



Environmental Impact Assessment Report Non-Technical Summary

*Carmanhall Road Strategic Housing Development,
Sandyford Industrial Estate, Dublin 18*

Prepared for:

Atlas GP Ltd

Prepared by:

Golder Associates Ireland Limited

Town Centre House, Dublin Road, Naas,
Co. Kildare, Ireland

+353 45 81 0200

19136014.R04.A3

April 2021

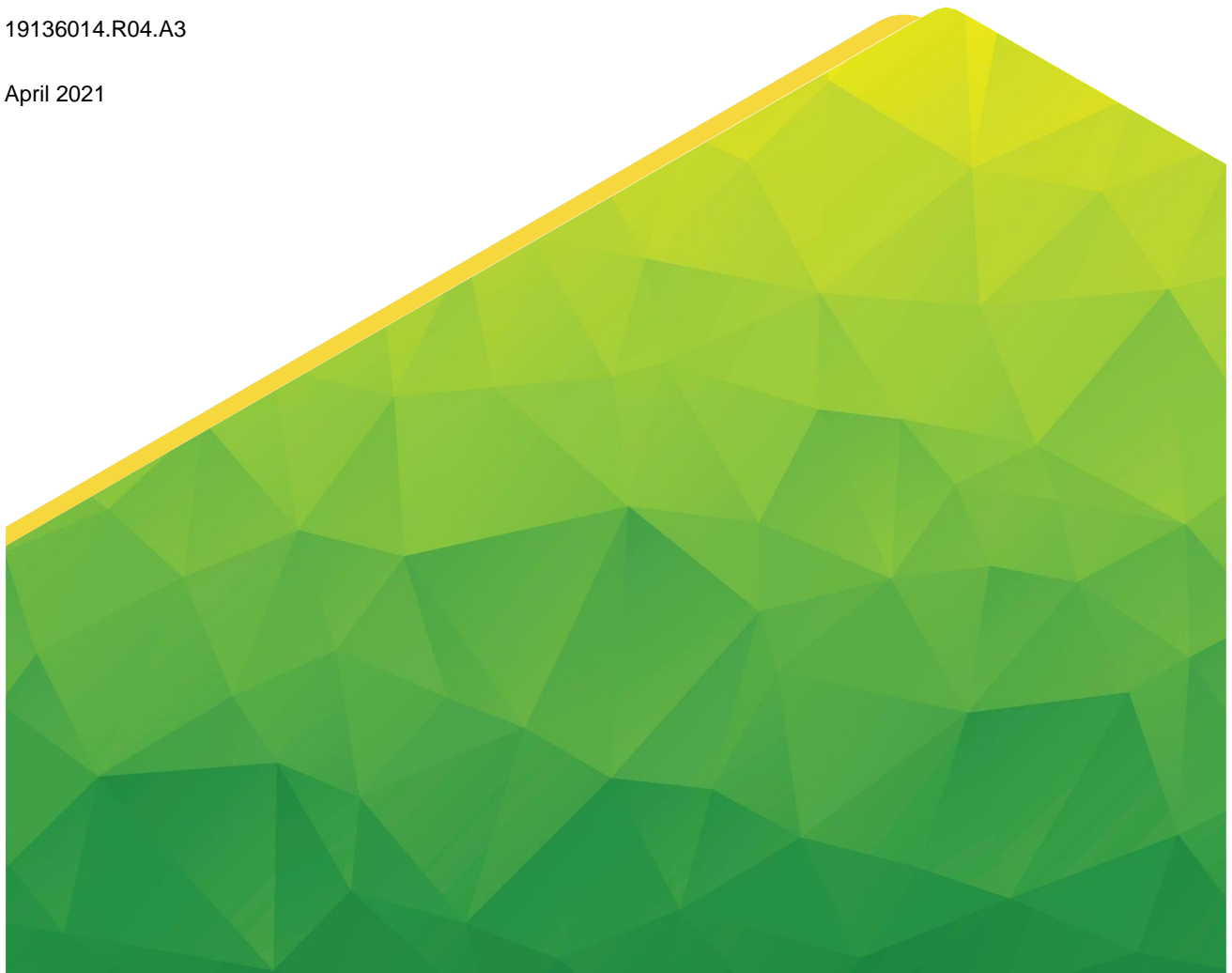


Table of Contents

NON-TECHNICAL SUMMARY	1
1.0 INTRODUCTION	1
1.1 EIA Scope and Methodology	1
1.2 Need for the Proposed Development.....	3
2.0 ALTERNATIVES	3
3.0 PROJECT DESCRIPTION	5
3.1 Proposed Development Description	5
3.2 Proposed Development Construction	7
3.3 Major Accidents and Disasters	8
4.0 POPULATION AND HUMAN HEALTH	8
5.0 ECOLOGY AND BIODIVERSITY	9
6.0 LAND, SOILS AND GEOLOGY	10
7.0 WATER.....	10
8.0 AIR QUALITY AND CLIMATE.....	11
8.1 Air Quality.....	11
8.2 Climate Factors	12
9.0 NOISE AND VIBRATION.....	12
10.0 CULTURAL HERITAGE	13
11.0 TRAFFIC AND TRANSPORT	14
12.0 WIND	15
13.0 LANDSCAPE AND VISUAL	17
14.0 MATERIAL ASSETS.....	18
15.0 INTERACTIONS, CUMULATIVE AND COMBINED EFFECTS.....	19
16.0 MITIGATION AND MONITORING MEASURES.....	20
17.0 SUMMARY & CONCLUSIONS.....	21
18.0 REFERENCES	22

TABLES

Table 1: Carmanhall SHD Environmental Interactions, C – Construction Phase, O – Operational Phase.....	20
--	----

FIGURES

Figure 1: Location and Application Boundary of the Proposed Carmanhall Road SHD. 1

Figure 2: Computer Generated View of the Proposed Development (renderare, view from Carmanhall Road and Blackthorn Road)..... 5

Figure 3: Building and ground level heights. View from Burton Hall Road to the east. BKD Architects 6

NON-TECHNICAL SUMMARY

1.0 INTRODUCTION

Golder Associates Ireland Ltd (Golder) have been commissioned to prepare this Environmental Impact Assessment Report (EIAR) on behalf of Atlas GP Ltd, as Developer and Applicant for the Carmanhall Road Strategic Housing Development (SHD; the 'Proposed Development'), on lands located at the former Avid Technology International site on Carmanhall Road, Sandyford Industrial Estate, Dublin 18, (the 'Site'; Figure 1). The EIAR represents the findings of an Environmental Impact Assessment carried out for the Proposed Development Site and supports the overall SHD application for the Proposed Development.

This document is a Non-Technical Summary (NTS) of the EIAR, and its purpose is to describe the Proposed Development and provide a summary in non-technical language of the key findings of the EIAR submitted to An Bord Pleanála (The Board) in support of the SHD Application.

To note, a Stage 1 Screening Report for Appropriate Assessment (AA) has been submitted to accompany this SHD Application. This assesses the potential effects which may occur on Natura 2000 sites and associated qualifying species as a result of the Proposed Development.



Figure 1: Location and Application Boundary of the Proposed Carmanhall Road SHD.

