Proposed Development on a regular basis to remove waste. The use of non-permitted waste contractors or unauthorised facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices. In the absence of mitigation, the effect on the local and regional environment is likely to be ***indirect, long-term, significant*** and ***negative***.

11.7 MITIGATION & MONITORING MEASURES

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This section outlines the mitigation and monitoring measures that will be employed in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle the waste in such a manner as to minimise the effects on the environment.

The concept of the 'circular economy'(CE) and 'waste hierarchy' are employed when considering all mitigation measures.

While the waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal.

11.7.1 Monitoring

The management of waste during the construction phase will be monitored by the Contactor's appointed Resource Manager to ensure compliance with the below-listed mitigation measures, and relevant waste management legislation and local authority requirements, including maintenance of waste documentation.

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the excavation and construction phases where there is a potential for waste management to become secondary to progress and meeting construction schedule targets.

The management of waste during the construction phase shall be monitored to ensure compliance with relevant local authority requirements, and effective implementation of the RWMP, including maintenance of waste documentation.

The mitigation measures in the RWMP specify the need for a Resource Manager to be appointed who will have responsibility to monitor the actual waste volumes being generated and to ensure that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Resource Manager shall identify the reasons for targets not being achieved and work to resolve any issues. Recording of waste generation during the construction phase will enable better management of waste contractor requirements and identify trends. The data will be maintained to advise on future projects.

The management of waste during the operational phase will be monitored by the Facilities Management to ensure effective implementation of the OWMP internally and by the nominated waste contractor(s).

The management of waste during the operational phase shall be monitored to ensure effective implementation of mitigation measures by facilities management and the nominated waste contractor(s). Waste generation volumes shall be monitored against the predicted waste volumes outlined in the OWMP. There may be opportunities to reduce the number of bins and equipment required in the Waste Storage Area where estimates have been too conservative. Reductions in bin and equipment requirements will improve efficiency and reduce waste contactor costs.

	Construction Mitigation
MA:RWM-C1	As previously stated, a project-specific RWMP has been prepared in line

	with the requirements of the EPA 'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021) and is included as Appendix 11A. The mitigation measures outlined in the RWMP will be implemented in full and form part of the mitigation strategy for the site. The mitigation measures presented in this RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the Proposed Development. • Prior to commencement, the appointed Contractor(s) will be required to refine / update the RWMP (Appendix 11A) in agreement with FCC and in compliance with any planning conditions, or submit an addendum to the RWMP to FCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream. • The Contractor will implement the RWMP throughout the duration of the proposed excavation and construction phases
MA:RWM-C2	A quantity of topsoil and sub soil will need to be excavated to facilitate the Proposed Development. The quantity surveyors have estimated that the majority excavated material will need to be removed off-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.
MA:RWM-C3	Building materials will be chosen to 'design out waste'.
MA:RWM-C4	On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated: • Clean Soil • Contaminated soil (if located onsite) • Concrete rubble (including ceramics, tiles and bricks); • Plasterboard; • Metals; • Glass; • Timber.
MA:RWM-C5	Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; (alternatively, the waste will be sorted for recycling, recovery or disposal);
MA:RWM-C6	All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
MA:RWM-C7	A Resource Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works;
MA:RWM-C8	Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
MA:RWM-C9	All construction staff will be provided with training regarding the waste management procedures;
MA:RWM-C10	All waste leaving site will be reused, recycled or recovered, where possible,

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	to avoid material designated for disposal;
MA:RWM-C11	All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities;
MA:RWM-C12	All waste leaving the site will be recorded and copies of relevant documentation maintained;
MA:RWM-C13	Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Regulation 27 (By-products), as amended, European Union (Waste Directive) Regulations 2011-2020. EPA approval will be obtained prior to moving material as a by-product.
	Operational Mitigation
MA:RWM-14	All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins or other suitable receptacles in designated, easily accessible areas of the site.
MA:RWM-15	As previously stated, a project specific OWMP has been prepared and is included as Appendix 11B. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the NWMPCE, Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland and the FCC waste bye-laws. Residents, the creche tenant and facilities management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of the OWMP, ensuring a high level of recycling, reuse and recovery at the site of the Proposed Development
MA:RWM-16	In addition, the following mitigation measures will be implemented: • On-site segregation of all waste materials into appropriate categories including (but not limited to): ○ Organic waste; ○ Dry Mixed Recyclables; ○ Mixed Non-Recyclable Waste; ○ Glass; ○ Waste electrical and electronic equipment (WEEE); ○ Batteries (non-hazardous and hazardous); ○ Cooking oil; ○ Light bulbs; ○ Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.); ○ Furniture (and from time-to-time other bulky waste); and ○ Abandoned bicycles.
MA:RWM-17	The residents, the crèche tenant and facilities management will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials
MA:RWM-18	The residents, the crèche tenant and facilities management will ensure that all waste collected from the site of the Proposed Development will be

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	reused, recycled, or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available.
MA:RWM-19	The residents, the crèche tenant and facilities management will ensure that all waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted, or licensed facilities.
	Monitoring
MA:RWM-M1	**Litter Pollution -** The Contractor will review and maintain waste records and site audits
MA:RWM-M2	**Unlicensed Waste Collection (Illegal Dumping) -** A register will be maintained and reviewed. A copy of all waste collection permits will be maintained.
MA:RWM-M3	**Insufficient Waste Facilities -** A register will be maintained and reviewed. A copy of all waste collection permits will be maintained.
MA:RWM-M4	**Lack of Waste Classification -** An appointed Resource Manager will monitor all on-site waste segregation and classification
MA:RWM-M5	**Unlicensed Waste Collection (Illegal Dumping) -** The operator/ facilities management company will maintain waste receipts on-site for a period of 7 years and make available to DCC as requested.
MA:RWM-M6	**Poor Waste Segregation Waste -** generation volumes and cross contamination will be monitored by the operator / facilities management company
MA:RWM-M7	**Litter Pollution -** Waste storage areas will be monitored by the operator / facilities management company

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These mitigation measures will ensure that the waste arising from the construction and operational phases of the Proposed Development is dealt with in compliance with the provisions of the, FCC waste bye-laws, Waste Management Act 1996, as amended, associated Regulations and the Litter Pollution Act 1997, as amended and the NWCPE. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will promote more sustainable consumption of resources.

11.8 RESIDUAL IMPACTS

The implementation of the mitigation measures outlined in Section 11.7 will ensure that a high rate of reuse, recovery and recycling is achieved at the Proposed Development during the excavation and construction phases as well as during the operational phase. It will also ensure that European, national and regional legislative requirements with regard to waste are met, and that associated policy targets for the management of waste are achieved.

Construction Phase

A carefully planned approach to waste management as set out in **Section 11.7** and adherence to the RWMP (which includes mitigation) **(Appendix 11A)** during the construction phase will promote resource efficiency and waste minimisation. When the mitigation measures are implemented and a high rate of prevention reuse, recycling and recovery is achieved, the predicted impact of the construction phase on the environment will be ***short-term, imperceptible*** *and* ***neutral.***

Operational Phase

During the operational phase, a structured approach to waste management as set out in **Section 11.7** and adherence to the OWMP (which includes mitigation) **(Appendix 11B)** will

promote resource efficiency and waste minimisation. When the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted impact of the operational phase on the environment will be ***long-term, imperceptible*** *and* ***neutral.***

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11.9 INTERACTIONS & CUMULATIVE IMPACTS

11.9.1 Construction Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. In a worst-case scenario, multiple developments in the area could be developed concurrently or overlap in the construction phase.

Permitted and Proposed Developments to which regard has been had in the assessment of potential cumulative impacts can be found in **Table 2.4** of chapter 2 **Description of Project and Alternatives**

Due to the high number of waste contractors in the FCC region, as provided from the National Waste Collection Permit Office and the EPA, there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all of the developments.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate against any potential cumulative effects associated with waste generation and waste management. As such the cumulative effect will be **short-term, imperceptible** and **neutral.**

11.9.2 Operational Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place. All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate any potential cumulative impacts associated with waste generation and waste management. As such the cumulative effect will be a **long-term**, **imperceptible** and **neutral**.

11.9.3 Interactions

This section discusses interactions between this Chapter and other specialist environmental topics considered in this EIAR.

Land & Soils
During the construction phase, excavated soil, stone and clay will be generated from the excavations required to facilitate site levelling, construction of new foundations and the installations of site services. It is envisaged that some of the excavated material will need to be removed off-site. When material has to be taken off-site, it will be taken for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 11 (Material Assets (Waste), Chapter 5 (Land and Soils) and the requirements of the

RWMP (Appendix 11A), will ensure the effect is ***long-term, imperceptible*** and ***neutral.***

Traffic & Transportation

Local traffic and transportation will be impacted by the additional vehicle movements generated by removal of waste from the Site during the construction and operational phases of the proposed development. The increase in vehicle movements as a result of waste generated during the construction phase will be *temporary* in duration. There will be an increase in vehicle movements in the area as a result of waste collections during the operational phase but these movement will be imperceptible in the context of the overall traffic and transportation increase. Traffic-related impacts during the construction and operational phases are addressed in Chapter 10 (Material Assets (Transportation). Provided the mitigation measures detailed in Chapter 10 and Chapter 11 are adhered to, the predicted effects are ***short to long-term, imperceptible*** and ***neutral.***

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Population & Human Health

The potential impacts on human beings are in relation to incorrect management of waste during construction and / or operation, which could result in littering and presence of vermin – with associated potential for negative impacts on human health and residential amenity. A carefully planned approach to waste management and adherence to the project specific RWMP and mitigation measures in Chapter 3 (Population & Human Health) and Chapter 11, will ensure appropriate management of waste and avoid any negative impacts on the local population. The effects should be ***long-term, imperceptible*** **and** ***neutral****.*

Biodiversity

The potential impacts on biodiversity in relation to the generation of waste during the construction or operational phases are that the incorrect management of waste could result in littering, pollution issues or vermin in areas affected.

Adherence to the mitigation measures set out in this chapter (Chapter 11), RWMP (Appendix 11A), OWMP (Appendix 11B) and in Chapter 4 (Biodiversity) will ensure the associated effect is ***long-term, imperceptible*** *and* ***neutral.***

11.10 REFERENCES

- Waste Management Act 1996 (No. 10 of 1996) as amended.
- Environmental Protection Agency Act 1992 as amended.
- Litter Pollution Act 1997 (S.I. No. 12 of 1997) as amended.
- Regional Waste Management Planning Offices, The National Waste Management Plan for a Circular Economy 2024 – 2030 (2024).
- Department of Environment and Local Government (DoELG) Waste Management – Changing Our Ways, A Policy Statement (1998).
- European Commission, Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (2017).
- Environmental Protection Agency (EPA) 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2022).
- Forum for the Construction Industry – Recycling of Construction and Demolition Waste.
- Department of Communications, Climate Action and Environment (DCCAE), Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025 (Sept 2020).
- DCCAE, Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021).
- Environmental Protection Agency (EPA) 'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021).

- FÁS and the Construction Industry Federation (CIF), Construction and Demolition Waste Management – a handbook for Contractors and site Managers (2002).
- Fingal County Council (FCC)*, Fingal County Development Plan 2023 – 2029* (2023).
- FCC, Fingal County Council Segregation, Storage and Presentation of Household and Commercial Waste Bye-Laws (2020).
- BS 5906:2005 Waste Management in Buildings – Code of Practice.
- Planning and Development Act 2000 (No. 30 of 2000) as amended.
- Environmental Protection Agency (EPA), Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous (2018).
- Council Decision 2003/33/EC, establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
- EPA, European Waste Catalogue and Hazardous Waste List (2002).
- Environmental Protection Agency (EPA), National Waste Database Reports 1998 – 2020 and the Circular Economy and National Waste Database Report 2021 – 2022 (2024)
- US EPA, Characterisation of Building Uses (1998).
- EPA and Galway-Mayo Institute of Technology (GMIT), EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned (2015).

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12. CULTURAL HERITAGE

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12.1 INTRODUCTION

This chapter details an archaeological, architectural and cultural heritage assessment undertaken in advance of a proposed development at Barrysparks and Crowscastle, Swords, Co. Dublin (ITM 718538, 746003). This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological, architectural and cultural heritage resource that may exist within the area. It was undertaken by Faith Bailey and Elizabeth Di Vincenzo of IAC Archaeology (IAC).

Figure 12.1: Proposed development area with nearby archaeology and townland boundaries

This study determines, as far as reasonably possible from existing records, the nature of the archaeological and cultural heritage resource in and within the vicinity of the proposed development using appropriate methods of study. Desk-based assessment consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance; the character of the study area, including appropriate consideration of the settings of heritage assets (CIfA 2020a). This leads to the following:

- determining the presence of known archaeological assets that may be affected by the proposed development;
- assessment of the likelihood of finding previously unrecorded archaeological remains during the construction programme;
- determining the impact upon the setting of known cultural heritage sites in the surrounding area; and
- suggested mitigation measures based upon the results of the above research.

The study involved detailed interrogation of the archaeological and historical background of the proposed development area. This included information from the Record of Monuments and Places of County Dublin, the Fingal County Development Plan, the topographical files of the National Museum of Ireland, and cartographic and documentary records. Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey, Bing Maps, and Google Earth has also been carried out. A field inspection has been carried out in an attempt to identify any known cultural heritage sites and previously unrecorded features, structures, and portable finds within the proposed development area.

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An impact assessment and a mitigation strategy have been prepared. The impact assessment is undertaken to outline potential adverse impacts that the proposed development may have on the cultural heritage resource, while the mitigation strategy is designed to avoid, reduce, or offset such adverse impacts.

The study area is defined as an area measuring c. 250m from the edge of the proposed development.

12.1.1 Legislation and Guidelines

The following legislation, standards and guidelines were consulted as part of the assessment.

- National Monuments Act 1930 to 2014;
- The Planning and Development Acts 2024;
- Heritage Act, 1995, as amended;
- Draft Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), 2015, EPA;
- Guidelines on the Information to be Contained in Environmental Impact Statements. Dublin. Government Publications Office, 2022, EPA; and
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht, and Islands.

12.1.2 Consultation

During scoping and research for the assessment and EIAR, a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the receiving environment and study area, as follows:

- Department of Housing, Local Government and Heritage – the Heritage Service and Policy Unit, National Monuments and Historic Properties Section: Record of Monuments and Places; Sites and Monuments Record; Monuments in State Care Database; Preservation Orders; Register of Historic Monuments;
- National Museum of Ireland, Irish Antiquities Division: topographical files of Ireland; and
- Fingal County Council: Planning Section

12.1.3 Assessment Criteria

The quality and type of an impact can be classed as one of the following (as per the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA 2022).

- Negative Impact: A change which reduces the quality of the environment, for example a change that will detract from or permanently remove an archaeological or cultural heritage site from the landscape;
- Neutral Impact: A change which does not affect the quality of the environment;

- Positive Impact: A change which improves the quality of the environment, for example a change that improves or enhances the setting of archaeological or cultural heritage site.

The below terms are used in relation to the archaeological, architectural, and cultural heritage and relate to whether a site will be physically impacted upon or not:

- Direct Impact: Where an archaeological or cultural heritage feature or site is physically located within the footprint of the proposed development and entails the removal of part, or all, of the monument or feature; and
- Indirect Impact: Where a feature or site of archaeological or cultural heritage merit or its setting is located in close proximity to the footprint of a development.

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12.1.4 Significance of Effects

Definitions (as defined by the EPA 2022 Guidelines)

- Imperceptible: An effect capable of measurement but without noticeable consequences.
- Not significant: An effect which causes noticeable changes in the character of the environment but without noticeable consequences
- Slight Effects: An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
- Moderate Effects: An effect that alters the character of the environment in a manner that is consistent with existing and emerging trends.
- Significant Effects: An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
- Very Significant: An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment.
- Profound Effects: An effect which obliterates sensitive characteristics

12.2 ASSESSMENT METHODOLOGY

Research for this report was undertaken in two phases. The first phase comprised a paper survey of all available archaeological, historical, and cartographic sources. The second phase involved a field inspection of the site.

12.2.1 Desktop Resources

- Record of Monuments and Places for County Dublin;
- Sites and Monuments Record for County Dublin;
- National Monuments in State Care Database;
- Preservation Orders List;
- Register of Historic Monuments;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Fingal County Development Plan, 2023–2029;
- Place name analysis;
- National Inventory of Architectural Heritage;
- Aerial photographs; and
- Excavations Bulletin (1970–2025).

Record of Monuments and Places (RMP) is a list of archaeological sites known to the National Monuments Section, which are afforded legal protection under Section 12 of the 1994 National Monuments Act and are published as a record.

Sites and Monuments Record (SMR) holds documentary evidence and field inspections of all known archaeological sites and monuments. Some information is also held about archaeological sites and monuments whose precise location is not known e.g. only a site type and townland are recorded. These are known to the National Monuments Section as 'un-located sites' and cannot be afforded legal protection due to lack of locational information. As a result, these are omitted from the Record of Monuments and Places. SMR sites are also listed on a website maintained by the Department of Housing, Local Government and Heritage (DoHLGH) – www.archaeology.ie.

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National Monuments in State Care Database is a list of all the National Monuments in State guardianship or ownership. Each is assigned a National Monument number whether in guardianship or ownership and has a brief description of the remains of each Monument. The Minister for the DoHLGH may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

Preservation Orders List contains information on Preservation Orders and/or Temporary Preservation Orders, which have been assigned to a site or sites. Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

Register of Historic Monuments was established under Section 5 of the 1987 National Monuments Act, which requires the Minister to establish and maintain such a record. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

The topographical files of the National Museum of Ireland are the national archive of all known finds recorded by the National Museum. This archive relates primarily to artefacts but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance.

Cartographic sources are important in tracing land use development within the proposed development area as well as providing important topographical information on areas of archaeological potential and the development of buildings. Cartographic analysis of all relevant maps has been made to identify any topographical anomalies or structures that no longer remain within the landscape.

Documentary sources were consulted to gain background information on the archaeological, architectural and cultural heritage landscape of the proposed development area.

Development Plans contain a catalogue of all the Protected Structures and archaeological sites within the county. The Fingal County Development Plan (2023–2029) was consulted to obtain

information on cultural heritage sites in and within the immediate vicinity of the proposed development area.

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Aerial photographic coverage is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its likely potential for archaeology. A number of sources were consulted including aerial photographs held by the Ordnance Survey, Google Earth, and Bing Maps.

Excavations Bulletin is a summary publication that has been produced every year since 1970. This summarises every archaeological excavation that has taken place in Ireland during that year up until 2010 and since 1987 has been edited by Isabel Bennett. This information is vital when examining the archaeological content of any area, which may not have been recorded under the SMR and RMP files. This information is also available online (www.excavations.ie) from 1970–2025.

Place Names are an important part in understanding both the archaeology, history, and cultural heritage of an area. Place names can be used for generations and in some cases have been found to have their root deep in the historical past. The main reference used for the place name analysis is *Irish Local Names Explained* by P.W Joyce (1870) and the Place Names Database of Ireland.

The National Inventory of Architectural Heritage (NIAH) is a state initiative established under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 tasked with making a nationwide record of significant local, regional, national and international structures, which in turn provides county councils with a guide as to what structures to list within the Record of Protected Structures. The NIAH has also carried out a nationwide desk-based survey of historic gardens, including demesnes that surround large houses.

12.2.2 Field Inspection

Field inspection is necessary to determine the extent and nature of archaeological and historical remains and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

The archaeological field inspection entailed –

- walking the proposed development and its immediate environs;
- noting and recording the terrain type and land usage;
- noting and recording the presence of features of archaeological or historical significance;
- verifying the extent and condition of any recorded sites or structures (RMPs); and
- visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin and of archaeological or cultural heritage significance.

12.3 RECEIVING ENVIRONMENT

12.3.1 Archaeological and Historical Background

The proposed development area is located in Barrysparks and Crowscastle townlands, within the parish of Swords and barony of Nethercross. The site comprises a number of fields to the south of the R132, to the southwest of Swords. The western perimeter of the site comprises the townland boundary between Barryspark and Crowscastle. The southern perimeter crosses the same townland boundary. A portion of the eastern perimeter crosses the Barrysparks/Commons

East townland boundary and terminates at the Commons East and Swords Demesne townland boundary.

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There are no recorded monuments located within the proposed development area. The closest is the site of a holy well (RMP DU011-045), located c. 40m to the south. There are no protected structures or structures listed on the NIAH within the proposed development area or surrounding study area (Figure 12.1).

Prehistoric Period

Mesolithic Period (c. 8000–4000 BC)
Recent discoveries may suggest the possibility of a human presence in the southwest of Ireland as early as the Upper Palaeolithic (Dowd and Carden 2016); however, the Mesolithic period is the earliest time for which there is clear evidence for prehistoric human colonisation of the island of Ireland. During this period people hunted, foraged and gathered food and appear to have led a primarily mobile lifestyle. The presence of Mesolithic communities is most commonly evidenced by scatters of worked flint material, a by-product of the production of flint implements.

There is no archaeological evidence of Mesolithic activity within the immediate environs of the proposed development area. In the wider north Dublin region, a number of shell middens and flint scatters are located along the coast from Sutton and Malahide to Balbriggan, notably at Barnageeragh c. 15.5km to the north-northeast of Swords (Baker 2010) and at Lambay Island c. 13km to the east (Dolan and Cooney 2010). This indicates that Mesolithic groups were active along the coast and rivers of North Dublin.

Neolithic Period (c. 4000–2500 BC)
During this period communities became less mobile and their economy became based on the rearing of stock and cereal cultivation. The transition to the Neolithic was marked by major social change. Communities had expanded and moved further inland to more permanent settlements. This afforded the further development of agriculture which demanded an altering of the physical landscape. Forests were rapidly cleared, and field boundaries were constructed. Pottery was also being produced, possibly for the first time. The advent of the Neolithic period also provided the megalithic tomb. There are four types of megalithic tombs in Ireland, namely the Court Cairn, Portal, Passage and Wedge; of which the latter style straddles the Neolithic to Bronze Age transition.

