ARDAROSTIG LRD

VOLUME I

Non-Technical Summary

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CHAPTER 1 | Introduction

Article 5(1)(e) of the EIA Directive requires the project proponent to include a Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) and it is transposed into Irish law under article 94(c) of the Planning and Development Regulations 2001, as amended. The term 'non-technical' indicates that this summary should not include technical terms, detailed data and scientific discussion, that detail is presented in Volume II, the EIAR.

This Non-Technical Summary provides a concise, but comprehensive description of the Project, its existing environment, the effects of the project on the environment, the proposed mitigation measures, and the proposed monitoring arrangements, where relevant. The NTS highlights any significant uncertainties about the project. It explains the development consent process for the Project and the role of the EIA in that process.

It is important to highlight that the assessments that form part of the EIAR were undertaken as an iterative process rather than a one-off, post-design environmental appraisal. Findings from the individual assessments have been fed into the design process, resulting in a project which achieves a 'best fit' within the environment.

The development description is set out in Section 2.1. To summarise, the proposed development consists of a Large-Scale Residential Development (LRD) which consists of the construction of 246 no. residential units, a creche and all associated site development works at Ardarostig (Townland), Bishopstown, Cork.

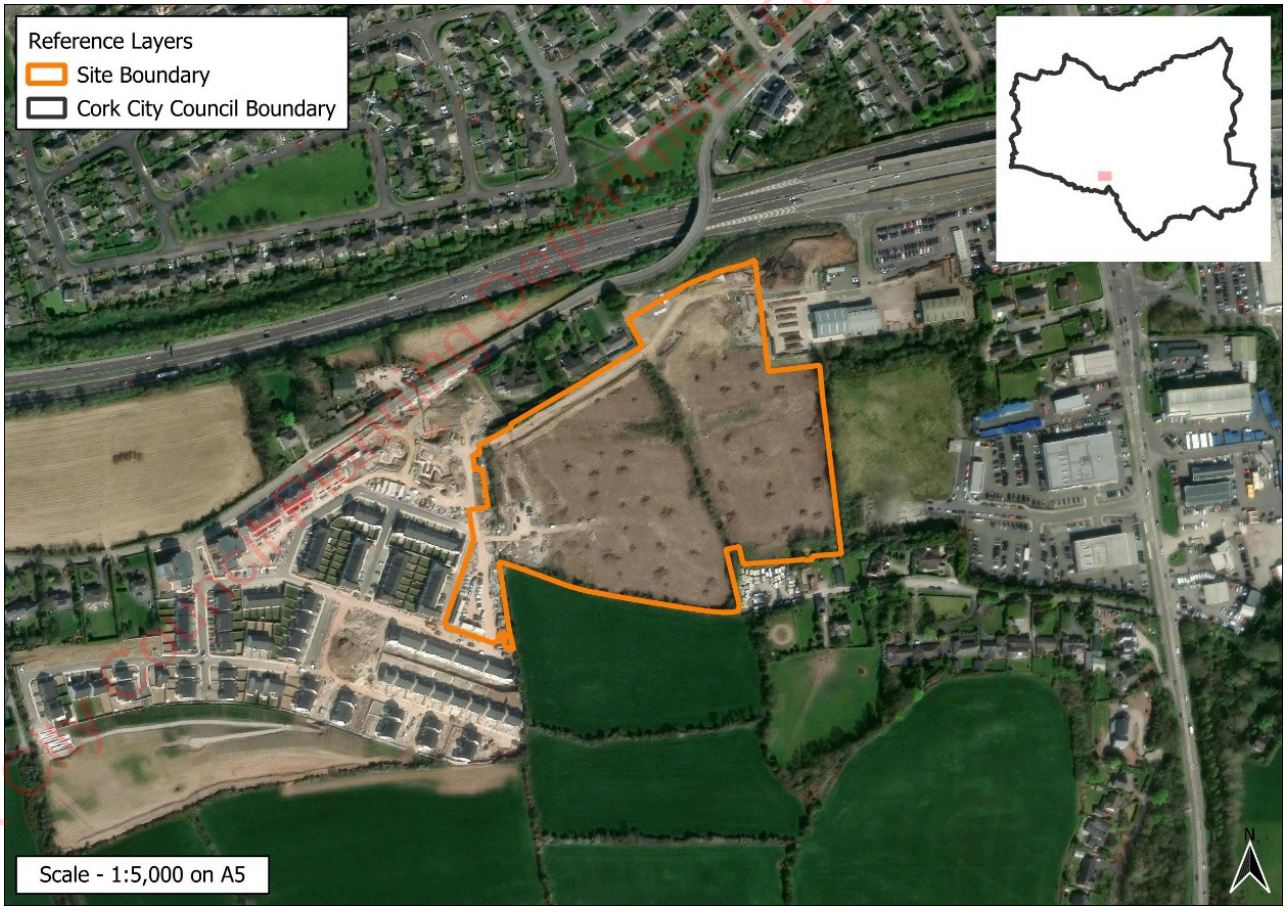

Figure 1 Indicative Outline of Site Location

1.1 Screening for Environmental Impact Assessment

Development which falls within one of the categories specified in Schedule 5 of the Planning and Development Regulations 2001, as amended, which equals or exceeds, a limit, quantity, or threshold prescribed for that class of development must be accompanied by an EIAR.

The proposed Large-Scale Residential Development consists of the construction of 246 no. residential units on a site area of 5.76 hectares. While neither of these figures reach the threshold of categories specified in Schedule 5 of the Planning and Development Regulations 2001 as a standalone development, the development site is located adjacent to a Strategic Housing Development (SHD) permitted by An Coimisiún Pleanála under Ref. No. 310274 and is currently under construction. This SHD has undergone significant construction to date and comprises the construction of 275 residential units on a site area of 9.95 hectares. Given the proximity of the development site to the SHD site, it was considered appropriate that the proposed development be considered with the permitted development. The number of units combined, along with the overall site area of the two independent sites would reach thresholds as identified under Schedule 5 and as a result the preparation of an EIAR is considered appropriate.

1.2 Competency

It is a requirement that the EIAR must be prepared by competent experts. For the preparation of this EIAR, the Applicant engaged McCutcheon Halley Chartered Planning Consultants to direct and coordinate the preparation of the EIAR and a team of qualified specialists were engaged to prepare individual chapters. The consultant firms and lead authors are listed in **Table 1**. Details of competency, qualifications, and experience of the lead author of each discipline is outlined in the individual chapters.

Table 1 Chapters of EIAR & Contributors

Chapter	Aspect	Consultancy	Lead Consultant
1	Introduction	McCutcheon Halley Planning Consultants	Ciaran Dineen
2	Project Description	McCutcheon Halley Planning Consultants	Ciaran Dineen
3	Alternatives	McCutcheon Halley Planning Consultants	Ciaran Dineen
4	Population & Human Health	McCutcheon Halley Planning Consultants	Ciaran Dineen
5	Landscape & Visual	JBA Consulting Engineers	Maria Ines Timoteo
6	Material Assets: Traffic & Transport	MHL Consulting Engineers	Brian Murphy
7	Material Assets: Built Services	OSL Consulting Engineers	Ben Mong
8	Material Assets: Waste	AWN Consulting	Chonaill Bradley
9	Land & Soils	JBA Consulting Engineers	Conor O'Neill
10	Water & Hydrology	AWN Consulting	Luke Maguire
11	Biodiversity	Enviroguide	Tom Ryan
12	Noise & Vibration	AWN Consulting	Dominic Wright
13	Air Quality	AWN Consulting	Ciara Nolan
14	Climate	AWN Consulting	Ciara Nolan
15	Cultural Heritage – Archaeological & Built Heritage	Lane Purcell Archaeology	Musetta O'Leary

Chapter	Aspect	Consultancy	Lead Consultant
16	Risk Chapter	McCutcheon Halley Planning Consultants	Ciaran Dineen
17	Interactions of the Foregoing	McCutcheon Halley Planning Consultants	Ciaran Dineen
18	Summary of Mitigation Measures	McCutcheon Halley Planning Consultants	Ciaran Dineen

1.3 Methodology

In preparing the EIAR the following regulations and guidelines were considered:

- The requirements of applicable EU Directives and implementing Irish Regulations regarding Environmental Impact Assessment;
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Reports (European Commission, 2017)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency, May 2022).
- Guidelines on Information to be Contained in Environmental Impact Statements (EIS) (Environmental Protection Agency, 2002)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).

In addition, contributors have had regard to other relevant discipline-specific guidelines, these are noted in individual chapters of the EIAR.

Each chapter of this EIAR assesses the direct, indirect, cumulative, and residual impact of the proposed development for both the construction and operational stage of the proposed development.

The identified quality, significance, and duration of effects for each aspect is primarily based on the terminology set out in the EPAs Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022) as summarised in the following table:

Table 2 Impact Rating Terminology

Quality of Effects	
Positive	A change which improves the quality of the environment (for example, by increasing species diversity; or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral	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).

Significance of Effects	
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.
Duration & Frequency of Effects	
Momentary Effects	Seconds to minutes
Brief Effects	Less than 1 day
Temporary Effects	Less than 1 year
Short-term Effects	1-7 years
Medium-term Effects	7-15 years
Long-term Effects	15-60 years
Permanent Effects	Over 60 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).
Extent & Context of Effects	
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?)
Probability of Effects	
Likely	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

Type of Effects	
Indirect 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).

1.4 Consultation

The following prescribed bodies have been consulted in relation to the general scope of the EIAR.

- Department of Housing, Local Government, and Heritage
- Department of Tourism, Culture, Arts, Gaeltacht, Sport & Media
- Department of Education
- Geological Survey Ireland (Department of the Environment, Climate and Communications)
- The Heritage Council
- Office of Public Works (OPW)
- Transport Infrastructure Ireland (TII)
- The National Transport Authority (NTA)
- The Health and Safety Authority (HSA)
- The Health Service Executive (HSE)
- Inland Fisheries Ireland
- Bat Conservation Ireland
- Uisce Éireann
- An Taisce
- Bord Gais
- ESB
- Environmental Protection Agency
- Fáilte Ireland

Responses received along with a copy of the consultation information letter issued to each of the above prescribed bodies are presented in Appendix 1.1.

CHAPTER 2 | Project Description

2.1 Proposed Development

The proposed development consists of the following;

Permission for the following Large Scale Residential Development (LRD) comprising the construction of 246 no. residential units to include 143 no. dwelling houses (comprising a mix of 2,3, and 4 bed semi-detached and townhouse/terraced units) and 103 no. 1 and 2 bed apartment/duplex units, modifications to the creche permitted under Strategic Housing Development (SHD) ACP Ref No. 310274 to provide a 747 sqm creche and all associated ancillary development works including vehicular and pedestrian access, drainage, landscaping, amenity and open space/play areas, footpaths and cycle lanes, boundary treatments, bicycle and car parking, bin and bike storage, public lighting and all other ancillary development at Waterfall Road, Ardarostig (townland), Bishopstown, Cork. Vehicular access will be to the west of the site through the permitted SHD (ACP Ref No. 310274).

An Environmental Impact Assessment Report (EIAR) has been submitted to the planning authority with the application. The Environmental Impact Assessment Report will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours at the offices of the Local Authority.

The application may be inspected online at the following website set up by the applicant: www.waterfallmanorlrd.ie

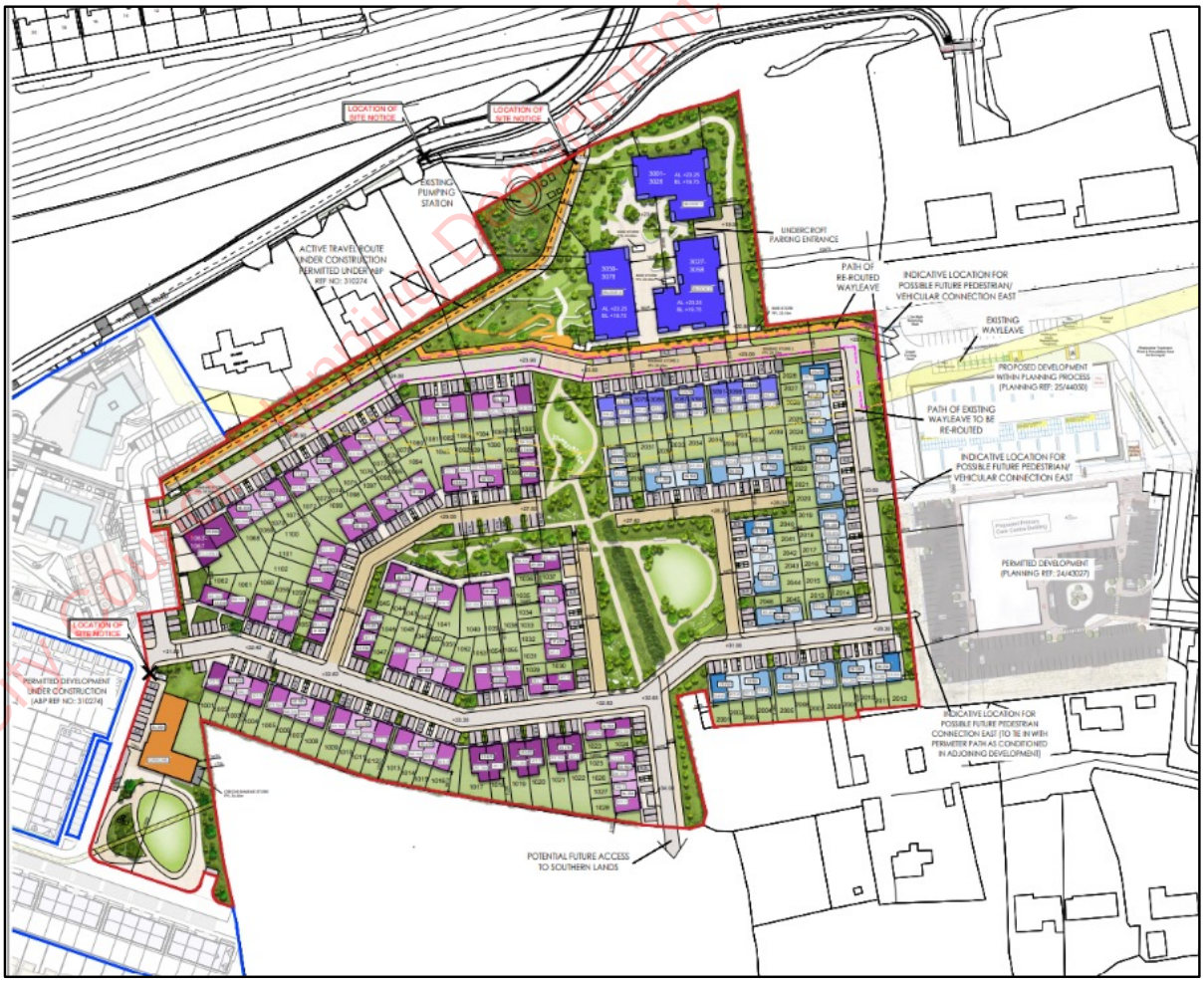

Figure 2 Proposed Site Plan

The site, which is 5.76 hectares in area, with a net developable area of 4.8 hectares, is located within the extended Cork City development boundary within the Southwestern Suburbs, to the south of the Bandon Road (N71) and N40 South Ring Road.

The subject site is situated approximately 6.1km southwest of Cork City Centre (15 minutes' drive), 2.5km southwest of Wilton Shopping Centre (8 minutes' drive) and 1.1km west of Bishopstown Court Neighbourhood Centre.

The site is bounded by the N40 and 4 no. dwellings to the north, light industrial uses to the east, agricultural land to the south and a residential development to the west, which is currently under construction. There are vehicular, cycle and pedestrian connections to the Waterfall Heights residential development (including two vehicular connection points connecting on to the Waterfall Road via the Waterfall Heights development); a pedestrian/cycle connection to the north (onto an existing footpath/cycle way); and provision for future vehicular, cycle and pedestrian access points to the adjoining lands to the south and east of the proposed development.