1.1 EIA Scope and Methodology

Environmental Impact Assessment is a process used to predict the adverse and beneficial impacts of a Proposed Development. It provides a means of drawing together the findings from a systematic analysis of the likely significant environmental effects of a scheme to assist planning authorities, statutory consultees and other key stakeholders in their understanding of the impacts arising from a development.

Legislation requires that an EIA is carried out for certain classes of the projects or development. The Proposed Development was screened against the prescribed classes of developments that are contained in Schedule 5 to the Planning and Development Regulations 2001 (S.I. 600 of 2001, as amended). The Schedule 5 criteria provide that EIA is mandatory for projects consisting of the construction of 500 or more dwelling units. While the Proposed Development comprises 428 dwelling units, having regard to those the criteria and the matters more particularly set out in Schedule 7 (which addresses sub-threshold project), and considering the features of this Site, including the proposed size and extent of occupancy, an EIAR has been prepared to accompany this SHD Application to the Board.

The Proposed Development was screened against the Schedule 5 prescribed classes of developments in the Planning and Development Regulations 2001 (S.I. 600 of 2001, as amended). Having regard to those criteria and the matters more particularly set out in Schedule 7, and considering the features of this Site, including the proposed size and extent of occupancy, an EIAR has been prepared to accompany this SHD Application to The Board.

Each technical environmental topic necessarily has separate legislative, policy and best practice requirements, however the assessments have applied the same overall standard approach. This includes:

- Confirming the relevant legislative and policy context;
- Determining the applicable study area for that discipline;
- Establishing the baseline conditions for that discipline;
- Identifying potential receptors and their importance;
- Predicting potential sources of impact (change) to the receptors for the Proposed Development;
- Applying a risk-based assessment methodology to evaluate the level of significance of environment effects resulting from each of the potential impacts;
- Where applicable, developing a mitigation, compensation or management strategy to avoid, prevent, reduce or, if possible, offset, the magnitude/severity of the impacts and thereby reduce the level of significance of each potential effect; and
- Conducting a final assessment of residual environmental effects, factoring in the proposed mitigation, compensation and management strategies.

The EIAR was prepared by appropriately qualified and competent consultants as required by the EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU).

Further technical details concerning the scope and methodology of the EIAR have been provided in Chapter 2 of the EIAR.

The structure of the main EIAR is laid out as follows:

- Chapter 1 - Introduction and Background;
- Chapter 2 - Scope and Methodology;
- Chapter 3 - Project Description;
- Chapter 4 - Population and Human Health;
- Chapter 5 - Ecology and Biodiversity;
- Chapter 6 – Land, Soils and Geology;

- Chapter 7 - Water;
- Chapter 8 - Air Quality and Climate;
- Chapter 9 – Noise and Vibration;
- Chapter 10 - Cultural Heritage;
- Chapter 11 - Traffic and Transport;
- Chapter 12 - Wind
- Chapter 13 - Landscape and Visual;
- Chapter 14 - Material Assets;
- Chapter 15 - Interactions, Cumulative and Combined Effects; and
- Chapter 16 - Mitigation and Monitoring Measures.

1.2 Need for the Proposed Development

The Department of Public Expenditure and Reform's 2018, National Development Plan (NDP) 2018 - 2027 identifies that the population of Ireland is expected to grow by over 1 million to 5.7 million people by the year 2040. The NDP also recognises the urgent requirement for a major uplift of the delivery of housing within existing built-up areas of cities. The NDP notes there should be a particular focus on brownfield development which targets derelict and vacant sites that may have been developed before but have fallen into disuse.

The Department of Housing, Planning and Local Government published the 'Project Ireland 2040 - National Planning Framework' policy document in 2018. This Framework seeks to target a greater proportion of future housing development to be within and close to the existing 'footprint' of built-up areas. This target is to be achieved by developing underutilised land and buildings, including 'brownfield' sites, with higher housing and jobs densities, better serviced by existing facilities and public transport.

Appendix 15 of the Dún Laoghaire Rathdown County Development Plan 2016-2022 is the Sandyford Urban Framework Plan. This Urban Framework Plan provides for a coherent strategised development of the overall Sandyford Business District. The Site is located within an area of Sandyford where Dún Laoghaire Rathdown County Council (DLRCC) have identified specific objectives for the creation of Sustainable Residential Neighbourhoods, which preserve and protect residential amenity in the Sandyford Business District.

The Site is located on the south-west corner of the Carmanhall Road and Blackthorn Road intersection. Specifically, the Proposed Development is located on a brownfield site where a former commercial premise was recently demolished.

These provisions within the National Development Plans and Framework, as well as the local objectives for the Site, provide justification for the need for the Proposed Development.

2.0 ALTERNATIVES

Alternatives to the Proposed Development are detailed in Chapter 3 of the EIAR.

The principal alternatives assessed during the design and planning of the Proposed Development were alternative design layouts for a residential development at the Application Site.

Given the specific local area objectives for the Site, if the Application Site was not developed (i.e. the **'Do-Nothing' Alternative**), it is assumed that it would remain as an undeveloped vacant site absent of residential development or amenities. The failure to develop the Site has a potential negative impact on the regional and local planning objectives, and therefore a 'Do-Nothing' alternative was not considered to be a reasonable alternative.

Alternative locations for the Proposed Development were not considered during the development stage of this Project. The justification for this is owing to the zoning and local residential objectives for the Site identified in the DLRCC Sandyford Urban Framework Plan 2016-2022.

There are two **previously granted alternative** developments which were consented for the Application Site since 2016. These are:

- Reg. Ref. PL06D.303467 - Permission granted for a student accommodation development comprising the construction of 122 no. apartments, providing 817 no. student bed spaces, with other associated residents' facilities; and
- Reg. Ref. D16A/0158 - Permission granted for a development comprising of 147 no. apartments with associated residents' facilities.

It is considered that the Proposed Development provides additional positive social effects in relation to the previous planning applications through its increased efficiency in use of the Site and its size and scale. Furthermore, the Proposed Development is designed to provide a high standard of accommodation and amenity for future occupants and the local community.

Given the nature of the Project (residential) and the rationale for the Proposed Development, reasonable **alternative technologies or processes** were not assessed. However, an energy analysis was carried out as part of the development design and is submitted within the SHD Application (IN2, 2021). The report examines the methodology in terms of Primary Energy, Renewable Technologies, and the alternatives between Centralised and Decentralised plant.

Alternative design of the Proposed Development and **alternative size and scale** was considered throughout the design process and revised and altered in response to the Section 5 Pre-Application Consultation with The Board. During this process a number of design factors were considered; the foremost design alteration was the increase in height to achieve a landmark building. The current Proposed Development design has thus been refined, through the dropping of the adjoining shoulders of the eastern elevation and the increased height of the central tower feature to provide a landmark tower element.

The Proposed Development is expected to be constructed in one phase over approximately 24 months. Given the scale of the Application Site's area, completing the entire development in a number of phases would not be a practical alternative, and therefore **alternative phasing** has not been considered.

The mitigation measures identified in the chapters of the EIAR and consolidated in Chapter 16 (Mitigation and Monitoring Measures) are deemed appropriate for the Proposed Development. Therefore, consideration to **alternative mitigation** was not given as the measures represent commonly employed best-practice for similar developments.