While recent years have seen a large increase in the number of identified Neolithic settlement and habitation sites, there is no archaeological evidence to substantiate Neolithic settlement within the immediate environs of the proposed development area to date. An excavation undertaken in the 1940s at Feltrim Hill, c. 1.41km southeast of Barryspark, produced c. 1,400 finds dating to the Neolithic and medieval periods. Approximately 1,000 flint artefacts including blades, flakes, arrowheads, knifes and debitage (NMI 1947:159-393, 750-752, 756.1-756.30, 757-789, 790.1-790.85, 791.1- 791.168, 792.1-792.100, 793.1-793.150, 794.1-794.56, 795.1-795.26, 796.1-796.88, 812-827, 829 and 830) were recorded from this excavation. In addition, c. 40 larger stone tools including hone stones, hammer stones, axeheads and spindle whorls were also retrieved (NMI 1947:684-722, 829-830). A total of 84 sherds of Neolithic pottery were also retrieved from these excavations (NMI 1947:755.1-755.80; 1947:809-812).

Bronze Age (c. 2500–800 BC)
This period is marked by the use of metal for the first time. As with the transition from Mesolithic to Neolithic, the transition into the early Bronze Age was accompanied by changes in society. Megalithic tombs were replaced in favour of individual, subterranean cist or pit burials that were either in isolation or in small cemeteries. These burials contained inhumed or cremated remains

and were often, but not always, accompanied by a pottery vessel.

A ring ditch (DU011-152), likely to represent a Bronze Age burial monument is recorded c. 194m to the south of the proposed development area, which was identified during a programme of geophysical survey (Thebaudeau 2009, Licence No. 09R0038) and archaeological testing (O'Hara and O'Connell 2010, Licence No. 10E0028). A further ring ditch (DU011-034019) was identified and excavated c. 845m to the northwest of Fosterstown in Windmill Lands (O'Donovan 2013, Licence No. 13E0267).

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Over 7,000 burnt mounds or *fulacht fia* sites have been recorded in the country and c. 1,500 examples excavated, making them the most common prehistoric monument in Ireland (Waddell 2022, 164). Although dating evidence from a growing number of burnt mounds, suggests activities resulting in burnt mounds were being carried over a span of 3,500 years in Ireland (Hawkes 2018), the Bronze Age has long been believed to have seen the peak of this activity. They are typically located in areas where there is a readily available water source, often in proximity to a river or stream or in places with a high-water table. In the field burnt mounds may be identified as charcoal-rich mounds or spreads of heat shattered stones, however, in many cases, the sites have been disturbed by later agricultural activity and are no longer visible on the field surface. Nevertheless, even disturbed spreads of burnt mound material often preserve the underlying associated features, such as troughs, pits and gullies, intact.

Numerous *fulachtaí fia* are recorded within North Dublin. They are often found near to low-lying marshy areas or adjacent to streams or rivers. The closest recorded example (DU011-148) is c. 2.1km to the northwest of the proposed development area.

Iron Age (c. 800 BC–AD 500)

There is increasing evidence for Iron Age settlement and activity in recent years as a result of development-led excavations as well as projects such as Late Iron Age and Roman Ireland (Cahill Wilson 2014). Yet this period is distinguishable from the rather rich remains of the preceding Bronze Age and subsequent early medieval period, by a relative paucity within the current archaeological record. The Iron Age in Ireland is problematic for archaeologists as few artefacts dating exclusively to this period have been found and without extensive excavation it cannot be determined whether several monument types, such as ring-barrows or standing stones, date to the late Bronze Age or Iron Age. It is likely that there was significant continuity in the Iron Age, with earlier monuments re-used in many cases.

With the expanding population there was an increased need for defence at this time. Coastal promontory forts were constructed around Ireland as defensive settlements, of which four are located in Fingal. The largest of these four is located at Drumanagh (DU008-006001), c. 13km northeast of the proposed development area. At Drumanagh, the promontory is defended by a series of deep ditches and high banks at the neck while also providing extensive views of the coastline. Roman artefacts, such as, 2nd century AD Roman coins, Romano-British fibulae and copper ingots, were found at Drumanagh, which suggest a possible trading link with Roman Britain (Baker 2010).

Early Medieval Period (c. AD 500–1100)

Swords was an important centre of the ancient Gaelic kingdom of *Brega*, which from the late Iron Age to the Norman conquest of 1169, approximately covered the same area of modern Fingal bounded by the River Tolka to the south and the River Delvin to the north. During this period, *Brega* was ruled by the *Ui Chernaig* branch of the dynasty known as *Sil nAedo Slaine,* a southern branch of the *Ui Neill* who gained control of the territory in the early 8th century (Bradley 1998). MacShamráin (2016) concludes that Swords formed part of the sub kingdom of *Gailenga Becca* until the expansion of the Hiberno-Norse kingdom of Dublin in the late 9th and 10th centuries.

This period is characterised by the foundation of a large number of ecclesiastical sites throughout Ireland during the centuries following the introduction of Christianity in the 5th century AD. These early churches tended to be constructed of wood or post-and-wattle, replaced by the late 8th and 10th centuries with mortared stone churches. Many of the sites, some of which were monastic foundations, were probably originally defined by an enclosing wall or bank similar to that found at the coeval secular sites.

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A monastic settlement, dedicated to St Colmcille, was likely founded in the 6th century on high ground to the west of the River Ward, c. 504m to the north-northwest of Barrysparks and Crowscastle (Gwynn and Hadcock 1988, 44). The name 'Swords' derives from the Irish Sord Colmcille or St. Colmcille's Well; sord meaning 'pure' (Joyce 1995, 566). O'Donovan (2016) suggests possible missionary activity in the area in the 6th century with the coming of Palladius and Secundus, while according to MacShamráin (2016) there is a strong possibility of Gaulish and British ecclesiastical links at Swords and the wider Fingal area. Evidence for substantial burial grounds originating in the early medieval period have also been identified in the wider area, such as that at Mount Gamble (DU011-101), c. 328m northwest of the proposed development area (O'Donovan 2016).

The ecclesiastic settlement at Swords suffered a series of attacks during the 10th and 11th centuries although it held prominence as one of the resting places of Brian Boru's funeral procession following the Battle of Clontarf in 1014. The pattern of attack and counterattack continued as Swords found itself on the border of warring kingdoms. The value of Swords to the Hiberno-Norse of Dublin made it a prime target for the Kings of Meath, who repeatedly attacked Swords throughout the 11th and 12th centuries.

A holy well is located c. 40m to the south of the proposed development area and these features often originated during the early medieval period. The well (DU011-045) has today been cleared and reconstructed, but the SMR file notes that it was dedicated to St Werburgh and was thought to cure sore eyes or pains (as cited in the Duchas Schools Collection). St Werburgh was a princess from the Kingdom of Mercia but was a nun for most of her life. She became the fourth Abbess of Ely and died in AD700. Veneration of St Werburgh became more common during the later 9th and early 10th centuries and by the 11th century, she was considered to be the patron saint of Chester.

Medieval Period (c. AD 1100–1600)

The piecemeal conquest of Ireland by the Anglo-Normans, which commenced in 1169, had a fundamental impact on the Irish landscape. Following this, the property of the monastery of Swords formed part of the lands of the See of Dublin, confirmed to Archbishop Laurence O'Toole in 1179 (McNeill 1950). In 1197, King Richard granted a charter to Swords, by which each burgess was to pay 12 pence annually for his burgage. In a later charter, he confirmed the burgesses of Swords in their burgages and gave them the liberties and free customs of Dublin and established an annual rent of one shilling per burgage (Bradley 1988; Ball 1906).

During the 13th century, the archbishops of Dublin occasionally resided at Swords Castle (DU011-034001) c. 790m north of the proposed development area. Expenditure on the upkeep of the castle was recorded and in the 1270s, a sum of £100 was accounted for the 'repairs of houses, mills, and other expenses in the manor of Swords' implying that mills along the River Ward were in existence at least as early as the late 13th century (Stalley 2006).

Post-Medieval Period (c. AD 1600–1800)

Swords was granted a charter and borough status during the reign of Elizabeth I and it appears that the castle was retained by the archbishop well into the 17th century, if not beyond. During

the Wars of the Catholic Confederation in 1641, Swords Castle was used as a rendezvous for Confederate forces and attacked and routed by the forces led by Sir Charles Coote. Following the execution of Charles I, the aristocracy of Fingal remained loyal to the Royalist cause. A rebel force was defeated by Charles Coote at Swords in 1642. By the 18th century Swords expanded into a market and post-town and in 1837, Lewis describes the population as comprising '3722 inhabitants, of which number, 2537 are in the town'.

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The 18th century saw dramatic rise in the establishment of large residential houses around the country. The large country house was only a small part of the overall estate of a large landowner and provided a base to manage often large areas of land that could be located nationwide. Lands associated with the large houses were generally turned over to formal gardens, which were much the style of continental Europe. By the mid-18th century more natural parkland landscapes were in favour although the creation of these required considerable effort, including moving earth, removal of field boundaries, culverting streams to form lakes and quite often roads were completely diverted to avoid travelling anywhere near the main house or across the estate. The closest demesne landscape to the proposed development area was located c. 245m to the north and was originally established as part of the landscape associated with Swords House (750m to the north). Today the main house is no longer extent and the associated landscape has been entirely covered by modern development.

12.3.2 Summary of Previous Archaeological Fieldwork

A review of the Excavations Bulletin (1970–2025) has revealed that three previous investigations have occurred within the proposed development area along with a number of other investigations in the wider study area. These are summarised below.

A geophysical survey was carried out within lands including the proposed development area in 2009. This identified two clear areas of archaeological potential, a fragmented curvilinear response, perhaps a barrow, and a strong and broad response, perhaps an area of burning. The survey also noted that much of the proposed development area had been previously stripped of topsoil (Thebaudeau 2009, Licence No. 09R0038, Figure 12.2).

Test-trenching was then carried out, which included part of the proposed development area, for a planned road network. A total of 27 test trenches were excavated along the path of the road, which included the western portion of the proposed development area (Figure 12.2). The circular anomaly identified during the geophysical survey was confirmed as a ring-ditch and subsequently added to the RMP (DU011-152) (O'Hara & O'Connell 2010, Licence No. 10E0028).

In 2021, further archaeological testing was carried out, which included the eastern portion of the proposed development area (Figure 12.3). No features or deposits of archaeological significance were identified at this time (Coen 2021a, Licence No. 21E0510).

No features or deposits of archaeological significance were identified during the course of testing located c. 198m to the west of the proposed development area in 2020 (Coen 2021b, Licence no. 20E0526).

During 2018, archaeological monitoring was carried out at the existing MSD Swords facility, c. 205m to the east (Licence No. 18E0548). Nothing of archaeological significance was identified during the course of these works.

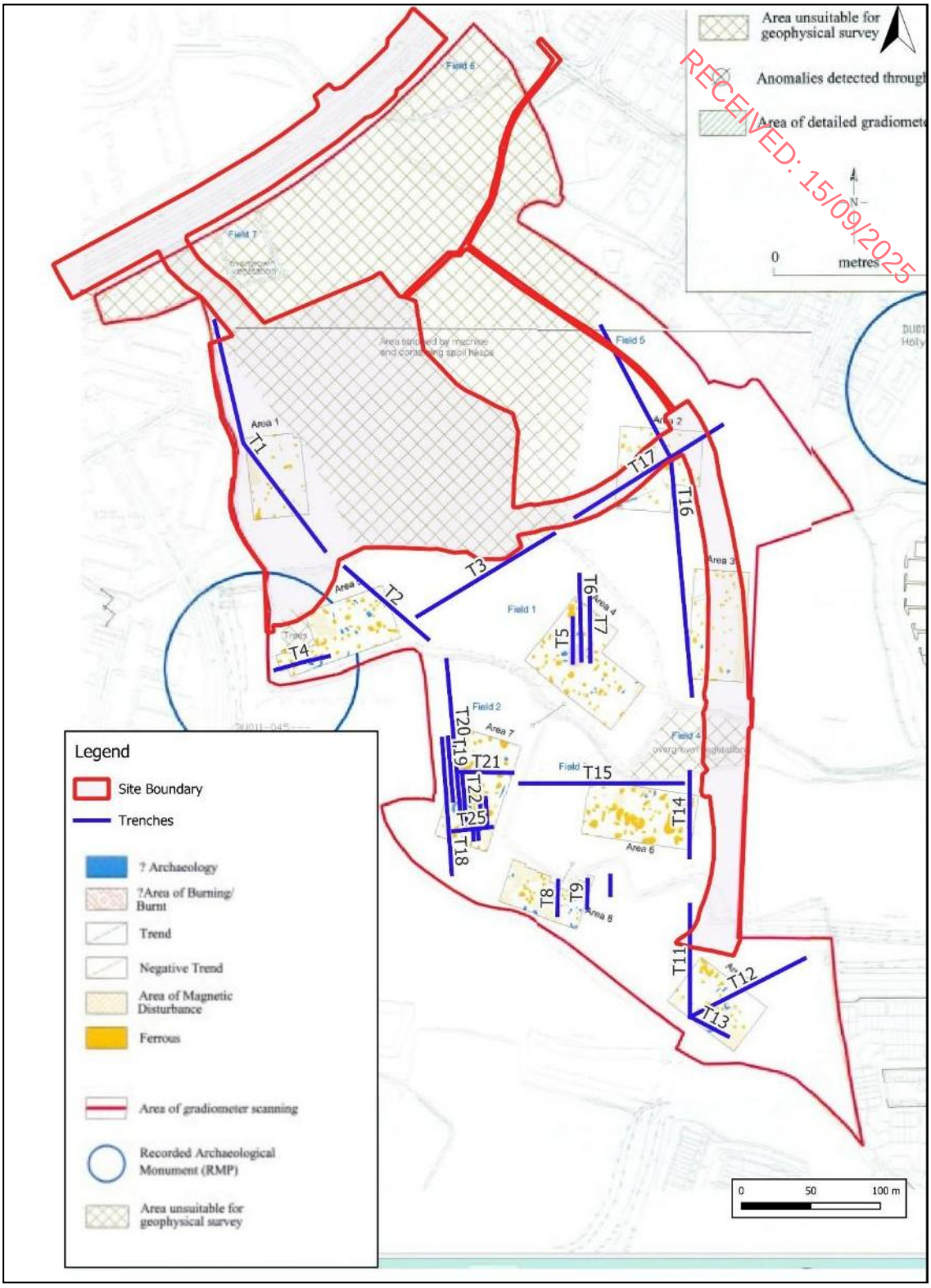

Figure 12.2: Archaeological Testing Trenches overlaying geophysical results
(After O'Hara & O'Connell 2010)

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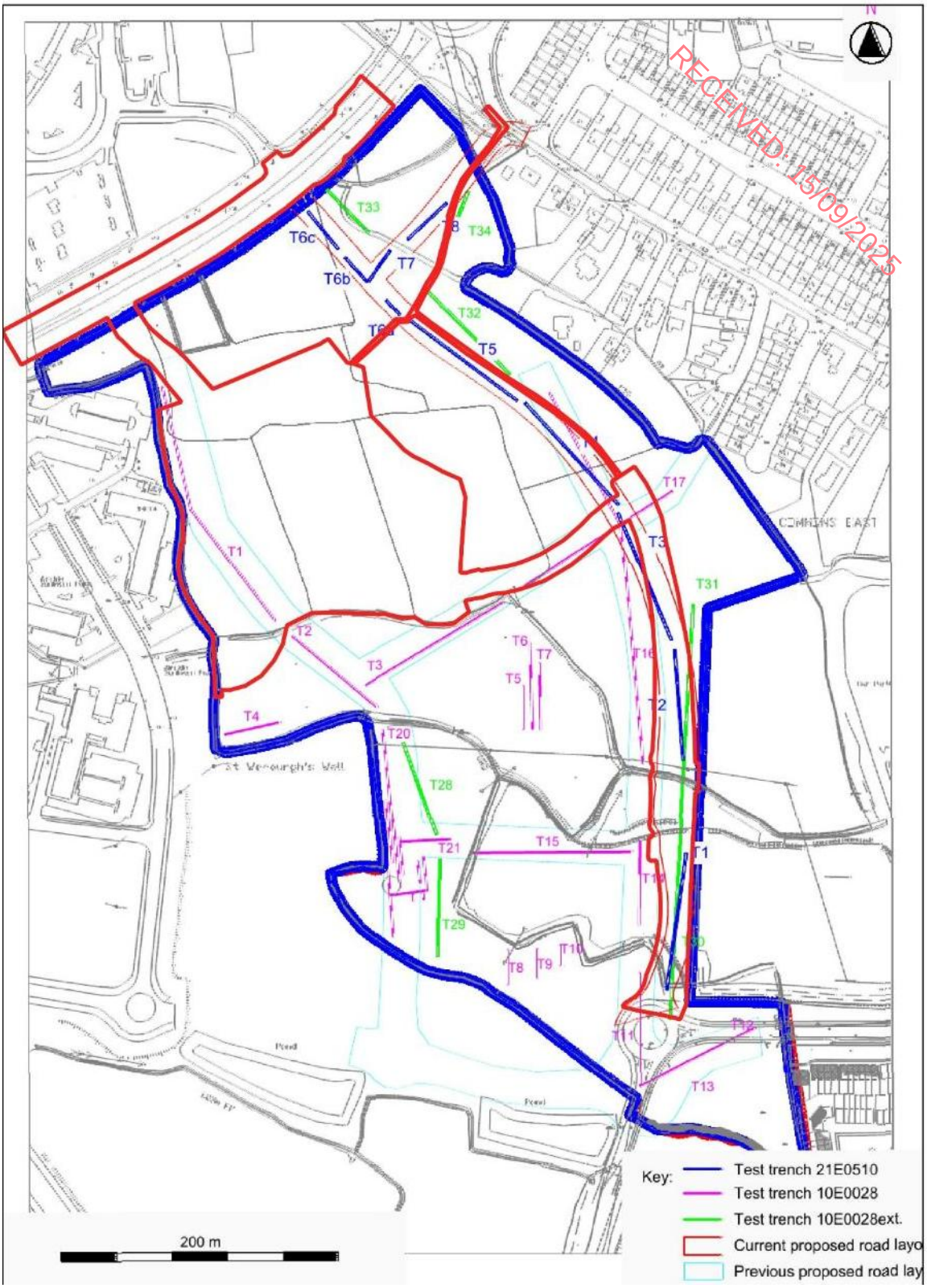

Figure 12.3: Archaeological Testing Trenches (Licence No. 21E0510) (After Coen 2021a)

12.3.3 Cartographic Analysis

William Petty, Down Survey: Barony of Nethercross in County Dublin, c. 1655

This early map was designed to identify and record land ownership and while it does not focus on identification of landmarks or buildings it does occasionally depict prominent features in the landscape. The proposed development area is represented in the area to the immediate south of

Swords Town.

John Rocque's Map of the City and County of Dublin, 1760 (Figure 12.4)

The Barryspark area is marked within an area annotated as 'Swords Commons', which is shown as a greenfield area to the southeast of Swords town, likely in use for grazing of livestock at this time. A number of isolated buildings are shown within the surrounding area; however, no structures are shown within the approximate location of the proposed development area.

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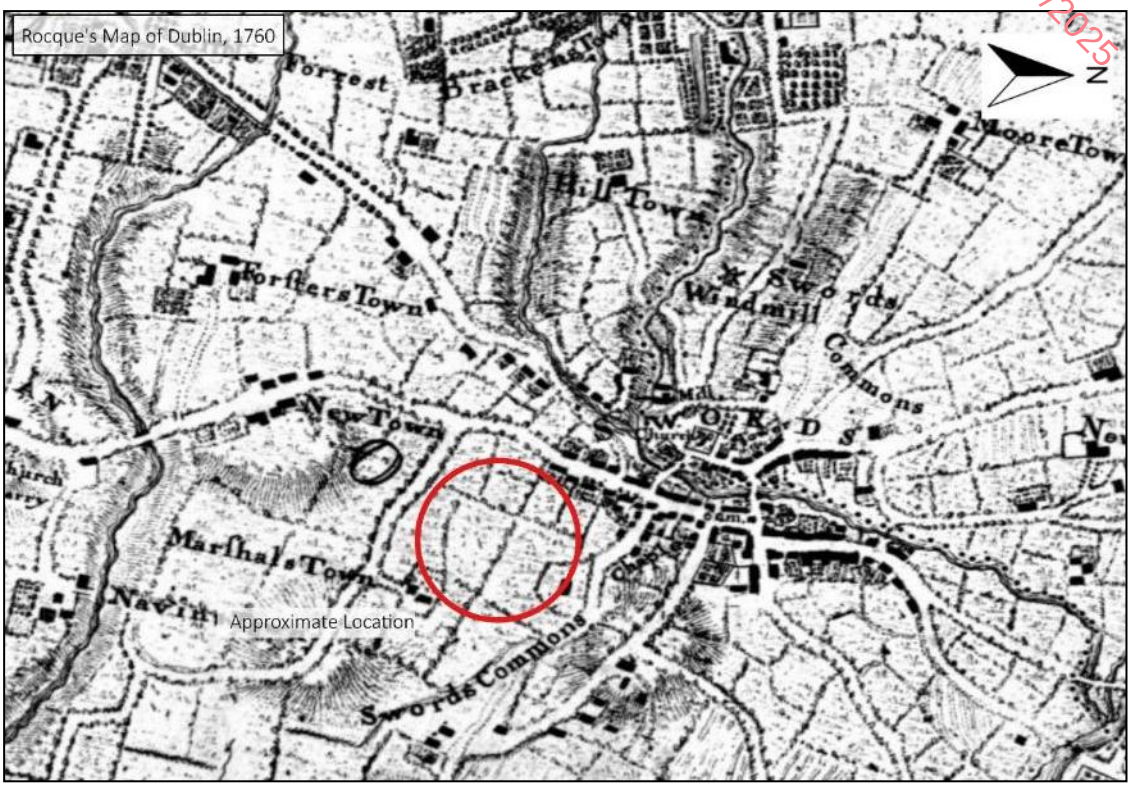

Figure 12.4: Extract from Rocque's map (1760)

John Tayor's Map of the Environs of Dublin, 1816

This map of County Dublin shows the proposed development area southeast of Swords, in an area marked as Crowscastle. No structures or features of archaeological significance are marked within the approximate location of the proposed development area. Marshalstown and the Commons are shown once more.