The site is also within a short walking distance of nearby bus stops, which is served by the 208-bus service along Curraheen Road (1.1km from the site), and the 236-bus service along Bishopstown Road (600 m from the site), both providing direct access to Cork City. Additional bus stops with more frequent public transport facilities are available along Curraheen Road.

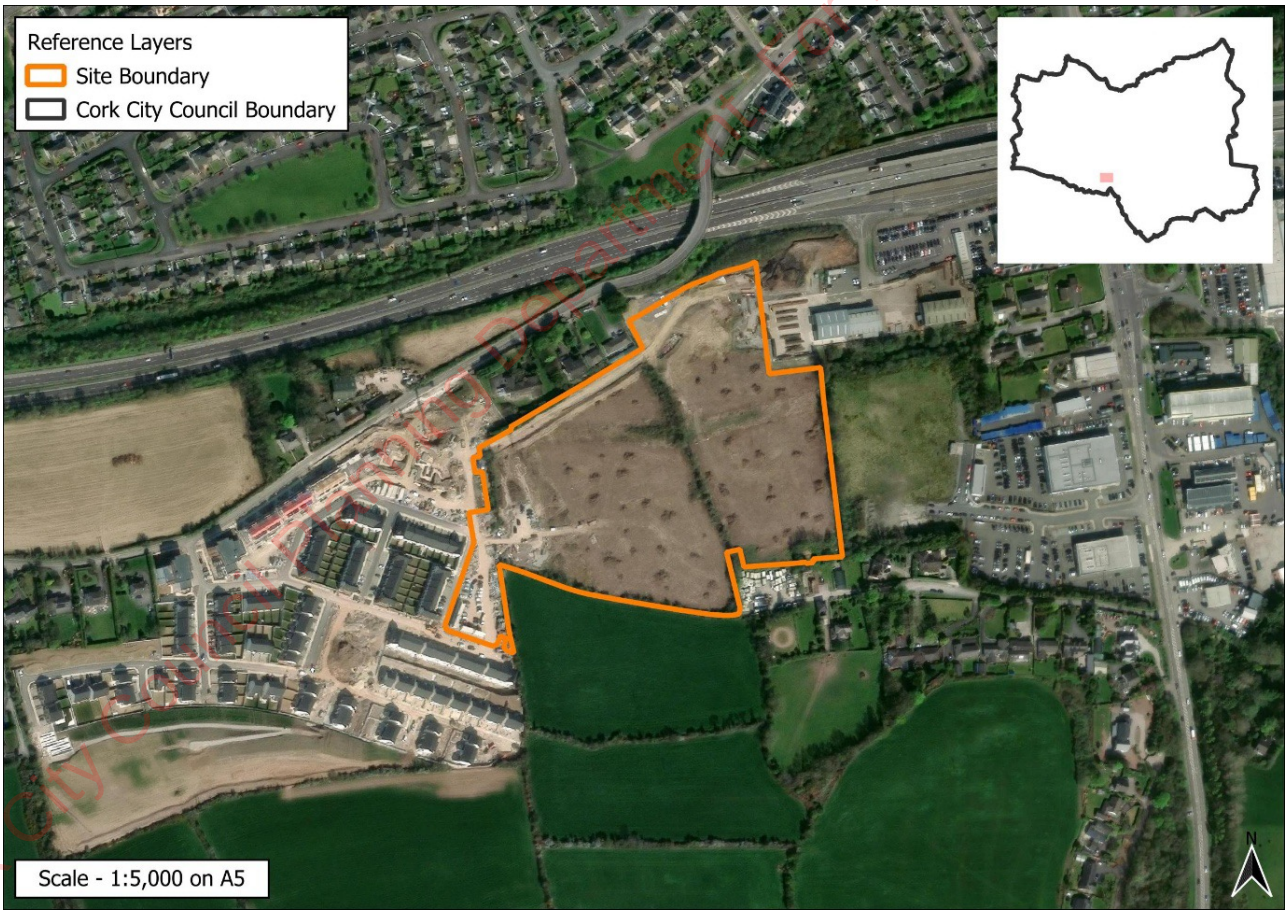

Figure 3 Location of Development Site

An overview of the key development statistics is set out in the following Table:

Table 3 Development Overview

Development Statistics	
Gross Site Area	5.75 ha
Net Site Area	4.8 ha
No. Units	246
Public Open Space	15%
Non Residential Uses	Creche 747sqm
Density (Net Area)	51.2 unit/ha
Unit Mix Summary	52 no. 1 bed unis (21%) 91 no. 2 bed units (37%) 90 no . 3 bed units (36.5%) 13 no. 4 bed units (5.5%)
Car Parking	299
Bicycle Parking	228
Dual Aspect Units	226
Plot Ratio (Net Site Area)	0.46
Site Coverage (Net Site Area)	26.2%

2.2 Non Residential Use

As part of the proposed development, it is proposed that uses, in addition to that of residential, will be provided. As per the proposed development description provided in Section 2.1, the proposal includes modifications to the creche permitted under Strategic Housing Development (SHD) ACP Ref No. 310274 to provide a 747 sqm creche. The proposed development seeks to extend the size and capacity of this creche to cater for the proposed development, alongside the permitted adjoining Strategic Housing Development to the west. This creche will be increased in size to accommodate 140 childcare places.

Figure 4 CGI Render of Proposed Creche (Deady Gahan Architects)

2.3 Height/Massing

The proposed development consists of the construction of 246 no. residential units to include 143 no. dwelling houses (comprising a mix of 2,3, and 4 bed semi-detached, and townhouse/terraced units) and 103 no. duplex/apartment units (comprising 25 no. 1, 2 and 3 bed duplex/apartment units and 78 no. 1 and 2 bed apartments in 3 no apartment blocks). The apartment blocks range in height from 4 to 5 storeys with basement/undercroft parking. The height across the site therefore ranges from 2-5 storeys.

2.4 Materiality

The building materials will help establish a clear identity, contributing to a unique character in each area of the new neighbourhood. The placement of materials on individual units is guided by their durability and visual appeal. The development is designed to foster neighbourhoods with distinct architectural identities, each centred around a shared open space. These character areas create a strong sense of place through a combination of landmark housing typologies and a curated mix of materials unique to their setting. Character Area 1 includes finishes such as beige brick and off-white render finish, Character Area 2 incorporates grey brick as the primary material, while Character Area 3 are defined by the apartment blocks, which are characterised by large windows, pressed metal and private balconies. .

2.5 Access, Parking & Connections

It is proposed that the site will be accessed from the west off Waterfall Road via Waterfall Heights with 2 no. site entrances with potential future connections located along the eastern boundary.

Connectivity, legibility and permeability are some of the key themes of the scheme and develops from the wider surrounding area to the local environment. Permeability and connections between the variety of public spaces will be incorporated throughout the site. The existing north-south historic hedgerow is a unique existing feature and will be retained and integrated into the landscaping concept.

The proposed design establishes a well-structured and interconnected movement network that prioritises accessibility, permeability, minimal car dependency, and sustainable transport. The provision of walkways/cycleways throughout the scheme will provide connectivity between the residential units and public open spaces on site. A variety of open spaces are provided throughout the scheme and facilitate pedestrian/cycle access.

The proposed development provides in-curtilage car parking spaces, on-street car parking spaces and under croft car parking spaces. Provision has been made for a number of motorcycle spaces throughout the site.

Parking spaces are to be provided and are compliant with 'Cork City Development Plan 2022-2028'. A total of 299 no. parking spaces are to be provided: 242 no. allocated parking spaces, 39 no. communal spaces, 9 no. visitor spaces and 9 no. creche spaces.

The car parking provision is broken down in further detail under Dwg. No. 23161/P/007 – 'Proposed Parking Allocation' by Deady Gahan Architects, provided under separate cover with the application material submitted.

All allocated spaces will be equipped with necessary infrastructure and ducting for charging points.

All houses and ground floor apartment that have direct access to rear gardens or private amenity to the front of units can utilise these areas for bicycle storage. Allocated bicycle spaces are assigned to a number of unit types, while communal spaces are also available for the apartment blocks. Details of bicycle parking spaces are provided under Dwg. No. 23161/P/007 – 'Proposed Parking Allocation' by Deady Gahan Architects, provided under separate cover with the application material submitted.

In total 228 no. bike storage spaces are to be provided throughout the site. This includes 60 no. visitor spaces and 22 no. spaces for the creche – equating to 228 no. spaces total are to be provided.

A full breakdown of car parking and bicycle parking space details are provided in the below Table.

Table 4 Car and Bicycle parking figures for the site

	Car Parking Spaces	Cycle Parking Spaces
Total Communal Electrical Vehicle Parking Spaces	39	N/A
Visitor Parking	9	60
Childcare Facility	9	22
Total Parking	299	228

2.6 Landscape, Public Open Space & Amenity Space

Public open space reflects 15% of the overall developable area of the site. Open spaces are interspersed throughout the site to ensure that all residential areas of the scheme have access to green spaces. Some of the amenities provided within these open spaces include trails, paths, play areas and amenity walks, which will give prospective residents a high quality residential environment which promotes interaction with open spaces.

Figure 5 General Landscape Plan

2.7 Drainage Strategy

A full description of services associated with the proposed development is contained in Chapter 7 of this EIAR and it should be read in conjunction with this section.

2.7.1 Wastewater

It is proposed that wastewater from the proposed development will connect to existing foul pipes to the north of the development sites and discharge to a new pumping station as permitted under the adjoining SHD. The proposed foul network will be located within the public road and green area and will be a combination of 150mm & 225mm diameter sewer.

A confirmation of feasibility has been obtained from Uisce Eireann. This confirms that the connection to the wastewater network can be facilitate, subject to upgrades.

These upgrade works are understood to be between 160-200m existing Sewer network to 200mm and will be funded by the developer. Any associated additional works will be carried out in accordance with the connection agreement and in line with Standard details and Code of Practice.

2.7.2 Surface Water

It is proposed that the surface water on site will connect to the existing drainage ditch to the east, passing to the north of the site network. This will be achieved by connecting into the existing surface water pipe, running west to east and passing the north of the site. Connection to same can be made without interference to the road network, as the pipe are to the south of the existing path/roadway infrastructure.

As part of the development, several different SuDS measures will be provided to minimise the impact on water quality and water quantity of the runoff and maximise the amenity and biodiversity opportunities within the site.

Determination of storm water runoff and a suitable control system for this site is in accordance with the requirements of Dublin Corporation's "Storm water Management Policy for Developers" (SMPD)

2.7.3 Sustainable Urban Drainage Systems (SuDS)

Sustainable drainage systems (SuDS) features incorporated in the design include green roofs, tree pits, swales, ponds, percolation areas, petrol interceptors and flow control devices in accordance with CIRIA publication C753 SuDS Manual. These design features will aid in managing rainwater close to where it falls, allow rainwater to soak into the ground, promote evapotranspiration, slow down and store runoff, treat runoff to reduce contamination through pollution prevention and controlling the runoff at source and reduce the risk of urban contaminants causing environmental pollution.

A full list of SuDS features are available in the Surface Water Management Plan/ Drainage Impact Assessment prepared by OSL Consulting Engineers under separate cover.

The proposed surface water drainage design has been discussed in more detail within the Engineering Report submitted as part of this application, under separate cover by OSL Consulting Engineers.

2.7.4 Water Supply

It is proposed that the development will connect into an existing watermains, recently constructed as part of the adjoining SHD.

As per the Confirmation of Feasibility, the Water network will have to be upgraded from 150mm to 200mm for approximately 200m. This work will be carried out by Uisce Éireann and the costs for this will be included in the connection fee. Any associated additional works will be carried out in accordance with the connection agreement and in line with Standard details and Code of Practice.

2.8 Services

2.8.1 Electrical Supply and Telecommunications

In order to facilitate the new development the proposal is to install new electrical services to serve the houses and apartments. This involves the following:

- Rerouting the overhead lines underground.
- New Unit Substations
- New underground ducting and electrical infrastructure to serve the development.
- New underground ducting and electrical infrastructure to serve the development lighting.

2.8.2 Gas Supply

It is not proposed that gas is provided to the houses and apartments in the development.

2.8.3 Waste Management

An Operational Waste Management Plan (OWMP) prepared by AWN Consulting Engineers accompanies this application and should be referred to in conjunction with this section.

2.8.4 Climate Action and Energy

A Climate Action and Energy Statement has been prepared by OSL Consulting Engineers and is provided under separate cover with the application material.

2.8.5 Site Lighting

A public lighting strategy has been developed by Molloy Consulting and is provided under separate cover as part of the application material.

2.9 Construction Phase

This application is accompanied by an **Outline Construction Environmental Management Plan** (OCEMP), prepared by OSL Consulting Engineers, which should be read in conjunction with this chapter for a comprehensive description of the construction phase.

It is proposed, upon receiving a successful application, that there will be a possible number of phases of construction. The dwelling units will be developed on a sequential basis starting on the Western part of the site and generally moving sequentially. The anticipated start date of work on site is Q1/Q2 of 2026, starting with the site set up followed by the setting out and provision services. It is expected that the total duration of construction for the proposed works will be 24 months. This timeframe is subject to change depending on several factors but can be considered an accurate estimate with information available as at the time of compiling this report.

2.10 Site Compound

The compound shall be entirely within the site boundaries. Site accommodation to be provided will include suitable washing/dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure.

The compound shall be constructed using a clean permeable stone finish and will be enclosed with security fencing. A permeable hardstand area will be provided for staff parking and these areas will be separate for designated machinery/ plant parking.

A material storage zone will also be provided in the compound area. This storage zone will include material recycling areas and facilities.

A series of 'way finding' signage will be provided to route staff/deliveries into the site and to designated compound/ construction areas.

On completion of the works all construction materials, debris, temporary hardstands etc. from the site compound will be removed off site and sent do reuse as by-products or recovery at authorised facilities and the site compound area reinstate in full on completion of the works.

For more details please refer to Construction Traffic Management Plan by MHL Consulting Engineers.

2.11 Construction Hours

For the duration of the proposed works the maximum working hours shall be 07:00 to 19:00 Monday to Friday (excluding bank holidays) and 07:00 to 16:00 on Saturday. No works are to take place on Sundays or Bank Holidays unless otherwise agreed in advance with the Planning Authority.

2.12 Construction Traffic

An Outline Construction Traffic Management Plan (OCTMP) prepared by MHL Consulting Engineers accompanies this application under separate cover and should be read in conjunction with this section.

This CTMP is a preliminary planning stage document that outlines strategies and measures to effectively manage, and control traffic associated with construction activities. It outlines traffic management planning items such as the transportation and movement of vehicles, equipment, and personnel during the construction phase of a project. The CTMP includes details about traffic routes, access points, parking arrangements, and measures to minimize the impact on local roads and communities. The aim is to ensure the safe and efficient flow of traffic, reduce disruptions to the surrounding area, and mitigate potential risks associated with construction-related transportation.

2.13 Earthworks

2.13.1 Ground Conditions

As detailed in Chapter 9 of this EIAR, the site is primarily underlain by Sandstone with mudstone and siltstone (Gyleen Formation), and flaser-bedded sandstone and minor mudstone (Old Head Sandstone Formation).

Topsoils across the site are primarily fine loamy drifts with siliceous stones and coarse loamy drifts with siliceous stones, with made ground located adjacent to the eastern boundary and to the north, associated with the built-up areas of south-west Cork City.

2.13.2 Invasive Species

Invasive species surveys were incorporated into the habitats and flora survey carried out at the Site on 11th April 2025. During this ecological walkover, the location of invasive species, where they were encountered, was documented through the use of remote mapping software (QField), along with the extent of the area they cover. The invasive plant species survey primarily focused on plant species that are listed on Schedule III of the European Communities (Birds and Habitats) Regulations and considered to be 'High impact' invasive species e.g., Japanese Knotweed (Reynoutria japnica). Incidental observations of other terrestrial plant species known to be potentially invasive, such as Butterfly Bush (Buddleja davidii), were also recorded, where found.