3.0 PROJECT DESCRIPTION

3.1 Proposed Development Description

The Proposed Development comprises the construction of a 'build-to-rent' housing development, accommodating a total of 428 no. residential apartments, in a six to seventeen storey apartment building with maximum height provided within the north-east of the Site at furthest proximity from adjoining sites (Figure 2).



Figure 2: Computer Generated View of the Proposed Development (renderare, view from Carmanhall Road and Blackthorn Road).

The proposed scheme has a housing density of 416 dwellings per hectare, a plot ratio of 3.97 and a site coverage of 56%. These figures are calculated based on the Application Site area of 1.03 ha. More specifically, the 'build-to-rent' housing development will comprise the following mix of units:

- Studio Apartment 41 No. Units;
- One-Bedroom Apartment 285 No. Units;
- Two-Bedroom Apartment 94 No. Units; and
- Three-Bedroom Apartment 8 No. Units.

Of these apartments 413 no. will have access to private amenity space, in the form of a balcony or lawn/terrace, and 15 no. apartments will have access to a shared private roof terrace (142 m²) at ninth floor level.

All of the apartments will have access to approximately 2,600 m² of communal amenity space, spread over a courtyard at first floor level and roof terraces at the sixth, eighth and ninth floor levels. A residents' childcare facility, which will accord with the relevant guidelines and will meet all relevant safety/building standards and regulations will be located on the ground floor level. Further residents' amenities will include concierge/meeting rooms, office/coworking space, cinema, gym, yoga studio, laundry and café/lounge at ground floor level. The

café/lounge will primarily serve the residents of the Proposed Development and will be open for community use on a weekly/sessional basis. In addition to the amenities provided on site, it is also worth noting that the subject development is in close proximity to the Dundrum Shopping Centre which also features a variety of amenities and services.

The Proposed Development is served by a ground floor level carpark, accessible via a new vehicular entrance from Carmanhall Road, providing a total of 145 no. vehicular parking spaces (including 8 no. mobility parking spaces, 2 no. club-car spaces and 44 no. electric charging spaces) and 5 no. motorcycle parking spaces. Bicycle parking, plant and storage is accommodated at basement level with 752 no. bicycle parking spaces. A further 22 no. residential short stay bicycle parking spaces are provided at Ground Floor Level bringing the total bicycle parking provision for the Proposed Development to 774 no. spaces.

The Proposed Development includes improvements to street frontages and the public realm of Carmanhall Road and Blackthorn Road comprising provision of an upgraded pedestrian footpath, an increased quantum of landscaping and street-planting, new cycling infrastructure, the provision of new street furniture comprising bins, benches and cycle parking spaces and the upgrading of the existing Carmanhall Road and Blackthorn Road junction through provision of a new uncontrolled pedestrian crossing.

A pocket park has been incorporated into the design of the principal entrance to the scheme, off Carmanhall Road, to provide a transitional area between the private and public areas of communal amenity. Such parks present an option for the provision of public spaces without large-scale redevelopment.

The building height of the Proposed Development ranges from six to seventeen storeys. The surface level at the Carmanhall Road and Blackthorn Road intersection will be ca. 84.0 mOD, (Figure 3). Roof, communal terraces and roof garden heights will vary depending on the number of storeys and location. The total height of the marker tower element at the Bruton Hall Road junction will be ca. 143.925 mOD.

The Proposed Development includes all ancillary works, including provision of play equipment, boundary treatments, drainage works - including SuDS drainage, landscaping, lighting, rooftop telecommunications structure and all other associated site services, site infrastructure and site development works.

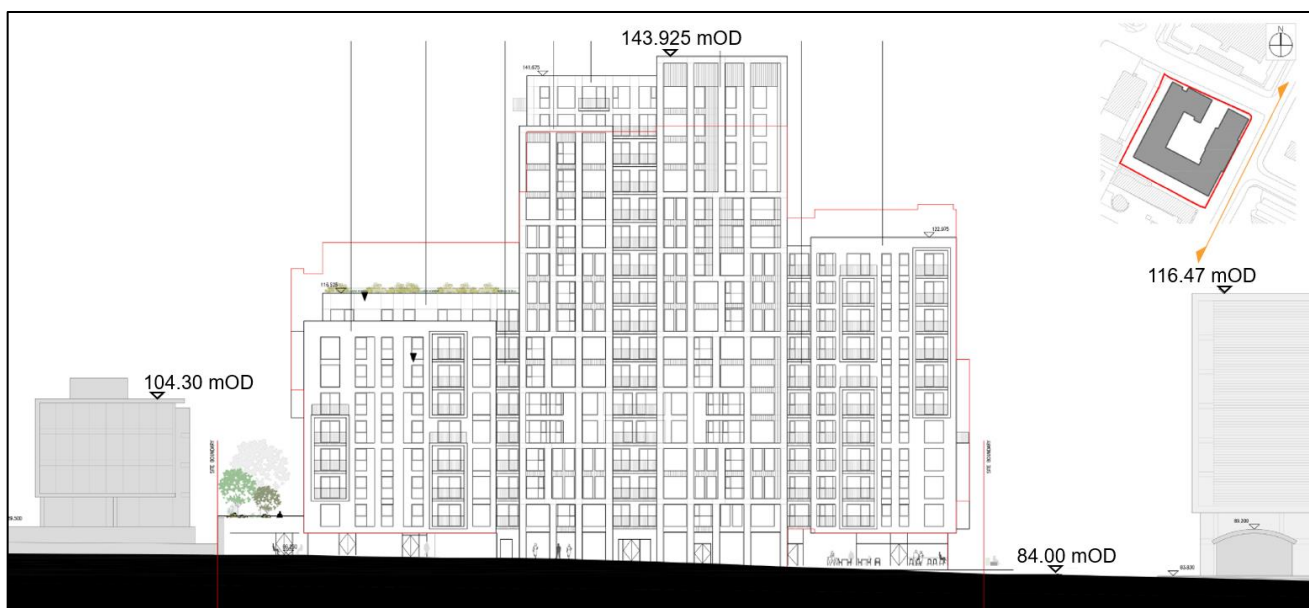


Figure 3: Building and ground level heights. View from Burton Hall Road to the east. BKD Architects

Further details concerning the items below have been provided in Chapter 2 of the EIA:

- Architectural Design;

- Landscape Design;
- Proposed Works to Communal Public Area;
- Proposed Works to Public Roads;
- Site Services and Connections;
- Operational Management of the Proposed Development; and
- Operational Waste.

3.2 Proposed Development Construction

Construction Duration

It is anticipated that the construction of the Proposed Development will be conducted in a single phase over a period of approximately 24 months, from the commencement of the construction works to final completion. A detailed Construction Programme will be prepared by the appointed Main Contractor for the works.

In accordance with the DLRCC County Development Plan 2016-2022, the working hours of the construction site will be: 08:00 hours to 19:00 hours Monday to Friday; and 08:00 hours to 14:00 hours on Saturdays. No work will be carried out on Sundays or bank holidays and the Site will remain secure when construction is not taking place. No work, or other activity that could reasonably be expected to cause annoyance to residents in the vicinity (including deliveries), will take place on Site between 19:00 hours and 08:00 hours.