First Edition Ordnance Survey Map, 1843, scale 1:10,560 (Figure 12.5)

This is the first accurate historic mapping coverage of the area containing the proposed development area. The proposed development area comprises parts of over 20 open fields mainly within the Barrysparks townland. The western boundary runs along the townland boundary for Miltonsfields/Crowscastle and Barrysparks and the southern boundary crosses the Crowscastle/Barrysparks townland boundary. The northeastern route within the proposed development area crosses the Barrysparks and Commons East townland boundary and terminates within the Commons East townland. The only feature depicted within the Barrysparks and Crowscastle townlands is St. Werburgh's Well (RMP DU011-045), c. 40m to the south. The village of Swords is shown c. 300m to the northwest.

Ordnance Survey Map, 1908, scale 1:2,500 (Figure 12.6)

On this edition of the historic mapping, there have been no significant changes within or around Barrysparks.

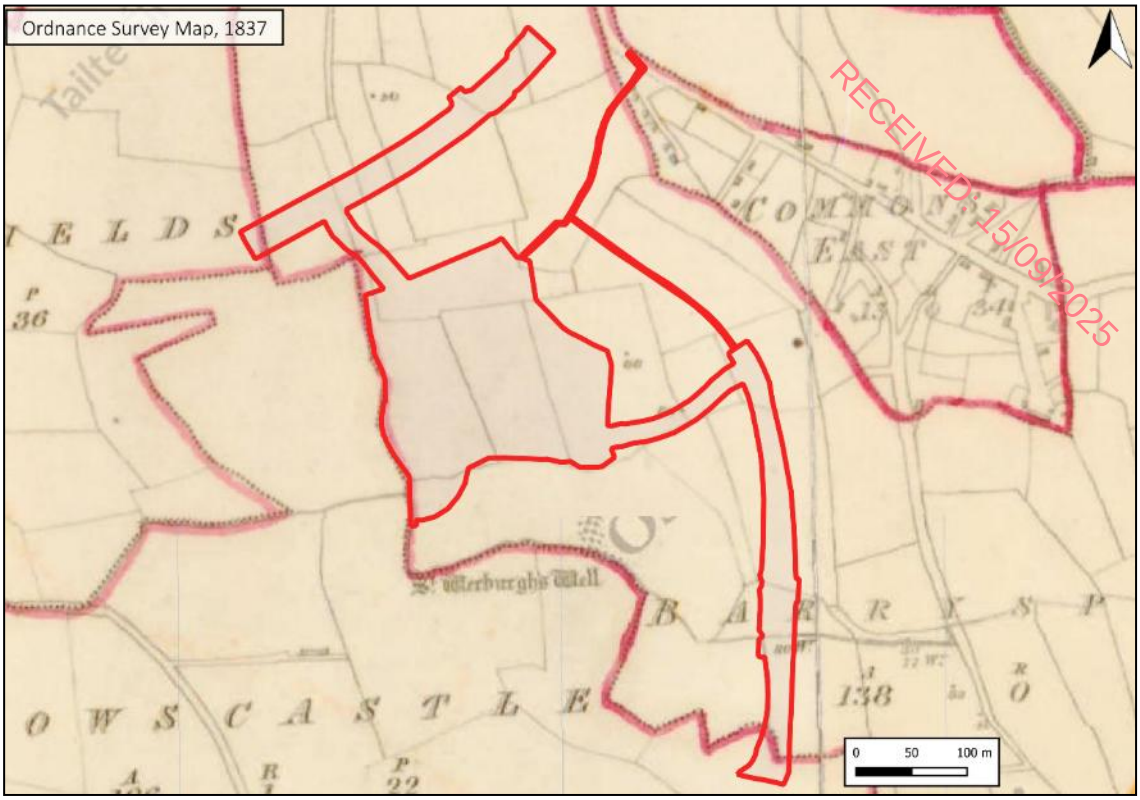

Figure 12.5: Extract from the first edition Ordnance Survey map (1843)

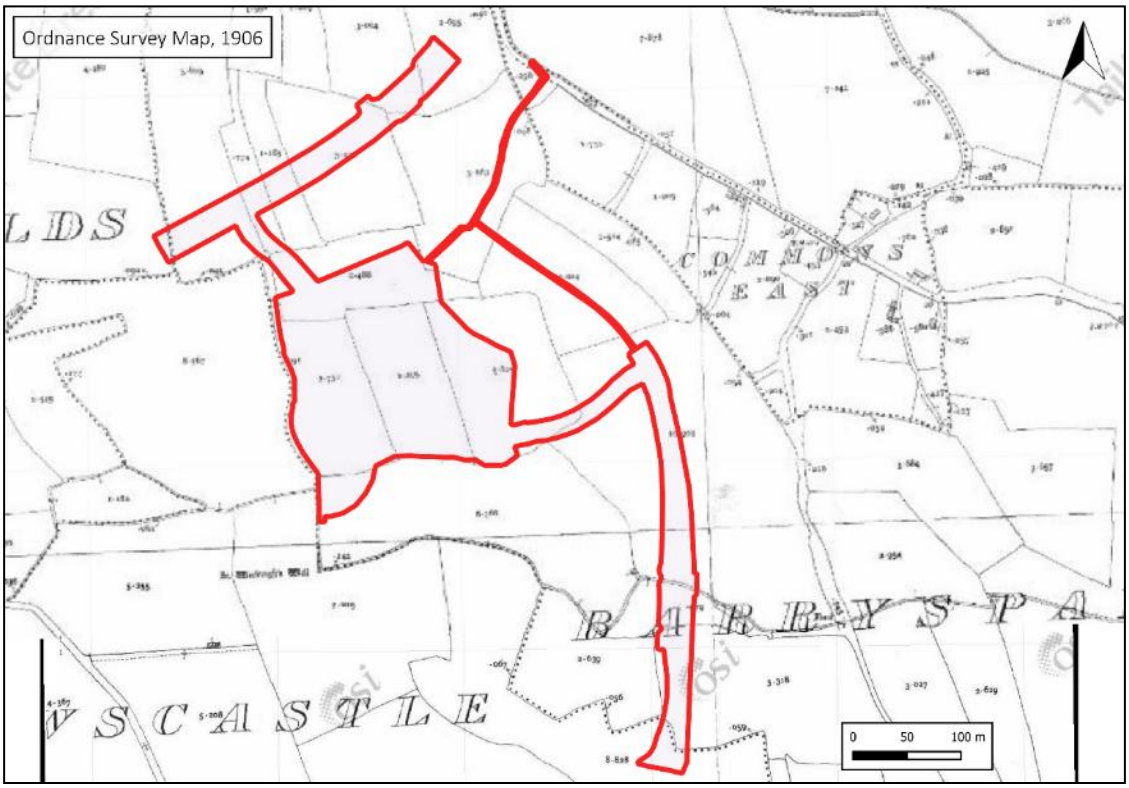

Figure 12.6: Extract from Ordnance Survey map (1908)

Ordnance Survey Map, 1941, scale 1:10,000

There are no major changes to note within the cartography of this map that relate to the proposed development area.

12.3.4 County Development Plan

Record of Monuments and Places

The Fingal County Development Plan (2023–2029) recognises the statutory protection afforded to all Record of Monuments and Places (RMP) sites under the National Monuments Legislation (1930–2014). The development plan lists a number of aims and objectives in relation to archaeological heritage (Appendix 12.B).

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There are no recorded monuments located within the proposed development area. The closest site is St Werburgh's holy well, DU011-045, located c. 40m to the south (Table 12.1; Figure 12.1; Appendix 12.A).

None of these recorded monuments are further protected as National Monuments in State Care or are subject to Preservation Orders.

Table 12.1: Recorded archaeological sites in the study area

RMP NO.	LOCATION	CLASSIFICATION	DISTANCE FROM DEVELOPMENT
DU011-045	Crowscastle	Ritual site- holy well	c. 40m south
DU012-022	Commons East	Ritual site- holy well	c. 170 east
DU011-152	Crowscastle	Ring-ditch	c. 194m south

Record of Protected Structures

The Fingal County Development Plan (2023–2029) recognises the value of the built heritage to the county and is committed to the protection and enhancement of this heritage by providing measures for the protection of architectural heritage. These include the establishment of a Record of Protected Structures (RPS) and the designation of Architectural Conservation Areas (ACAs).

There are no structures included on the RPS within a 250m radius of the proposed development. The nearest of protected structure is a National School (RPS 357, NIAH 11343014) located c. 550m to the northwest of the proposed development area.

The proposed development area is not located within an ACA.

12.3.5 National Inventory of Architecture Heritage

Building Survey

There are no structures listed on the NIAH building survey within the proposed development or surrounding area. The closest is a water pump (NIAH 11343015), located c. 400m to the northwest.

Garden Survey

The first edition Ordnance Survey map of County Dublin (1843) shows the extent of demesne landscapes as shaded portions of land within the study area. These were established as a naturalised landscaped setting for the large houses of the landed gentry. The closest demesne landscape to the proposed development area was associated with Swords House and was located c. 250m to the north. Today Swords House is no longer extant and the demesne has been entirely covered by modern development.

12.3.6 Placenames

Townland and topographic names are an invaluable source of information on topography, land ownership and land use within the landscape. They can also provide information on the history;

archaeological monuments and folklore of an area. A place name may refer to a long-forgotten site and may indicate the possibility that the remains of certain sites may still survive below the ground surface. The Ordnance Survey surveyors wrote down townland names in the 1830s and 1840s when the entire country was mapped for the first time. Many of the townland names in the study area are of English origin or may have Irish roots but through time have been anglicised.

A description and possible explanation of each townland name in the environs of the proposed development area is provided in Table 12.2.

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Table 12.2: Toponomy of local townlands

PLACENAMES	ORIGIN	DERIVATION	POSSIBLE MEANING
Barrysparks	English/Irish	-	Barry is a family or individual name, while park may derive from *pairc* the Irish for field.
Crowscastle	English	-	Crow's Castle
Miltonsfields	English	-	Milton's Fields
Commons East	English	-	Common land (likely subdivided into East and West at a later date)
Swords Demesne	English	-	Swords Demesne

2.3.7 Townland Boundaries

The townland is an Irish land unit of considerable longevity as many of the units are likely to represent much earlier land divisions. However, the term townland was not used to denote a unit of land until the Civil Survey of 1654. It bears no relation to the modern word 'town' but like the Irish word *baile* refers to a place. It is possible that the word is derived from the Old English *tun* land and means 'the land forming an estate or manor' (Culleton 1999, 174).

Gaelic land ownership required a clear definition of the territories held by each sept and a need for strong, permanent fences around their territories. It is possible that boundaries following ridge tops, streams or bog are more likely to be older in date than those composed of straight lines (ibid. 179).

The vast majority of townlands are referred to in the 17th century when land documentation records began. Many of the townlands are mapped within the Down Survey of the 1650s, so called as all measurements were carefully 'laid downe' on paper at a scale of forty perches to one inch. Therefore, most are in the context of pre-17th century landscape organisation (McErlean 1983, 315).

In the 19th century, some demesnes, deer parks or large farms were given townland status during the Ordnance Survey and some imprecise townland boundaries in areas such as bogs or lakes were given more precise definitions (ibid.). Larger tracks of land were divided into a number of townlands and named Upper, Middle or Lower, as well as Beg and More (small and large) and north, east, south and west (Culleton 1999, 179). By the time the first Ordnance Survey had been completed a total of 62,000 townlands were recorded in Ireland.

The proposed development area is located primarily within the townland of Barrysparks. The western perimeter of the site comprises the townland boundary between Barryspark and Crowscastle. The southern extent of the proposed development area enters Crowscastle townland. A portion of the eastern perimeter crosses the Barrysparks/Commons East townland boundary and terminates at the Commons East and Swords Demesne townland boundary.

The Barryspark/Crowscastle boundary is extant on the western border of the proposed development area as a field boundary. At its southern extent it appears to have been partially removed. The Barryspark/Commons East townland boundary is partially extant as a field boundary but has been impacted by previous development to east of the proposed development area.

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12.3.8 Cultural Heritage Sites

The term 'cultural heritage' can be used as an over-arching term that can be applied to both archaeology and architecture. However, it also refers to more ephemeral aspects of the environment, which are often recorded in folk law or tradition or possibly date to a more recent period. No specific cultural heritage sites, with the exception of those sites described above, were identified during the course of this assessment.

12.3.9 Topographical Files of the National Museum of Ireland

Information on artefact finds from the study area in County Dublin has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area. No stray finds are recorded from within the proposed development area or the study area.

12.3.10 Aerial Photographic Analysis

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995–2013), Google Earth (2002–2025), and Bing Maps revealed a large portion of the proposed development area has been subject to disturbance. Construction activity is visible in the northern part of the site within Google Earth coverage dating to 2008. This has increased in size by the time of the 2009 coverage (Plate 12.1), where a large portion of the site has been stripped of topsoil. Later aerial coverage shows that the stripped topsoil has been levelled across the site (Plate 12.2).

Plate 12.1: Aerial extract from Google Earth map (2009)

Plate 12.2: Aerial extract from Google Earth map (2013)

12.3.11 Field Inspection

The field inspection sought to assess the proposed development area, its previous and current land use, the topography and any additional information relevant to the report. During the course of the field investigation the proposed development area and its immediate surrounding environs were inspected.

The proposed development area is located within a large open area of rough pasture, which is bounded to the west by industrial development (Plate 12.3). Portions of the site are under scrub and the previous stripping of the site (Plate 12.1) has been levelled. The site is relatively level but does slope slightly to the south. The southern portion of the site is more overgrown with gorse and small trees (Plate 12.4). Approximately 40m to the south of the development area is the site of St Werburgh's Well (DU011-045, Plates 12.5-6). The well is located within an overgrown area and comprises a circular arrangement of stones placed around the spring and small stone lined channel. The eastern portion of the proposed development area, which comprises a section of proposed access road, also crosses scrubby pasture to the immediate west of industrial development, before joining an existing roundabout (Plate 12.7). It will cross a small watercourse but the channel is very overgrown and was subject to widening and regrading (along with the other watercourses/drains on the site) in 2013.

No previously unrecorded sites or structures of archaeological, architectural or cultural heritage significance were identified during the course of the field inspection.

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Plate 12.3: Proposed development area, facing south

Plate 12.4: Proposed development area, facing east

Plate 12.5: Access to Holy Well (DU011-045), facing west

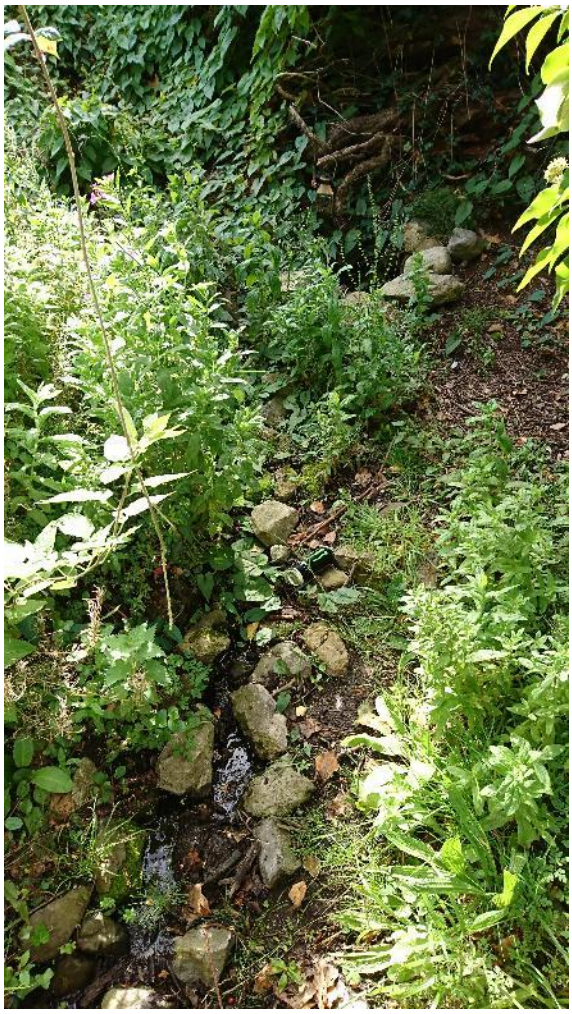

Plate 12.6: Holy Well (DU011-045), facing north

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Plate 12.7: Route of proposed access road, facing north

12.4 CONCLUSIONS

The proposed development area is located within the townlands of Barryspark and Crowscastle, to the southeast of Swords Town. There are no recorded monuments located within the development area. The closest is a holy well (RMP DU011-045), located c. 40m to the south. There are no protected structures or NIAH structures located in or within the study area of the proposed development. The closest demesne landscape was located c. 245m to the north, but it is no longer extant, having been subject to extensive modern development.

A review of the Excavations Bulletin (1970-2025) has shown that three programmes of archaeological excavation have been carried out within the landscape containing the proposed development. In 2009, part of the site was subject to geophysical survey although the majority of the site was not suitable for survey, having been subject to disturbance in 2008. In 2010 the western portion of the development area was subject to testing, but nothing of significance was identified. In 2021, the eastern portion of the development was subject to testing, but nothing of significance was recorded.

Analysis of the historic mapping coverage of the areas failed to identify any previously unrecorded sites or archaeological potential. This was similarly the case during the analysis of the aerial photographic coverage. Google Earth coverage does illustrate that a large portion of the proposed development area has been disturbed during construction and topsoil stripping during 2008 and clearance/regrading works in 2013. The works in 2013 included the widening and regrading of the watercourses that cross the site. The development area and its surrounding environs is now under scrubby pasture. No previously unrecorded sites or structures of archaeological, architectural or cultural heritage potential were noted within the site during the course of this assessment.

12.5 CONSTRUCTION IMPACTS

Archaeology

The proposed development area has been subject to a large degree of disturbance, with

remaining areas included in a programme of geophysical survey, followed by two programme of archaeological testing. No features or areas of archaeological significance have been identified within the proposed development area. It is possible that isolated or small-scale archaeological features survive within the proposed development area outside of the locations of the previously excavated test trenches. Any such features would subject to direct, negative, permanent impacts as a result of ground disturbances associated with the construction of the development. Effects may range from moderate to significant, depending on the nature and extent of any remains that may be present.

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Architecture
There are no architectural sites within the proposed development area and as such there will be no impacts arising from the construction of the proposed development.

Cultural Heritage
The townland boundaries are largely being retained as part of the proposed development, with the exception of a small portion of the Barryspark/Crowscastle, which will removed to facilitate a roadway as part of the proposed development. This represents a direct, negative permanent impact. The significance of effect is slight.

12.6 OPERATIONAL IMPACTS

No impacts on the archaeological, architectural or cultural heritage resource are predicted during the operational phase of the proposed development area.

12.7 MITIGATION AND MONITORING MEASURES

Archaeology
Archaeological monitoring of topsoil stripping will be carried out by a suitably qualified archaeologist in order to identify any archaeological features that may survive within the proposed development area. If any such features are discovered, further mitigation will be required such as preservation in situ or preservation by record. Any further mitigation will require agreement from the National Monuments Service.

Architecture
As no impacts on the architectural resource are predicted no mitigation is necessary.

Cultural Heritage
A written and photographic record will be made of the section of the townland boundary to be removed and its removal will be subject to archaeological monitoring.

	Construction Mitigation
CH-C1	Archaeological monitoring of all topsoil stripping. If any such features are discovered, further mitigation will be required such as preservation in situ or preservation by record. Any further mitigation will require agreement from the National Monuments Service.
	Operational Mitigation
CH-O1	None required
	Monitoring
CH-M1	The mitigation measures will also function as a monitoring system during construction to allow the further assessment of the scale of the predicted impacts and the effectiveness of the mitigation measures.

12.8 RESIDUAL IMPACTS

Following the implementation of the mitigation measures, there will be no significant residual impacts on the archaeological, architectural and cultural heritage resource.

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12.9 INTERACTIONS & CUMULATIVE IMPACTS

No interactions between archaeological, architectural and cultural heritage and any other discipline have been identified during the course of this assessment.

All proposed and permitted developments within the study area have been assessed for potential cumulative impacts. As any archaeological remains will either be preserved in-situ or by record, no cumulative impacts have been identified upon the archaeological, architectural or cultural heritage resource.

12.10 REFERENCES

Baker, C. 2010. Antiquities of Old Fingal. Wordwell. Dublin.

Ball, F.E. 1906 A History of the County Dublin. Vol IV, Dublin.

Bennett, I. (ed.) 1987-2010. Excavations: Summary Accounts of Archaeological Excavations in Ireland. Bray. Wordwell.

Bradley, J. 1998. The Medieval Boroughs of County Dublin. In C. Manning (ed.) Dublin and Beyond the Pale: Studies in honour of Patrick Heal. Wordwell Ltd. Bray.

Byrne, F. J. 1973. Irish Kings and High Kings. Dublin. Four Courts Press.

Cahill Wilson, J. 2014. Late Iron Age and Roman Ireland, Discovery Programme Report Series No. 8, Discovery Programme. Dublin. Wordwell.

Chartered Institute for Archaeologists 2020a. Standard and guidance for historic environment desk-based assessment.

Chartered Institute for Archaeologists 2020b. Standards & Guidance for Field Evaluation.

Chartered Institute for Archaeologists 2020c. Standards & Guidance for Archaeological Excavation.

Chartered Institute for Archaeologists 2020d. Standards & Guidance for an Archaeological Watching Brief (Monitoring).

Coen, L. 2021a. Archaeological impact assessment for Barrysparks LAP lands spine road, Swords, Co. Dublin (Licence No. 21E0510). Unpublished report by Archer Heritage Planning.

Coen, L. 2021b. Archaeological impact assessment for Barrysparks, Swords, Co. Dublin (Licence No. 20E0526). Unpublished report by Archer Heritage Planning.

Culleton, E. 1999. *Celtic and Early Christian Wexford*. Dublin. Four Courts Press.