Detailed mitigation measures will be presented in the final Biodiversity Chapter in relation to invasive species.

2.13.3 Waste

A Resource and Waste Management Plan (RWMP) has been prepared for the construction phase of the proposed development and is submitted under separate cover with the planning application and should be read in conjunction with this section. This RWMP has been prepared by AWN Consulting Engineers. In addition, an Operational Waste Management Plan (OWMP) has been prepared by AWN Consulting Engineers.

The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible. The Contractor will have the responsibility to record resource and waste management at the site in line with the RWMP and OWMP. Both management plans are available in the appendices of Chapter 8.

2.13.4 Bulk Excavation

According to the OCEMP, a specialist ground works contractor will be appointed to carry out the excavation and rock breaking works. The appointed specialist contractor will carry out a full risk assessment prior to the commencement of work.

The ground works operation will be carried out in order to ensure that material removed from the ground is taken away at regular intervals in order to reduce the amount of material that can be stored on site.

If required by condition imposed by the local authority, topsoil stripping associated with the proposed development will be monitored by a suitably qualified archaeologist, which will ensure the identification of any small archaeological features that may survive within the site. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation will be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH).

2.14 Health and Safety

2.14.1 Construction Phase

A detailed Construction and Environmental Management Plan (CEMP), in line with the preliminary OCEMP submitted as part of this planning application, will be prepared and implemented by the contractor at the construction phase.

2.15 Commissioning

The testing and commissioning of services (drainage, watermain, gas, electricity) will be completed in accordance with relevant codes of practice as set out in Chapter 7 of the EIAR.

2.16 Decommissioning

The design life of the scheme is greater than 60 years. Thus, for the EIA process, the development is considered permanent, and a decommissioning phase is not considered in this report.

CHAPTER 3 | Alternatives Considered

The Planning and Development Regulations, 2001, as amended, require:

> *"A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment."*

The requirement is elaborated at paragraph 2(b), which makes clear that reasonable alternatives may include project design proposals, location, size and scale, which are relevant to the proposed development and its specific characteristics. The Regulations require that an indication of the main reasons for selecting the preferred option, including a comparison of the environmental effects be presented in the EIAR.

The Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports states:

> *"The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with 'an indication of the main reasons for selecting the chosen option'. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or 'mini-EIA') of each alternative is not required."*

The Guidelines also state that the range of alternatives considered may include the 'do-nothing' alternative.

Accordingly, this chapter of the EIAR provides an outline of the main alternatives examined during the design phase. It sets out the main reasons for choosing the development as proposed, taking into account and providing a comparison on the environmental effects. The assessment of alternatives is considered under the following headings;

i. Do Nothing Alternative
ii. Alternative Locations
iii. Alternative Uses
iv. Alternative Project Design (3 no. alternative scenarios)
v. Alternative Processes

3.1 Do-Nothing Alternative

The Do-Nothing Alternative would see the proposed development site remain in its current condition, and it would not fulfil its residential zoning objective nor assist in the delivery of housing units at a period of national housing shortage. Accordingly, there would be an adverse effect on population, as this approach would fail to address the shortage of homes in Cork City. Maximising the efficiency of zoned land particularly when nationally, there is a housing crisis and as a result, the delivery of housing on zoned land in a timely manner is of critical importance

3.2 Alternative Locations

The suitability of the proposed development site for residential development is confirmed by the Cork City Development Plan 2022-2028 and the residential zoning policy for the site. The selected location is considered the most suitable location for the proposed development.

3.3 Alternative Uses

The proposed development site is primarily zoned ZO 01 'Sustainable Residential Neighbourhood'. The primary objective of this zoning policy is to protect and provide for residential uses and amenities, local services and community, institutional, educational and civic uses. In addition to this, a portion of the site is zoned ZO 02 'New Residential Neighbourhood' where it is an objective to provide for new residential development in tandem with the provision of the necessary social and physical infrastructure. The Development Plan notes that these areas are intended primarily for residential development but may also include ancillary uses such as social/community and amenity use.

Therefore, the proposed residential development, which includes the provision of a childcare facility, is considered an appropriate use for the subject site.

3.4 Alternative Design (including size & scale)

The layout of the proposed development went through a detailed design team process with input from Cork City Council and the entire applicant's design team and the EIAR team. Three Alternative layouts (1-3) were considered and presented to Cork City Council before the final layout (Alternative 4) was developed and selected. These five layouts are discussed in detail in Chapter 3 of Volume II.

An overview of the key statistics for each alternative is provided in the table below.

Table 5 Key Statistics Overview for Alternatives

Statistic	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Net Site Area	5 ha	5.73ha	5.76ha	5.76ha
Total No. Units	242 no.	3239no.	239 no.	246 no.
Creche Spaces	N/A	140no.	140no.	140no.
Density	48uph	49uph	50uph	51.3uph
Open Space	15%	15%	15%	15%

3.5 Alternative Processes

Due to the nature and scale of the proposed development (i.e. a residential development greater than 100 residential units), the only option is to submit a Large-Scale Residential Development planning application to the Planning Authority. Therefore, there is no alternative process to consider.

3.6 Difficulties Encountered

There were no difficulties encountered in the preparation of this assessment for the proposed development.

3.7 Proposed Preferred Alternative

The Final Design directly responds to the stakeholder feedback and is overall an accumulation of high quality design stemming from design team input and feedback from Cork City Council throughout the planning process.

The layout proposes 246 no. units with a density of 51.2 units/ha. Useable open space measures 15%.

CHAPTER 4 | Population & Human Health

The assessment of Population and Human Health is contained within Chapter 4 of Volume II.

4.1 Existing Environment

The site is located within the extended Cork City development boundary within the southwestern Suburbs, to the south of the Bandon Road (N71) and N40 South Ring Road. The subject is situated approximately 6.1km southwest of Cork City Centre and 2.5km southwest of Wilton Shopping Centre. The site benefits from the many facilities and amenities within close proximity of the site. The site itself has features and characteristics which help create a positive living environment by retaining some of the natural assets and features contained within its setting. There are a number of natural hedgerow boundaries through and around the perimeter of the site which provides an opportunity to create recreational and educational opportunities while serving as vital wildlife habitats.

4.2 Do Nothing Scenario

If the development were not to proceed there would be no immediate impact on the existing population, economic activity, or community services and facilities in the area, however, if the development does not occur there will be a shortfall in housing supply in this area of the southwest suburbs of the City which may negatively impact the ability of Cork City to supply homes to meet the population projections in the coming years.

The site is zoned for residential development and the provision of housing on the subject site will support the core strategy and objectives of the Cork City Development Plan 2022. If the development does not occur the zoning and objectives of the local planning policy will not be realised in the short term.

In terms of Population and Human Health, a 'do nothing' scenario would represent a lost opportunity to develop these lands for residential use on site zoned for residential use. As such, the proposed development site would remain underutilised, and it would not contribute to increasing provision of housing in this area.

The impacts on land use are therefore envisaged to be negative to neutral for the 'do-nothing' scenario.

4.3 Impact Assessment

4.3.1 Construction Phase

The construction phase is expected to last approximately 24 months, as per the Outline Construction and Environmental Management Plan (OCEMP) submitted with the application, under a separate cover, by OSL Consulting Engineers.

Population

The potential impacts arising during the construction phase relate to short term impacts to quality of life, including visual impact/amenity, noise, air quality, and transport. Where relevant, these impacts have been considered in the relevant chapters of the EIAR and will be minimised or mitigated where appropriate. It is unlikely that these impacts will be of a scale to either encourage people to move from the area or discourage people from moving to the area.

Employment & Economics

The construction phase is anticipated to result in a temporary boost to the local economy as workers employed at the site can be expected to make use of local and retail facilities and other services. If the application is successful, construction works will continue until the development is completed. Up to 180 workers will be employed on site during the construction phase, and there will be positive economic externalities to industries that are complimentary to the construction sector.

Health

As with any construction site, there will be potential risk to health and safety in terms of injury or death of construction personnel on-site due to the usage of large, mobile machinery as well as heavy equipment and materials.

Residential Amenity

The anticipated likely significant effects in the absence of mitigation on residential amenities relate to disruption due to increased construction traffic movements on the local road network, noise, dust and visual impact arising from plants (e.g. cranes) necessary to deliver the development.

4.3.2 Operational Phase

Population

Based on the national household size of 2.74 persons, the proposed development of 246 no. units can be expected to provide a population of 674 no. persons

Health

The proposed development will not result in any significant negative impacts to the health and wellbeing of the existing population. In particular, the design of the scheme ensures that future residents of the local environment will benefit from the development, in the form of open spaces and amenity areas.

Residential Amenity

During the operational phase, the high-quality living environment of the proposed scheme will result in positive impacts on amenity for future residents. Achieving a high-quality living environment through an integrated and balanced design approach will have a locally significant, positive and permanent effect on residential amenity.

Employment & Economy

The Social Infrastructure Audit, submitted with the application, demonstrates that there is a good availability and variety of infrastructure within the catchment area. The proposed development site incorporates dedicated play areas with public open space areas, as detailed in the Landscape Plan provided under separate cover. The proposed development also includes a childcare facility.

4.3.3 Cumulative Impact

As noted in chapter 4 of this EIA, there is potential for the construction phase of the proposed development to overlap with the construction of recently permitted developments in the area (as listed in Chapter 1 of this EIAR) which would increase the potential impacts on human health and population. During the operational phase, the cumulative impact

of these applications is expected to be slight, long-term impact and positive by providing additional homes, childcare facilities, community spaces, and public open spaces for the local population.

4.4 Mitigation

4.4.1 Incorporated Design

The integration of energy efficient measures into the design will provide for healthier living standards for future occupants, less dependence on fossil fuels and associated improved air quality. The availability of on the doorstep public open space, amenity spaces, and a highly accessible layout across the scheme will encourage sustainable modes of outdoor access for a wide age group.

4.4.2 Construction Phase

An Outline Construction and Environmental Management Plan (OCEMP), Resource Waste Management Plan (RWMP) and Operational Waste Management Plan (OWMP) for the proposed development are included in the planning application documentation. The OCEMP, RWMP & OWMP will be further updated by the contractor, agreed with Cork City Council prior to commencement, and implemented by the selected contractor after any consent is received.

All construction personnel will be required to understand and implement the requirements of the OCEMP and RWMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.

The OCEMP provides for a construction phase management structure to ensure that environmental protection and mitigation measures are put in place. The CEMP requires that these measures will be checked, maintained to ensure adequate environmental protection. The CEMP also requires that records will be kept and reviewed as required to by the project team and that the records will be available on site for review by the planning authority.

4.4.3 Operational Phase

The proposed development is of a high-quality design that incorporates generously sized units with integrated energy efficiency measures and an abundance of open space. The impact assessment section did not identify likely significant negative environmental impacts on population and human health arising from the operational phase of the proposed development. Accordingly, mitigation measures are not proposed

4.5 Residual Impact Assessment

The proposed mitigation measures will avoid, prevent, reduce impacts on the human environment during the construction and operational phases of the proposed development, where no significant adverse residual effect have been identified.

4.6 Monitoring

Measures to avoid negative impacts on Population and Human Health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development.

No specific monitoring is proposed in relation to this section. Monitoring of standard construction mitigation measures as outlined in this EIAR will be undertaken by the appointed contractor.

CHAPTER 5 | Landscape & Visual

This Non-Technical Summary describes the likely landscape and visual effects of the proposed residential development at Ardrostig, Bishopstown, Co. Cork. The project will provide 246 new homes on a greenfield site beside Waterfall Heights Road, about six kilometres from Cork City Centre. The layout keeps the main hedgerow crossing the site and includes new tree and shrub planting along boundaries to help the development sit within its setting.

The site is currently open grassland divided by hedgerows and mature trees. To the north and east the area is suburban in character, while to the south and west it is mainly agricultural. There are no protected views or scenic routes within two kilometres of the site. The nearest notable viewpoint, the Five County View, is three kilometres to the south and will not be affected.

During construction, machinery, stockpiles and fencing will cause temporary change to the local landscape and views. These will result in slight to moderate negative effects for some nearby residents, especially those directly adjoining the site. Once the development is complete, the site will change from farmland to housing, giving rise to slight permanent effects on the local landscape. These will not be significant, as the change reflects ongoing suburban growth in Bishopstown.

In visual terms, a small number of nearby houses will experience the most noticeable impacts, particularly during construction, but views will be softened by existing vegetation and buildings. Over time, new planting will provide additional screening, and effects will reduce to slight and not significant. For receptors further away, including community and commercial properties, open spaces and travel routes, views of the development will be screened or filtered and the effects will be imperceptible to slight.

Mitigation measures include the use of timber hoarding during construction and the planting of new evergreen and native trees along boundaries. These will help reduce temporary views of construction works and provide year-round cover in the longer term.

When considered alongside nearby housing projects, the cumulative effect will be a gradual change from rural edge to suburban neighbourhood. This is consistent with the Cork City Development Plan and the combined landscape and visual impacts are considered slight and not significant.

In conclusion, the proposed development will bring some short-term visual disturbance during construction and slight changes to the local landscape character once complete. However, no significant long-term negative landscape or visual impacts are expected.

CHAPTER 6 | Material Assets: Traffic & Transport

The assessment of Traffic and Transport is contained within Chapter 6 of Volume II.

6.1 Existing Environment

The road network surrounding the site comprises the N40 South Ring Road, N71, Bishopstown Road, and Curraheen Road, forming a critical transport corridor in Cork City's southern and western suburbs. The N40 South Ring Road, a dual carriageway, serves as a major orbital route, linking the N22 (to Kerry) west of Ballincollig to the Dunkettle Interchange via the Jack Lynch Tunnel, facilitating high volumes of commuter and through traffic. The N71, a two-way single carriageway, extends south from the Bandon Road Roundabout (junction with the N40) towards West Cork, acting as a key radial route for both local and regional traffic. Bishopstown Road, another two-way single carriageway, connects residential and educational areas, including Munster Technological University (MTU), to the city centre via Western Road, experiencing moderate congestion during peak hours. Curraheen Road, also a two-way single carriageway, runs parallel to the Curraheen River, serving local residential and community facilities with noted high vehicular speeds, though recent upgrades like segregated cycle lanes and pedestrian crossings have improved active travel options. A private link road within the Marymount Care site connects Waterfall Road to Curraheen Road and the N40, providing direct access for local traffic.

Current traffic patterns show that north-south movements from (Waterfall Road/Bandon Road Junction, linking MTU/ Melbourn Road to the N40) frequently utilise the Rise Estate Road. This residential route allows drivers to bypass the congested Hawkes Road junction by diverting to Curraheen Road, a behaviour incorporated into the traffic assessment model. Congestion remains a challenge, particularly at the Bandon Road Roundabout (J5) and along Bishopstown Road near MTU during peak morning (8–9 AM) and evening (4–6 PM) periods, exacerbated by student and commuter traffic. The N40 experiences significant delays at key interchanges like the Bandon Road Roundabout and Kinsale Road Roundabout, especially during peak hours, due to its role as a primary bypass route.

The Traffic and Transport Assessment (TTA) evaluates several critical junctions impacted by current traffic conditions and the proposed development:

J1 (Proposed Site Entrance on Waterfall Road): A new access point, designed to integrate with existing local traffic flows, with potential impacts on Waterfall Road's residential character and moderate traffic volumes.

J2 and J3 (Western and Eastern Entrances of the Rise Estate): These residential access points see increased usage as a bypass route to Curraheen Road, with potential for delays during peak periods due to limited capacity and on-street parking.

J4 (Waterfall Road/Bandon Road Junction): A busy junction linking MTU and surrounding areas to the N71 and N40, prone to congestion during peak hours due to high commuter volumes and limited turning capacity.

J5 (Bandon Road Roundabout): A major interchange connecting the N71, N40, and local roads, experiencing significant queues during peak times due to its role as a regional traffic node.