Construction Management

The construction phase activities and overall site responsibilities will be laid out in a Construction Management Plan (CMP). This will be developed and implemented by the appointed Main Contractor and agreed with DLRCC prior to the commencement of construction works.

A preliminary Construction Management Plan (pCMP) has been completed for this SHD application for the Proposed Development. Ultimately, this pCMP will evolve into the finalised Construction Management Plan (CMP) prepared by the Main Contractor.

Elements of this pCMP may vary depending on the methods of the appointed Main Contractor, markets and other considerations. The purpose of this pCMP is to outline the general activities required for the construction of the Proposed Development.

A Construction and Environment Management Plan (CEMP) has been prepared to accompany this SHD Application. This will be a live document and will be further developed by the Main Contractor for the construction activities associated with the Proposed Development.

The CEMP outlines the developer's and the appointed Main Contractor's approach to avoid wherever practicable, environmental risk; to reduce consumption of resources; to restrict the production of waste; and to promote good relationships with interested parties and the general public.

Other management plans which will be used by the Main Contractor to manage the construction phase will include:

- Construction Stage Health and Safety Plan;
- Construction Traffic Management Plan; and
- Construction and Demolition Waste Management Plan.

3.3 Major Accidents and Disasters

The consideration of major accidents and disasters seeks to assess the relevant accidents and disasters which the Proposed Development is vulnerable to, and the relevant accidents and disasters that the Proposed Development could give rise to. Central to this assessment is the understanding that the Proposed Development is designed, constructed and operated in accordance with best practices and as such, major accidents to and from the Proposed Development would be very unlikely.

The assessment has considered fire within the design of the Proposed Development. The uses in the Proposed Development are considered normal hazard fire risks as would be encountered in most developments and do not include any hazards which would be regarded as presenting an exceptional environmental fire hazard. Fire safety consultants have been appointed to advise on fire safety measures to be incorporated into the Proposed Development. The resultant measures will ensure that the design of the Proposed Development does not present a significant risk of major accidents and disasters in relation to fire.

The main potential risk of major accidents and disasters which could result from the Proposed Development during the construction phase has been identified to be pollution incidents. Further possible major incidents may include: fire, incidents involving the interaction with the public and roads, aircraft strikes, and debris falls from scaffolding or cranes. Following the completion of a detailed construction programme the appointed Main Contractor will be responsible for developing comprehensive plans to manage the construction phase, including, associated safety plans and risk assessments, liaising with the relevant authorities, and developing a site Emergency Response Plan (ERP). With these measures it is considered that the risk of major accidents and hazards associated with the Proposed Development's construction phase is not significant.

4.0 POPULATION AND HUMAN HEALTH

The population and human health assessment describes the human environment and identifies and assesses any construction and operational related impacts from the activities at the Site. The human environment and potential impacts on the 'quality of life' as a consequence of the Proposed Development have been discussed under the following headings:

- Populations;
- Economic patterns (activity and employment);
- Amenity;
- Land-use;
- Human health; and
- Health and safety.

Impact Assessment and Mitigation Measures

Positive effects were identified during this phase. The construction phase of the Proposed Development, which is anticipated to last ca. 24 months, is likely to have a positive effect on the economic patterns of the local area. Direct and indirect employment will be created, and it is anticipated that the construction phase will provide for the direct temporary employment of ca. 400 – 500 construction staff. Other positive effects will be felt to local businesses associated with the increase in spending on goods and services in the area.

Potential adverse impacts from this phase for local populations and human health include noise, construction dusts, health and safety hazards, and impacts to waters.

Dust, NO₂, PM₁₀ and PM_{2.5} emissions generated during the construction phase could potentially pose a risk to human health of receptors surrounding the Proposed Development. Noise emissions from this phase have the potential to cause annoyance and affect the mental health and quality of life of surrounding sensitive receptors. In addition, construction activities including drilling and piling, and/or the disturbance of unidentified previously contaminated material may introduce substances to groundwater resulting in poorer groundwater quality for groundwater users. With the application of appropriate mitigation measures identified in the air, noise and water assessments it is considered that there will not be significant impacts on local populations and human health as a result of the construction phase of the Proposed Development.

Prior to commencement, the Main Contractor will also ensure that the Project's health and safety documentation considers COVID-19 and aligns with the measures outlined in the Construction Industry Federation's (CIF; November 2020) 'Construction Sector C-19 Pandemic Standard Operating Procedures', and the COVID-19 Specific National Protocol for Employers and Workers, general / standard health and safety requirements.

Impacts on neighbouring buildings was also considered with regards to daylight and sunlight. Building surrounding the Proposed Development are commercial in nature and could continue to operate relatively unharmed if affected by a disruption in to form of reduced daylight/sunlight.

The operational phase of the Proposed Development will likely result in a positive effect on the local population due to the provision of housing. The increase in residents will result in the contribution of additional revenue to the local economy, and the Proposed Development will include public spaces which will provide additional amenity to the local area. The use of a brownfield site for the development of residential units is a beneficial effect and is consistent with the DLRCC objective for the lands at the Proposed Development.

Air quality and noise levels associated with traffic impacts during the operational phase of the Proposed Development are not predicted to be significant and to result in human health effects. Furthermore, the Proposed Development will be connected to a mains water supply and potential impacts from sanitary waste will be mitigated by connection to mains sewer, while parking places will be provided with an associated oil/water interceptor, thereby protecting water resources.

The design of the Proposed Development has been devised to provide for a safe environment for future residents and employees/contractors. A Property Management Strategy report has been provided in the SHD application and sets out the strategy to be implemented in the operational phase. This includes safety standards ensuring the wellbeing of the residents and the staff/contractors, and the management of emergency and fire provisions for the Proposed Development.

5.0 ECOLOGY AND BIODIVERSITY

The ecology and biodiversity assessment has evaluated the importance of the ecological resources present and defined the degree of significance of potential impacts resulting from the Proposed Development. The assessment approach has followed Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) and taken account of national planning policy, structure and local plan policies in respect of nature conservation, and protected species legislation in identifying appropriate avoidance, mitigation (including design mitigation) and compensation measures.

The Site footprint is almost entirely comprised of hardstanding with only some scattered trees present. The presence, or potential presence, of species on the Site was identified from the desk study and Phase 1 Habitat Survey.

Impact Assessment and Mitigation Measures

The assessment has concluded that no nature conservation sites will be directly affected by the Proposed Development. The Site is essentially impoverished when considering habitats or species regardless of conservation status. Risks to off-Site aquatic receptors will be minimised through adherence to construction best practice and also due to the planned upgrade of the Ringsend wastewater treatment plant.

A number of enhancement measures will be incorporated within the Proposed Development, to improve habitat quality over and above the current situation, together with creating new opportunities for fauna within the Site. When cumulatively considering the mitigation and enhancement measures outlined within the EIAR, it is considered that a net gain for biodiversity will be afforded over the medium to long term.

6.0 LAND, SOILS AND GEOLOGY

This assessment has considered the potential impacts and effects on soils, land and geology that can be reasonably foreseen as consequences of the normal construction and operation of the Proposed Development during the construction and after-use phases.

The main receptors identified that required to be assessed were land (soil/sub-soils) at and immediately adjacent to the Proposed Development and human health (workers during construction and after-use occupiers), that could be secondarily affected by changes to soils/sub-soils.