Department of Arts, Heritage, Gaeltacht and the Islands. 1999a. Framework and Principles for the Protection of the Archaeological Heritage. Dublin. Government Publications Office.

Department of Arts, Heritage, Gaeltacht and the Islands. 1999b. Policy and Guidelines on Archaeological Excavation. Dublin. Government Publications Office.

Dolan, B. and Cooney, G. 2010 Lambay lithics: the analysis of two surface collections from Lambay, Co. Dublin Proceedings of the Royal Irish Academy 110C, 1–33.

Dowd, M. and Carden, R.F. 2016. First evidence of a Late Upper Palaeolithic human presence in Ireland. Quaternary Science Reviews 139, 158-163.

Environmental Protection Agency. 2017. Draft Advice Notes on Current Practice (in the preparation of Environmental Impact Statements). Dublin. Government Publications Office.

Environmental Protection Agency. 2022. Guidelines on the Information to be Contained in Environmental Impact Statements. Dublin. Government Publications Office.

Fingal County Development Plan 2023–2029.

Gwynn, A. & Hadcock, R. N. 1988. Medieval Religious Houses. Irish Academic Press.

Hawkes, A. 2018. The Archaeology of Prehistoric Burnt Mounds in Ireland. Oxford. Archaeopress.

Lewis, S. 1837. Topographical Dictionary of Ireland (online edition).

Lynch, R. 2019 Archaeological Monitoring Report at MSD Swords, Co. Dublin (Licence No. 18E0548). Upcoming report prepared by IAC Archaeology.

MacShamráin, A. 2016. Swords and district: the political and ecclesiastical background, fifth to twelfth centuries. In Duffy, S (ed.) Medieval Dublin XV, 39–63.

McErlean, T. 1983. The Irish Townland System of Landscape Organisation. In T. Reeves-Smity and F. Hammond (eds), *Landscape Archaeology in Ireland*, 315-339. U.K. British Archaeological Reports.

McNeill, C. 1950. Calendar of Archbishop Alen's Register 1172-1534. Dublin.

National Monuments Service, Department of Housing, Local Government and Heritage. Sites and Monuments Record, County Dublin.

National Museum of Ireland. Topographical Files, County Dublin.

O'Donovan, E. 2016 Archaeological Excavations at Mount Gamble hill: evidence for a new early medieval church in Swords? In XXX Medieval Dublin XV, 13-39.

O'Donovan, E. 2013. Archaeological Assessment of a proposed development site at St. David's, Windmill Lands, Brackenstown Road, Swords. Co. Dublin (Licence No. 13E0267). Unpublished report by Edmond O'Donovan & Associates.

RECEIVED 15/09/2025

O'Hara, R. and O'Connell, A. 2010. Archaeological Assessment for Barrysparks LAP Swords, Co. Dublin (Licence No. 10E0028). Unpublished report by Archer Heritage Planning.

Stalley, R.A. 2006 The archbishop's residence at Swords: castle or country retreat? In S. Duffy (ed.), Medieval Dublin VII, 152–176.

Thebaudeau, B. 2009. Geophysical Survey Report Lands at Barrysparks, Swords, North County Dublin (Licence No 09R0038). Unpublished report by Margaret Gowen & Co. Ltd.

Waddell, J. 2022. The Prehistoric Archaeology of Ireland (New Edition). Dublin. Wordwell.

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CARTOGRAPHIC SOURCES

William Petty, Down Survey Map of the Barony of Nethercross, c. 1655
John Rocque, An actual survey of the County of Dublin, 1760
John Tayor's Map of the Environs of Dublin, 1816
Ordnance Survey maps of County Dublin, 1843-1940

ELECTRONIC SOURCES

www.excavations.ie – Summary of archaeological excavation from 1970-2025.
www.archaeology.ie – DoHLGH website listing all SMR/RMP sites.
www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage.
www.geohive.ie – GeoHive is the State's Geospatial Data Hub, enabling search, view and access to the key authoritative geospatial information via interactive maps, data catalogues and geospatial applications (including National Townland and Historical Map Viewer and Aerial imagery 1995, 2000, 2005 and 2013).
www.googleearth.com – Satellite imagery (2002–2025).
www.booksulster.com/library/plnm/placenamesC.php - Contains the text from Irish Local Names Explained by P.W Joyce (1870).
www.logainm.ie – Placenames Database of Ireland, developed by Fiontar (DCU) and The Placenames Branch (DoTCAGSM).

13. LANDSCAPE

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13.1 INTRODUCTION

This chapter assesses the potential impacts of the proposed development on the landscape character and visual amenity of the receiving environment. The chapter should be read in conjunction with the book of verified photomontages contained in Appendix 13A of the EIAR.

The landscape and visual impact assessment (LVIA) was carried out by Richard Butler MILI MIPI of Model Works Ltd. Richard has degrees in landscape architecture and town planning and is a member of the Irish Landscape Institute and the Irish Planning Institute. He has over 25 years' experience in development and environmental planning, specialising in LVIA. In the last number of years, he has prepared LVIA EIAR chapters for the following projects among others:

- Pembroke Quarter (Irish Glass Bottle and Fabrizia sites) Phases 1, 1B, 2, A, Poolbeg West Strategic Development Zone, Dublin;
- St Vincent's Hospital and Residential Development, Fairview, Dublin;
- O'Devaney Gardens SHD, Dublin;
- Guinness Quarter, James's Street, the Liberties, Dublin;
- Project Montrose (former RTE lands) LRD, Donnybrook, Dublin;
- Sandford Road LRD, Dublin;
- Emmet Road SHD, Inchicore, Dublin;
- Dublin Arch (Connolly Quarter);
- Augustine Hill (Ceannt Station), Galway.

13.2 ASSESSMENT METHODOLOGY

The LVIA was carried out with reference to:

- *Guidelines for Landscape and Visual Impact Assessment*, 3rd edition, 2013 (GLVIA), published by the Landscape Institute;
- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*, 2022, published by the EPA;
- *Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment*, 2018, published by the Department of Housing, Planning and Local Government.

The EPA guidelines 2022 provide a general methodology and impact ratings for all EIA topics. The GLVIA provides specific guidelines for landscape and visual impact assessment. Therefore, a combination of the EPA guidelines and the GLVIA has informed the methodology for this assessment.

13.2.1 Key Principles of the GLVIA

Assessment of Both Landscape and Visual Effects

The GLVIA requires that effects on views/visual amenity be assessed separately from the effects on landscape character, although the two topics are inherently linked.

- ‘Landscape’ results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations and spatial distribution of these elements create variations in landscape character. Landscape effects assessment identifies the changes to this character which would result from the proposed development, and assesses the significance of those effects on the landscape as a resource.
- Visual effects assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area’s visual amenity.

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13.2.2 Methodology for Assessment of Landscape Effects

The assessment of potential landscape effects involves (a) classifying the sensitivity of the landscape, (b) classifying the potential magnitude of landscape change which would result from the proposed development, and (c) combining these factors to arrive at an assessment of significance of the effects - and the quality of the effects (positive, neutral or negative)

13.2.2.1 Landscape Sensitivity

The sensitivity of the landscape is a function of its character, which may be determined by its land use pattern, urban grain, building typologies and architecture, cultural and natural heritage elements (including topography, vegetation and drainage features), and the quality of the public realm. These factors determine the value that is placed on the landscape. The policy pertaining to the area (e.g. the land use zoning), and any related trend of change, are taken into account. The nature and scale of the proposed development are also considered (a particular landscape can have varying sensitivity to different development types). Five categories are used to classify sensitivity, as set out in (Table 13.1).

Table 13.1: Categories of Landscape Sensitivity

Sensitivity	Description
Very High	Areas where the landscape exhibits very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The landscape character is such that its capacity to accommodate change is very low. These attributes are recognised in policy or designations as being of national or international value and the principal management objective for the area is protection of the existing character from change.
High	Areas where the landscape exhibits strong, positive character with valued elements, features and characteristics. The landscape character is such that it has limited/low capacity to accommodate change. These attributes are recognised in policy or designations as being of national, regional or county value and the principal management objective for the area is the conservation of existing character.
Medium	Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The landscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principal management objective may be to consolidate landscape character or facilitate appropriate, necessary change.
Low	Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and the principal management objective may be to facilitate change through development, repair, restoration or enhancement.

Negligible	Areas where the landscape exhibits negative character, with no valued elements, features or characteristics. The character is such that its capacity to accommodate change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands, as well as sites or areas that are designated for a particular type of development. The principal management objective for the area is to facilitate change in the landscape through development, repair or restoration.

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Note on definitions used in this assessment

The definitions in Table 13.1 (landscape sensitivity), 13.2 (magnitude of landscape change), 13.4 (viewpoint sensitivity) and 13.5 (magnitude of visual change) are not taken from either the GLVIA or the EPA Guidelines 2022. Both of these guidance documents require that classifications of sensitivity and magnitude of change (such as high, medium, low, etc.) be used in the assessment process (see EPA Guidelines Figure 3.4 and GLVIA Box 3.1, Paragraph 3.26 and Figure 3.5), but neither guidance document provides definitions for such classifications.

The GLVIA specifically avoids being prescriptive in this regard (GLVIA para 1.20): *"The guidance concentrates on principles... It is not intended to be prescriptive, in that it does not provide a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances."*

The EPA Guidelines state (in Section 3, p.49): *"While guidelines and standards help ensure consistency, the professional judgement of competent experts can play an important role in the determination of significance. These experts may place different emphases on the factors involved. As this can lead to differences of opinion, the EIAR sets out the basis of these judgements so that the varying degrees of significance attributed to different factors can be understood."*

The GLVIA and EPA Guidelines thus require that the factors used in arriving at significance conclusions (i.e., classifications of sensitivity and magnitude) should be explained in the EIAR, but the guidelines do not provide the explanations themselves.

It is for this reason that the definitions in Tables 13.1, 13.2, 13.4 and 13.5 are provided in this section. These definitions have been developed and refined by LVIA practitioners in Ireland and the UK, including the chapter author, over decades of practice. They are not standard, i.e., the definitions used in this assessment may differ from those used by other practitioners. However, the author considers them to be reasonable and appropriate for the purpose of classifying the significance of landscape/landscape and visual effects and the same definitions have been used in many previous LVIA reports/chapters prepared by the author and accepted by the planning authorities.

13.2.2.2 Magnitude of Landscape Change

Magnitude of change is a factor of the scale, extent and degree of change imposed on the landscape by a development, with reference to its key elements, features and characteristics, and any affected surrounding character areas (also known as 'landscape receptors'). Five categories are used to classify magnitude of change (Table 13.2).

Table 13.2: Categories of Landscape Change

Sensitivity	Description
Very High	Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape, and/or introduction of large elements considered

	totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape.
High	Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the landscape, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape.
Medium	Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape.
Low	Change that is moderate or limited in scale, resulting in minor alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape.
Negligible	Change that is limited in scale, resulting in no alteration to key elements features or characteristics of the landscape, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character.

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13.2.2.3 Significance of Landscape Effects

To classify the significance of effects the magnitude of change is measured against the sensitivity of the landscape using the guide in Table 13.3 below.

Table 13.3: Guide to Classification of Significance of Landscape and Visual Effects

		Sensitivity of the Landscape/View				
		Very High	**High**	**Medium**	**Low**	**Negligible**
Magnitude of Landscape/ Visual Change	**Very High**	Profound	Profound to Very Significant	Very Significant to Significant	Moderate	Slight
	High	Profound to Very Significant	Very Significant	Significant	Moderate to Slight	Slight to Not Significant
	Medium	Very Significant to Significant	Significant	Moderate	Slight	Not Significant
	Low	Moderate	Moderate to Slight	Slight	Not significant	Imperceptible
	Negligible	Slight	Slight to Not Significant	Not significant	Imperceptible	Imperceptible

The matrix above (Table 13.3) is derived from the EPA Guidelines 2022 (Figure 13.1 below).

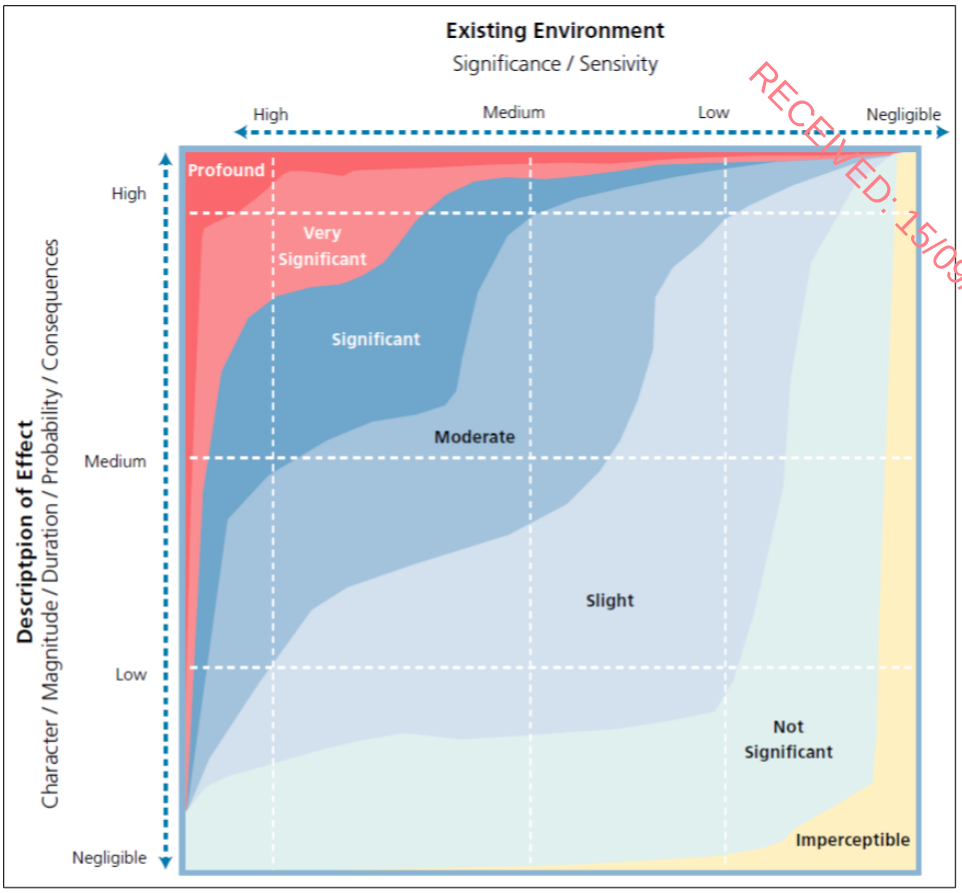

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Figure 13.1: 'Chart showing typical classifications of the significance of impacts'
(Source: Figure 3.4 of the EPA Guidelines 2022)

The matrix (Table 13.3) and the EPA chart (Figure 13.1) are only a guide to the classification of impact significance. The assessor also uses professional judgement informed by their expertise, experience and common sense to arrive at a classification that is reasonable and justifiable. In the EPA guidelines, the chart (Figure 13.1) is accompanied by a footnote that states: *"The depiction of significance classifications is indicative and should not be relied on as being definitive. It is provided for general guidance purposes"* (EPA guidelines Section 3, page 53). For example, according to the EPA chart a change of high magnitude affecting a receptor of medium sensitivity could be classified as either 'significant' *or* 'moderate'. That judgement must be made by the assessor.

13.2.3 Methodology for Assessment of Visual Effects

Assessment of visual effects involves identifying a number of key/representative viewpoints in the site's receiving environment, and for each one of these: (a) classifying the viewpoint sensitivity, (b) classifying the magnitude of change which would result in the view (informed by photomontages of the proposed development), and (c) combining these factors to arrive at a classification of significance of the effects on the view.

13.2.3.1 Sensitivity of the Viewpoint/Visual Receptor

Viewpoint sensitivity is a function of two main considerations:

- Susceptibility of the visual receptor to change. This depends on the occupation or activity of the people experiencing the view, and the extent to which their attention is focused on the views or visual amenity they experience at that location. Visual

receptors most susceptible to change include residents at home, people engaged in outdoor recreation focused on the landscape (e.g. trail users), and visitors to heritage attractions and places of congregation where the setting contributes to the experience. Visual receptors less sensitive to change include travellers on road, rail and other transport routes (unless on recognised scenic routes), people engaged in outdoor recreation where the surrounding landscape does not influence the experience, and people in their place of work or shopping.

- Value attached to the view. This depends to a large extent on the subjective opinion of the visual receptor but also on factors such as policy and designations (e.g. scenic routes, protected views), or the view or setting being associated with a heritage asset, visitor attraction or having some other cultural status (e.g. by appearing in arts).

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Five categories are used to classify a viewpoint's sensitivity (Table 13.4):

Table 13.4: Categories of Viewpoint Sensitivity

Sensitivity	Description
Very High	Iconic viewpoints (views towards or from a landscape feature or area) that are recognised in policy or otherwise designated as being of national value. The composition, character and quality of the view are such that its capacity for change is very low. The principal management objective for the view is its protection from change.
High	Viewpoints that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (e.g. views from houses or outdoor recreation amenities focused on the landscape). The composition, character and quality of the view may be such that its capacity to accommodate change may or may not be low. The principal management objective for the view is its protection from change that reduces visual amenity.
Medium	Views that may not have features or characteristics that are of particular value, but have no major detracting elements, and which thus provide some visual amenity. These views may have capacity for appropriate change and the principal management objective is to facilitate change to the composition that does not detract from visual amenity, or which enhances it.
Low	Views that have no valued feature or characteristic, and where the composition and character are such that there is capacity for change. This category also includes views experienced by people involved in activities with no particular focus on the landscape. For such views the principal management objective is to facilitate change that does not detract from visual amenity or enhances it.
Negligible	Views that have no valued feature or characteristic, or in which the composition may be unsightly (e.g. in derelict landscapes). For such views the principal management objective is to facilitate change that repairs, restores or enhances visual amenity.

13.2.3.2 Magnitude of Change to the View

Classification of the magnitude of change takes into account the size or scale of the intrusion of development into the view (relative to the other elements and features in the composition, i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral view, or in glimpses). Five categories are used to classify magnitude of visual change to a view (Table 13.5):

Table 13.5: Categories of Magnitude of Visual Change

Sensitivity	Description
Very High	Full or extensive intrusion of the development in the view, or partial intrusion that obstructs valued features or characteristics, or introduction of elements that are completely out of

	character in the context, to the extent that the development becomes dominant in the composition and defines the character of the view and the visual amenity.
High	Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity.
Medium	Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity.
Low	Minor intrusion of the development into the view, or introduction of elements that are not uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change to visual amenity.
Negligible	Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.

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13.2.3.3 Significance of Visual Effects

As for landscape effects, to classify the significance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint, using the guidance in Table 13.3 and Figure 13.1 above.

13.2.4 Quality of Effects (Landscape and Visual)

In addition to predicting the *significance* of the effects, EIA methodology requires that the *quality* of the effects be classified as positive/beneficial, neutral, or negative/adverse. For landscape to a degree, but particularly for visual effects, this is an inherently subjective exercise. This is because landscape and visual amenity are *perceived* by people and are therefore subject to variations in the attitude and values - including aesthetic preferences - of the receptor. One person's attitude to a development may differ from another person's and thus their response to the effects of a development on a landscape or view may vary.

Additionally, in certain situations there might be policy encouraging a particular development in an area, in which case the policy (of a democratically elected government or local authority) is effectively prescribing landscape and visual change. If a development achieves the objective of the policy the resulting effect might be considered positive, even if the landscape character or views are profoundly changed. The classification of quality of landscape and visual effects should seek to take these variables into account and provide a reasonable and robust assessment.

13.3 RECEIVING ENVIRONMENT

13.3.1 Site's Strategic Location

The site is located on the south side of the R132 Swords Bypass, directly across the R132 from the Pavilions Shopping Centre, which forms part of Swords town centre. The site is 600m from Swords Main Street. The planning-permitted Swords Central Metrolink station is located beside the site (alongside the R132). The site is thus contiguous with the town centre and adjacent to a future high capacity public transport hub.

In the Eastern and Midland Regional Spatial and Economic Strategy 2019-2031 (RSES), Swords is identified as one of three Key Towns in the metropolitan area of Dublin. Swords is the northern satellite urban core and gateway to the metropolitan area.

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Figure 13.2: RSES graphic of the Dublin Metropolitan Area

The RSES settlement strategy for the key towns is to *"Provide for the sustainable, compact, sequential growth and urban regeneration in the town core... by consolidating the built footprint through a focus on regeneration and development of identified Key Town centre infill/brownfield sites"*.

The site's strategic location with respect to Swords town centre and the Metrolink corridor, combined with its greenfield condition, has implications for its future land use and associated landscape character. Compact growth policy demands that such sites be developed to their maximum sustainable potential, taking account of any environmental constraints including landscape/townscape character and visual amenity.

13.3.2 The Site

The subject site is a greenfield land parcel of c. 6 ha (see Figure 13.4 below, showing the main developable area), and forms part of a wider landholding (all greenfield) of c. 18 ha owned by the applicant (refer to Figure 2.2). There are no structures on the lands. The lands were previously used for agriculture, but this use has ceased and the land cover can now be described as rough grassland. There are patches of gorse growing in the centre of the main developable area. The only trees within the site are a line of trees on a section of the bank of the Gaybrook Stream in the south west corner of the site. There are lines of trees and unkempt hedgerow along the west boundary shared with Airside Business Park.

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Figure 13.3: A view west from the site showing the rough grassland, Airside Business Park beyond

Figure 13.4: The main developable area of the site.

For the full application redline **boundary (including an area of works to the R132 and services connections to the site), see Figure 2.2.**

The Gaybrook Stream enters the Barrysparks lands at the western boundary from Airside Business Park. The stream runs along the site's west boundary before turning east through the Barrysparks lands to the south of the application site. The topography of the site is relatively flat and low-lying, and the land rises to the south of the site, south of the Gaybrook Stream.