The TTA accounts for these current conditions, including high vehicular speeds on Curraheen Road, recent active travel upgrades (e.g., cycle lanes on Bishopstown and Curraheen Roads), and the absence of extensive pedestrian or cycling infrastructure on the N40 and N71. The assessment model incorporates observed traffic behaviours, such as the use of Rise Estate Road to avoid Hawkes Road and anticipates potential impacts from the proposed development on junction performance and local congestion, particularly at J4 and J5, where delays are already prevalent. Ongoing initiatives like BusConnects and the Cork Cycle Network Plan may influence future traffic management, but the TTA focuses on mitigating the development's immediate impact on existing conditions as of August 2025.

6.2 Impact Assessment

6.2.1 Do Nothing Scenario

6.2.2 Construction Phase

When the new development is being built, there will be an increase in traffic from construction vehicles, such as trucks delivering materials and workers commuting to the site. This could lead to some temporary disruptions, like road closures or detours, but these will be managed carefully through traffic management plans. The main impacts during construction are expected to be short-term. Once the development is complete and in use, it will generate additional traffic from residents, workers, and visitors. More cars will use the local roads, and there may be a higher demand for parking. Public transport services will also see an increase in usage, with more people needing to catch buses or trains, especially during peak times. This additional demand could cause congestion, particularly at key junctions or intersections.

It is anticipated that the overall construction programme will commence in 2026 and take approximately 24 months to complete. HGVs would be restricted to the N40. HGVs would not be permitted into the adjoining residential estate located to the west of the site. The most immediate impact during the construction phase is predicted at the construction access with the N40, but impacts will be suitably mitigated through the management of site traffic, safety measures (such as signage), and other measures such as wheel washing and street sweeping.

6.2.3 Operational Phase

A detailed traffic assessment has been undertaken for the road network, which has Driver Delay, Pedestrian Delay and Amenity (the 'pleasantness' of the pedestrian experience), with commentary on Road Safety. The overall effect been assessed as 'Not Significant' in accordance with the EIA Regulations.

Operational Traffic Contribution

Construction traffic will access the proposed development site through the existing signalised junction of the Audi Garage / Heitons Steel and the N40. This junction gives direct access onto the national road network and will allow safe movements of HGVs and other vehicles accessing the site.

The number of vehicles accessing the site has been estimated according to the level of constructed units to be built/ phases to be completed based on previous experience, the proposed works programming and construction methodology. It has been estimated that during both the AM and PM peaks there will be a maximum of 50 private vehicle/light goods vehicle trips and 10 heavy goods vehicle trips equating to 60 total trips during the two peaks.

The impact of this construction traffic was assessed using the base year traffic count for the Bandon Road Roundabout. During the AM peak, a total of 3570 vehicles use the roundabout. Adding the 60 construction trips to this figure is equivalent to a 1.7% increase in vehicles. The increase is similar in the PM peak with a total of 4060 vehicles using the roundabout in 2025, the addition of 60 construction trips to this figure is equal to a 1.5% increase. This small increase in total vehicles during the AM and PM peaks will not cause any significant issues for the junction

Modelling Results

6.2.4 Cumulative Impact

The cumulative impact of the scheme on the surrounding roads network for future years is determined by modelling future scenarios on existing traffic data and allowing for committed infrastructure projects in the proximity of the scheme as well. In this instance, the network was tested to 2042 by adding development trip generated traffic to the analysed

scenarios along the surrounding road network, adding development traffic from Waterfall Heights (currently under construction) on the Waterfall Road and growth rates on existing traffic flows to 2042. No allowance has been made for modal shift in the presented analysis, thus providing a worst-case scenario.

The overall impact of this proposed development on the adjoining Waterfall Rd and the assessed junctions is to increase traffic %RFC by a maximum of 34% at the Development Junction (J1), 13% at Junction 2, 1% at Junction 3 and 96% at Junction 4.

Additional upgrades may be required at the existing Junction 4 to facilitate the level of development proposed along the Waterfall Rd, which have been identified in Figure 11.9. The new layout provides for a right turn lane of approximate length 50m from the Bandon Road

in addition to a left slip lane on Waterfall Road approaching the junction from the south. These provisions would ensure no additional queuing would be experienced at the Bandon Road Roundabout as a result the updated Junction 4.

It should be noted that by the year 2032, BusConnects routes should be in place which aims to significantly reduce the number of vehicles on the road and improve the public service infrastructure for the Cork City. In addition to this, the planned Cork City LRT (Light Rail Transit) route, as identified in CMATS, is proposed to pass by Cork University Hospital (CUH) and Munster Technological University (MTU), which are in close proximity to the development. Both of these public transport schemes will see a significant reduction in the number of vehicles in the area.

Junction 5, The Bandon Road Roundabout, was not modelled for this TTA. This junction will only see an increase of approximately 1.8% and 1.7% no. vehicles in the AM and PM peak hours, respectively. This was deemed not significant enough to run traffic models analysing the junction for existing and future years. The additional % traffic flows arising from the proposed development falls below the 5% threshold required for a traffic assessment to be deemed necessary on junction J5

6.3 Mitigation

Traffic impacts during the construction stage will be mitigated through the implementation of a Construction Traffic Management Plan (CTMP), which will be agreed with the local authority (CCC).

An Outline Mobility Management Plan has also been prepared by MHL to accompany the planning application. The aim of the Mobility Management Plan is to minimise the proportion of single occupancy vehicle trips and address the forecast transport impacts of the end-users of the subject site.

The proposed development will also include amenities such as a creche and public open space which will be accessible to the general public as well as residents.

6.3.1 Incorporated Design

These are mitigation measures embedded in the project's design to reduce traffic impacts:

- Inclusion of a Creche: The proposed development includes a creche, which reduces the need for residents to travel off-site for childcare, thereby decreasing vehicle trips.
- Public Open Space: Providing accessible public open space within the development encourages local recreation, reducing the need for residents to drive to external parks or recreational areas.
- Mobility Management Plan Features: The Outline Mobility Management Plan likely includes design elements such as pedestrian-friendly pathways, cycle lanes, or car-sharing facilities to promote sustainable transport modes and reduce single-occupancy vehicle use.

6.3.2 Construction Phases

These are mitigation measures applied during the construction stage to manage traffic impacts:

- Construction Traffic Management Plan (CTMP): The CTMP, agreed with the local authority (CCC), will outline specific measures such as designated routes for construction vehicles, scheduling deliveries outside peak traffic hours, and temporary traffic controls (e.g., signage or traffic marshals) to minimize disruption to local traffic.
- Coordination with Local Authority: Collaboration with CCC ensures that construction activities align with local traffic management policies, reducing congestion and ensuring safe access for residents and workers.
- Site Access Control: Implementing controlled entry and exit points for construction vehicles to avoid conflicts with regular traffic and pedestrians.

6.3.3 Operational Phase

These are mitigation measures for when the development is operational to address traffic impacts from end-users:

- Outline Mobility Management Plan: The plan aims to minimize single-occupancy vehicle trips through strategies like promoting public transport use, providing bicycle parking, or incentivizing carpooling for residents and visitors.
- Accessible Amenities: The creche and public open space, available to both residents and the general public, reduce the need for external trips, lowering traffic demand during the operational phase.
- Sustainable Transport Promotion: The Mobility Management Plan likely encourages walking, cycling, or public transport use through infrastructure (e.g., bike lanes, bus stops) or programs (e.g., travel awareness campaigns) to manage the transport impacts of end-users.

6.4 Residual Impact Assessment

The traffic assessment also considers future growth in the area. As the population increases and more developments are built, the demand for road space, public transport, and parking will rise. This EIAR evaluates how the proposed development fits into the broader picture of regional development, considering upcoming projects that could affect traffic, such as road upgrades or the expansion of public transport services. To prepare for this future, the design of the development includes space for future transport improvements, ensuring that any changes to the local transport network will not be hindered by the new development. The cumulative assessment considers how development might proceed in future years.

6.5 Monitoring

To ensure the effectiveness of the proposed traffic mitigation measures and to comply with Article 8a of the EIA Directive, a comprehensive monitoring program will be implemented during both the construction and operational phases of the project. During construction, the Construction Traffic Management Plan (CTMP), agreed with the local authority (CCC), will be monitored through regular traffic management and congestion assessments at key access points to ensure construction vehicle movements do not significantly disrupt local traffic flow. Delivery schedules and route adherence will also be audited to confirm compliance with the CTMP. In the operational phase, the Outline Mobility Management Plan will be evaluated through periodic surveys of resident and visitor travel patterns, focusing on the proportion of single-occupancy vehicle trips and the uptake of sustainable transport modes, such as walking, cycling, and public transport. These monitoring results will be reported to the local authority, with corrective actions taken if necessary to address any unforeseen adverse effects on the transport infrastructure.

The proposed development will have some impact on traffic and transport in the area, especially during construction and when the development becomes operational. However, with proper planning and mitigation measures in place, these impacts can be managed effectively. The inclusion of pedestrian improvements will not only reduce the negative

effects on traffic but will also promote more sustainable and environmentally friendly travel options. In the long run, the development aligns with national and local goals for a more sustainable, connected, and safe transport system. With the Construction Traffic Management Plan (CTMP) and Mobility Management Plan (MMP) in place, the residual impact of the Proposed Development will be 'not significant', in terms of the development in isolation. With the proposed pedestrian connectivity improvements in place, the residual impact of the cumulative effects of the development will be 'not significant' and connectivity to wider area will be feasible.

CHAPTER 7 | Material Assets: Built Services

The assessment of Built Services is contained within Chapter 7 of Volume II.

7.1 Existing Environment

7.1.1 Water Supply

Context and Character:

There is an existing 100mm diameter watermain installed as part of the Waterfall Heights development located to the west of the subject site. This main is serviced/supplied via the existing network located in Waterfall Road (L2230).

Sensitivity:

Water systems can be sensitive to changes in their design, installation, and maintenance.

7.1.2 Waste Water Drainage

Context and Character:

There is an existing Wastewater Pumping Station (Waterfall Road WWPS) located adjacent to the northern boundary of the subject site. This existing pumping station was constructed to service the adjacent lands, existing and future developments.

The rising main from the aforementioned pump station crosses the N40 and discharges to an existing foul network running parallel to the N40. This network eventually discharges to the Carrigrennan Wastewater Treatment Plant (WWTP).

Sensitivity:

Foul drainage systems can be sensitive to changes in their design, installation, and maintenance.

7.1.3 Surface Water Drainage

Context and Character:

The site of the proposed development is greenfield in nature in respect of surface water drainage. The existing lands currently drains in a southernly direction towards an existing open drainage ditch located along the northern site boundary. The existing surface water system crosses the N40 and eventually discharges into the existing Glasheen River.

Sensitivity:

Surface water drainage systems generally can be sensitive to changes in their design, installation, and maintenance.

Overall, surface water drainage systems are Moderately Sensitive to changes. The River Waterbody Glasheen (Cork City) EPA Code 19G04, and Transitional Waterbodies, Lee (Cork) Estuary Upper and Lower, approximately 4.5km to

the northeast of the subject lands is a receiving environment for surface water runoff from the site and is potentially Significantly Sensitive to changes in the nature of surface water runoff from the site.

A flood risk assessment of the site has been performed by OSL Butler Consulting Engineers and included as part of this application under sperate cover. The assessment concludes that the risk of flooding at the site is not significant and that the development of the site will not result in a significant increase in the risk of flooding at the site or elsewhere as a result of the development.

7.1.4 Electrical Supply

Context and Character:

The existing site has overhead electrical lines, Medium Voltage (10kV/20kV), across the site.

Sensitivity:

The proposed installation will be cable based within an underground ductwork system and will have low sensitivity.

7.1.5 Gas Supply

There are no existing gas supply lines located within the proposed development boundary.

7.1.6 Telecommunications

Context and Character:

There is no existing telecommunication services located within the proposed development boundary.

Sensitivity:

The proposed installation will be cable based within an underground ductwork system and will have low sensitivity.

7.2 Impact Assessment

7.2.1 Do Nothing Scenario

In the do-nothing scenario (i.e. assuming the proposed development were not progressed), the built services and infrastructure at the site of the proposed development and in the immediate vicinity would likely remain as they are at present (greenfield, previously agricultural). No likely significant effects would arise in relation to material assets in this scenario.

7.2.2 Construction Phase

The potential significant effects associated with the Material Assets - Built Services during the construction phase of this development has been summarised below.

Water Supply

New water supply systems will be constructed on site to service the new development, connecting to existing water supply infrastructure at the boundary of the site.

In the absence of mitigation measures the **Direct** impact of the construction phase on water supply services is **Negative** in quality, **Moderate** in terms of significance, **Likely** in probability and **Medium-term** in duration.

Potential **Indirect, Secondary and Cumulative** effects of the construction phase on water supply services are likely to have no significant effects.

Wastewater Drainage

New wastewater drainage systems will be constructed on site to service the new development, connecting to existing wastewater infrastructure in the receiving environment.

In the absence of mitigation measures the **Direct** impact of the construction phase of wastewater drainage services is **Negative** in quality, **Significant** in terms of significance, **Likely** in probability and **Medium-term** in duration.

In the absence of mitigation measures the **Indirect, Secondary and Cumulative** impact of the construction phase on wastewater drainage services is **Negative** in quality, **Moderate** in terms of significance, **Unlikely** in probability and **Medium-term** in duration.

Surface Water Drainage

New surface water drainage systems will be constructed on site to service the development, connecting to existing surface water drainage infrastructure in the receiving environment.

In the absence of mitigation measures the **Direct** impact of the construction phase on surface water drainage is **Negative** in quality, **Significant** in terms of significance, **Likely** in probability and **Medium-term** in duration.

In the absence of mitigation measures the **Indirect, Secondary and Cumulative** impact of the construction phase on surface water drainage services is **Negative** in quality, **Significant** in terms of significance, **Likely** in probability and **Medium-term** in duration.

Electricity/Gas and Telecommunications

For Electrical Supply, the permanent electricity connections will not be live during the construction phase until near completion. Construction related activities will require temporary connection to the local electrical supply network. The potential impact from the construction phase of the proposed development on the local electrical supply network is likely to have no significant effects.

Telecommunications

No likely significant effects.

7.2.3 Operational Phase

During the operational phase, the site will contain operational surface water drainage, wastewater water drainage, water supply, electrical supply and telecommunications systems to serve the proposed development.

Water Supply

In the absence of mitigation measures the **Direct** impact of the operational phase on water supply services is **Negative** in quality, **Moderate** in significance, **Likely** probability, **Permanent** in duration.

In the absence of mitigation measures the **Indirect** impact of the operational phase on water supply services is **Negative** in quality, **Slight** in terms of significance, **Likely** in probability and **Permanent** in duration.

Wastewater Drainage

In the absence of mitigation measures the **Direct** impact of the operational phase on wastewater services is **Negative** in quality, **Significant** in terms of significance, **Likely** in probability and **Permanent** in duration.

In the absence of mitigation measures the **Indirect, Secondary and Cumulative** impact of the operational phase of wastewater drainage services is **Negative** in quality with a **Slight** significance, **Likely** probability and **Permanent** in duration.

Surface Water Drainage

In the absence of mitigation measures the **Direct** impact of the operational phase on surface water drainage services is **Negative** in quality, **Moderate** in terms of significance, **Likely** in probability and **Permanent** in duration.

Electricity

The predicted impact of the operational phase on electrical supply services is Neutral in quality, Imperceptible in significance, Permanent in duration and **Indirect** in type.

Telecommunications

The predicted impact of the operational phase on telecommunications services is Neutral in quality, Imperceptible in significance, Permanent in duration and **Indirect** in type.

7.2.4 Cumulative Impact

The impact as a result of potential future developments has been assessed. These potential future developments will be of a similar nature to the proposed development. As a result, the cumulative impact is expected to be neutral and not significant.

7.3 Mitigation

7.3.1 Incorporated Design

All new-build service infrastructure is to be designed in accordance with the relevant service provider and asset owner's code of practice, which require due cognisance of the receiving environment. Design depths of proposed infrastructure are to be optimised so that excessive excavations are avoided where possible, and by association a reduction in resultant waste and machinery operation time.