Impact Assessment and Mitigation Measures

No geological heritage sites or mineral sites have been identified as part of the baseline study. The superficial tills underlying the Site are unlikely to represent a future resource and the bedrock geology beneath the Site that could be used as a crushed rock resource is ubiquitous across Ireland. Therefore, the impacts to, and effects on, geological sites and mineral or aggregate reserves were not considered further in the assessment.

There is no indication that the Proposed Development would sterilise any limited geological resources and there are no soils (agricultural or not) mapped at the Site, so the use or sterilisation of natural resources, loss of organic matter, soil erosion, or soil compaction were not considered further in the assessment.

Known design and construction management mitigation measures were accounted for in an assessment of initial impacts and effects; this included the management of all construction activities in line with the final Construction Management Plan and Construction Environmental Management Plan. Where additional mitigation measures were proposed to reduce the initial impacts and effects, these were identified and included in an assessment of residual impacts and effects.

In summary, the significance of residual effects on soils and geology (and on human health from soils and geology) resulting from the different potential impacts are predicted to be no higher than slight adverse and, therefore, not significant.

7.0 WATER

This assessment has considered the potential impacts and effects on the water environment that can be reasonably foreseen as consequences of the normal construction and operation of the Proposed Development during the construction and after-use phases.

The main receptors that required to be assessed were groundwater, surface water, on-site plant and infrastructure, infrastructure immediately adjacent to and downstream of the Proposed Development and human health (specifically existing water users) that could be secondarily affected by changes to the water environment.

The secondary effects on ecology and biodiversity were considered in Chapter 5 of the EIAR, Ecology and Biodiversity.

Impact Assessment and Mitigation Measures

There are no surface water features on the Site, the closest being Stillorgan Reservoirs just over 200 m to the north. The Site is classified as being at low flood risk (Flood Zone C). There is only one well or spring mapped within 2 km of the Site, a borehole located over 1.7 km to the north-east. There are no internationally designated sites at, or within 2 km, of the Site.

During the construction and operational phases, the Proposed Development could introduce a range of sources that on their own or in combination have the potential to impact water quality or availability. During the construction phase disturbance of unidentified previously contaminated material could introduce substances to groundwater resulting in poorer groundwater quality for groundwater users. Also wheel wash waste discharges to surface water could result in poorer water quality.

Known design and construction management mitigation measures were accounted for in an assessment of initial impacts and effects; this included the management of all construction activities in line with the final Construction Management Plan and Construction Environmental Management Plan. Where additional mitigation measures were proposed to reduce the initial impacts and effects further, these were identified and included in an assessment of residual impacts and effects.

In summary, the significance of residual effects on water (and on human health from water) resulting from the different potential sources of impact are predicted to be no greater than slight adverse and, therefore, not significant.

8.0 AIR QUALITY AND CLIMATE

8.1 Air Quality

This assessment has considered the potential air quality effects associated with the Proposed Development. The effects have been assessed in the context of relevant national, regional and local air quality policies. The assessment considered the construction and operational phases of the Proposed Development.

Impact Assessment and Mitigation Measures

A qualitative assessment of dust impact from the construction phase has been undertaken in line with Institute of Air Quality Management (IAQM) 'Guidance on the assessment of dust from demolition and construction' (IAQM, 2014). In line with the guidance, the study area for the construction phase assessment extends up to 350 m from the boundary of the Site and within 50 m of the routes used by construction vehicles on the public highway, up to 500 m from the Site entrances. Human receptors have been identified within the study area and assessed accordingly. No relevant ecological receptors such as Natura 2000 Sites (e.g. Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)) are located within the study area; therefore, assessment of potential effects on ecological receptors was scoped out of the assessment.

A full qualitative construction phase dust assessment was carried out. The potential changes that could occur from the Proposed Development were considered and the magnitude of that change assigned. Taking into consideration the mitigation associated with the Proposed Development design, good practice construction methods and pollution prevention measures that will be followed as part of the construction phase, the magnitudes of all predicted changes to air quality during construction are not significant. Therefore, it is concluded that there are no significant effects on air quality from dust arising during the construction phase of the Proposed Development. Detailed mitigation measures have been provided in full in the EIAR Air Quality chapter.

A quantitative operational phase assessment of effects from road traffic emissions was undertaken in accordance with Environmental Protection UK/Institute of Air Quality Management guidance document 'Land – Use Planning & Development Control: Planning for Air Quality' (EPUK/IAQM 2017). Detailed dispersion modelling using ADMS-Roads was undertaken to determine the effect of the Proposed Development on traffic derived pollutants, nitrogen dioxide (NO₂) and particulate matter, at nearby sensitive receptors. During this operational phase, the study area for human receptors extends to 200 m either side of all 'affected roads' – i.e. those meeting the criteria set out in the guidance. Human receptors were identified within the study area and therefore assessed. However, as no Natura 2000 Sites (e.g. SPAs and SACs) were identified within the study area the assessment of impacts on ecological receptors was scoped out of the assessment. The magnitudes of all predicted changes to air quality during the operational phase are negligible. Therefore, it is concluded that there are no significant effects on air quality from traffic arising from the operation of the Proposed Development.

8.2 Climate Factors

The climate assessment has considered climate change resilience and adaptation, i.e. how the Proposed Development may interact with a changing climate and whether this interaction could result in significant environmental effects. The contribution of the Proposed Development to climate change is also a requirement of the assessment of climate change resilience and adaptation of a development. The assessment considers the potential climate impacts during construction and the operational phases.

Impact Assessment and Mitigation Measures

The assessment considered aspects of the Proposed Development that are potentially vulnerable to the effects of climate change. Factors assessed included changes in air quality; noise; landscape and visual; water and flood risk; geology, ground conditions and groundwater; and ecology and biodiversity. Where relevant aspects have been identified, these can be mitigated through embedded mitigation, monitoring or other measures. The assessment identified that there will be no significant contribution from the Proposed Development to climate change during the construction and operational phases. There will also be no significant effects predicted on the Proposed Development due to climate change (e.g., flooding).

9.0 NOISE AND VIBRATION

This assessment has considered potential noise impacts associated with the construction and occupation of the Proposed Development. The assessment comprised characterisation of the baseline noise environment, adoption of appropriate evaluation criteria, prediction of noise levels at identified Noise Sensitive Receptors (NSRs) and specification of appropriate mitigation.

The assessment included a desk study to determine an appropriate study area and identify potentially sensitive receptors, characterisation of the baseline noise environment, prediction of worst-case construction and operational / occupation phase noise levels and evaluation against appropriate criteria. The Proposed Development lies within a predominantly commercial and light industrial area, with no high-sensitivity NSRs nearby.

Construction activities are not anticipated to generate significant off-site vibration, and no receptors with high sensitivity have been identified within close proximity to the Proposed Development, therefore evaluation of construction phase vibration was scoped out of the assessment. The Proposed Development will not generate vibration during the operational phase, therefore vibration impacts during the operational/occupation phase were scoped out of the assessment.

Impact Assessment and Mitigation Measures

The noise environment in the vicinity of the Site was dominated by road traffic on Carmanhall Road and Blackthorn Road, with a lesser contribution from the M50.