A spur extends from the main developable area to the R132 to the north, passing beside the site of the future Metrolink station, which lies between the site and the road. On the north side of the road, opposite the Metrolink station, is Swords Pavilion Shopping Centre and the Longlands residential neighbourhood. Adjacent to the west of the site is Airside Business Park. Extending to the east and south of the site is the applicant's greenfield landholding. These are future development lands.

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Figure 13.5: A view of the hedgerow and trees on the west boundary

The hedgerow and trees are **screening an office building in the neighbouring Airside Business Park.**

Figure 13.6: A view east across the site and the applications wider landholding

The residential neighbourhood of Drynam Road is in the distance, and a Tesco supermarket is to the south east.

13.3.2 Landscape Character of the Receiving Environment

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At the macro level, Swords can be divided into three distinct character areas. These are (1) the town centre, (2) the 20th century western and northern residential suburbs, and (3) a modern, mixed use zone east and south of the town centre, between the R132 Swords bypass and the M1. The site falls into the latter area. It is characterised by a mix of residential, business and industrial uses, a mostly course urban grain, and diverse plot and building typologies, scale and architecture. Such landscapes have an inherent capacity to accommodate change as there is no norm with which new development can or should conform.

Figure 13.7: Site location in the mixed use character area between the R132 and the M1.

The mixed character of the area is clearly visible on Figure 13.7 above and is notable in the site's immediate environs.

- **West and south of site:** Adjacent to the west of the site is Airside Business Park. This is a sprawling business campus, with large-footprint buildings of various height and mixed architectural quality, surrounded by parking areas. The buildings closest to the site are lower and of lesser architectural and material quality (see Figure 13.8), while to the south, nearer the business park entrance off the R125, the buildings are both taller and more attractive (see Figure 13.9). The presence of buildings of vertical form in the vicinity is significant. This landscape of 'large-box' buildings and parking areas, extending to the west and south of the Barrysparks lands (see Figure 13.10), is of low sensitivity to landscape/visual change.

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Figure 13.8: The Airside Business Park building nearest to the site.

The building is equivalent to three storeys tall and is of limited architectural quality**.**

Figure 13.9: The building at the entrance to Airside Business Park

Located off the R125, this building is six storeys and more ambitious in **its architectural expression.**

- South of the R125 is a large area of retail parks. <u>This area is of even lesser value and sensitivity, in terms of landscape character and visual amenity, than the business campus to the west of the site</u>. Both landscape types are 'anti-urban', with indistinct or varying urban grain lacking continuity between plots, limited street enclosure and activation, poor

quality public realm and dominance of cars, minimal provision of public open space, and buildings of poor architectural and material quality.

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Figure 13.10: The site environs and potential receptors of landscape and visual change.

- **North of site:** To the north of the site is the R132 (Figure 13.10) and beyond the wide dual carriageway is Swords Pavilion shopping Centre. The road carries a large volume of traffic through the modern, mixed use area of the town, and road users are therefore exposed to a wide range of development. The R132 and the road users, as potential receptors of landscape/visual change, are of low sensitivity. The shopping centre north of the road is also of low sensitivity (although the large building is of some architectural merit). The site of the future Swords Central Metrolink station (Figure 13.14), adjacent to the site, is intended to be a catalyst for urban consolidation and densification in the area. It too can be considered of low sensitivity to change of the type proposed.
- The only potentially sensitive receptor to the north is the Carlton Court residential estate to the west of Pavilions, diagonally across the R132 from the site – and buffered from the site by the wide road corridor. The estate is additionally protected from the R132 by a

dense belt of trees. These trees will function as a visual screen for any development that takes place on the site (see Figure 13.15).

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Figure 13.11: A view towards site along the R132, from a pedestrian bridge to the east of the site

Figure 13.12: Swords Pavilion shopping Centre.

Figure 13.13: A view towards the site from Swords Pavilion Shopping Centre.

Figure 13.14: Photomontage future Swords Central Station between the R132 and the site.

The construction of the station will require the removal of the **existing roadside trees on the north side of the R132 (the trees in Figure 13.11, not the trees in front of Carlton Court in Figure 13.14).**

The photographs of the area to the north of the site (Figures 13.11-13), as well those illustrating the area to the west (Figures 13.8-9), show that (a) the site's landscape context is of low value and sensitivity, and (b) would benefit from any development that contributes to the creation of 'urban character' (e.g. residential use, a clear urban grain with enclosure of streets and public open space by built form, activation and passive surveillance of streets/public realm, buildings of architectural and material quality, etc.).

Figure 13.15: The Carlton Court residential estate

This development is **buffered from the R132 and any development beyond the R132, by a dense belt of roadside trees.**

- **East of site:** Adjacent to the east of the site is an area of unused/greenfield land of the same type as the site (see Figure 13.10). This is part of the applicant's landholding, to be developed in future phases following the proposed development (if permitted).
- Further to the east is a residential neighbourhood along Drynam Road. This area includes Drynam Court (see Figure 13.16), Primrose and Commons East. These are streets of detached and semi-detached houses of suburban character. This area is the only potential receptor that can be considered sensitive to landscape/visual change – although, as an urban neighbourhood in an area already characterised by mixed use and diverse building typologies, scale and architecture, there is some tolerance for change.
- Additionally, the application site is the furthest part of the Barrysparks lands from the Drynam Road area. The proposed development thus has the least potential (of the applicant's landholding) to cause landscape and visual impacts on the neighbourhood, and future phases will screen any development on the subject site from view.

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Figure 13.16: A view from Drynam Court to the east of the site

The existing buildings of Airside Business Park are visible in the distance beyond the Barrysparks lands. The site is the furthest part of the Barrysparks lands from the Drynam Road neighbourhood.

The areas described above make up the site's receiving environment, and are the main potential receptors of landscape/visual change. The impact assessment in Sections 13.5 and 13.6 focusses on these areas, with the viewpoints for visual effects assessment selected to represent the users and residents of these areas.

13.3.4 Landscape Sensitivities

The main landscape sensitivity on or near the site is the Gaybrook Stream that runs along part of the site's west boundary before turning east to run through the Barrysparks lands (south of the application site). The stream requires consideration and protection – by means of a dedicated riparian corridor - in the development of the lands.

There is also a holy well, St Werburgh's Well, just to the south of the site beside an existing parking area on the east side of the Aiside Business Park access road. The well is hidden in a stand of vegetation. The area surrounding the well is of poor environmental quality, and well's condition and presentation could be enhanced by the area's development.

Figure 13.17: St Werbergh's Holy Well

Hidden in a clump of vegetation beside a parking area just to the south of the site.

Figure 13.18: A view of the clump of vegetation surrounding St Werbergh's Holy Well.

The site is to the rear of the well in this view.

13.3.4 Relevant Policy and Guidance – Fingal Development Plan 2023-2029

In the Fingal Development Plan 2023-2029, the site is zoned ME (Metro Economic Corridor), with the objective to: *"Facilitate opportunities for high density mixed use employment*

generating activity and commercial development, and support the provision of an appropriate quantum of residential development within the Metro Economic Corridor".

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The site is additionally identified as (part of) Masterplan Area 8.D.

Section 2.4.2 of the FDP states: *"The preparation of Masterplans will continue to assist in achieving quality developments in terms of, inter alia, urban design, structure, delivery of community/amenity facilities and permeability… The Council will continue to implement the Masterplans currently in place at the time of adoption of the Development Plan".* Among the operational Masterplans identified in the FDP are the Swords Masterplans, which includes the Barrysparks and Crowscastle Masterplan, 2019.

Regarding the Barrysparks Masterplan, the FDP states: *"The Masterplan lands at Barrysparks and Crowscastle 2019 will accommodate a mixed-use commercial and residential development that will grow into a key economic cluster both for Swords and the Greater Dublin Area. The strategic employment land bank at this location will play a key role, accommodating up to c. 180,000 sq.m of commercial space and c. 14,500–15,500 additional jobs over a period of 20 years, and providing for c. 700–750 new residential units".*

13.3.5 Relevant Policy and Guidance – Barrysparks and Crowscastle Masterplan 2019

The FDP's land use zoning and masterplan designation of the Barrysparks lands confirms that the lands (including the site) are deemed suitable - by Fingal Co. Co. - for urban development, and that the transformation of Barrysparks into an urban landscape is acceptable in principle.

The Barrysparks and Crowscastle Masterplan provides guidance for that landscape change, in the form of a vision and principles, which are grouped under the headings 'land use', 'green infrastructure', 'built form (including urban design), typologies and density', 'interface areas', 'height', and 'open space'.

In a situation such as this, where a landscape is designated for change and a masterplan has been prepared to guide that change, the principles expressed in the masterplan can be used to evaluate proposed developments in the area. If a proposed development is in keeping with the principles of the masterplan and would contribute to the realisation of the vision, then the effects of the proposed development can be classified positive.

The following principles of the Barrysparks and Crowscastle Masterplan 2019 are specifically relevant to the landscape, and useful for the evaluation of the proposed development's landscape and visual effects.

Land Use

"The Masterplan lands are envisaged to be predominantly commercial in nature, creating a unique employment cluster of high-technology related businesses. It is intended that the Masterplan lands will be set in parkland, with a central green spine of open space that incorporates walking and cycling facilities...

"Residential dwellings will be located on the northern section of the lands to facilitate the active use of the proposed MetroLink station and Core Bus Corridor along the R132."

Green Infrastructure

"Green Infrastructure is a key component of the design and layout of development, with flood risk mitigated by SuDS features. A central route through the Masterplan site is

proposed to create a link to the Pavilions. This green spine will form a connection between Swords Town Centre with the lands at Airside and Holywell."

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Built Form, typologies and density

"This Masterplan envisions campus-style commercial development, with a mix of other commercial and residential building forms to facilitate the active use of the proposed MetroLink station…

"Lower density houses have been incorporated along existing residential communities to the north-east, while higher density dwellings are located at the northern end of the lands, where they are more appropriate."

Interface Areas

"The building heights and typologies proposed have considered adjacent communities and structures. Density and height respectfully transition down at the existing residential dwellings along Drynam Road, with heights not exceeding three-storeys to reflect the current scale of development. Greater opportunity exists throughout the remaining lands and along the R132 to develop higher density building types, with the potential for landmark-buildings along this road."

Heights

"Overall heights on the land will range from 2- to 9-storeys. Alongside the residential communities on Drynam Road building heights will remain below 3-storeys to protect the residential amenity of the area. It is considered that along the central green corridor through the lands and both the R132 and R125, that greater building heights would be appropriate."

Open Space

"Provide public open space in the form of green corridors which facilitate pedestrian and cyclist facilities and the linking of the Masterplan lands with the wider Swords area…

"The open space in the Masterplan lands will not only act to create sustainable connections for people and places, but will also incorporate the necessary SuDS requirements for this site."

Key Urban Design Objectives for the Barrysparks & Crowscastle Masterplan lands

Reinforce a sense of place at this strategic location along the main 'Gateway' to Swords, by providing high-quality public spaces and strong urban elevations along key road frontages.

Reduce the visual impact of new development on adjacent residential properties through the use of appropriate heights and scaling, building typologies, and building orientation to ensure passive surveillance.

Ensure the proposed 'Swords Central' Metro station and associated open space facilitates active travel and connections to the wider Swords area.

Height Key Objectives

Provide a variety of heights throughout the Masterplan lands to create visual interest and to facilitate access to light, generally in accordance with Figure 6.2.

Provide lower heights adjoining existing residential areas in the form of 2 to 3 storey development adjacent to the residential dwellings accessed off the Drynam Road.

Provide a strong urban edge to the R132 to the north of the site, where taller development will be supported in proximity to MetroLink.
Provide a strong urban edge to the R125 to the south-west of the site, with a mixture of heights that address the road and provide overlooking and passive surveillance.

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The Masterplan includes a number of spatial plans depicting the vision and principles. For the area of the subject site, the masterplan envisions the following (see Figure 13.19 below):

Road access to the site from the R132, entering the site in the north west corner. A road leading to the site from the Holywell Road, running inside the east boundary of the Barrysparks lands before turning west to enter the main site development area in its south east corner.

Two linear apartment buildings parallel to the site's west boundary (between the new north-south street and the boundary), overlooking the Gaybrook Stream and Airside Business Park to the west.

Two blocks of apartment buildings on the other side of the north-south street, roughly in the form of perimeter blocks enclosing courtyards.

A wide open space corridor to the east of these two blocks, running inside the east boundary of the site. This is to form part of the 'central green spine' and should incorporate pedestrian and cycle routes, active and passive recreation amenities, and SUDS elements.

Figure 13.19: Barrysparks Masterplan 2019 drawing with approximate boundary superimposed.

Regarding building height, the masterplan envisages the two western buildings being three to five storeys, and the two larger blocks ranging from four to nine storeys, with the tallest

elements overlooking the central green spine. There would thus be a gradation in height from lower to higher west to east across the site. The masterplan generally promotes a similar gradation from south to north, so that the tallest buildings are concentrated around the Metrolink station and along the R132 to the north.

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Figure 13.20: Barrysparks and Crowscastle Masterplan 2019 height strategy.

13.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development is described in detail in the architectural and landscape design statements, and in Chapter 2 of this EIAR. The following are the aspects of the proposal most relevant to the assessment of townscape and visual effects. The description is organised under the same headings as the Barrysparks and Crowscastle Masterplan 2019.

Transport and Movement

The proposed development includes:

Road access to the site from the R132, entering the site in the north west corner.

A road leading to the site from the Holywell Road, running inside the east boundary of the Barrysparks lands before turning west to enter the main site development area in its south east corner.

Open Space and Green Infrastructure

The proposal includes a wide corridor of open space inside the east boundary of the main development area of the site, to the east of Blocks C and D. This space establishes the Masterplan's envisaged 'central green spine' across the Barrysparks lands.

The proposed parkland includes pedestrian and cycle routes (allowing for future connections to the Metrolink station and over the R132 to the Pavilions), water detention basins (SUDS features), a playground, exercise equipment and passive recreation amenities (seating). The open space includes numerous trees as well as wildflower meadow, amenity lawn areas and ornamental planting. The abundant planting and the scale of the space are such that they would create a 'parkland character', as required by the Masterplan.

The proposal includes a belt of trees and riparian planting along the Gaybrook Stream as part of a 10m wide riparian corridor free of built development (other than pedestrian paths). This forms a 2nd north-south 'green corridor' to complement the central green spine.

A third green corridor (aligned east-west, connecting the two north-south corridors) is proposed between Blocks C and D and Blocks A and B.

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Land Use, Built Form, Typologies and Density

The proposed development includes 530 no. apartments and a creche in four buildings:

- Two linear buildings (Blocks A, B) parallel to the site's west boundary, west of the north-south access road, overlooking the Gaybrook Stream and Airside Business Park to the west.
- Two blocks of apartment buildings (Block C, D) east of the north-south access road. These are perimeter/courtyard-type blocks enclosing central communal amenity spaces.

The buildings are located in the area designated in the Masterplan for apartment development (the area closest to the future Metrolink station and the R132), and their positioning and typologies (e.g. linear blocks, perimeter/courtyard blocks) are in keeping with the principles and spatial guidance of the Masterplan.

Height and Interface Areas

The proposed Blocks C and D are both 1 – 9 no. storeys, with each block comprised of volumes are varying height, to divide the massing into smaller visual units and create visual interest. The height of Blocks C and D is in keeping with the Masterplan, which recognises the favourable context for building height provided by the central green spine to the east of these blocks (the Masterplan states: *"Overall heights on the land will range from 2- to 9-storeys… It is considered that along the central green corridor through the lands and both the R132 and R125, that greater building heights would be appropriate"*).

Proposed Block A is 1 – 7 no. storeys and proposed Block B is 6 – 9 no. storeys. These buildings are taller than what was envisioned in the Masterplan, and this is the main difference between the proposal and the Masterplan (from the LVIA perspective).

13.5 CONSTRUCTION IMPACTS

Over the course of the estimated 2-3 year construction period, the site would be disturbed by construction activities including the erection of site hoarding, site clearance, haulage and storage of materials, construction activity (including the operation of cranes) and the incremental growth of buildings on site (refer to the Construction Environmental Management Plan for specific breakdown of the construction process and timeline).

Construction is inherently disturbing of the landscape, and unsightly. The landscape and visual effects are therefore negative, but temporary. The areas/receptors potentially most affected would be:

- Airside Business Park to the west;
- The R132 passing to the north of the site.

Neither of these receptors/areas is sensitive to landscape change. They can both be classified as 'low' sensitivity. Taking account of the low sensitivity and the temporary nature of the impact, the significance of the construction phase effects can be classified as 'slight' negative.

The nearest sensitive receptors to the site are the Drynam Road residential area to the east, and the Carlton Court residential estate to the north west across the R132. Both of these residential areas are well removed from the site. The development under construction on the

site would be visible in the middle distance (c. 150m in the case of the nearest houses in the Drynam Road area, and c. 100m but screened by vegetation in the case of Carlton Court). Given the separation distance and the temporary nature of the construction phase impact, the landscape effects on these areas can also be classified 'slight' negative.

The potential visual effects during construction are addressed in the individual assessments of the representative viewpoints in Section 13.6.1 below.

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13.6 OPERATIONAL IMPACTS

13.6.1 Visual Effects

Based on the analysis of the receiving environment and consideration of the characteristics of the proposal, 16 no. viewpoints (Figure 13.21) were selected for visual effects assessment informed by verified photomontages.

Figure 13.21: Viewpoints for visual effects assessment.

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The effects on each view are individually assessed below. For the methodology and terms used in the assessment, refer to Section 13.2.3 above. The assessments should be read in conjunction with the verified photomontages provided in Appendix 13A. For each viewpoint, the following views are provided:

- Existing View (photograph)
- Proposed View (Existing View + render of the proposed development)
- Cumulative/Future View (Proposed View + the planning-permitted VHI scheme + massing model of the future phases of development on the applicant's lands)

13.6.1.1 Viewpoint 1: R125 to south of site

Existing View

The R125 is one of the main approach roads to Swords from the M1. The road corridor is very wide, with two lanes in each direction, segregated pedestrian and cycle lanes and wide green verges on both sides. It is a distinctly urban thoroughfare.

Approaching Barrysparks and the Airside area, the road passes a Tesco supermarket on the right, while on the left behind a high grass embankment are a row of retail warehouse buildings.

Passing the Tesco, a view opens up over the Barrysparks lands to the north. The wide, undeveloped green space appears incongruous in the otherwise urban area. A tall, broad office building is prominent (even dominant) at the Airside Business Park entrance off the R125 to the left. In the distance to the right beyond Barrysparks are the houses of the Drynam Road area. The curved roof of the Pavilion Shopping Centre is visible on the skyline, beyond the R132.

Viewpoint sensitivity: Low. The viewpoint context is urban and relatively unsightly (dominated by road infrastructure and retail warehouse-type buildings), and the large office building in Airside Business Park contributes further to a high capacity for change.

Proposed View

The cluster of tall residential buildings is prominent in the middle distance towards the further end of the Barrysparks lands. The building typology and their visibly orthogonal arrangement generate a distinctly urban, 'town-centre' character (locally), and the built form and elevations are pleasingly articulated. The variation in height between the buildings, and between sub-volumes of the buildings, adds visual interest.

The development introduces a new typology to the landscape (high density residential buildings), which contrasts in type with the other development in view.

Magnitude of change: Medium.

Significance of Effects

Construction phase: Not significant negative. The visibility (temporary) of the buildings under construction in the middle distance would have a minor negative effect.

Operation phase: Slight positive. The development provides complementary context for the large office building, improving the overall composition and causing a shift in character towards a 'mixed use, town-centre urban' condition. This is a positive change, and no valued element or characteristic of the view would be compromised.

Cumulative/Future View

The VHI development is visible, adding another piece to the emerging urban landscape.

The future phases of the Barrysparks lands will cement the landscape's transformation into a contemporary, mixed use, mixed density urban quarter appropriately located close to the existing town centre and adjacent to Swords Central Metrolink station.

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13.6.1.2 Viewpoint 2: Airside Business Park main access road

Existing View

Having turned off the R125, the business park access road passes by a large, landmark-type office building beside the entrance. A well established double avenue of trees along the road combines with the building to generate an attractive urban character locally (this dissolves after passing the building).

The undeveloped lands to the right of the road give the landscape an incomplete appearance, and the view could benefit from additional development of high quality to complement the road treatment and the office building. There is capacity – indeed – a requirement – for change.

Viewpoint sensitivity: Low.

Proposed View

The cluster of residential buildings is visible through the bare canopies of the trees, to the right of the road. (In spring and summer the development would be more completely screened.)

The development introduces a new typology to the landscape (high density residential buildings), which both contrasts with and complements the office building, strengthening the urban character of the landscape.

Magnitude of change: Low-Medium.

Significance of Effects

Construction phase: Not significant negative. The temporary visibility of the development under construction, seen from a business park access road, would constitute a not significant negative effect.

Operation phase: Slight positive. The development would contribute positively to the emerging mixed use urban character. No valued element or characteristic of the view would be compromised.

Future/Cumulative View

The VHI development is visible to the right, adding another piece to the emerging urban landscape.

The future phases of the Barrysparks lands will cement the landscape's transformation into a contemporary, mixed use, mixed density urban quarter, with the character of the Airside access road shifted towards that of an urban street (enclosed by buildings of high quality).

13.6.1.3 Viewpoint 3: Airside Business Park parking area adjacent to St Werbergh's Well

Existing View

This viewpoint was selected to assess the effect on St Werbergh's Holy Well, a cultural heritage feature in close proximity to the site. The well itself is enclosed by vegetation, with very limited view of the surrounding landscape (see Figure 13.22).

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However, the proposed development would be visible when approaching the well.

Figure 13.22: A view from the seat at the holy well.

In the foreground is the entrance road to a parking area that serves the business park. A spur off this road leads to a construction compound beside the subject site. The holy well is hidden in the vegetation in the foreground to the right. One of the business park buildings is visible in the middle distance to the left.
This is a view from a parking area, showing the landscape at the edge of a business park, with ongoing change/development occurring. There is a high capacity for change in the view. The holy well could benefit from consolidation of the landscape character (i.e. the completion of the area's urbanisation).
Viewpoint sensitivity: Low.