It is proposed that products and materials are supplied locally, where practicable and available, in order to reduce carbon footprint of travel and production.

7.3.2 Construction Phases

A detailed Construction and Environmental Management Plan (CEMP), in line with the preliminary CEMP submitted as part of this planning application, will be prepared and implemented by the contractor at the construction phase. The mitigation measures described below are relevant to both the Demolition and Construction Phase and are recommended to be implemented during these phases.

General Mitigation Measures

The following mitigation measures are recommended for the construction phase of the development:

- Works shall be performed in accordance with Statutory requirements, including Health, Safety and Welfare at Work (Construction) Regulations 2013 (S.I. no. 291 of 2013).
- The works shall be supervised by suitable competent personnel responsible for delivery of the built services as per the permitted development.
- Works in existing roads shall be performed in accordance with Guidelines for Managing Openings in Public Road, Dept of Transport Tourism and Sport, Second Edition (Rev 1), April 2017.
- Works in existing public roads and pedestrian paths shall be performed in accordance with Cork City Council requirements for the management and control of roadworks in Cork City.
- The Construction and Environmental Management Plan (CEMP) prepared to accompany the planning application shall be updated with any and all additional requirements included in a Grant of Permission from the Planning Authority and shall be adopted and executed with updating as necessary to reflect changes in the construction phase.
- The Resource and Waste Management Plan (RWMP) prepared to accompany the planning application shall be updated with all additional requirements included in a Grant of Permission from the Planning Authority and shall be adopted and executed with updating as necessary to reflect changes in the construction phase.
- The locations of all existing on-site services (underground and overhead) shall be confirmed prior to the commencement of works and suitable protection measures put in place to minimise the risk of damage to existing services.
- The precise routing of electricity and telecommunications infrastructure on the site are to be agreed with the relevant service providers prior to the commencement of on-site works.
- Consultation with the relevant services providers shall be undertaken in advance of works. This will ensure all works are carried out to the relevant standards and ensure safe working practices are implemented.
- All reasonable precautions shall be taken to avoid unplanned disruptions to any services / utilities during the proposed works.
- There will be an interface established between the contractor(s) and the relevant utilities service providers / authorities during the construction phase of the proposed development. This interface will be managed in order to ensure a smooth construction schedule with no / minimal disruption to the local community

With the implementation of these mitigation measures, above and below, the severity of the impact of the proposed development on the built services will be minimised, with tie-ins to existing services and installation of new services completed in a satisfactory manner for the relevant service providers.

Surface Water Drainage

In addition to the General Mitigation Measures listed above, the following measures shall be implemented in relation to surface water drainage services:

- A quality management plan shall be created and implemented to ensure that the works are executed to deliver the permitted surface water drainage system free of significant defects.

Wastewater Drainage

In addition to the General Mitigation Measures listed above, the following measures shall be implemented in relation to wastewater drainage services:

- Uisce Éireann shall be consulted prior to commencement of works.
- Existing wastewater drainage infrastructure shall be protected in accordance with Uisce Éireann requirements.
- Wastewater drainage services to be adopted by Uisce Éireann shall be constructed in accordance as per the permitted development and in accordance with the following:
  - » Code of Practice for Wastewater Infrastructure, Connections and Developer Services, Design and Construction Requirements for Self-Lay Developments, Uisce Éireann, July 2020 (Revision 2);
  - » Wastewater Infrastructure Standard Details, Connections and Developer Services, Design and Construction Requirements for Self-Lay Developments, Uisce Éireann, July 2020 (Revision 2)
  - » Quality Assurance (QA) Field Inspection Requirements Manual, Connections and Developer Services (A Guide for Self-Lay Developers), Uisce Éireann, August 2020 (Revision 3)
- In respect of wastewater drainage services not to be adopted by Uisce Éireann, including temporary wastewater drainage, a quality management plan shall be created and implemented to ensure that the works are executed to provide a suitable wastewater drainage system free of significant defects and in accordance with the recommendations of Building Regulations Technical Guidance Document H – Drainage and Waste Water disposal (published 2010, re-printed 2016)

Water Supply

In addition to the General Mitigation Measures listed above, the following measures shall be implemented in relation to water supply services:

- Uisce Éireann shall be consulted prior to commencement of works
- Existing water supply infrastructure shall be protected in accordance with Uisce Éireann requirements.
- Water supply services to be adopted by Uisce Éireann shall be constructed in accordance as per the permitted development and in accordance with the following:
  - » Code of Practice for Water Infrastructure, Connections and Developer Services, Design and Construction Requirements for Self-Lay Developments, Uisce Éireann, July 2020 (Revision 2);
  - » Water Infrastructure Standard Details, Connections and Developer Services, Design and Construction Requirements for Self-Lay Developments, Uisce Éireann, July 2020 (Revision 4)
  - » Quality Assurance (QA) Field Inspection Requirements Manual, Connections and Developer Services (A Guide for Self-Lay Developers), Uisce Éireann, August 2020 (Revision 3)
- In respect of water supply services not to be adopted by Uisce Éireann, including temporary water supply, a quality management plan shall be created and implemented to ensure that the works are executed to provide a suitable water supply system free of significant defects and in accordance with the recommendations of Building Regulations Technical Guidance Document G – Hygiene (published 2008, Reprinted July 2011)

Electricity Network

The following measures shall be implemented in relation to Electrical Supply services:

- ESB Networks will be consulted prior to commencement of the works
- A quality management plan shall be created and implemented to ensure that the works are executed to deliver the permitted Electrical Supply System free of significant defects.

Telecommunications Network

The following measures shall be implemented in relation to Telecommunication Supply services:

- Openeir will be consulted prior to commencement of the works
- A quality management plan shall be created and implemented to ensure that the works are executed to deliver the permitted Telecommunications Supply System free of significant defects.

7.3.3 Operational Phase

The design and construction of the required services infrastructure in accordance with the relevant guidelines and codes of practice is likely to mitigate any potential impacts during the operational phase of the development, with the exception of any routine maintenance of the site services.

Any additional mitigation measures required for the proposed built services, if required, during the operational phase will be as advised by the relevant service provider.

Surface Water Drainage

The surface water drainage includes various components to control and ensure the quantity and quality of surface water runoff in accordance with design requirements. Inspection and maintenance of components of the system shall be performed on a regular and scheduled basis to ensure the effective functioning of the system and the mitigation of risk to the receiving environment, for both adoptable and non-adoptable parts of the system.

Wastewater Drainage

The wastewater drainage network, when completed, will be vested to Uisce Éireann who will have responsibility for the ongoing maintenance and operation of the services generally.

Information on good household practices in relation to domestic water usage shall be supplied to the purchaser at handover.

The sale or lease of commercial premises that generates grease and oil and food residue as part of its commercial output will include a requirement to install grease traps in accordance with EN 1825- 1:2004 Grease separators Principles of design, performance and testing, marking and quality control and to enter an agreement with a suitably licenced operator to maintain and clean the grease traps on an appropriate maintenance schedule.

Water Supply

The water supply network when completed will be vested to Uisce Éireann who will have responsibility for the ongoing maintenance and operation of the service.

Information on good household practices in relation to domestic water usage shall be supplied to the purchaser at handover.

Electricity Network

ESB Networks will take charge of their system on completion and will be responsible for the ongoing maintenance and operation of the service.

Telecommunications Network

Openeir will take charge of their system on completion and will be responsible for the ongoing maintenance and operation of the service

7.4 Residual Impact Assessment

This section assesses potential significant environmental impacts which remain after mitigation measures are implemented.

Assuming the full and proper implementation of the mitigation measures set out herein; and given that the design, construction and operation of utilities infrastructure are strictly controlled by the respective utility provider and authorities (i.e. Uisce Water, ESB, GNI and so on); the residual impact of the proposed development is as described below.

7.4.1 Construction Phase

Residual impacts on the built services during the construction phase is considered to be temporary and occasional in nature and not significant, where service is unavoidably disrupted to facilitate the construction phase.

Surface Water Drainage

With the implementation of mitigation measures the **Direct** impact of the construction phase on surface water drainage services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

With the implementation of mitigation measures the **Indirect, Secondary and Cumulative** impact of the construction phase on surface water drainage services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

Wastewater Drainage

With the implementation of mitigation measures the **Direct** impact of the construction phase of wastewater drainage services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

With the implementation of mitigation measures the **Indirect, Secondary and Cumulative** impact of the construction phase on wastewater drainage services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

Water Supply

With the implementation of mitigation measures the **Direct** impact of the construction phase on water supply services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

Electricity Network

With the implementation of mitigation measures the **Direct** impact of the construction phase on electrical supply services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

Telecommunications Network

With the implementation of mitigation measures the **Direct** impact of the construction phase on telecommunications services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Medium-term** in duration.

7.4.2 Operational Phase

Residual impacts on the built services during the operational phase given the new infrastructure and upgrades to the existing networks is considered to be permanent with a constant occurrence, positive and beneficial to all the end users.

Surface Water Drainage

With the implementation of mitigation measures the **Direct** impact of the operational phase on surface water drainage services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Permanent** in duration.

Wastewater Drainage

With the implementation of mitigation measures the **Direct** impact of the operational phase on wastewater services is **Neutral** in quality, **Insignificant** in significance, **Likely** probability, **Permanent** in duration.

With the implementation of mitigation measures the **Indirect, Secondary and Cumulative** impact of the operational phase of wastewater drainage services is **Neutral** in quality, **Insignificant** significance, **Likely** probability, **Permanent** in duration.

Water Supply

With the implementation of mitigation measures the **Direct** impact of the operational phase on water supply services is **Neutral** in quality, **Insignificant** in significance, **Likely** probability, **Permanent** in duration.

With the implementation of mitigation measures the **Indirect, Secondary and Cumulative** impact of the operational phase on water supply services is **Neutral** in quality, **Insignificant** in significance, **Likely** probability, **Permanent** in duration

Electricity Network

With the implementation of mitigation measures the **Direct** impact of the operational phase on electrical supply services is **Neutral** in quality, **Insignificant** in significance, **Likely** probability, **Permanent** in duration.

Telecommunications Network

With the implementation of mitigation measures the **Direct** impact of the operational phase on telecommunications services is **Neutral** in quality, **Insignificant** in significance, **Likely** probability, **Permanent** in duration.

7.4.3 Cumulative Residual Effects

Considering the proposed future developments listed under the previous sections above, the cumulative residual effects are considered to be neutral and not significant.

7.5 Monitoring

All potable water will be cleaned and tested to the satisfaction of Uisce Éireann prior to the connection to the public potable water. In addition, all connections to the public potable water and foul water sewer will be carried out under the supervision of Uisce Éireann.

All new infrastructure, which is to serve the proposed development, is to be routinely inspected with any maintenance carried out, as required. Any monitoring of the built services required during the operational phase of the proposed project will be as advised by the relevant services providers.

CHAPTER 8 | Material Assets: Waste

The assessment of Waste is contained within Chapter 8 of Volume II.

8.1 Existing Environment

In terms of waste management, the receiving environment is largely defined by CCC 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 WAPCE.

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.

The Regional Waste Management Planning Offices have issued a National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) in March 2024, which supersedes the southern regional (SR) 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 Cork City Development Plan 2022 – 2028 sets out the policies and objectives for the CCC area which reflect those set out in the regional waste management plan and can be found in Appendix 8.1 and 8.2.

8.2 Impact Assessment

8.2.1 Do Nothing Scenario

If the proposed development was not to go ahead (i.e. in the Do-Nothing scenario) there would be no excavation or construction at this site. There would continue to be no operational waste generated from at the site. There would, therefore, be a **neutral effect** on the environment in terms of waste.

On this site it is likely that in the absence of this subject proposal that a development of a similar nature would be progressed on the site that accords with national and regional policies, which can be found in appendix 8.1 and appendix 8.2, and therefore the likely significant effects would be similar to this proposal.

8.2.2 Construction Phase

The impact assessment in this section relates to all phases of construction including site excavations and construction works.

The proposed Development will generate a range of non-hazardous and hazardous waste materials during site excavation and construction. General housekeeping and packaging will also generate waste materials, as well as typical municipal wastes generated by construction employees, including food waste. Waste materials will be required to be temporarily stored on-site pending collection by a waste contractor. 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 indirect effect of litter issues is the presence of vermin 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.**

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 Southern Region which can accept hazardous and non-hazardous waste materials, and acceptance of waste from the 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 which will need to be excavated to facilitate the proposed development. A detailed review of the existing ground conditions on a regional, local site-specific scale are presented in Chapter 9 (Land & Soils). It is anticipated that all clean excavated soil can be reused on-site. In the event that excavated material is found to be contaminated it 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. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **short-term, significant and negative.**

8.2.3 Operational Phase

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. 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 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 efficiently from this type of development. Waste which is not suitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables which is typically exported for conversion in 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. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **short-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. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative.**

8.2.4 Cumulative Impact

If waste material are not managed and stored correctly and in the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative.**

8.3 Mitigation

8.3.1 Incorporated Design

This section outlines the 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 'Waste Hierarchy' and 'Circular Economy' is employed when considering all mitigation measures. 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. The circular economy principle aims to keep materials, components, and products in-use in the economy for as long as possible. In circularity, the key objective is to design consumption and production systems to create and retain value. Both principles have been applied and will further be applied during the detailed design, construction and operational phases.

8.3.2 Construction Phases

The following mitigation measures will be implemented during the excavation and construction phase of the proposed development:

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 8.1. The mitigation measures outlined in the RWMP will be implemented in full and form part of 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 8.1) in agreement with CCC and in compliance with any planning conditions, or submit an addendum to the RWMP to CCC, 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 and should treat the document as outlined in the guidance as a live document.

A quantity of topsoil and sub soil will need to be excavated to facilitate the proposed development. The project design team have estimated that all clean excavated soil can be reused on-site. In the event that any excavated soil is found to be contaminated it 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.

In addition, the following mitigation measures will be implemented:

- Building materials will be chosen to 'design out waste';
- On-site segregation of waste materials will be carried out where possible to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated:
  - » Concrete rubble (including ceramics, tiles and bricks);
  - » Plasterboard;
  - » Metals, and
  - » Timber.
- 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;

- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- 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);
- A Resource Manager will be appointed by the main Contractor(s) 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;
- All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal;
- All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

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 of the EC (Waste Directive) Regulations (2011-2020). EPA approval will be obtained prior to moving material as a by-product.

These mitigation measures will ensure that the waste arising from the construction phase of the proposed development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations and the Litter Pollution Act 1997, the NWMPCE (2024). It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will promote more sustainable consumption of resources.

8.3.3 Operational Phase

The following mitigation measures will be implemented during the operational phase of the proposed development:

All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins, skips or other suitable receptacles in a designated, easily accessible areas of the site.

- The Staff / Facilities Management of the Site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – for the authoring and implementation of an Operational Waste Management Strategy, ensuring a high level of recycling, reuse and recovery at the site of the proposed development.
- The Staff/ Facilities Management will regularly audit the onsite waste storage facilities and infrastructure and maintain a full paper trail of waste documentation for all waste movements from the site.

The following mitigation measures will be implemented:

- The Residents/ Creche Tenants / Staff / Facilities Management will ensure 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;
  - » Cardboard;
  - » Plastic;
  - » Waste Electrical and Electronic Equipment (WEEE) including computers, printers and other ICT equipment;
  - » Cooking oil;

- » Cleaning chemicals (paints, adhesives, resins, detergents, etc.);
- » Furniture (and from time-to-time other bulky waste); and
- » Abandoned bicycles

- The Staff / 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;
- The Staff / 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; and
- The Staff / Facilities Management will ensure that all waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities.

These mitigation measures will ensure the waste arising from the proposed development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations, the Litter Pollution Act 1997, the NWMPCE (2024) and the CCC waste bye-laws. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

8.4 Residual Impact Assessment

The implementation of the mitigation measures outlined in Section 8.9 of Chapter 8 will ensure that targeted rates of reuse, recovery and recycling are achieved at the site of the proposed development during the construction and operational phases. It will also ensure that European, National and Regional legislative waste requirements with regard to waste are met and that associated targets for the management of waste are achieved.