Predicted construction phase noise effects were examined for a 'worst-case' scenario (site clearance and preparation activities), and were determined to be not significant at the closest NSRs as they meet the noise threshold during the proposed construction hours (weekday daytimes, Saturday mornings), therefore no specific mitigation is required to prevent the occurrence of significant impacts.

Following the completion of a detailed construction programme by the appointed Main Contractor, and once any requirements for out-of-hours activities have been identified, detailed noise predictions will be undertaken for these activities to determine any specific mitigation measures required such that the noise thresholds are met at NSRs.

Best practice noise control measures, scheduling of works within appropriate time periods, strict construction noise limits and noise monitoring will be used during the construction phase. This will ensure effects are controlled and will meet threshold criteria derived from measured baseline noise levels.

Noise associated with changes to traffic flows on the local road network has been predicted using noise modelling software. Noise levels from road traffic have been predicted for the future scenario with the Proposed Development. The development year for which traffic flows were predicted and provided was 2038. Noise impacts from the road traffic have been assessed within internal areas of the Proposed Development, and also the external amenity areas, which were identified as NSRs.

Operational / occupation phase noise impacts at proposed NSRs will be mitigated through appropriate specification of alternative ventilation within residential units, such that internal target noise levels will be met using closed-window attenuation. As a result effects to proposed NSRs arising from road traffic on Carmanhall Road and Blackhall Road, and noise from commercial / industrial sources, has been assessed to be not significant.

10.0 CULTURAL HERITAGE

This assessment has considered the potential effects of the Proposed Development on cultural heritage during both the construction and operational phases. The term 'cultural heritage' is used collectively to refer to all assets of archaeological, architectural and historical or cultural value. The assessment included a detailed baseline study to establish the existing conditions, and an effects analysis and impact assessment that considered both direct effects (e.g. physical disturbance) and indirect effects (e.g. changes to setting due to dust and visual changes). The assessment of indirect effects has been informed by the results of other assessments, including Chapter 8 (Air Quality and Climate), Chapter 9 (Noise and Vibration) and Chapter 13 (Landscape and Visual). Where required, appropriate mitigation measures have been proposed to avoid or reduce identified impacts.

In lieu of specific guidance from the Institute of Archaeologists of Ireland (IAI), the impact assessment conformed to the guidelines set out by the Chartered Institute for Archaeologists (CIfA, 2020a¹; 2020b²). The assessment was informed by a separate archaeological impact assessment prepared by Archaeology and Built Heritage Ltd (2020).

¹ CIfA (2020a). Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment.

² CIfA (2020b). Standard and guidance for historic environment desk-based assessment.

Impact Assessment and Mitigation Measures

There are no known cultural heritage assets within the Site, and so no direct effects are predicted to known designated or non-designated assets during construction. There is potential, albeit very low, for undiscovered archaeological remains to survive within the Site, including a potential field boundary shown on historic mapping. If such remains do exist, then there is potential for these to be directly impacted during construction by ground disturbance.

To mitigate this impact, initial soil stripping activities, prior to excavation of the foundations and basement, will be completed under licensed archaeological supervision. If archaeological remains do exist, the supervising archaeologist will record, hand excavate and, if appropriate, sample any features. With these mitigation measures it is predicted that there will be no significant effects.

Ground disturbance will be limited to construction activities, and so no direct effects are predicted as a result of operation. No significant indirect effects are predicted during either construction or operation.

11.0 TRAFFIC AND TRANSPORT

This assessment has considered the potential impacts and effects of the Proposed Development on the surrounding road network. The receiving environment has been assessed in terms of walking, cycling, public transport and road infrastructure. The environmental effects associated with the increased traffic have been assessed elsewhere in the EIAR, including Chapter 8 (Air Quality and Climate) and Chapter 9 (Noise and Vibration).

The Proposed Development is proposed to be accessed by way of a vehicular priority junction off the Carmanhall Road. Car parking has been included in line with DLRCC Development Plan requirements with 145 car parking spaces proposed including 8 mobility impaired spaces, 44 electric vehicle spaces, 2 car club spaces and 5 motorcycle spaces. Cycle parking has been provided in line with both the DLRCC Development Plan (2016-2022) requirements with a total of 774 cycle parking spaces being provided (752 within the basement and 22 at surface).

Impact Assessment and Mitigation Measures

During the construction phase all construction vehicles accessing and egressing the Site will do so from the entrance point to the north of the Site on Carmanhall Road. Construction traffic travelling to and from the Site will do so via Carmanhall Road and Blackthorn Drive from where they will access the M50 and the national road network. This will keep trucks to an established HGV route, minimising their effects on residential areas.

Vehicle movements during construction will ultimately depend upon the construction approach, methodology and sequencing of the Main Contractor. Details of proposed vehicle movements during construction will be identified within the finalised CMP and Construction Traffic Management Plan (CTMP) which will be agreed with DLRCC prior to the construction phase and commencement of works. At this current stage of the development process, a reasonable estimate of likely daily vehicle movements based on the size and scale of the Proposed Development are: 50 daily Light Vehicles (LVs), (including private vehicles), 100 movements per day; and 60 daily Heavy Goods Vehicles (HGVs), 120 movements per day. The CMP and CTMP will also govern where construction works interact with the public realm and footpaths outside the Site. Once these measures are implemented and managed in accordance with the plan it is considered that the effects will not be significant.

For the operational phase of the Proposed Development a trip generation assessment was completed. Trip distribution onto the network was established cognisant of current and future traffic patterns. The assumed Opening Year (2023) and Future Year scenarios (2028 and 2038) were calculated using central growth rates from the TII's Travel Demand Projections to take into account the level of committed developments in the

immediate vicinity of the Proposed Development. The traffic impacts upon the junctions were identified to be nominal, resulting in effects that are not significant.

Visibility requirements have been provided for in line with Design Manual for Urban Roads and Streets (DMURS) for 50 km/hr. Site servicing has been provided for in terms of a 10.2 m bin lorry for access and circulation.

A Mobility Management Plan has been prepared (and has been included in the Traffic and Transport Assessment which accompanies this SHD application). This plan indicates the measures that will be implemented by the management company to promote more sustainable forms of transport to staff / visitors of the Proposed Development.

It is considered that there will be no significant effects on surrounding traffic or transportation from the construction and operation of the Proposed Development.

12.0 WIND

A wind and micro-climate assessment has been conducted to identify the possible wind patterns around the Proposed Carmanhall Road Development considering mean and peak wind conditions typically occurring in Dublin. The criteria of Lawson's Wind Comfort and Distress have been adopted to determine if a specific area of the Proposed Development should be comfortable and safe to pedestrians for its designated activity (i.e. standing/walking/strolling).

Results of the wind analysis were discussed with the design team so as to configure the optimal layout of the Proposed Development for the objective of achieving a high-quality environment for the scope of use intended for each area/building (i.e. comfortable and pleasant for potential pedestrians) and without compromising the wind impact on the surrounding areas and on the existing buildings.

Impact Assessment and Mitigation Measures

The wind modelling study has been performed through an Advanced Computational Fluid Dynamics (CFD) analysis; this numerical methodology simulates the movement of wind within the prescribed area. The simulations have been carried out using the concept of Large Eddy Simulation (LES) and Reynolds Average Navier-Stokes (RANS).