Proposed View
The cluster of residential buildings is visible above the foreground vegetation, to the side of the business park and its c. three storey office buildings.
The development introduces a new development typology (high density residential) and built form (vertical instead of horizontal) to the landscape, initiating a shift in character towards an urban condition (from that of a peri-urban business campus).
Magnitude of change: Medium.

Significance of Effects
Construction phase: Not significant negative. The temporary visibility of the development under construction, seen from a business park parking area, would constitute a not significant negative effect.

Operation phase: Slight positive. The development would contribute positively to the planned shift in character in the area - towards an urban condition more suited to the location, adjacent to the future Metrolink station and Swords town centre.
No valued element or characteristic of the view would be compromised. Further urban development/consolidation of the landscape could only benefit St Werbergh's Holy Well, which currently exists in a degraded, transitional landscape.

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Future/Cumulative View
The future phases of development of Barrysparks will cement the landscape's transformation into a contemporary, mixed use, mixed density urban quarter. The holy well, if retained as part of the green infrastructure network, would benefit from this change.

13.6.1.4 Viewpoints 4, 5, 6: Airside Business Park

Existing Views
Although not sensitive, the neighbouring business park to the west of the site is the area most susceptible to change due to its proximity to the site.
These three views are from the main business park access road and the parking areas between the buildings. The views are experienced regularly, but by a relatively small number of people, i.e. the workers and visitors to this part of the business park.
The business park has an unconventional layout, with the buildings angled to create a diamond shaped central space/parking area, with additional parking areas in the outer corners. This is an inefficient and 'anti-urban' layout, with poor definition of space and streets and no relationship with the surrounding landscape. While not unusual for a peri-urban business park, if the creation of urban character in Barrysparks is to be achieved, then future development should ignore the Airside Business Park layout and seek to establish urban characteristics such as edge definition, street and spatial enclosure, continuity and permeability, etc.
All three views show (a) the buildings at angles to the roads and boundaries; (b) long, low buildings of limited architectural ambition; (c) a landscape comprised of disconnected lawn areas, hedges and ornamental planting, and a limited selection of tree species; (d) dominance of provision for cars.
As a place of work of limited landscape/visual amenity and limited connection to the surrounding landscape, the business park is of low sensitivity to change.
Viewpoint sensitivity: Low.

Proposed Views
The proposed buildings protrude above the roofs and trees of the business park, slightly increasing the built/visual enclosure experienced in the business park.
The buildings of the two neighbouring developments are not aligned (due to the business park's unconventional layout), and are also of different typologies and architectural quality. The views are therefore not as coherent as – for example – Views 1 and 2 (where there are commonalities in scale, alignment and quality between the proposed buildings and the landmark office building).
Magnitude of change: Medium.

Significance of Effects
Construction phase: Slight negative. The temporary visibility of development under construction on the neighbouring site would constitute a slight negative effect.

Operation phase: Moderate neutral. No valued element or characteristic of the views would be compromised, and the proposed buildings are not unsightly. However (like the existing views), the proposed views cannot be considered visually pleasing. There would be no gain nor loss in visual amenity. It must be recognised that this is due to the nature of the business park, not the proposed development, which adopts urban design principles that conflict with the business campus landscape.

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Future/Cumulative View
n/a.

13.6.1.5 Viewpoint 7: Holywell residential estate

Existing View
The Holywell estate is the nearest residential area to the south of the site. The nearest houses to the site are those fronting the Holywell Road in the western part of the estate. This view represents these houses.
The Barrysparks lands are across the Holywell Road from the estate, the undeveloped lands spanning the view from left to right. In the distance to the left is the large office building at the entrance to Airside Business Park. Other, lower buildings can be seen to its right.
In the foreground to the right is the site of an apartment development (Fingal Co. Co. Reg. Ref. LADP/008/23) currently under construction adjacent to the Holywell estate. The development is comprised of three buildings up to six storeys in height. It will significantly change the context of the existing Holywell estate and contribute to the continuing urbanisation of the wider area.
The landscape in view is in the urban area, designated for urban development, and in the process of change. There is capacity for further change, although as a residential receptor the viewpoint is somewhat sensitive.
Viewpoint sensitivity: Medium.

Proposed View
The proposed buildings, c. 500m distant, protrude marginally above a line of trees on the Barrysparks lands. Largely screened by the trees, the residential buildings is considerably less prominent than the office building to the left of the view. (They will also be considerably less prominent than the apartment development currently under construction in the foreground to the right.)
Magnitude of change: Low.

Significance of Effects
Construction phase: Not significant negative. The temporary visibility of development under construction in the distance constitute a not significant negative effect.
Operation phase: Not significant neutral. The development would make a very minor contribution to the planned urbanisation of the area, but it is too far from the viewer to have any significant effect on the quality of the view.

Future/Cumulative View
n/a.

13.6.1.6 Viewpoint 8: Holywell Road

Existing View

The view is taken from a roundabout on the Holywell Road, adjacent to Barrysparks. The roundabout is positioned to provide access to the area to facilitate its development. The rough grassland and gorse covered lands span the view from left to right.

To the right (out of frame) behind a security fence is the MSD Biotech facility, a large industrial complex. Some of the houses along Drynam Road are visible beyond that. In the distance to the left is the roof of Swords Pavilion shopping centre beyond the R132.

The landscape in view is in the urban area, designated for urban development and in the process of change. In their current condition (of disuse), the Barrysparks lands provide limited visual amenity. The landscape would benefit from consolidation of the emerging urban character.

Viewpoint sensitivity: Low.

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Proposed View

A new road leads north from the roundabout into the Barrysparks lands. The road has dedicated cycle and pedestrian lanes on both sides, and an avenue of street trees in green verges. The streetscape initiates the urbanisation of the landscape.

The cluster of tall residential buildings is prominent in the middle distance towards the further end of the Barrysparks lands. The building typology and their orthogonal arrangement generate an urban, 'town-centre' character (locally), and the built form and elevations are well articulated. The variation in height between the buildings, and between sub-volumes of the buildings, adds visual interest.

Magnitude of change: High.

Significance of Effects

Construction phase: Slight negative. The visibility (temporary) of the road and buildings under construction would constitute a slight negative effect.

Operation phase: Moderate positive. The development would initiate the transformation of Barrysparks into a new urban quarter - the new road an attractive movement corridor, and the buildings forming the core of a high density neighbourhood appropriately located beside the future Metrolink station and the town centre. No valued element or characteristic of the view would be lost or compromised.

Cumulative/Future View

The VHI development is visible in the foreground to the left, adding another piece to the emerging urban landscape.

The future phases of the Barrysparks lands will cement the landscape's transformation into a contemporary, mixed use, mixed density urban quarter.

13.6.1.7 Viewpoint 9: Barrysparks

Existing View

This view is included to assess the effects on the Barrysparks lands themselves, which can be considered a character area in the Swords urban landscape, and therefore a receptor of landscape and visual effects.

In the foreground is a field of rough grassland and gorse. In the middle distance, a line of trees marks the western and northern boundaries of the Barrysparks lands. The Airside Business

Park buildings are visible through trees to the west (left), while to the right is the curved roof of the Pavilion shopping centre beyond the R132.
Although currently greenfield, the landscape in view is adjacent to Swords town centre and includes the site of the future Metrolink station (to the right, on the near side of the R132). The landscape is designated for urban development, and is its current condition it provides limited visual amenity.
Viewpoint sensitivity: Low.

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Proposed View
*(**Note on the photomontage:** The proposed development involves raising the ground level around this viewpoint. The existing view represents the typical eye level view in this location, currently. For the proposed view, the virtual camera position was raised to reflect the proposed raising of the ground level, to represent the typical eye level view in the proposed scenario. The proposed view is therefore not strictly a verified photomontage, but the view does accurately represent the proposed view from these x and y coordinates.)*

The new road passes to the left of the viewer. Ahead, the road is enclosed to the right and at the junction by two apartment buildings, giving urban-type enclosure to the streetscape.
To the right, two tall apartment buildings overlook a large public open space. Steps in the height of the buildings are complemented by steps in building line, variations in façade treatment, and well articulated facades (with expressed balconies and a high proportion of void to solid) – to break down the massing and soften the buildings' presence. The texture of the brick cladding contributes to this.
The park includes a playground, grass berms and swales (for water attenuation), planting beds and numerous trees of various species. The wide space provides favourable context for the tall buildings, which in turn provide enclosure/definition and passive surveillance of the park.
Magnitude of change: Very High.

Significance of Effects
Construction phase: Not significant negative. At this location the temporary visibility of the development under construction would constitute a not significant negative effect.
Operation phase: Moderate positive. The development would transform the landscape into an attractive high density urban neighbourhood (appropriately located beside the future Metrolink station), with buildings of appreciable design and material quality, a legible, navigable urban grain, and generous provision of public open space. No valued element or characteristic of the view would be lost or compromised.

Cumulative/Future View
The future phases of the Barrysparks lands will cement the area's transformation into a contemporary, mixed use, mixed density urban quarter.

13.6.1.8 Viewpoints 10, 11: Drynam Court and Commons East

Existing Views
Viewpoints 10 and 11 represent the residential neighbourhood to the east of the site, off Drynam Road. These are the two closest publicly accessible locations to the site in this area. View 10 represents a view from the public realm in the neighbourhood, while View 11 is intended to represent a view from the rear windows and gardens of the houses nearest to the site.

The views are partially screened or filtered by walls or hedgerows on the boundary shared with the Barrysparks lands. The undeveloped lands fill the view, with only glimpses of distant buildings in Airside Business Park and the Pavilion shopping centre.
The absence of development on the lands can be considered to contribute to the neighbourhood's visual amenity, although it must be recognised that this is not sustainable in the urban location, close to the future Metrolink station and Swords town centre. There must be some tolerance for change in views of Barrysparks from the neighbouring residential area.
Viewpoint sensitivity: Medium.

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Proposed View
The cluster of tall residential buildings is visible in the middle distance (c. 250m, on the far side of the Barrysparks lands), filtered by the boundary vegetation in the foreground. (The development will be largely screened from view in the summer months.) The building typology and their orthogonal arrangement generate urban character. The built form and elevations are well articulated, and the variation in height across the cluster adds visual interest.
Magnitude of change: Medium.

Significance of Effects
Construction phase: Slight negative. The temporary visibility of development under construction would constitute a slight negative effect.
Operation phase: Moderate positive. The development would initiate the transformation of Barrysparks into a new urban quarter appropriately located beside the future Metrolink station and the town centre. The buildings are of high design quality, establishing a suitable standard for the area. No valued element or characteristic of the view would be compromised.

Future/Cumulative View
Future phases of development in Barrysparks will screen the proposed development from view and complete the urbanisation of the area.

13.6.1.9 Viewpoint 12: Footbridge over R132

Existing View
The footbridge provides an elevated view of the R132 road corridor, with the Barrysparks lands extending to the south (left), filtered by the belt of trees along the road.
The road corridor is motorway-like in width and specification and contributes to a landscape/view devoid of urban character and dominated by road infrastructure and traffic (with no urban grain, no buildings, no sense of place, etc.). This is particularly unfortunate and inappropriate given the location beside Swords town centre.
The landscape in view (south of the road) is designated for urban development and the view could only benefit from this. There is considerable capacity for change.
Viewpoint sensitivity: Low.

Proposed View
The cluster of tall residential buildings is visible in the middle distance, filtered by the roadside trees. (In summer the development will be largely screened from view.) The building typology and their formal, orthogonal arrangement generate urban character. The built form and elevations are well articulated, and the variations in height across the cluster add visual interest.

Magnitude of change: Medium.

Significance of Effects

Construction phase: Not significant negative. The temporary visibility of development under construction would constitute a not significant negative effect.

Operation phase: Moderate positive. The development would initiate the transformation of Barrysparks into a new urban quarter appropriately located beside the future Metrolink station, the R132 and the town centre. The buildings are of high design quality, establishing a suitable standard for the area. No valued element or characteristic of the view would be compromised.

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Future/Cumulative View

Future phases of development in Barrysparks along the R132 (set back behind the Metrolink corridor) will complement the proposed development, establishing a large new mixed use urban quarter, providing a counterbalance to the R132 which currently dominates the landscape.

13.6.1.10 Viewpoint 13: Pavilion Shopping Centre

Existing View

Swords Pavilion shopping centre is minutes' walk from Main Street and forms part of Swords town centre. The shopping centre however has the distinct character of a modern retail mall. This is particularly the case on the south side of the large building, where the surface parking area is located. This view is taken from the main southern entrance to the mall.

The foreground is occupied by the parking area, which features a large number of maturing trees. A line of taller trees can be seen in the middle distance. These are the trees along the R132. Apart from the large building behind the viewer, there is a notable lack of built form in the view, particularly for a town-centre location.

Visual amenity is limited and there is considerable capacity for change in the view.

Viewpoint sensitivity: Low.

Proposed View

The cluster of tall residential buildings is visible through the trees lining the R132 in the middle distance. The buildings are heavily filtered in the winter view, and would be entirely screened in summer.

The built form and elevations are well articulated, and the variations in height across the cluster add visual interest.

Magnitude of change: Medium.

Significance of Effects

Construction phase: Not significant negative. The temporary visibility of development under construction would constitute a not significant negative effect.

Operation phase: Moderate positive. The development introduces a new typology (high density residential) to the landscape and generates urban character appropriate to the location (close to the town centre and the future Swords Central Metrolink station. The expansion of the urban core across the R132 is an important step in the evolution and

consolidation of Swords town centre. No valued element or characteristic of the view would be compromised.

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Future/Cumulative View
Future phases of development in Barrysparks along the R132 (in front of the proposed development) will largely hide the proposed development from view, reinforcing the expansion of the urban core and the changing character of the area (the shift towards a mixed use, high density urban condition).

13.6.1.12 Viewpoint 14: Exit from Pavilion Shopping Centre onto R132

Existing View
This view at the road exit onto the R132 is experienced by a large number of people that visit the Pavilion shopping centre by car. The view is dominated by the wide road, and - as in Views 12 and 13 – there are no buildings in view, no urban grain and no sense of place. This is unfortunate given the central urban location.
The belt of trees on the far side of the road marks the northern edge of the Barrysparks lands. The future Swords Central Metrolink station is in this area, and the lands extending to the south are designated for urban development. There is a high capacity for change in the view.
Viewpoint sensitivity: Low.

Proposed View
The cluster of tall residential buildings is visible through the trees lining the R132. The buildings are filtered in the winter view and would be partially screened in summer.
The built form and elevations are well articulated, and from this proximity the design and material quality are appreciable, the buildings attractive. The variations in height add visual interest, and the taller accent volumes suggest places of importance in the emerging urban landscape (e.g. the Metrolink station and the new park).
Magnitude of change: Medium-High.

Significance of Effects
Construction phase: Not significant negative. The temporary visibility of development under construction would constitute a not significant negative effect.
Operation phase: Moderate positive. The development would initiate the transformation of Barrysparks into a new urban quarter appropriately located beside the future Metrolink station, the R132 and the town centre. The buildings are of high design quality, establishing a suitable standard for the area. No valued element or characteristic of the view would be compromised.

Future/Cumulative View
Future phases of development in Barrysparks along the R132 (set back behind the Metrolinkr) will complement the proposed development, establishing a large new mixed use urban quarter, providing a counterbalance to the R132 which currently dominates the landscape.

13.6.1.13 Viewpoint 15: The R132 passing to the north of the site

Existing View

The purpose of the R132 was to remove traffic from Swords town centre. Due to its scale (width) and traffic volume, most of the neighbouring lands are protected from the visual and noise impacts of the road by belts of roadside vegetation. This encloses the road and directs views along the road as opposed to laterally.

While having succeeded in its purpose, the road can be considered 'anti-urban' in character. It functions as a barrier to north-south movement and views across the landscape. This must be overcome in expansion and evolution of Swords. Barrysparks needs to be connected physically and visually to the town centre.

The belt of trees alongside the road largely screens the Barrysparks lands from view. These lands are designated for urban development and there is a high capacity for change in the view.

Viewpoint sensitivity: Low.

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Proposed View

Two buildings of contemporary urban typology, scale and architecture are visible through the trees. Together the buildings frame a street leading into the new neighbourhood. (This simple urban move, the creation of a clear gateway to enter and a street to follow, is important. It invites entry to the new neighbourhood/quarter, and initiates the creation of a legible urban grain.)

Removing the foreground trees (as will be required for construction of the future Metrolink) reveals a new road entering the neighbourhood from the R132.

The built form and elevations are well articulated, and from this proximity the design and material quality are appreciable, the buildings attractive. The variations in height add visual interest, and the accent volumes suggest places of importance in the emerging urban landscape (e.g. the Metrolink station).

Magnitude of change: Medium-High.

Significance of Effects

Construction phase: Not significant negative. The temporary visibility of development under construction would constitute a not significant negative effect.

Operation phase: Moderate positive. The development would initiate the transformation of Barrysparks into a new urban quarter appropriately located beside the future Metrolink station, the R132 and close to the town centre. The buildings are of high design quality, establishing a suitable standard for the area. No valued element or characteristic of the view would be compromised.

Future/Cumulative View

Future phases of development in Barrysparks along the R132 (set back behind the Metrolinkr) will complement the proposed development, establishing a large new mixed use urban quarter, providing a counterbalance to the R132 which currently dominates the landscape.

13.6.1.14 Viewpoint 16: Carlton Court north of the R132

Existing View

Carlton Court is the nearest residential neighbourhood (and sensitive receptor) north of the site. The nearest houses in the estate face the R132, with the Airside Business Park directly across the wide road. The subject site is a little to the east, diagonally across the road from Carlton Court.

In the view from the estate, the nearest houses to the site houses are to the left and a belt of trees and a wall hides the wide, busy R132 corridor from view. This vegetation combines with a similar belt of trees on the far side of the road to screen the site from view.
As a residential receptor Carlton Court is sensitive – although in the urban location, adjacent to a busy road, a business park and a shopping mall, there is some tolerance for change.
Viewpoint sensitivity: Medium.

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Proposed View
The development is barely discernible through the tree belts on both side of the R132. In spring and summer it would be completely screened.
Magnitude of change: Negligible.

Significance of Effects
Construction phase: Not significant negative.
Operation phase: Not significant neutral. The development would cause no material change in landscape character or visual amenity.

Future/Cumulative View
n/a.

Table 13.6: Summary of Visual Effects Assessment

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction(temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
1	R125 to south of site	Low	Medium	Medium	Not significant negative	Slight positive
2	Airside Business Park main access road	Low	Low-Medium	Low-Medium	Not significant negative	Slight positive
3	Airside Business Park adjacent to St Werbergh's Well	Low	Medium	Medium	Not significant negative	Slight positive
4	Airside Business Park	Low	Medium	Medium	Slight negative	Moderate neutral
5	Airside Business Park	Low	Medium	Medium	Slight negative	Moderate neutral
6	Airside Business Park	Low	Medium	Medium	Slight negative	Moderate neutral
7	Holywell residential estate	Medium	Low	Low	Not significant negative	Not significant neutral
8	Holywell Road	Low	High	High	Slight negative	Moderate positive
9	Barrysparks	Low	Very High	Very High	Not significant negative	Moderate positive
10	Drynam Court off Drynam Road	Medium	Low-Medium	Low-Medium	Slight negative	Moderate positive
11	Commons East off Drynam Road	Medium	Medium	Medium	Slight negative	Moderate positive

12	Footbridge over R132	Low	Medium	Medium	Not significant negative	Moderate positive
13	Pavilions Shopping Centre	Low	Medium	Medium	Not significant negative	Slight positive
14	Exit from Pavilions Shopping Centre onto R132	Low	Medium-High	Medium-High	Not significant negative	Moderate positive
15	The R132 passing to the north of the site	Low	Medium-High	Medium-High	Not significant negative	Moderate positive
16	Carlton Court north of the R132	Medium	Negligible	Negligible	Not significant neutral	Not significant neutral

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13.6.2 Landscape Effects

The assessment of potential landscape effects involves (a) classifying the sensitivity of the landscape, (b) classifying the potential magnitude of landscape change which would result from the proposed development, and (c) combining these factors to arrive at an assessment of significance of the effects - and the quality of the effects (positive, neutral or negative).

13.6.2.1 Landscape Sensitivity

Landscape sensitivity is a function of the landscape's character, which in urban areas may be determined by its land use pattern, urban grain, plot and building typologies, architecture, cultural and natural heritage elements, and the quality of the public realm. These factors determine the value that is placed on the landscape. The policy pertaining to the area (e.g. the land use zoning), and any related trend of change, are also relevant. When classifying landscape sensitivity, the nature and scale of the proposed development are also considered. This is in recognition of the fact that a particular landscape can have varying sensitivity to different development types.

The landscape sensitivity of the receiving environment can be classified 'low' (definition: *Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and the principal management objective may be to facilitate change through development, repair, restoration or enhancement*).

The low sensitivity classification is based on the following factors:

- The site is part of a large parcel of unused/infill land, previously in agricultural use and now covered in rough grassland and gorse. There is limited tree cover on the site. The only trees are along the Gaybrook Stream (which runs along the site's west boundary) and inside the north boundary where the site fronts the R132.
- The Gaybrook Stream and associated riverine vegetation, and St Werbergh's holy well (a short distance to the south of the site), are the only landscape features of value/sensitivity on or close to the site. Both features currently exist in a sub-optimal environment, at the edge of a business park, beside an area of disturbed, unused land.

- The site is centrally located in the Swords urban area, close to (across the R132 from) the town centre, adjacent to the site of the future Swords Central Metrolink station.
- The site is zoned ME (Metro Economic Corridor), with the objective to: *"Facilitate opportunities for high density mixed use employment generating activity and commercial development, and support the provision of an appropriate quantum of residential development within the Metro Economic Corridor"*.

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At the macro level, the site is located in a distinct landscape character area that exists between the R132 Swords Bypass and the M1. This area is characterised by mostly modern development, a mix of residential, business/commercial and industrial uses, a generally course urban grain, and diverse plot and building typologies, scale (including large buildings, in footprint and height) and architecture. Such diverse, modern urban landscapes have an inherent capacity to accommodate change as there is no norm with which new development can or should conform and few sensitivities (such as historic buildings, etc.).