Construction Phase

A carefully planned approach to waste management as set out in Section 8.9.3 of Chapter 8 and adherence to the RWMP (which includes mitigation) (Appendix 8.1) during the construction phase will ensure that the predicted effect 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 8.9.4 of Chapter 8 will promote resource efficiency and waste minimisation. Provided 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.**

8.5 Monitoring

The management of waste during the construction phase will be monitored by the Contactor's appointed Resource Manager to ensure compliance with the above-listed mitigation measures, and relevant waste management legislation and local authority requirements, including maintenance of waste documentation.

The management of waste during the operational phase will be monitored by the Operator / Buildings Manager to ensure effective implementation of the mitigation measures outlined in Section 8.9 of Chapter 8 internally and by the nominated waste contractor(s).

Construction Phase

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 works, where there is a potential for waste management objectives to become secondary to other objectives, i.e. progress and meeting schedule targets. The RWMP specifies the need for a Resource Manager to be appointed, who will have responsibility for monitoring the actual waste volumes being generated and ensuring that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Resource Manager will identify the reasons for this and work to resolve any issues. Recording of waste generation during the construction phase of the proposed Development will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future developments.

Operational Phase

During the operational phase, waste generation volumes should be monitored by the Operator / Buildings Management. There may be opportunities to reduce the number of bins and equipment required in the Waste Storage Area (WSA's), where estimates have been too conservative. Reductions in bin and equipment requirements will improve efficiency and reduce waste contactor costs.

CHAPTER 9 | Land & Soils

The assessment of Land & Soils is contained within Chapter 9 of Volume II.

9.1 Existing Environment

This assessment is based on a desktop study, site visits, and site investigations conducted by IGSL Geotechnical. The assessment methodology adheres to the EPA (2022) Guidelines and follows the guidance set out in the Institute of Geologists of Ireland (IGI) Guidelines for the Preparation of Soils, Geology, and Hydrogeology Chapters of Environmental Impact Statements (2013).

The site is primarily underlain by Sandstone with mudstone and siltstone (Gyleen Formation), and flaser-bedded sandstone and minor mudstone (Old Head Sandstone Formation).

Topsoils across the site are primarily fine loamy drifts with siliceous stones and coarse loamy drifts with siliceous stones, with made ground located adjacent to the eastern boundary and to the north, associated with the built-up areas of south-west Cork City.

The subject site is located within the extended Cork City development plan boundary, within the Southwestern Suburbs. The subject site is situated approximately 6.1km southwest of Cork City Centre. The site lies to the south of Bandon Road (N71) roundabout and South Ring Road N40 . The land uses on Bandon Road (N71) comprise light industrial including car sales show rooms, service stations, and a storage warehouse. The site is bounded by the N40 and 4 no. dwellings to the north, light industrial uses to the east, agricultural land to the south and a residential development to the west, which is currently under construction.

9.2 Impact Assessment

9.2.1 Do Nothing Scenario

In the event of the proposed development not being constructed, there would be no resulting impacts on land and soils at the site, and the site would continue in use for agriculture. The existing land use and subsoil environment at the site would remain in place. The Do-Nothing effect would be **long-term, not significant, neutral** with regard to land and soils.

9.2.2 Construction Phase

During construction and operation, several activities have potential for effects on land, soil and geology at the site. These are associated with the establishment and operation of site compounds, including storage of potential pollutants such as fuels and oils, the excavation of topsoil and subsoils, import of materials, and export of excavated material off-site. Without mitigation measures in place, the potential effects range from **moderate to slight negative.**

9.2.3 Operational Phase

Limited land take will occur as a result of the proposed development. The land to be built on is currently in use for agriculture but is zoned for residential use in the Cork City Development Plan 2022. While there will be land take for the proposed development, there is sufficient agricultural land in the surrounding areas, and the site is zoned appropriately. There will therefore be a long-term, not significant negative effect on land take.

The potential effect on land and soils during operation is **long term, imperceptible, with a neutral effect on quality** i.e., an effect capable of measurement but without noticeable consequences.

9.2.4 Cumulative Impact

Cumulative effects are the result of several minor effects combining to create a more significant effect. The assessment of cumulative effects considers existing stresses on land, soils, and groundwater as well as developments close to this development that are in planning or are underway have been identified as; an LRD at Ardarostig, Waterfall Road Development, a SHD at Ballinaspig More, Curraheen Road and a three-storey Primary Care Centre at Ardarostig. No significant cumulative effects are expected to occur as a result of the proposed development.

9.3 Mitigation

9.3.1 Incorporated Design

The proposed surface water management system for the proposed development has been designed in accordance with the principles of Sustainable Drainage Systems (SuDS). Surface water will attenuate to 4 no. attenuation tanks, which provide greater capacity than the equivalent 100-year return period storm event. The attenuation outflows will be fitted with flow control devices which will limit discharge to the pre-development greenfield runoff rate.

The SuDS strategy includes a combination of measures such as permeable surfacing to parking spaces, permeable paving to private driveways and reinforced grass to spaces outside private curtilages. Filter strip collection channels underlined with perforated piping, allowing for reduces flow through the pipe to discharge downstream.

The proposed drainage layout and location of SuDS features is shown in the drawing “Proposed Surfacewater Layout” by OSL – Buttler Consulting Engineers.

9.3.2 Construction Phases

Mitigation measures, including the preparation of a Construction Environmental Management Plan (CEMP) and measures for the preparation of site compounds and safe management of excavations, are outlined in the chapter. These measures cover:

- Safe storage of soil stockpiles, oils and fuels;
- Prevention of spills and leaks; and
- Safe pouring of concrete.
- Surface water discharge monitoring

The mitigation measures also outline that the contractor must carry out a waste characterisation of soil material to be taken off site for disposal, which will include a waste acceptance criteria (WAC) analysis and measurement of asbestos levels. These will classify any material to be disposed of off-site and ensure that waste is properly segregated and disposed of at the correct facilities.

9.3.3 Operational Phase

No significant effects are anticipated during the operational phase. Therefore, no mitigation measures have been proposed.

9.4 Residual Impact Assessment

During construction, with the proposed mitigation measures in place, the residual impact to land and soils will be reduced to **short-term, slight negative**, reducing to **imperceptible** over time. Once operational, the residual effects will be **neutral and imperceptible**.

9.5 Monitoring

Monitoring is included in the Construction Environmental Management Plan (CEMP) during construction. These measures cover:

- During the construction phase, a monitoring programme will include daily checks, weekly inspections and monthly audits
- Appropriate monitoring of groundwater levels during site works shall be undertaken. Standard construction phase filtering of surface water for suspended solids will be carried out.
- A dust deposition monitoring programme will be implemented during the Construction Phase to include; Regular watering of stockpiles during dry and windy periods.

No operational phase monitoring is required for land and soils.

CHAPTER 10 | Water & Hydrology

10.1 Introduction

This chapter of the EIAR has been prepared by AWN Consulting Ltd. which assesses and evaluates the likely significant impacts of the proposed development on the surrounding hydrological and hydrogeological environment associated with the construction of a development.

10.2 Baseline Environment

The proposed development site is at Ardarostig, Bishopstown, about 5 km southeast of Cork City. It covers 5.76 hectares (14.2 acres) and consists of three fields divided by hedgerows. The site is bordered by Waterfall Road and the N40 to the north, with houses and businesses nearby. To the east are industrial premises, to the south open greenfield land, and to the west the Waterfall Heights housing estate.

The site contains several field drains and a drainage ditch along its northern boundary. These drains are likely to flow northwards, eventually connecting with the Glasheen Stream or the Twopot River, which discharge into the River Lee. The northern ditch flows eastwards into a culvert at the Heiton site entrance, which forms part of the local drainage network linked to the Glasheen River.

The Glasheen Stream currently has a ‘Poor’ water quality status and is not expected to reach ‘Good’ status by 2027. This is mainly due to its poor biological condition. The nearby Twopot and Curragheen waterbodies are classed as having ‘Moderate’ status and are considered at risk of further decline. The Upper Lee Estuary is also at ‘Moderate’ status and at risk of not meeting good ecological standards.

No flooding has been recorded on the proposed site itself, but past flood events have occurred nearby, mainly linked to the Curraheen, Twopot, and Glasheen Rivers. These rivers have caused flooding in the surrounding area in recent years, particularly in 2009 and 2012. National flood maps show that these rivers remain at risk of flooding. However, a Flood Risk Assessment confirms that the proposed development area is within Flood Zone C, which is considered low risk and suitable for residential development.

There are no SPAs, SACs, NHAs, or pNHAs within the Proposed Development site boundary. The nearest protected European site is Cork Harbour Special Protection Area (SPA), about 9 km from the proposed development. While the site is indirectly connected to the SPA through local streams and rivers that eventually flow into Cork Harbour, it is located a significant distance away.

The site's hydrological features are rated as having 'Low' importance based on TII methodology, as they are not used for water supply, located in a flood zone, or designated as an amenity area.

The site lies above the Ballinhassig East groundwater body, which is currently classified as having ‘Good’ status under water quality standards. The underlying bedrock is considered a locally important aquifer, meaning it can provide useful water supplies in the area. The groundwater vulnerability in this location is rated as ‘Extreme’, which means that water here could be more easily affected by surface activities.

Based on TII methodology, the site's hydrogeological features are of 'Medium’, this reflects the presence of a locally important aquifer beneath the site and the fact that groundwater here is highly vulnerable to potential impacts from surface activities.

10.3 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**, **slight** 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.
- 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**, **significant**, and **long-term**.

10.4 Mitigation

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 Environment 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 Dublin 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.

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.

10.5 Monitoring

Construction Phase

During the construction phase, various monitoring measures will be implemented to ensure environmental compliance, including regular inspections, surface water management, and soil sampling.

- Contractors will conduct regular inspections to ensure compliance with the CEMP.
- Daily inspections will address environmental concerns such as dust, litter, waste management, and housekeeping.
- Weekly checks will ensure surface water drains remain unblocked.
- Regular inspection and maintenance of surface water run-off and sediment controls (e.g., silt traps).
- Soil sampling will determine proper disposal options for excavated soils to prevent contaminated run-off.
- Regular inspection of construction and mitigation measures (e.g., concrete pouring, refueling).

Operation Phase

No future surface water monitoring is planned for the site due to its low hazard potential. Hydrocarbon interceptors will be maintained and cleaned according to the manufacturer's instructions. Regular maintenance of the surface water drainage system and foul sewers is recommended to prevent accidental discharges.

10.6 Residual Impact Assessment

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 **long-term**.

CHAPTER 11 | Biodiversity

The assessment of Biodiversity is contained within Chapter 11 of Volume II.

11.1 Existing Environment

The EIAR study boundary is located within the extended Cork City development boundary within the Southwestern Suburbs. The Site of the Proposed Development is located on relatively flat terrain which for the past 19 years has been developing a young woodland area which had established itself following agricultural land abandonment c. 2006.

The Site has been cleared of the woodland area previously present and is now dominated by spoil and bare ground with hedgerows, treeline, scrub and a series of brash stockpiles present on the edges and interspersing the area. The remaining natural features have shown to be important for foraging and commuting bat species as is to be expected in areas with suitable habitat that is well connected to the broader landscape through linear habitat features. The absence of bat activity over lower value habitat was evident during bat activity surveys.

No rare or protected plant species were present during Site surveys undertaken in 2025, and no rare or protected plant species were shown to be recorded on Site or within the broader hinterland of the Site during the detailed desk study carried out at the preliminary stages of the ecological assessment.

There was no direct evidence of protected mammal species on Site, but suitable supporting habitats such as hedgerows, scrub and treelines were present on the edges and interspersing the area.

The study area was found to contain a range of common bird species as well as small numbers of species (five) classified as 'target species' (species of medium to high conservation concern). No significant usage of the Site was recorded by these birds during an extensive breeding bird survey effort carried out during the core breeding bird season. One Red-listed bird species (swift) was recorded on Site and was classified as non-breeding as it was shown to be commuting and passing through the area. No suitable breeding areas were present for swift. The Site also holds some schedule four (Wildlife Act 1976(2000)) and green-listed raptor species including Buzzard and Sparrowhawk, the later having been confirmed as breeding in the area, outside the EIAR study boundary and outside the zone of influence of the Proposed Development. Buzzard was also commonly recorded, and is classified as a probable breeding species, also off Site. The amber-listed Goldcrest is classified as a probable breeder on the Site edges in areas of treeline and hedgerow and is the only amber-listed species likely to be breeding on Site. A further 17 bird species were recorded on Site and are associated with the hedgerow, scrub and treeline areas of the Site.

The Site holds suitable habitat for small mammals such as Hedgehog, Irish Stoat and Pine Marten as well as amphibian and reptile refuge areas within hedgerows and brash stockpiles and margins.

Invasive species have been identified within the study area including one high-impact flora species (Cherry Laurel) This high-impact species is present in two areas on the Site edges. Medium-impact sycamore is present at the centre of the Site within areas of existing scrub, and is re-colonising the spoil and bare ground areas of the Site.

11.2 Impact Assessment

11.2.1 Do Nothing

In the absence of the Proposed Development, the Site at Ardarostig, Bishopstown would likely have remained in its pre-clearance state as young establishing woodland, which was establishing as a result of agricultural land abandonment. Without the cessation of agriculture and the zoning of the land as 'Sustainable Residential Neighbourhoods' under the

Cork City Development Plan 2022-2028, the land is likely to have remained in agricultural use long term, prior to the establishment of young woodland. It is worth highlighting that the presence of high-impact cherry laurel suggests that this plant would have continued to spread in the absence of the Proposed Development.

11.2.2 Construction Phase

The construction phase poses the risk of impacts to a number of ecological receptors. The young woodland area, which is to be cleared in full to facilitate the development, will be permanently lost, having a permanent and significant negative effect on this relatively small but valuable habitat area, as well as the local populations of species reliant on it. This area is to be fully cleared in the absence of feasible alternatives. In line with the precautionary principle, mitigation measures are proposed to minimise effects on these receptors resulting from the construction phase. Standard construction phase control measures, and specific mitigation measures, have been outlined to ensure that the Proposed Development does not unduly impact on any species, or habitats of conservation importance within the zone of influence of the Proposed Development during the construction phase.

11.2.3 Operational Phase

The operational phase of the development poses less risk to the receiving environment overall. Moderate and permanent effects on commuting and foraging areas for local bat assemblages are likely in the absence of adequate mitigation measures, including appropriate design of lighting in sensitive areas. In line with the precautionary principle, mitigation measures are proposed to reduce effects on these receptors resulting from the operational phase from 'unlikely' or 'likely' to 'imperceptible'.

11.2.4 Cumulative Impact

The Proposed Development has been considered in combination with other plans and policies which could potentially cause in-combination effects. Plans and policies considered include

- Cork City Development Plan (2022-2028).
- Cork Biodiversity Action Plan (2021-2026).
- Cork City Heritage and Biodiversity Plan (2021-2026)

On examination of the above it is considered that there are no means for the Proposed Development to act in-combination with any plans or projects that would cause any likely significant effects to nearby ecological sensitivities.

Also considered during the assessment process was the effects resulting from additional loading of the Carrigrennan Waste Water Treatment Plant (WWTP) at Little Island, the planned upgrade works to the pipe network, the wastewater pumping station recently installed on Site and the combination of existing planning permissions within the environs of the Proposed Development. It is not expected that foul waters generated by the Proposed Development or in-combination effects resulting from existing planning permissions will present any source of significant impacts to the receiving environment or biodiversity including effects to Lough Mahon transitional waterbody and associated SPA post treatment and discharge from the WWTP.

11.3 Mitigation

11.3.1 Incorporated Design

The design of the Proposed Development Is such that a range of sustainable features will be incorporated, including the use of Sustainable Urban Drainage Systems (SuDS), biodiversity enhancing landscape design and an appropriate lighting regime that is sensitive to nocturnal wildlife.