A total of 18 different wind scenarios have been studied considering variation of wind magnitude and directions in line with their frequency of occurrence based on 30 years of historical weather data. An exceedance of occurrence of 5% of the duration was considered in line with the Comfort and Distress criteria. Through the wind assessment it has been possible to highlight, at design stage, areas of concern in terms of downwash/funnelling/downdraft and to identify critical flow accelerations that could potentially occur.

The assessment has been carried out considering the impact of wind on the following configurations:

- The "Existing Receiving Environment (Baseline)": in this case the assessment has considered the impact of the local wind on the existing area / buildings prior to construction of the Proposed Development. For this assessment a statistical analysis of 30 years of historical weather wind data has been carried out to find the most critical wind speeds and directions and the frequency of occurrence of the same;
- The "Potential Impact": in this case the assessment has considered impacts of wind on the existing environment area, the Proposed Development, and its immediate vicinity, with the aim to identify potential impacts on future nearby buildings. For this scenario, the Proposed Development will introduce no negative wind effect on adjacent or nearby developments within its vicinity; and

- The “Cumulative Impact”: in this case the assessment has considered impacts of wind on the existing environment area, the Proposed Development, and its immediate vicinity (including buildings that have not been built yet but that have been granted planning permission), with the aim to identify potential impacts on future nearby buildings. For this scenario, the Proposed Development will introduce no negative wind effect on adjacent, nearby or future phase developments within its vicinity. Wind modelling of future phases around the Proposed Development will need to be performed for all future phase developments.

The Potential and Cumulative Impacts of the Proposed Development have been considered in terms of the impact of wind on the existing area including the Proposed Development. For these scenarios, the analysis has been used to identify the critical areas of the Proposed Development requiring implementation of mitigation measures.

CFD modelled results of the Proposed Development showed that:

- The Proposed Development will produce a high-quality environment that is attractive and comfortable for pedestrians of all categories;
- The surrounding environment and development properly shields all paths/walkways around and within the Proposed Development. Pedestrian footpaths are in all cases successfully shielded and comfortable;
- Some higher velocities are experienced around the building for certain wind directions. In particular, some recirculation effects are expected near the corners of the unit and at the main entrance. However, tree landscaping on the main roads and all around the Proposed Development, with particular attention to the corners and to the entrance, have been planned and will mitigate these effects;
- Depending on the wind direction, some slight funnelling effects are experienced on the main roads around the Proposed Development, especially on the road on the south-side of the Proposed Development. However, the implementation of tree landscaping has been planned for these areas and will mitigate these effects;
- The courtyard is shown to be well shielded. However, some low recirculation effects have been found for certain wind directions, especially near the main entrance. The implementation of tree landscaping that has been planned for these areas will mitigate these effects;
- Regarding the terraces, higher velocities can be found for some directions, only in some areas of the terraces and often corresponding to the edges of it. However, these velocities are below critical values for safety. Moreover, mitigation measures with balustrade, planters and trees have been planned and will mitigate these effects;
- The Proposed Development does not impact or give rise to negative or critical wind speed profiles at the nearby adjacent roads, or nearby buildings;
- The pedestrian comfort assessment, performed at Ground Floor level, on the courtyard (including the main entrance) and on the terraces according to the Lawson criteria, identified the areas that are suitable for the different pedestrian activities to enable pedestrian comfort. The area all around the Proposed Development is predicted to be suitable for every activity, including long-term sitting, apart from the corners of the building that are not suitable for long-term sitting. The courtyard is always suitable for long-term sitting, short-term sitting, standing, walking and strolling activities. The main entrance is not suitable for long-term sitting. Regarding the terraces, there are areas of that are not suitable for long-term sitting, and some small areas that are not suitable for standing or short-term sitting, while they are suitable for all the other activities. However, this analysis has been performed considering the worst-case scenario conditions, considering the whole year. It is not expected that people would be making use of such roof areas during the worst-case conditions. Moreover, mitigation measures with balustrade, planters and trees

have been planned and will mitigate these effects. Additionally, it must be noted that, in any case, these are not critical issues regarding safety. In terms of distress, no critical conditions were found for “Frail persons or cyclists” and “General Public” in the surrounding area of the Proposed Development; and

- During the construction phase the predicted impacts are classified as negligible.

The proposed mitigation measure for the ground floor of the Proposed Development is landscaping using tree planting, which creates a further reduced vorticity, making it possible to reduce incoming velocities and to mitigate some funnelling and recirculation effects, thus further reducing wind impacts on the buildings, public spaces or pedestrian paths. The proposed mitigation measures for the terraces of the Proposed Development are landscaping using tree planting, planters and a balustrade.

These mitigation measures are required to be implemented within the Proposed Development, particularly on the main roads around the Proposed Development, with particular attention to the corners of the buildings, as well as in the courtyard, at the main entrance and on the terraces, as fully reported in the related EIAR chapter.

The impacts of implementing mitigation measures such as tree planting will result in further shielding of public spaces and pedestrian footpaths from wind.

13.0 LANDSCAPE AND VISUAL

The impact of the Proposed Development on Landscape / Townscape has been considered at both construction stage and operational stage (post-completion) of the Proposed Development. It has also been considered in respect of physical effects on the landform and land cover of the Site as well as the contribution of the Proposed Development to wider townscape fabric and character.

Impact Assessment and Mitigation Measures

Due to the typical clutter and activity associated with major construction projects and in this prominent location, which is deemed to be of Low sensitivity, construction stage townscape impacts are deemed to be ‘Slight’ negative. However, such effects are unavoidable and relatively familiar in this area. More importantly, they are ‘short term’ in duration.

Once completed and operational, it is considered that the Proposed Development will have an imperceptible and not significant effect on the prevailing landscape / townscape of the Site and its surrounds. This is because the notably increased scale and intensity of built development within the Site, is balanced by its appropriate form and townscape function, which is a bold design response to the zoning and policy context of the locality.

The visual impact of the Proposed Development was assessed from 14 viewpoints representing a range of receptors, viewing distances and directions within and around the Sandyford business district. The range of receptor sensitivity at viewpoints varied between Low within the business district, Medium-Low within surrounding residential areas where the business district already influences views and High-Medium from two designated scenic routes within the foothills of the Dublin Mountains.

The significance of visual impacts ranged between ‘Slight’ negative and ‘Positive’. Only from the elevated viewpoint (VP7) at Leopardstown Rise on the opposite side of the M50 is the Proposed Development considered to contribute a ‘Slight’ negative visual impact. In this particular instance the uppermost sections of the proposed buildings bookend the eastern portion of existing high-rise development of the Sandyford business district core and, in doing so, they also partially obscure the view towards Dublin Bay and Howth Head. Slight-imperceptible impacts were also considered to occur at a viewpoint (VP11) within the grounds of Burton Hospital and from a viewpoint (VP13) within the Dublin Mountains context.

From those viewpoints within the Sandyford business district, the Proposed Development is considered to contribute either 'Imperceptible' or 'Positive' impacts. It serves as a sentry-like threshold development to the Sandyford business district when approaching from the east (VP1 and VP12) and when viewed along Blackthorn Road (VP2, VP5 and VP10) it consolidates the partially established building line and forms a more abrupt and legible transition between the core area of the Sandyford business district and its low-rise light industry precinct to the east. In this respect it represents the physical manifestation of the zoning and policy context for this locality.