None of the adjacent/surrounding land uses and areas is sensitive to landscape change:

- To the west is Airside Business Park.
- To the south, beyond a large area of unused land (future phases of Barrysparks development), is the R125 road, Airside Retail Park and a Tesco supermarket. The nearest residential receptor to the south, the Holywell housing estate, is well removed from the site.
- To the north is the R132 and beyond that Swords Pavilions Shopping Centre. The Carlton Court housing estate (beside Pavilions) is the only potentially affected sensitive receptor north of the site, but it is buffered from the site by the R132 and the roadside tree belts.
- To the east is an area of future development land (part of Barrysparks) lying between the site and the residential area off Drynam Road. These houses are a sensitive receptor, but they too are well removed from the site and buffered from it by future phases of development on the Barrysparks lands.

In summary, there are few valued landscape elements, features or characteristics on or in proximity to the site. Any sensitive receptors (the houses off Drynam Road and at Carlton Court) are well removed and buffered from the site. Much of the site environs – including the Barrysparks lands themselves, Airside Business and Retail Parks, Swords Pavilions and the MSD Biotech site – could benefit from consolidation of the urban landscape.

In particular, the landscape could benefit from the establishment of a legible, navigable urban grain, the introduction of built form to define streets and spaces, the provision of public open space with passive surveillance from surrounding buildings, the introduction of uses (e.g. residential) to complement the existing office, employment and retail uses and activate the area.

13.6.2.2 Magnitude of Landscape Change

The magnitude of landscape change which would result from the proposed development can be classified 'high' (definition: *Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the landscape and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape*).

The high magnitude of change classification is based on the following:

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- At c. 6 ha, the subject site is large for an urban infill site and constitutes a substantial portion of the Barrysparks lands.
- Comprised of (a) four buildings ranging from one to nine storeys and containing 530 no. apartments and a creche, (b) new streets defined/enclosed by the buildings, (c) road connections to the R132 and across the Barrysparks lands to Holywell Road, and (d) extensive new public open space, the proposed development is of substantial spatial extent and height.
- The development would introduce a new building typology (high density residential) and urban elements and characteristics (urban grain, streets and blocks, buildings/ architecture, public realm, etc.) to the heretofore undeveloped Barrysparks area. This would have the effect of expanding Swords town centre southwards across the R132, into the Barrysparks area. It would cause a shift in character in that area - and the wider town centre - towards a 'contemporary urban' condition. While this shift would be relatively remote (and not visible) from the historic town centre (Main Street), it would constitute a significant change in the Barrysparks and Airside area.
- Due to the site's location within view from certain heavily trafficked areas, namely Swords Pavilions, the R132, the R125 and the future Swords Central Metrolink station, the landscape change would be visible to a large number of people. (It should be noted that none of these people would be sensitive to landscape/visual change.)

13.5.3.3 Significance and Quality of Landscape Effects

Measuring the magnitude of change ('high') against the sensitivity of the receiving environment ('low') - using the guidance in Table 13.3 and Figure 13.1 above) - **the significance of the proposed development's landscape effects can be classified 'moderate'** (EPA definition: *An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends*).

The key question in a situation such as Barrysparks, when the area has been deemed suitable for development, is zoned for development, and where a masterplan has been prepared by the planning authority to guide the transformation of the landscape, is whether the proposed development is aligned with the principles of the masterplan, and wand ould contribute to the realisation of the vision. This is considered below:

Transport and Movement

The proposed development includes:

Road access to the site from the R132, entering the site in the north west corner.

A road leading to the site from the Holywell Road, running inside the east boundary of the Barrysparks lands before turning west to enter the main site development area in its south east corner.

The alignment of the proposed roads and their entry points to the site are in keeping with the Barrysparks and Crowscastle Masterplan 2019. The development would establish an urban grain and routes of movement across the site (for pedestrians, cyclists and vehicles) very closely aligned with those envisioned in the Masterplan.

Open Space and Green Infrastructure

The proposal includes a wide corridor of open space inside the east boundary of the main development area of the site, to the east of Blocks C and D. The location and proportions of this space are very closely aligned with the Masterplan's envisaged 'central green spine'.

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The proposed open space includes pedestrian and cycle routes (allowing for future connections to the Metrolink station and over the R132 to the Pavilions), water detention basins (SUDS features), a playground, exercise equipment and passive recreation amenities (seating). The space includes numerous trees as well as wildflower meadow, amenity lawn areas and ornamental planting. The abundant planting and the scale of the space are such that they would create a parkland character. This is in keeping with the Masterplan, which states: *"It is intended that the Masterplan lands will be set in parkland, with a central green spine of open space that incorporates walking and cycling facilities"*.

The proposal includes a belt of trees and riparian planting along the Gaybrook Stream on the west boundary, as part of a 10m wide riparian corridor (free of built development other than pedestrian paths). This forms a 2nd north-south 'green corridor' to complement the central green spine.

Land Use, Built Form, Typologies and Density

The proposed development includes 530 no. apartments and a creche in four buildings:

Two linear buildings (Blocks A, B) parallel to the site's west boundary, west of the north-south access road, overlooking the Gaybrook Stream and Airside Business Park to the west.

Two blocks of apartment buildings (Block C, D) east of the north-south access road. These are perimeter blocks enclosing courtyards, with breaks in the built form to provide access to the central spaces.

The buildings are located in the area designated in the Masterplan for apartment development (the area closest to the future Metrolink station and the R132), and their positioning and typologies (e.g. linear blocks, perimeter/courtyard blocks) are in keeping with the forms expressed in the Masterplan maps/diagrams.

Height and Interface Areas

The proposed Blocks C and D are both 1–9 no. storeys, with each block comprised of volumes are varying height, to divide the massing into smaller visual units and create visual interest. The height of Blocks C and D is in keeping with the Masterplan, which recognises the favourable context for building height provided by the central green spine to the east of these blocks (the Masterplan states: *"Overall heights on the land will range from 2- to 9-storeys… It is considered that along the central green corridor through the lands and both the R132 and R125, that greater building heights would be appropriate"*).

Proposed Block A is 1–7 no. storeys and proposed Block B is 6–9 no. storeys. These buildings are taller than what is indicated in the Masterplan. The buildings shown in the position of Blocks A and B are 3-5 no. Storeys in the Masterplan (Figure 6.2: Height Objectives). This is the main difference between the proposal and the Masterplan (from the LVIA perspective).

While taller than the Masterplan's indicated

heights, the positioning of greater height inside the west boundary is in keeping with the Masterplan's principle of considering the context and respectfully transitioning down where required, e.g. to neighbouring residential areas (such as Drynam Road). The area to the west of Blocks A and B is a part of Airside Business Park. The buildings in this area are two commercial/office storeys tall. (Elsewhere in the business park there are taller buildings, up to six storeys – see Figures 13.3 and 13.8 above.) The business campus cannot be considered a sensitive landscape, and it would be unsustainable for development on the Barrysparks lands, beside the Metrolink, to be constrained by the scale of the buildings on the neighbouring 20th century business park. Furthermore, it is not unusual, nor necessarily undesirable, for there to be pronounced variations in scale in contemporary urban environments. This can contribute to character, place-making and legibility. The main considerations should be (a) whether the height is warranted/sustainable in the location, and (b) whether it causes any harm (landscape/visual or other) to any sensitive receptors. In this case (a) the additional height in Blocks A and B seeks to make optimal use of the site's position with respect to the Metrolink and Swords town centre, and (b) it would cause no harm to any sensitive receptor; the juxtaposition in scale between Blocks A and B and the neighbouring business park buildings would only be notable only from the business park itself.

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One of the Key Objectives of the Masterplan in relation to height is to provide a variety of heights to create visual interest and facilitate access to light. The photomontages illustrate that the proposed development meets this objective.

In conclusion, the landscape effects of the proposed development are predicted to be of moderate significance and positive. The development would create a new high density residential neighbourhood appropriately located close to the Swords Central Metrolink station and Swords town centre. The neighbourhood would be characterised by (a) a legible, navigable urban grain; (b) wide streets prioritising pedestrian and cycle movement and densely planted to form green avenues; (c) generous provision of public open space in the form the central green spine, a green/riparian corridor along the Gaybrook Stream and another green corridor between Blocks C and D (collectively giving the area a parkland character); and (d) buildings of high design and material quality and visual interest (generated by variations in height and facade treatments).

The assessment of the effects on 16 no. representative viewpoints found that the development would have only positive or neutral visual effects. No negative effects were identified - and there would be no negative effects resulting from Block A and B being taller than envisioned in the Masterplan.

The development would make a significant contribution to the realisation of the vision outlined in the Barrysparks and Crowscastle Masterplan 2019, and would cause a positive change in the character of the landscape south and east of the R132.

13.7 MITIGATION & MONITORING MEASURES

13.7.1 Construction Stage

The most effective mitigation for the potential landscape and visual effects of construction is site hoarding. This can hide the most unsightly elements of a construction site from ground

level views from the surroundings. However, hoarding is only effective for ground level activity. When buildings under construction rise above ground level they are exposed and unsightly. Therefore, negative impacts are unavoidable in the construction phase of multi-storey development.

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Good practice in site management can reduce unnecessary visual impacts. These may include (a) considered positioning and layout of the construction site with regard to the most sensitive visual receptors, (b) dust control (e.g. water sprays to avoid dust plumes; spraying of vehicles before site departure to avoid dirtying roads), (c) waste control (e.g. netting/covering of storage bins/areas; regular site inspection for litter), and (d) considered positioning of security lighting.

A Construction Environmental Management Plan (CEMP) has been prepared and submitted with the LRD application. The CEMP includes measures – or a framework for the future agreement of measures - such as those identified above.

The only recommended construction stage mitigation measures are (1) the positioning of the construction compound as far as practicable from the Drynam Road neighbourhood to the east of the site, and (2) erection and maintenance of site hoarding around the construction site for the duration of construction.

No monitoring is required for construction stage landscape or visual effects.

13.7.2 Operation Stage

The assessment has found that the operation stage visual effects of the proposed development would be positive or neutral for all 16 no. representative viewpoints (refer to Table 13.6 above), and the landscape effects would also be positive. Therefore, no operation stage mitigation measures are recommended.

No monitoring is required for operation stage landscape or visual effects.

	Construction Mitigation
L-C1	Siting of construction compound as far as practicable from the Drynam Road neighbourhood to the east of the site.
L-C2	Erection and maintenance of site hoarding around the construction site for the duration of construction
	Operational Mitigation
L-O1	-
	Monitoring
L-M1	-

13.8 RESIDUAL IMPACTS

Since no construction stage or operation stage mitigation measures have been recommended, the residual impacts are the same as those described in 13.6.1 and 13.6.2 above.

13.9 INTERACTIONS & CULMULATIVE IMPACTS

13.9.1 Cumulative Impacts

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Proposed Metrolink Project

There is potential for cumulative landscape and visual effects to arise from the proposed development in combination with the proposed Metrolink project, specifically the Swords Central station, which is located between the site and the R132 to the north. The proposed station shelter structure (which is of contemporary design – see Figure 13.13 above), the railway corridor itself and the associated hard and soft landscaping would have a strong urbanising effect on the landscape locally, affecting the R132 and the adjacent Barrysparks lands in particular.

The landscape and visual effects of the two developments would be complementary, combining to reinforce expansion of Swords town centre across the R132, overcoming the severing/barrier effect that the road currently has on the landscape.

Applicant's Proposed Masterplan for the Wider Barrysparks Landholding

The proposed development has been designed in parallel with the preparation of a masterplan for the Applicant's wider Barrysparks landholding (by the design team for the proposed development). The proposed development is phase 1 of 5 phases (as currently planned), and would provide important enabling infrastructure (e.g. the road connections to the R132 and Holywell Road) for the subsequent phases.

The proposed development and the future phases would combine to cause significant positive landscape effects, expanding the new mixed use quarter across the Barrysparks lands as far as the Holywell Road and the R125. This would redefine the landscape character locally with the relatively low quality, car dominated environments of the Airside Business and Retail Parks, MSD Biotech, etc. counterbalanced by the new high quality, green, sustainable urban environment of Barrysparks.

For a number of the viewpoints assessed in this chapter, the future phases of development across Barrysparks would screen the proposed development from view. Importantly, this is the case for the views from the Drynam Road residential area to the east of the site (Viewpoints 10, 11). Any visual impact that would result from the proposed development on its own will be extinguished by future phases of development on the lands between the site and the Drynam Road area.

Permitted VHI Health Centre

The permitted VHI Health Centre is on the Barrtysparks lands to the south east of the site, close to Holywell Road. Although somewhat removed from the site, the two developments would combine to have cumulative landscape and visual effects, together advancing the urban development of the Barrysparks lands.

13.9.2 Interactions

Landscape/Visual and Population and Human Health (Noise and Dust Emissions)

During the construction stage, there is potential for negative landscape and visual effects of construction to combine with noise and dust emissions from the construction site to negatively affect the amenities nearby receptors. The receptor most likely to experience such impacts is the Airside Business Park to the west of the site. This is not a sensitive receptor. There is less potential; for such impacts affecting the more sensitive Drynam Road residential neighbourhood c. 150m to the east and Carlton Court estate c. 100m to the north west across the R132.

Landscape/Visual and Population and Human Health

Following the construction phase, the site would be transformed into a high density, residential neighbourhood with a large new resident population. This population would benefit directly from the change in the landscape - from the provision of homes and a network of public open spaces and pedestrian and cycle routes, and access to the future Swords Central Metrolink station and Swords town centre.

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Landscape/Visual and Climate Change

The change in landscape character by the introduction of a high density residential neighbourhood served by public transport services (bus and Metrolink) has implications for climate change. Higher density development, appropriately located, is more sustainable than low density development. The new resident population would have access - by foot or bicycle - to shops, services, schools, employment opportunities, public transport services and public open space, reducing the need for use of private cars.

Landscape/Visual and Biodiversity

There will be a change in use of the site from disused agricultural to residential. The greenfield land would be occupied by buildings and infrastructure, thereby reducing permeable surface for water infiltration and the area of vegetation cover. However, the proposal includes compensatory SUDS measures for water attenuation, and a large number of trees along with other planting (meadowgrass, amenity grass, ornamental planting, etc.). The proposed trees, shrubs and groundcovers have been selected by the project landscape architect, in consultation with the project ecologist, for their biodiversity value. Additionally, the proposed buildings feature extensive green roof systems.

13.10 REFERENCES

Fingal Development Plan 2023-2029, Fingal County Council.

Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA), published by the Landscape Institute.

Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, 2022, published by the EPA.

Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, 2018, published by the Department of Housing, Planning and Local Government.

Townscape Character Assessment, Technical Information Note 05/2017, Landscape Institute.

Swords Masterplans Part B: Barrysparks & Croscastle, May 2019, Fingal County Council.

Urban Design Manual – A Best Practice Guide, Department of Environment, Heritage and Local Government, 2009.

Urban Development and Building Height Guidelines for Planning Authorities, December 2018, Department of Housing, Planning and Local Government.

14. SUMMARY OF PRINCIPAL INTERACTIONS AND CUMULATIVE IMPACTS

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14.1 INTERACTIONS WITHIN THE PROJECT

The matrix incorporated in Table 14.1 inter-relates the various Chapters of the EIAR to the various impact headings referred to in Schedule 6 Item 2(d) of the Planning and Development Regulations, 2001, As Amended. This matrix does not represent a form of relative assessment of impacts, but merely identifies and amalgamates areas of principal interaction.

Table 14.2 provides further details on the nature of these interactions in the construction and operational phases.

14.2 INTERACTIONS WITH OTHER PROJECTS

Cumulative impacts have been assessed by taking into account of the baseline environment and the predicated impacts of the construction and operation of the proposed development in combination with those of any other existing and/ or permitted projects in the area.

Each of the specialist contributors have considered the potential for cumulative impacts to arise, with particular reference to the projects listed in Chapter 2.

For topic-specific assessments of the potential for cumulative impacts with other projects, refer to the foregoing chapters. Assuming the full and proper implementation of the mitigation measures set out in the EIAR, no significant negative cumulative impacts are likely to arise during the construction or operational phases of this project.

Table 14.1 Summary of Interactions

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Source \ Receptor	Pop /Human Health	Biodiversity	Land and Soils	Water	Air and Climate	Noise and Vibration	MA: Built Services	MA: Transportation	MA: Res and Waste Mgt	Cultural Heritage	Landscape
Population and Human Health					X	X	X	X	X		X
Biodiversity			X	X	X	X					X
Land and Soils		X		X					X		
Water		X	X				X				
Air and Climate	X	X						X			
Noise and Vibration	X	X						X			
Material Assets: Built Services	X			X							
Material Assets: Transportation	X				X	X			X		
Material Assets: Resource and Waste Management			X					X			
Cultural Heritage			X								X
Landscape	X	X								X	

Table 14.2: Description of Types of Interactions

	Construction Stage Interactions	Operational Stage Interactions
Population and Human Health	All topics interact with population and human health to a certain degree but the more significant areas of interaction considered in this EIAR are:- **Air and Climate –** Construction activities give rise to air borne dust which impact on the residential amenity of local population and, in exceptional circumstances, can affect human health **Noise and Vibration** - Construction activities give rise to noise and vibration which impact on the residential amenity of local population and, in exceptional circumstances, can affect human health **Material Assets: Transportation** – Construction activities can given rise to disruption to local population due to traffic congestion and traffic hazard. **Landscape** – The project will impact on the receiving landscape in terms of hoarding cranes and other construction plant and machinery	All topics interact with population and human health to a certain degree but the more significant areas of interaction considered in this EIAR are:- **Material Assets: Built Services** – The impact on population and human health is closely related to the ongoing management, maintenance and improvement of public infrastructure assets dealing with water Supply, foul drainage and surface water **Material Assets: Transportation** – During the operational phase there is potential for negative impacts as a result of additional traffic on the road network. These impacts need to be considered in the context of positive benefits that accrue from improvements in sustainable public transport modes, walking and cycling. **Landscape** – The project will transform the local landscape which will impact on the perception of the site by the existing local population and also by future residents.
Biodiversity / Species and Habitats	**Land and Soils** – Disturbance of land/ soils has impacts on the site's flora and fauna. **Air and Climate –** A significant diminution of air quality arising from construction activities can impact on sensitive flora and fauna. **Noise and Vibration** – Construction noise can impact on existing habitats on the site and surroundings. **Water** – uncontrolled runoff has the potential to enter watercourses.	**Landscape** - The impacts associated with the permanent loss of vegetation / habitat, are mitigated through the implementation of a landscape / open space strategy for the proposed development
Land and Soils	**Water** - The construction phase of the proposed development has the potential to result in increased sediment runoff which has the potential to interact negatively on surface water quality. **Biodiversity** - There is potential for silt laden material or pollution to enter the watercourse and impact on local biodiversity. Dust emissions from exposed earthworks have the potential to settle on plants causing impacts to local ecology. **Material Assets: Resource & Waste Management** - During the construction phase, excavated soil will be generated from the excavations required to facilitate site levelling, construction of new foundations, installations of site service, etc	**Water** - Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids having an effect on soil fertility and contamination.
Water	**Land and Soils** – Soil contamination arising from construction activities can impact on ground water quality.	**Material Assets: Built Services** – The interaction between Water and Built Services relates to the ongoing management,

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	Biodiversity – Reduced water quality also potentially impacts local ecology.	maintenance and improvement of public infrastructure assets dealing with water Supply, foul drainage and surface water **Water** - There is potential for impacts to biodiversity associated with uncontrolled discharges to surface waters during operational phase.
Air and Climate	**Population and Human Health** – Construction related air borne dust impacts on the residential amenity of local population and, in exceptional circumstances, can affect human health **Biodiversity –** A significant diminution of air quality arising from construction activities can impact on sensitive flora and fauna. **Land & Soils** - Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between Air Quality and Land & Soils in the form of dust emissions. **Material Assets: Transportation** - Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase.	**Material Assets: Transportation** - Traffic and transportation movements are used as an input for the air quality and climate assessment of the operational phase.
Noise and Vibration	**Population and Human Health** – Construction related noise impacts on the residential amenity of local population and, in exceptional circumstances, can affect human health **Biodiversity –** A diminution of the noise environment quality arising from construction activities can impact on sensitive flora and fauna.	**Material Assets: Transportation** - Traffic and transportation movements are used as an input for the noise and vibration assessment of the operational phase.
Material Assets: Built Services	**Population and Human Health** - Material Assets: Built Services addresses the ongoing management, maintenance and improvement of public infrastructure assets dealing with water Supply, foul drainage and surface water which are essential to public health	**Water** – The interaction between MA:Built Services and Water also relates to the ongoing management, maintenance and improvement of public infrastructure assets dealing with water Supply, foul drainage and surface water
Material Assets: Transportation	**Population and Human Health** – The potential for negative impacts as a result of additional construction traffic is a feature of all construction projects. **Air and Climate** - Traffic and transportation cause diminution of air quality during the construction stage. **Noise and Vibration** - Traffic and transportation movements can cause noise and vibration during construction stage.	**Population and Human Health** – The potential for negative impacts as a result of additional traffic on the road network is a consequence of all urban development. These impacts may be offset by positive benefits from improvements in sustainable public transport modes, walking and cycling. **Air and Climate** - Traffic and transportation movements are used as an input for the air quality and climate assessment of the operational stage. **Noise and Vibration** - Traffic and transportation movements are used as an input for the noise and vibration assessment of the operational phase.