Surface water run-off will be adequately attenuated and treated prerelease into the receiving water. Enhancement measures have been proposed by the project ecologist which include increasing the availability of nesting opportunities for birds (swift), amphibian and reptile hibernacula and bat boxes. Native planting is also incorporated the landscape design, connecting wildlife areas within the Site and to the wider landscape in the long-term post construction.

11.3.2 Construction Phases

Construction phase impacts will be mitigated through several measures, under supervision and monitoring of an Ecological Clerk of Works (EcOW) and through the responsibility of the contractor. Many of the mitigation measures are outlined in the Construction Environmental Management Plan and include measures for the protection of bats and birds, dust emissions control and bird and construction waste management. Additional measures proposed by the project ecologist (DNV, 2025) aimed to protect all sensitive receptors both on Site and within the zone of influence. These include the biosecurity measures to prevent the spread of invasive species, control of construction phase lighting and noise, timing of vegetation clearance, as well as mitigations to prevent wildlife entrapment.

11.3.3 Operational Phase

Prevention of long term effects such as the spread of invasive species and effects arising from inappropriate lighting are mitigated through adherence to best practice design with wildlife at the forefront of planning. Permanent measures put in place for the operational phase include mitigation measures including ongoing surface water treatment maintenance and landscape management.

11.4 Residual Impact Assessment

Provided all recommended measures are implemented in full and remain effective throughout the life-time of the Proposed Development, no significant negative residual impacts on the local ecology, or on any designated nature conservation sites, will occur as a result of the Proposed Development.

11.5 Monitoring

Monitoring of the implementation of mitigation measures will be carried out during the construction phase of the Proposed Development where relevant and outlined in the Biodiversity Chapter. Further monitoring will take place during the operational phase, including the instruction of a project ecologist to oversee the installation of the swift bricks or boxes, and calling system, during the construction phase or after the development has been completed.

CHAPTER 12 | Noise & Vibration

The assessment of Noise & Vibration is contained within Chapter 12 of Volume II.

12.1 Existing Environment

The existing baseline environment within the site and at surrounding noise sensitive locations was quantified by undertaking environmental noise surveys, the results of which are presented within Chapter 12. The baseline noise surveys determined that the noise environment is largely dominated by the surrounding road networks namely the N40 to the north of the development. Other sources of noise noted were in relation aircraft overhead, pedestrian movements and birdsong.

12.2 Impact Assessment

12.2.1 Do Nothing Scenario

In the absence of the proposed project, the existing noise and vibration levels within the study area are expected to remain largely unchanged. The current baseline conditions characterised by the noise surveys within chapter 12 will continue to prevail.

12.2.2 Construction Phase

Construction noise impacts will vary at various noise sensitive locations (NSLs) throughout the construction phase of the proposed development. The main construction activities in relation to noise will include:

- Site Set Up and Clearance
- Provision of Site Services
- General Construction of the development buildings

Without mitigation the worst-case noise effects will occur during the site establishment and clearance phase and during the provision of site services stages of construction phase at the closest NSLs to the red line boundary of the site. There is potential for temporary to short term, negative and significant to very significant at these closest NSLs. During the remaining general construction phase works, including the construction of the site buildings, construction noise levels are predicted to be within the adopted construction noise thresholds at all NSLs resulting in a slight to moderate effects.

12.2.3 Operational Phase

The noise impacts relating to the operational phase of the proposed development will relate to:

- Mechanical Plant and Services
- Outward Noise from Creche
- Additional Traffic on Public Roads
- Inward Noise Impacts

The noise impacts relating to mechanical plant and services are likely to be neutral, not significant and long-term if guidelines and recommendations within the EIAR chapter are followed. The noise impacts relating to the creche within the proposed development is likely to be negative, not significant and long term. Additional Road Traffic on Public Roads will be long term, negative and Imperceptible to not significant.

With reference to the Cork Agglomeration Noise Action Plan (2024 to 2028) and the Professional Practice Guidance on Planning and Noise (ProPG:2017), the site has been categorised in the range of low to high noise risk. Due to the sites proximity to the N40 the northern portion of the site falls into the high-risk category with the risk reducing to low further south into the site away from the traffic noise levels. A full inward impact assessment and Acoustic Design Statement is presented within Chapter 12.

12.2.4 Cumulative Impact

Cumulative noise impacts in relation to construction noise are unlikely to occur due to the scale of the proposed development with construction noise associated with the development likely to dominate the surrounding noise environment. The noise contribution of other sites would need to be equal to those associated with the proposed development in order to result in any cumulative effect.

The noise limits set within the EIAR are designed to avoid any significant increase in the prevailing background noise environment. There is not expected to be a cumulative effect in relation to either operational mechanical plant noise or road traffic noise during the operational phase of the proposed development.

12.3 Mitigation and Residual Impact

12.3.1 Construction Phase

Mitigation measures to be implemented during the construction phase are discussed within the full EIAR which will be implemented in accordance with BS 5228: 2018+A1 2014, parts 1 and 2.

After mitigation, it is anticipated that the residual worst-case effect of the construction phase noise will remain temporary to short-term, negative, and significant to very significant at the closest NSLs to the red line boundary during the site set up and clearance phase of works. During the general construction stage of the proposed development however construction noise levels will fall within the adopted construction noise thresholds resulting in a slight to moderate effect.

It is important to note that the worst-case residual effect will occur at certain NSLs highlighted within the noise and vibration chapter, which are closest to the construction work areas related to the various phases of construction. For most of the construction periods, construction works will be further from NSLs, resulting in a lower impact. It is also important to note that construction activities are inherently transient, meaning noise intrusive works will only affect the nearest NSLs for brief periods.

12.3.2 Operational Phase

Mitigation measures to be implemented during the operational phase are discussed within Chapter 12. These measures mainly relate to the selection of quiet plant as well the suppression of break out noise from items of mechanical plant, where required for residential buildings. The residual operational noise impact in relation to the mechanical plant and services noise will be neutral, not significant and long term.

The residual impact of the traffic on the surrounding road will be negative, not significant and long term.

Chapter 12 includes a detailed Inward Noise Impact Assessment relating to the impact of existing road traffic on the local road networks likely to affect the proposed development. The Inward Impact Assessment within the EIAR provides details on the required acoustic performance to glazing and ventilation systems for various facades on the building facades within the site bordering the N40.

12.4 Monitoring

During the construction phase the contractor will carry out noise monitoring at representative NSLs to evaluate and inform the requirement and / or implementation of noise management measures. Noise monitoring will be conducted in accordance with ISO 1996–1 (ISO 2016) and ISO 1996–2 (ISO 2017).

There are no proposed monitoring requirements associated with the operational phase of the proposed Development.

CHAPTER 13 | Air Quality

The assessment of Air Quality is contained within Chapter 13 of Volume II.

- 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.

13.1 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.

13.2 Impact Assessment

13.2.1 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.***

13.2.2 Construction Phases

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.

The sensitivity of the area was combined with the dust emission magnitude for the site under four distinct categories: 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.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2022 guidance document *'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106'.* As a result, a detailed air assessment of construction stage traffic emissions has been scoped out and the construction stage traffic emissions will have a ***short-term, neutral*** and ***imperceptible*** impact on air quality, which is an overall ***not significant*** impact in EIA terms.

13.2.3 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 imperceptible 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.

13.2.4 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 Section 13.8.1 of Chapter 13 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.***

Operational phase direct impacts on air quality associated with the proposed development and cumulative traffic emissions 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.

13.3 Mitigation

13.3.1 Construction Phases

Detailed dust mitigation measures are outlined within Section 13.8.1 of Chapter 13 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).

13.3.2 Operational Phase

No site-specific mitigation measures are proposed for the operational phase. The impact to air quality has been assessed as ***long-term, direct, localised, negative*** and overall, ***not significant***

13.4 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 ***short-term, direct, localised, negative*** and ***not significant***.

13.5 Monitoring

Monitoring of the dust mitigation measures will be required as set out in Section 13.13.1 of Chapter 13 and the Construction Environmental Management Plan. The monitoring requirements will ensure that the dust mitigation measures are working satisfactorily.

CHAPTER 14 | Climate

The assessment of Climate is contained within Chapter 14 of Volume II. The impact assessment included the following:

- The potential greenhouse gas emissions during the construction and operational phases of the development.
- The vulnerability of the project to climate change, including considerations for increased rainfall and other projected climate impacts.
- The design measures to enhance the project's resilience to future climate risks, such as incorporating drainage systems for increased rainfall.

14.1 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 alignment with Ireland's 2030 sectoral emissions ceilings and carbon budgets. The EPA state that Ireland had total GHG emissions of 57.6 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.

14.2 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.

The impact of the construction and operation of the proposed development on Ireland's total national greenhouse gas emission is compared to Ireland's 2024 total greenhouse gas emissions, the relevant sectoral emissions ceilings and 2030 carbon budgets. Any adverse impacts are predicted to primarily occur during the construction phase, with the dominant sources of greenhouse gas emissions as a result of the development due to the embodied carbon associated with the building materials for the proposed development.

14.2.1 Do Nothing Scenario

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.

14.2.2 Greenhouse Gas Assessment

14.2.2.1 Construction Phase

Calculation of the GHG emissions associated with the construction of the proposed development was calculated using information the OneClick LCA 3D Carbon Designer tool and the online Transport Infrastructure Ireland Carbon Tool. The GHG emissions associated with the proposed development are predicted to be a small fraction of Ireland's 2030 carbon budget of 27.7 MtCO_2e and 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.

14.2.2.2 Operational Phase

GHG emissions during the operational phase due to road traffic were assessed. Modelling of operational CO_2e emissions from traffic associated with the proposed development on the surrounding road network was undertaken 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"*. It was concluded that traffic related CO_2e emissions will not have a significant impact on climate due to the low level changes in emissions.

14.2.2.3 GHG Assessment Significance of Effects

The TII PE-ENV-01104 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 proposed for the development has been taken into account when determining the significance of the proposed development's GHG emissions. Based on the carbon emissions intensity and proposed mitigation measures, it can be concluded that the proposed development is aligned with Ireland's GHG trajectory to net zero by 2050. Therefore, according to the TII significance criteria, the significance of the GHG emissions during the construction and operational phase is minor adverse. The proposed development has mitigated some GHG impacts where possible. In accordance with the EPA guidelines 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***.

14.2.3 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 considered ***direct, long-term, negative*** and ***imperceptible***, which is considered overall ***not significant*** with regard to the construction and operational phase.

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

14.2.4 Cumulative Impact

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.

14.3 Mitigation

14.3.1 Incorporated Design

A number of mitigation measures have been incorporated into the design of the proposed development. The development will be in compliance with the requirements of the Near Zero Energy Building (NZEB) Standards and will achieve a Building Energy Rating (BER) in line with the NZEB requirements. Additionally, other measures have also been incorporated into the design of the proposed development to mitigate the impacts of future climate change. To address future climate change risks, the design includes mitigation measures such as adequate drainage systems to manage a 20% increase in rainfall.

14.3.2 Construction Phase

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.

14.3.3 Operational Phase

During the operational phase the primary focus will be on operational energy usage and outlined through the incorporated design mitigation. Sustainable travel modes will be encouraged through support facilities for cycling, and infrastructure for electrical vehicle charging points.

14.4 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 PE-ENV-01104 guidance references the ISEF 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. 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 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.

14.5 Monitoring

Monitoring and reporting of embodied carbon of construction materials, water usage, power and fuel usage, and waste generation (including reuse and recycling rates) is recommended for the construction phase of the proposed development.

CHAPTER 15 | Cultural Heritage – Archaeological & Built Heritage

The assessment of Cultural Heritage – Archaeology & Built Heritage is contained within Chapter 15 of Volume II.

15.1 Existing Environment

There are no known registered archaeological sites within the proposed development area. Within the broader 1 km study area, sixteen recorded archaeological sites have been identified. The closest of these is an enclosure (CO086-134), located approximately 100m to the south of the proposed site. These recorded sites provide evidence of human activity and occupation in the surrounding landscape dating back to the Bronze Age, indicating the archaeological potential of the proposed development site.

There are no registered architectural structures within the proposed development site. The closest registered structure is a church (PS745) which is also a registered archaeological monument (CO074-055002) in Ballinaspig More, 880m to the northwest.

15.2 Impact Assessment

15.2.1 Do Nothing Scenario

In the event that the proposed development does not proceed, the existing landscape will remain in its current form. This would preserve the site's present condition and ensure that any potential, as yet unidentified, archaeological features or deposits beneath the surface would remain undisturbed

15.2.2 Construction Phase

Registered Archaeological Monuments

There are no registered archaeological monuments within the proposed development site. As such, no direct or indirect effects on any registered archaeological sites are anticipated during the construction phase.

Potential for previously unknown archaeological sites or features

Much of Ireland's archaeological heritage exists as subsurface remains, often unrecorded and vulnerable during ground-disturbing activities. The construction phase involves extensive topsoil stripping and ground reduction, which has the potential to directly impact any previously unknown archaeological sites.

The development site has undergone considerable ground disturbance due to extensive root activity and recent tree clearance. Archaeological testing, conducted in July 2025, involved the excavation of 15 test trenches across the site. The investigation identified one small, isolated pit of unknown origin, but no features or finds of archaeological significance were recorded. However there remains a low to moderate potential for the presence of subsurface archaeological features within the site.

Any impact on previously unknown archaeological features would be direct and negative in nature. The significance of such an impact remains uncertain, as it depends on the presence, extent, and character of any unrecorded remains encountered during construction.

15.2.3 Operational Phase

The completed development is not expected to generate any impacts on archaeological, architectural, or other cultural heritage resources. Therefore, no significant effects are predicted during the operational phase.

15.2.4 Cumulative Impact

Cumulative effects on cultural heritage have been considered in the context of other existing and proposed developments in the surrounding area (see Chapter 1 for planning context). The proposed development does not intersect with, or directly impact, any known or recorded archaeological sites or structures of architectural heritage significance.

Licensed archaeological monitoring was carried out on the northern half of the adjacent Waterfall Heights residential development in July 2023 (Purcell and O'Leary, 2023). No archaeological features or finds were identified during these works.

While no cultural heritage assets have been recorded within the proposed development site and in the northern half of the adjacent Waterfall Heights site, cumulative ground disturbance resulting from multiple developments in the wider landscape may increase the likelihood of encountering unrecorded subsurface archaeological remains. Should such features be uncovered and subsequently preserved by record, their removal would constitute a permanent loss to the cultural landscape, contributing to a negative cumulative impact.

15.3 Mitigation

15.3.1 Incorporated Design

As there are no Recorded Monuments or Protected Structures within the site, no specific alterations to the layout were required to preserve known features. While the potential for encountering previously unknown subsurface archaeological remains during construction is considered low to moderate, the design includes provision for licensed archaeological monitoring during all groundworks. This precautionary measure will ensure that any unexpected discoveries are promptly identified, recorded, and appropriately managed in consultation with the relevant statutory authorities.

15.3.2 Construction Phases

Licenced archaeological monitoring will be conducted during the construction phase. Should archaeological features or deposits be revealed during these investigations, both the National Monuments Service and the Planning Authority will be consulted. All newly identified archaeological sites will be preserved *in situ* or by record and sufficient time and resources will be allowed to resolve all archaeological matters. Preservation *in situ* will require the relocation of the element of the development beyond the area of archaeological sensitivity. Preservation by record will require the excavation of the archaeological material and such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht, and the Islands). This work will be funded by the developer.

15.3.3 Operational Phase

No archaeological, architectural or cultural heritage effects are predicted during the operational phase of the proposed development; therefore, no mitigation measures are proposed.

15.4 Residual Impact Assessment

Following the implementation of mitigation measures, including licenced archaeological monitoring during groundworks, the residual impact on cultural heritage is expected to be minimal. While there remains a low to moderate potential for the discovery of previously unknown subsurface archaeological features, the monitoring strategy ensures that any such remains can be properly recorded, assessed, and preserved by record if necessary.