Overall, it is considered that the Proposed Development will not give rise to any significant townscape or visual effects. Instead, such effects will generally be imperceptible or result in enhancement of the townscape and visual setting. It is important to reiterate, particularly for this scale of development, that 'Imperceptible' significance is not tantamount to a barely discernible degree of visual change. Instead, it reflects that the nature of the sometimes considerable visual change is compatible and consistent with the receiving townscape setting.

14.0 MATERIAL ASSETS

The material assets assessment has addressed the construction and operational related impacts of the Proposed Development on material assets located in the vicinity of the Application Site. Material assets comprise the physical resources in the environment, which may be of human or natural origin. Material Assets in the vicinity of the Site comprise of built services and infrastructure such as surface water drainage, telecommunications (including microwave linkages), electricity, gas, water supply infrastructure and sewerage. Other Material Assets include traffic and transport which have been assessed in a separate chapter (Chapter 11.0).

Impact Assessment and Mitigation Measures

Electricity

All works to the electrical lines during the construction phase will be carried out in accordance with appropriate requirements and Electricity Supply Board (ESB) Network guidelines. Locations and capacity of the network services will be agreed in consultation with ESB Networks. There will be an increased demand in electricity supply required during the operational phase of the Proposed Development. Demands will be agreed and authorised by ESB Networks and will ensure there will be no significant effects. ESB Networks were consulted and it was identified that there are currently no issues with the provision of the required power to the Proposed Development.

Gas Supply

During the construction phase, works on and around the gas transmission lines will be conducted in accordance with the Main Contractor's final Construction Management Plan and the Gas Networks Ireland (GNI) 'Code of Practice for Working in the Vicinity of the Transmission Network'. For the operational phase GNI have provisionally confirmed that sufficient capacity exists in the local gas network to serve the Proposed Development and it is considered that there will be no significant effects during this phase.

Telecommunications

During the construction phase works on and around the telecommunication utilities will be conducted in accordance with the Main Contractor's final Construction Management Plan and the appropriate service provider's Codes of Practice.

For the operational phase suppliers Eir and Virgin Media have confirmed that their infrastructure to the surrounding area is sufficient to service the Proposed Development, subject to final agreement. The microwave links surrounding the Site (operated by Three and Vodafone) will experience impact or diffraction due to the

presence of the Proposed Development. The proposed design provides for infrastructure located on the roof to mitigate any impacts on these microwave links.

Foul and Potable Water Networks

A pre-connection enquiry to Irish Water was made by the Project engineers (AECOM). Irish Water issued a Statement of Design Acceptance to AECOM for the Proposed Development. The Proposed Development will require a wastewater connection to be made to the foul sewer on Arkle Road, and a potable water connection will be made on Carmanhall Road. Construction phase works on an around the networks will be conducted in accordance with the Main Contractor's final Construction Management Plan and the Irish Water Code of Practice for such works to ensure there is no significant impact to the asset.

To service the Proposed Development, AECOM have undertaken their design following Irish Water's Code of Practice for Wastewater Infrastructure. Irish Water have confirmed acceptance of the design of the system and potential effects on the local foul water and potable water networks are predicted to be not significant.

Surface Water Drainage Infrastructure

The design of the surface water infrastructure is in accordance with Irish Water's Code of Practice for Wastewater Infrastructure. The design also incorporates sustainable drainage systems (SuDS) that will reduce the current run-off rate in accordance with the Greater Dublin Strategic Drainage Study. Discharge to the public surface water sewer will be via an oil/water interceptor. With the appropriate design mitigation, the potential effects on the surrounding surface water drainage network will not be significant.

15.0 INTERACTIONS, CUMULATIVE AND COMBINED EFFECTS

This chapter of the EIAR describes interactions/inter-relationships between environmental effects and also effects of the Proposed Development in combination with other appropriate committed development in the region of the Site. The overall objective of this assessment is to identify, through a review of these issues, whether additional mitigation is required that would not otherwise have been identified in the individual study areas for these interacting or cumulative effects.

Interactions and Inter-relationships

Interactions of EIA study topic areas are typically displayed visually in a matrix table which identifies potential interactions which are likely to occur between the various disciplines. This table, from Chapter 15.0 of the EIAR, has been reproduced in Table 1. Green shaded boxes identify the potential interacting disciplines where a relationship exists, and the respective phase where there is an interaction is also indicated.

Table 1: Carmanhall SHD Environmental Interactions, C – Construction Phase, O – Operational Phase

	Pop. & Human Health	Ecology & Biodiversity	Land, Soils & Geology	Water	Air Quality & Climate	Noise & Vibration	Cultural Heritage	Traffic & Transport	Wind	Landscape & Visual	Material Assets
Pop. & Human Health				C O	C O	C O		C O	C O	C O	C O
Ecology & Biodiversity				C O						O	
Land, Soils & Geology				C O	C	C		C			C
Water											C O
Air Quality & Climate							C O				
Noise & Vibration							C O				
Cultural Heritage										C O	
Traffic & Transport											
Wind											
Landscape & Visual											
Material Assets											

Cumulative and Combined Effects

This section of the EIAR describes the environmental effects and impacts of the Proposed Development in combination with other relevant committed development surrounding the Site.

Cumulative effects are defined as the addition of many non-significant or significant effects, including the effects of other projects, to create larger, more significant effects. Singular activities may have a non-significant effect in isolation, however when combined with other effects these can be collectively significant and therefore must be included in the EIA process.

Relevant committed proposed developments in the region of the Application Site were examined to assess the likelihood and magnitude of combined environmental effects with the Proposed Development. These applications included four SHD schemes within 1 km of the Proposed Development.

No likely significant cumulative effects have been identified with regards the Proposed Development and the other local committed developments identified.

16.0 MITIGATION AND MONITORING MEASURES

The purpose of this Section is to collate the mitigation and monitoring measures identified in the EIAR that are considered necessary to protect the environment prior to, and during the construction and operational phases of the Proposed Development. Where environmental impacts cannot be avoided by embedded mitigation, additional mitigation and monitoring measures have been recommended in the EIAR.

Where appropriate, environmental monitoring activities have been proposed for the construction and operational phases. Monitoring will take place after the consent is granted for the Proposed Development to provide assurance that aspects of the design and management are functioning as intended and therefore not generating significant effects.

17.0 SUMMARY & CONCLUSIONS

The findings of the EIA process are fully documented in the EIAR accompanying the planning application.

Measures have been identified to avoid or reduce environmental impacts during construction and operation of the Proposed Development. Some of these form part of the design of the Proposed Development itself. Others, such as management plans, will be secured by provisions in planning conditions of the final grant.

18.0 REFERENCES

Archaeology and Built Heritage Ltd., (2020). Archaeological impact assessment. Avid Sandyford, Carmanhall Road, Sandyford Industrial Estate, Dublin 18.

Department of Public Expenditure and Reform. 2018. Project Ireland 2040, National Development Plan 2018 - 2027.

Department of Housing, Planning and Local Government. 2018. Project Ireland 2040. National Planning Framework.

Dún Laoghaire Rathdown County Development Plan 2016-2022.

IN2. 2021. Energy Analysis Report. No. D2005.



golder.com