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Material Assets: Resource and Waste Management	**Land and Soils** – Waste generated by the proposed development includes soil and construction / demolition waste. **Material Assets: Transportation** - Local traffic and transportation will be impacted by the additional vehicle movements generated by removal of waste from the Site during the construction and operational phases of the proposed development. **Population & Human Health** - The potential impacts on human beings are in relation to incorrect management of waste during construction and / or operation.	**Population and Human Health** – The new permanent population resulting from the residential elements and the visitor / employee occupancy will generate significant volumes of waste which need to be assessed in the operational stage of the project. **Material Assets: Transportation** - Traffic and transportation movements arising from management of waste are used as an input for the assessment of the operational phase.
Cultural Heritage	**Land and Soils** – Subsurface archaeology is potentially impact by any change to the ground on which the development is proposed.	**Landscape** - The impact on cultural heritage interacts with the impacts on the urban landscape.
Landscape	**Population and Human Health** – The construction of the project will temporarily impact on people in terms of the reduced visual amenity associated with a large construction project.	**Population and Human Health** – The project will benefit the existing local population and future residents by transforming the site into a new urban quarter. **Biodiversity**, Species and Habitats can be improved through the landscaping of the development **Cultural Heritage** – The insertion of new buildings into the urban landscape interacts with the conservation of cultural heritage (protected structures and designated monuments etc.)

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15. SUMMARY OF MITIGATION/ MONITORING MEASURES

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An objective of EIA is to identify likely significant adverse impacts at the pre-consent stage and, where necessary, to propose measures to mitigate or ameliorate such impacts.

The 2018 EIA Guidelines published by the Department of Housing, Planning and Local Government state:

> *'While not a mandatory requirement an EIAR can very usefully include a summary table of features and/or measures envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects of the proposed development, and a timescale for the implementation of proposed mitigation measures.'*

Therefore, mitigation and monitoring measures to be adopted during the construction and operational phases of the project are detailed within each chapter and collated in Tables 15.1 below under each chapter heading.

EIA related conditions may be imposed as part of conditions of planning permission and this Chapter brings together the key mitigation measures arising from the EIA process for this project to facilitate the competent/consent authority in this respect.

It is intended that mitigation and monitoring measures proposed in each of the Chapters by the individual specialists will be incorporated into the contractors Construction and Environmental Management Plan (CEMP) prior to works commencing on site.

Table 15.1: Summary of Mitigation and Monitoring Measures – All Chapters

POPULATION AND HUMAN HEALTH	
	Construction Mitigation Measures
PHH-C1	**Construction and Environmental Management Plan (CEMP)-** In order to mitigate potential temporary community disturbance during construction, a Construction and Environmental Management Plan (OCEMP) has been prepared and is included with the application. If the project is approved and implemented, the appointed contractor will incorporate the environmental commitments contained in this EIAR and prepare a Construction and Environment Management Plan (CEMP) for the agreement of the Planning Authority prior to development commencing on site.
PHH-C2	**Liaison Officer** - The contractor(s) will appoint a liaison officer to ensure that any issues from the local community are dealt with promptly and efficiently during construction. These details will be included in the Contractor(s) CEMP prepared prior to construction commencing.
PHH-C3	**Working Hours -** Typically, construction working hours will be limited to 7am – 7pm Monday to Friday and 8am to 2pm on Saturday. It is anticipated that there will be times, due to exceptional circumstances, that construction work will be necessary outside these standard hours i.e. large concrete pours. Deviations from these standard times will be agreed in advance with the Planning Authority.
	Operational Mitigation Measures
	N/A
	Monitoring
	N/A

BIODIVERSITY	
	Construction Phase
BIO-C1	Prior to commencement of works, the Tree Protection Plan shall be implemented.
BIO-C2	The construction phase surface water management strategy contained in the Outline Construction Environmental Management Plans shall be implemented.
BIO-C3	Prior to commencement, All site contractors will be briefed regarding the biodiversity value of the retained habitats within and adjoining the site (these include the boundary treeline, retained scrub and grassland areas and the watercourse) to ensure that there are no accidental or unintentional actions conducted during the project construction that could lead to a reduction in water quality/damage to same.
BIO-C4	No clearance of vegetation suitable for nesting birds within the site (gorse scrub, bramble tangles, etc.) will take place during this period. Should such clearance be required than the area proposed for clearance should be inspected by an ecologist to ascertain if any nesting birds are present.
BIO-C5	Site and compound lighting is to be strictly controlled to illuminate only the required works areas to ensure that there is no light spill from the proposed development onto the watercourse, the retained areas of vegetation and boundary features.
BIO-C6	20 integrated bat boxes are to be included in the new buildings to provide roosting potential for bats. These will be sited by the contractor under the supervision of a suitably qualified ecologist.
BIO-C6	All machinery and plant entering the site should be cleaned to ensure that no fragments of Japanese knotweed or seeds of other invasive species are brought on to the site in line with S.I. No. 374 of 2024 European Union (Invasive Alien Species) Regulations 2024 and the Birds and Natural Habitats Regulations (2011).

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BIO-C7	All planting is to be native and of local origin.
BIO-C8	An Invasive Species Management Plan shall be prepared and implemented.
BIO-C9	The sediment control measures in the OCEMP shall be implemented in full to protect the Gaybrook Stream watercourse.
BIO-C10	An ecological clerk of works will be appointed to oversee the construction of the proposed development and the implementation of the mitigation measures and recommendations set out in this report and to sign off on same.
	Operational Phase
BIO-O1	Invasive Species Control and Management shall continue in the operational phase through the implementation of a landscape management plan for the completed development.
	Monitoring
BIO-M1	Ecological mitigation measures will be monitored for a period of time during and following construction (years 1, 2, 3 and 5)

LAND & SOILS	
	Construction Phase
LS-C1	The CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works, where relevant. All personnel working on the Site will be trained in the implementation of the procedures.
LS-C2	During the project planning phase, a comprehensive emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. Furthermore, it's imperative to disseminate this emergency protocol to all site personnel during the site induction process.
LS-C3	The appointed contractor shall prepare and implement a soil excavation, stockpiling, removal and infill method statement.
LS-C4	No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within any riparian or buffer zone. Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer subject to agreement with Uisce Éireann (Irish Water).
LS-C5	The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or water quality impacts: • Designation of a bunded refuelling areas on the site if refuelling cannot be undertaken off site; • Provision of spill kit facilities across the site; • Where mobile fuel bowsers are used, the following measures will be taken: • Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use; • The pump or valve will be fitted with a lock and will be secured when not in use; • All bowsers to carry a spill kit and relevant operatives must have spill response training; • Portable generators or similar fuel containing equipment will be placed on suitable drip trays.
	Operational Phase
	N/A

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	Monitoring
	N/A

WATER & HYDROLOGY	
	Construction Phase
WH-C1	The CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the site will be trained in the implementation of the procedures and equipment.
WH-C2	To manage the potential impact associated with sediment and sediment runoff the following mitigation measures will be implemented during the construction phase. • During earthworks and excavation works care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the excavation site which limits the potential for any offsite impacts. • Silt reduction measures on site will include a combination of silt traps and hydrobrakes measures. • Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only. • Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination. • Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. • Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations. • Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site.
WH-C3	Wash-outs will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker. The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. Relevant personnel working on the site will be suitably trained in the implementation of the procedures.
WH-C4	To prevent any spillages to ground of fuels and other construction chemicals and prevent any resulting to surface water (and groundwater) systems: • Designation of bunded refuelling areas on the site; • Provision of spill kit facilities across the site; • Where mobile fuel bowsers are used, the following measures will be taken: • Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use; • The pump or valve will be fitted with a lock and will be secured when not in use; • All bowsers to carry a spill kit and relevant operatives must have spill response training; • Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

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WH-C5	All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.
WH-C6	Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated bunded refuelling areas, which will be away from surface water gulleys or drains.
WH-C7	Foul water from the offices and welfare facilities on the site will be collected in portable sanitary facilities and disposed of appropriately by licenced contractor.
WH-C8	Surface water discharge from the site will be managed and controlled for the duration of the construction works until the surface water drainage system of the Proposed Development is complete.
	Operational Phase
	None
	Monitoring
	None

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AIR QUALITY	
	Construction Mitigation
AQ-C1	The following dust mitigation measures shall be incorporated into the contractor's CEMP: <u>Communications</u> • Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. Community engagement includes explaining the nature and duration of the work to local residents and businesses. • The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details. <u>Site Management</u> • During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions. Dry and windy conditions are favourable to dust suspension therefore mitigations must be implemented if undertaking dust generating activities during these weather conditions. • A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out. <u>Preparing and Maintaining the Site</u> • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. • Avoid site runoff of water or mud. • Keep site fencing, barriers and scaffolding clean using wet methods. • Remove materials that have potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.

- Cover, seed or fence stockpiles to prevent wind whipping.
- Fully enclose sites or specific operations where there is a high potential for dust production and the site is actives for an extensive period.

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Operating Vehicles / Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Avoid bonfires and burning of waste materials.

Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

Measures Specific to Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials, ensure bags are sealed after use and stored appropriately to prevent dust.
- Avoid scabbling (roughening of concrete surfaces) if possible.

	• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. <u>Measures Specific to Trackout</u> • A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles. • Avoid dry sweeping of large areas. • Ensure vehicles entering and leaving sites are covered to prevent the escape of materials during transport. • Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. • Record all inspections of haul routes and any subsequent action in a site logbook. • Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permit. • Access gates to be located at least 10 m from receptors where possible.
	Operational Mitigation
AQ-O1	No operational mitigation proposed
	Monitoring
AQ-M1	• Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary. • Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

CLIMATE	
	Construction Mitigation
C-C1	Appointing a suitably competent contractor who will undertake waste audits detailing resource recovery best practice and identify materials can be reused/recycled.
C-C2	Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
C-C3	Ensure all plant and machinery are well maintained and inspected regularly.
C-C4	Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.
C-C5	Sourcing materials locally where possible to reduce transport related CO2 emissions.
C-C6	Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible. For example a 30% minimum clinker replacement in cement may be utilised in line with the requirements for public bodies.

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C-C7	The Contractor is required to mitigate against the effects of climate hazards (extreme rainfall/flooding, extreme winds/storms, fog, lighting, hail and extreme temperatures) through site risk assessments and method statements.
	Operational Mitigation
C-O1	No operational phase mitigation is proposed other than the incorporated design mitigation in relation to operational energy usage as set out in the Climate Action Energy Statement.
	Monitoring
C-M1	Monitoring and reporting of the embodied carbon in the construction phase will be conducted. The aim of monitoring will be to seek further ways to minimise climate impacts. Monitoring will include contractual obligations, in line with the most recent Climate Action Plan and sectoral targets, for the successful tenderer to ensure that the proposed development stays in line with updated aims. Commitments to monitor GHG emissions during the construction phase will also be secured through the final Construction Environmental Management Plan (CEMP). Monitoring will include embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates). Where monitoring shows that the proposed development is not meeting its targets, further mitigation will be put in place. Monitoring should also include reviewing potential for extreme weather events which may cause damage during construction. Contractors' Environmental Management System (EMS) will include measures to address risks during such events i.e. flooding

NOISE AND VIBRATION	
	Construction Mitigation Measures
NV-C1	Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228 (2009 +A1 2014) Parts 1 and 2 will be complied with. This includes guidance on several aspects of construction site mitigation measures, including, but not limited to: selection of quiet plant; noise control at source; screening, and; liaison with the public.
NV-C2	The following best practice migration measures should be considered: • Site compounds should be located away from noise sensitive boundaries within the site constraints. The lifting of bulky items, dropping and loading of materials within these areas should be restricted to normal working hours. • For mobile plant items such as cranes, dump trucks, excavators and loaders, maintaining enclosure panels closed during operation can reduce noise levels over normal operation. Mobile plant should be switched off when not in use and not left idling. • For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system. • For percussive tools such as pneumatic breakers, noise control measures include fitting muffler or sound reducing equipment to the breaker 'tool' and ensure any leaks in the air lines are sealed. Localised screens should be erected around breaker or drill bits when in operation in close proximity to noise sensitive boundaries. • For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials. • Compressors, generators and pumps should be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.

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	• All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.
NV-C3	Standard construction site hoarding (2.4 m in height) with a mass per unit of surface area greater than 7 kg/m^2 can provide adequate sound insulation. Where practicable hoarding should be located at the site perimeter.
NV-C4	A designated noise liaison officer will be appointed to site during construction works. Any noise complaints should be logged and followed up in a prompt fashion by the liaison officer.
	Operational Mitigation Measures
NV-O1	At the design stage plant will be designed and selected to ensure that the criteria detailed in Section 8.10 is achieved.
NV-02	The following practices are required for all plant items in order to minimise potential noise disturbance for neighbours: • all mechanical plant items shall be regularly maintained to ensure that excessive noise generated by any worn or rattling components is minimised; • any new or replacement mechanical plant items, including plant located inside new or existing buildings, shall be designed so that all noise emissions from site do not exceed the noise limits outlined in this document. • Installed plant will have no tonal or impulsive characteristics when in operation.
	Monitoring
-	NA

MATERIAL ASSETS: BUILT SERVICES	
	Construction Mitigation
MA:BS-C1	Connections to the existing electricity, water services, and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors under the control of the service provider.
	Operational Mitigation
	None
	Monitoring
	None

MATERIAL ASSETS: TRANSPORTATION	
	Construction Mitigation
MA:T-C1	Tracked excavators will be moved to and from the Site on low-loaders and will not be permitted to drive onto the adjacent roadway. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
MA:T-C2	The applicant shall at all times keep all public and private roads and footpaths entirely free of excavated materials, debris and rubbish. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
MA:T-C3	Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris. In order to reduce the impact of additional traffic along the proposed dedicated haul route.

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MA:T-C4	The applicant shall be responsible for and make good any damages to existing roads or footpaths caused by his own contractors or suppliers transporting to and from the Site. In order to reduce the impact on pedestrian and cycle movements on roads in the vicinity of the proposed development.
MA:T-C5	All construction workers will be encouraged to use public transport, and also to car share where appropriate. On site staff car parking can also be provided to ensure no construction workers will be required to park on adjacent roads or streets. In order to reduce the impact of additional construction personnel car / light vehicle movements on the local road network.
MA:T-C6	No daytime or night-time parking of site vehicles or construction staff vehicles will be permitted outside agreed areas. In order to reduce the impact of additional construction personnel car / light vehicle movements on the local road network.
MA:T-C7	Construction work will be limited to normal working hours; that are 08.00 – 19.00 on weekdays and 08.00 – 14.00 on Saturdays. All deliveries of materials, plant and machinery to the Site and removals of waste or other material will take place within the permitted hours of work. Vehicle movements will be planned to ensure arrival and departure times are maintained inside the agreed working hours. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
MA:T-C8	Deliveries will be co-ordinated to prevent queuing of vehicles adversely affecting traffic flow and to minimise disruption to local traffic. They will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly to adjoining owners), and rush hour traffic. Large deliveries will be scheduled outside peak traffic hours to minimise disruption. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
MA:T-C9	Properly designed and designated access and egress points to the construction site will be used to minimise impact on external traffic. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
MA:T-C10	Firm, level, and well-drained pedestrian walkways will be provided. In order to reduce the impact on pedestrian and cycle movements on roads in the vicinity of the proposed development.
MA:T-C11	Adequate visibility will be provided at the proposed access point to the proposed development. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
MA:T-C12	Footpaths will not be blocked resulting in pedestrians having to step onto the carriageway. In order to reduce the impact on pedestrian and cycle movements on roads in the vicinity of the proposed development.
MA:T-C13	The final Construction Traffic Management Plan with be submitted and agreed with the planning department prior to the commencement of any development. In order to reduce the impact of additional HGV traffic along the proposed dedicated haul route.
	Operational Mitigation
MA:T-O1	A Mobility Management Plan has been prepared for the proposed development which includes recommended mitigation measures to reduce usage of private

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	cars and increase the use by residents and patrons within the development of more sustainable modes of travel, such as including good cycle parking provision, will further promote the greater use of sustainable travel modes. It is projected that successful implementation of the mobility management plan measures included will reduce the vehicular trip generation from the proposed development below that included for in the Traffic Impact Assessment for the proposed development. In order to reduce the impact of additional traffic on roads in the vicinity of the proposed development.
MA:T-O2	The MMP is a live document and is intended to be reviewed and updated on an annual basis. Post occupation the Management Company will appoint a Mobility Manager responsible for the delivery of the programme and to act as an interface between the various stakeholders. In order to reduce the impact of additional traffic on roads in the vicinity of the proposed development.
MA:T-O3	A Stage 2 Road Safety Audit (RSA) will be undertaken at the detailed design stage to ensure that the final design is in accordance with the TII Road Safety Audit Guidelines (December 2017) prior to the commencement of construction. A Stage 3 post-construction and pre-opening of the proposed development in accordance with RSA guidelines to address any potential road safety issues related to the completed scheme. In the interest of Road Safety and in order to reduce the impact of additional traffic on roads in the vicinity of the proposed development.
	Monitoring
MA:T-M1	A Construction & Environmental Management Plan (CEMP) has been prepared and will be submitted with the application. The CEMP sets out the overarching vision of how the construction of the project will be managed in a safe and organised manner by the Contractor with the oversight of the Developer. The CEMP is a living document, and it will go through a number of iterations before works commence and during the works. It will set out requirements and standards that must be met during the construction stage and will include the relevant mitigation measures outlined in the EIAR and any subsequent conditions relevant to the project. Further specific monitoring measures are set out below: 1. A site liaison officer will be identified as a single contact point for the planning authority and local community to deal in a prompt and efficient manner with any issues that may arise in relation to construction traffic and activity on the public road. 2. Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
MA:T-M2	As part of the Mobility Management Plan for the proposed development a Mobility Manager will be appointed by the Management Company. The Mobility Manager will also be involved in monitoring of the modes of travel to and from the proposed development. This ideally will be done on an annual basis. Monitoring of travel patterns will facilitate the provision of sustainable transport modes and ensure that modal targets are met and improved upon over time.

MATERIAL ASSSETS: RESOURCE & WASTE MANAGEMENT	
	Construction Mitigation
MA:RWM-C1	As previously stated, a project-specific RWMP has been prepared in line with the requirements of the EPA 'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021) and

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	is included as Appendix 11A. The mitigation measures outlined in the RWMP will be implemented in full and form part of the mitigation strategy for the site. The mitigation measures presented in this RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the Proposed Development. • Prior to commencement, the appointed Contractor(s) will be required to refine / update the RWMP (Appendix 11A) in agreement with FCC and in compliance with any planning conditions, or submit an addendum to the RWMP to FCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream. • The Contractor will implement the RWMP throughout the duration of the proposed excavation and construction phases
MA:RWM-C2	A quantity of topsoil and sub soil will need to be excavated to facilitate the Proposed Development. The quantity surveyors have estimated that the majority excavated material will need to be removed off-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.
MA:RWM-C3	Building materials will be chosen to 'design out waste'.
MA:RWM-C4	On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated: • Clean Soil • Contaminated soil (if located onsite) • Concrete rubble (including ceramics, tiles and bricks); • Plasterboard; • Metals; • Glass; • Timber.
MA:RWM-C5	Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; (alternatively, the waste will be sorted for recycling, recovery or disposal);
MA:RWM-C6	All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
MA:RWM-C7	A Resource Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works;
MA:RWM-C8	Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
MA:RWM-C9	All construction staff will be provided with training regarding the waste management procedures;
MA:RWM-C10	All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal;
MA:RWM-C11	All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities;
MA:RWM-C12	All waste leaving the site will be recorded and copies of relevant documentation maintained;

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MA:RWM-C13	Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Regulation 27 (By-products), as amended, European Union (Waste Directive) Regulations 2011-2020. EPA approval will be obtained prior to moving material as a by-product.
	Operational Mitigation
MA:RWM-14	All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins or other suitable receptacles in designated, easily accessible areas of the site.
MA:RWM-15	As previously stated, a project specific OWMP has been prepared and is included as Appendix 11B. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the NWMPCE, Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland and the FCC waste bye-laws. Residents, the creche tenant and facilities management of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of the OWMP, ensuring a high level of recycling, reuse and recovery at the site of the Proposed Development
MA:RWM-16	In addition, the following mitigation measures will be implemented: • On-site segregation of all waste materials into appropriate categories including (but not limited to): ○ Organic waste; ○ Dry Mixed Recyclables; ○ Mixed Non-Recyclable Waste; ○ Glass; ○ Waste electrical and electronic equipment (WEEE); ○ Batteries (non-hazardous and hazardous); ○ Cooking oil; ○ Light bulbs; ○ Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.); ○ Furniture (and from time-to-time other bulky waste); and ○ Abandoned bicycles.
MA:RWM-17	The residents, the crèche tenant and facilities management will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials
MA:RWM-18	The residents, the crèche tenant and facilities management will ensure that all waste collected from the site of the Proposed Development will be reused, recycled, or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available.
MA:RWM-19	The residents, the crèche tenant and facilities management will ensure that all waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted, or licensed facilities.
	Monitoring
MA:RWM-M1	**Litter Pollution -** The Contractor will review and maintain waste records and site audits

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MA:RWM-M2	**Unlicensed Waste Collection (Illegal Dumping) -** A register will be maintained and reviewed. A copy of all waste collection permits will be maintained.
MA:RWM-M3	**Insufficient Waste Facilities -** A register will be maintained and reviewed. A copy of all waste collection permits will be maintained.
MA:RWM-M4	**Lack of Waste Classification -** An appointed Resource Manager will monitor all on-site waste segregation and classification
MA:RWM-M5	**Unlicensed Waste Collection (Illegal Dumping) -** The operator/ facilities management company will maintain waste receipts on-site for a period of 7 years and make available to DCC as requested.
MA:RWM-M6	**Poor Waste Segregation Waste -** generation volumes and cross contamination will be monitored by the operator / facilities management company
MA:RWM-M7	**Litter Pollution -** Waste storage areas will be monitored by the operator / facilities management company

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	Construction Mitigation
CH-C1	Archaeological monitoring of all topsoil stripping. If any such features are discovered, further mitigation will be required such as preservation in situ or preservation by record. Any further mitigation will require agreement from the National Monuments Service.
	Operational Mitigation
CH-O1	None required
	Monitoring
CH-M1	The mitigation measures will also function as a monitoring system during construction to allow the further assessment of the scale of the predicted impacts and the effectiveness of the mitigation measures.

	Construction Mitigation
L-C1	Siting of construction compound as far as practicable from the Drynam Road neighbourhood to the east of the site.
L-C2	Erection and maintenance of site hoarding around the construction site for the duration of construction
	Operational Mitigation
L-O1	-
	Monitoring
L-M1	-