As no known archaeological or architectural heritage assets will be directly affected, and appropriate mitigation is in place to address any unforeseen finds, the overall residual impact on cultural heritage is assessed as neutral to minor negative

15.5 Monitoring

Licenced archaeological monitoring will be conducted during the construction phase. Should archaeological features or deposits be revealed during these investigations, both the National Monuments Service and the Planning Authority will be consulted. All newly identified archaeological sites will be preserved *in situ* or by record and sufficient time and resources will be allowed to resolve all archaeological matters. Preservation *in situ* will require the relocation of the element of the development beyond the area of archaeological sensitivity. Preservation by record will require the excavation of the archaeological material and such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht, and the Islands). This work will be funded by the developer.

CHAPTER 16 | Risk Chapter

The assessment of Risk Management is assessed under Chapter 16 of Volume II of this EIAR.

16.1 Existing Environment

The site which is 5.76 hectares in area, with a net developable area of 4.8 hectares, is located along Waterfall Road, in the townland of Ardarostig, Bishopsown, Co. Cork.

The subject land is predominantly a greenfield site and is bounded to the north of the development by the public footway, linking lands from west to east. The west of the site is bounded by the Waterfall Heights Residential Scheme. Southern lands are open space whilst the lands to the east are a mix of residential and industrial which part of the lands to be developed as a primary health care unit.

16.2 Topography

The site slopes down from south to north. The site has a high point on the southern boundary 35.5m Malin Head Datum and a low point of 17.5m Malin Head datum at the northern boundary, adjacent to the roadside footway.

16.3 Flood Risk

A Site-Specific Flood Risk Assessment has been carried out by OSL Consulting Engineers and is submitted under separate cover. The site including all proposed residential dwellings is located in Flood Zone C as defined by the requirements of "The Planning System and Flood Risk Management, Guidelines for Planning Authorities" and its Technical Appendices.

16.4 Seismic Activity

In Ireland, seismic activity is recorded by the Irish National Seismic Network.

The principal events have occurred along/ beyond the east, south-east and south of Ireland with seismic movements generally up to 2.9 Magnitude recorded on land with no large seismic events recorded in the immediate vicinity of the subject site.

16.5 COMAH/SEVESO Sites

The Seveso Directive (Directive 82/501/EEC, Directive 96/82/EC, Directive 2012/18/EU) was developed by the EU after a series of catastrophic accidents involving major industrial sites and dangerous substances. Such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. The Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations"), implement the latest Seveso III Directive (2012/18/EU).

There are two tiers of establishment, which are related to the quantities of dangerous substances present. Depending on quantity, an establishment may be upper-tier or lower-tier. Upper-tier establishments have greater quantities of dangerous substances present and therefore are obliged to comply with additional requirements specified in the Regulations. Lower-tier establishments have lower quantities of dangerous substances present.

There are 6 no. Seveso sites (3 no. lower tier and 3 no. upper tier) located in the Cork City Council administrative area.

Ther are no Seveso sites in close proximity to the proposed development. The closest to the subject site is Irish Oxygen Limited which is a 'lower tier establishment' and is 500m from the site, located along Waterfall Road, Cork City, Co. Cork. The most recent COMAH inspection of the premises was in August 2024. In the event of an emergency HSA Regulations 25 information for Irish Oxygen Limited states the following:

> *"Members of the public likely to be affected will be warned by the Gardaí or Fire Service."*

Given the low risk and 'lower tier' nature of Irish Oxygen premises and the distance to the proposed development, it is not considered a concern for the proposed development at construction or operational phase.

16.6 Impact Assessment

16.6.1 The Do Nothing Scenario

The site will remain as underutilized greenfield area.

16.6.2 Construction Phase

No scenarios of concern have been identified during the construction phase. As such the predicted impact is considered to be short term, imperceptible and neutral.

16.6.3 Operational Phase

The proposed development is not located in an area prone to flooding or an area prone to seismic events or within close proximity to a COMAH/Seveso site. As such, these accident scenarios are not of concern.

16.6.4 Residual Impact

Control measures will be put in place for health and safety and environmental management as per conditions of the planning permission, relevant code of practices and relevant legislation. The residual impacts will be negligible once all control, mitigation and monitoring measures have been implemented. The potential for dust or noise from the site operations to cause any nuisance to nearby receptors is deemed to be negligible and the adherence and full implementation of the appropriate control and mitigation measures will ensure there is no potential for cumulative effects to arise.

CHAPTER 17 | Interactions of the Foregoing

Likely significant interactions are set out in Chapter 17 of the EIAR. In practice many impacts have slight or subtle interactions with other disciplines. During the preparation of this EIAR each of the specialist consultants engaged with each other with respect to the likely interactions between effects predicted as a result of the proposed development. Mitigation measures to alleviate identified likely significant effects address identified interactions. This approach meets with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001, as amended.

CHAPTER 18 | Summary of Mitigation Measures

A key objective of the Environmental Impact Assessment process is to identify likely significant environmental impacts at the pre-consent stage and where necessary to propose measures to mitigate or ameliorate such impacts. Monitoring Measures must be incorporated in the Development Consent for a Project if the Project is likely to have significant adverse effects Article 8a of the EIA Directive, requires that monitoring measures proposed (if appropriate) should be included in the EIA Report.

This section summarises the proposed mitigation and monitoring measures set out in Chapters 4 to 15 of Volume II of this EIAR.

It is proposed that the appointed contractor will develop a site-specific Construction and Environmental Management Plan (CEMP) prior to works commencing on-site. All the mitigation and monitoring measures proposed within the individual specialists' assessments will be incorporated into the plan.

Table 6 Incorporated Design Mitigation

Aspect	Mitigation
Population & Human Health	The proposed development complies with the Building Regulations which provide for the safety and welfare of people in and about buildings. The Building Regulations cover matters such as structure, fire safety, sound, ventilation, conservation of fuel and energy, and access, all of which safeguard users of the buildings and the health of occupants. The proposed design provides for the segregation of pedestrians and bicycle traffic from motorised traffic. The design also incorporates the principles of universal design and the requirements of Part M of the Building Regulations so that the development will be readily accessible to all, regardless of age, ability or disability. The integration of energy efficient measures into the design will provide for healthier living standards for future occupants, less dependence on fossil fuels and associated improved air quality. The availability of on the doorstep public open space, amenity spaces, and a highly accessible layout across the scheme will encourage sustainable modes of outdoor access for a wide age group.
Landscape & Visual	No incorporated design mitigation measures are proposed as part of the proposed development.
Material Assets: Traffic & Transport	The design incorporates enhanced pedestrian crossings, and traffic calming measures in line with DMURS (2019).
Material Assets: Built Services	All new-build service infrastructure is to be designed in accordance with the relevant service provider and asset owner's code of practice, which require due cognisance of the receiving environment. Design depths of proposed infrastructure are to be optimised so that excessive excavations are avoided where possible, and by association a reduction in resultant waste and machinery operation time. It is proposed that products and materials are supplied locally, where practicable and available, in order to reduce carbon footprint of travel and production.

Aspect	Mitigation
Material Assets: Waste	A number of measures 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 'Waste Hierarchy' and 'Circular Economy' is employed when considering all mitigation measures. 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. The circular economy principle aims to keep materials, components, and products in-use in the economy for as long as possible. In circularity, the key objective is to design consumption and production systems to create and retain value. Both principles have been applied and will further be applied during the detailed design, construction and operational phases.
Land & Soils	No incorporated design mitigation measures are proposed as part of the proposed development
Water & Hydrology	No incorporated design mitigation measures are proposed as part of the proposed development
Biodiversity	Green infrastructure is incorporated into the design of the Proposed Development. The inclusion of native species will enhance biodiversity overall with provision of native shrubs, trees and sustainable surface water drainage methods as outlined in the landscape strategy prepared by SRLA (2025).
Noise & Vibration	No incorporated design mitigation measures are proposed as part of the proposed development
Air Quality	No incorporated design mitigation measures are proposed as part of the proposed development

Aspect	Mitigation
Climate	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 14.7.2.2). 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 will be Nearly Zero Energy Building (NZEB) compliant in line with the Technical Guidance Part L (2022) of the Building Regulations requirements for the residential elements and Technical Guidance Part L (2022), Buildings other than Dwellings for the creche. As per the Climate Action and Energy Statement the following key elements will be included in the design parameters. Maximise the passive elements of the design by: • Specifying building fabric insulation u-values better than the Part L 2022 Regulations. • Targeting the air permeability to be ≤ 3m3/m2/hr @ 50Pa Using the DEAP Software to optimise the façade using differing glazing u-values, light transmittance and solar gain ('g' values). • Ensuring particular detailing of linear thermal bridging. • Maximising the active elements of the design by: Specifying lighting designs that deliver > 90 lumen/ circuit watt • Specifying lighting systems with occupancy and daylight controls in Landlord areas. • Specifying high efficiency Heating systems • Minimise the specific fan power where applicable The proposed development will incorporate renewable technologies to improve on the RER of 20% specified in the NZEB requirements. Renewable energy options include solar PV panels, ground source heat pumps, air source heat pumps and exhaust air heat pumps. Additionally, the Climate Action Energy Statement has considered the following in relation to reduce, where possible, the embodied carbon impact of the proposed development: • Reduce the weight of equipment. • Specify products that can be demounted and reused. • Specify products with long lifespans. • Mitigate refrigerant impact through low refrigerant Global Warming Potential (GWP) and leakage rates. • Plant should be easily accessible for inspection, maintenance and replacement. • Design with adaptation in mind. • Less is more, design out MEP. • Source local materials where possible. • Source materials with an Environmental Product Declaration (EPD) where possible 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.
Cultural Heritage	As there are no registered archaeological monuments, architectural structures within the proposed development site, no specific alterations to the layout were required to preserve known heritage features. While the potential for encountering previously unknown subsurface archaeological remains during construction is considered low to moderate, the design includes provision for licensed archaeological monitoring during all groundworks. This precautionary measure will ensure that any unexpected discoveries are promptly identified, recorded, and appropriately managed in consultation with the relevant statutory authorities.

Table 7 Construction Phase Mitigation Measures

Aspect	Mitigation
Population & Human Health	An Outline Construction and Environmental Management Plan (OCEMP), Resource Waste Management Plan (RWMP) and Operational Waste Management Plan (OWMP) for the proposed development are included in the planning application documentation. The OCEMP, RWMP & OWMP will be further updated by the contractor, agreed with Cork City Council prior to commencement, and implemented by the selected contractor after any consent is received. All construction personnel will be required to understand and implement the requirements of the OCEMP and RWMP and shall be required to comply with all legal requirements and best practice guidance for construction sites. The OCEMP provides for a construction phase management structure to ensure that environmental protection and mitigation measures are put in place. The OCEMP requires that these measures will be checked, maintained to ensure adequate environmental protection. The OCEMP also requires that records will be kept and reviewed as required to by the project team and that the records will be available on site for review by the planning authority. All construction personnel will attend induction and training classes as required to ensure that the OCEMP is effectively implemented. The OCEMP will comply with all appropriate legal and best practice guidance for construction sites.
Landscape & Visual	Mitigation measures during the construction phase include the provision of 2.5m palisade walls made of solid timber with no viewing gaps between them surrounding the boundaries of the affected receptor groups.
Material Assets: Traffic & Transport	The following summarises the construction and operational phase mitigation; • Schedule construction traffic outside peak hours. • Implement noise barriers and limit construction hours. • Employ dust suppression techniques (e.g., water spraying). • Establish clear signage and detours for pedestrians. • Implement a Mobility Management Plan to promote sustainable transport options. • Enhance public transport services and facilities (e.g., bus stops, shelters). • Install pedestrian crossings, bike lanes, and safety signage. • Encourage use of electric vehicles and provide EV charging stations. Implement noise-reduction measures (e.g., sound barriers, landscaping).

Aspect	Mitigation
Material Assets: Built Services	A detailed Construction and Environmental Management Plan (CEMP), in line with the preliminary CEMP submitted as part of this planning application, will be prepared and implemented by the contractor at the construction phase. The following is a summary list of all mitigation measures: • Implement the Construction Environmental Management Plan (CEMP) • Implement the Resources and Waste Management Plan (RWMP) • Liaise with all relevant Statutory Authorities and Service Providers prior to commencement of construction • Create and implement a surface water drainage construction quality control system • Implement the Uisce Eireann Quality Assurance system for construction of wastewater and water supply services • Implement the ESB Quality Assurance system for construction of electrical services infrastructure • Implement the Openeir Quality Assurance system for construction of telecommunication services infrastructure
Material Assets: Waste	• The following summarises the Construction and Operational Phase mitigation • The Contractor will be required to fully implement the RWMP throughout the duration of the proposed construction phase. • All waste leaving the site will be recorded and copies of relevant documentation maintained • All waste leaving the site will be recorded and copies of relevant documentation maintained • All waste material leaving site will be correctly classified and segregation prior to removal where possible.

Aspect	Mitigation
Land & Soils	At Construction Stage the following mitigation measures are proposed: • The measures proposed to be put in place to mitigate any potential damage from the effluent of contaminated ground water will be to create an exclusion zone. • Concrete batching will take place off site and wash down and wash out of concrete trucks will take place off site. • Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains and drainage ditches. • Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds. • Any lubricants or hydraulic oils will be bunded in bunds that can contain 110% volume of the largest container. Absorbent pig bags will be kept in the site offices. These will be disposed of correctly if used and replaced with new ones immediately. Disposal records for used adsorbent will be retained by the Site Manager; • All materials taken on-site will be clearly labelled and stored in sealable containers; • The diesel fuel tank will be adequately bunded (110%) and the filling nozzle will be stored within the bunded area. The Site Manager will as part of their daily site walkaround check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager; • Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology; • The contractor will ensure that no hazardous or noxious materials enter a watercourse or drain or open excavation. Should this situation arise emergency procedures will be activated; • During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand; • Trucks delivering concrete to the site will not be allowed to washout their vehicles on site. Only washing of the chute will be allowed. The washing facilities will be remote from watercourses and will be bunded by a low earthen berm. • The Contractor is to clean equipment prior to delivery to the site. The Contractor is to avoid using any equipment which leaks fuel, hydraulic oil or lubricant. The Contractor is to maintain equipment to ensure efficiency and to minimise emissions; • Should mobilisation of soil particles/pollution be noted in the course of weekly monitoring by the Site Manager, works will stop temporarily, and the Site Manager will initiate the interception and treatment of pollution/silt run-off; • Precast elements should be maximised to avoid wet concreting in close proximity to water. • Discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. • Surface water runoff will be collected, a temporary positive drainage system shall be installed prior to the commencement of the construction works • A series of geotextile lined cascading, high level outfall, settling basins will be installed upstream of the agreed discharge point by the appointed contractor. • Alternatively, a 'siltbuster' silt control unit can be used on the outfall. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled out and removed before water is discharged in a controlled manner to the agreed outfall.

Aspect	Mitigation
	• All inlets to the cascading settling basins will be riprapped to prevent scour and erosion in the vicinity of the inlet. There will be: » Minimisation of site disturbance » Implementation of sediment control (as outlined above) » Minimisation of the potential for erosion » Prevention of sediment-contaminated water leaving the site • All soil stockpiles will be covered (vegetated or with tarpaulins/similar material) to minimise the risk of rain runoff/wind erosion. Vegetation will be established as soon as possible on all exposed soils.
Water & Hydrology	The following mitigation measures will be implemented during the construction phase. **Mitigation associated with sediment and sediment runoff** • 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. • 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 **Mitigation associated with spillages to ground of fuels and other construction chemicals** • 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.

Aspect	Mitigation
	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. • 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 • 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)

Aspect	Mitigation
Biodiversity	The following mitigation measures will be implemented as part of the Proposed Development and in line with the policy objectives of the Cork Biodiversity Action Plan (2021-2026), in order to minimise the potential impacts on the existing ecology during the construction phase. **Biodiversity Measures within the CEMP** • The CEMP (OSL, 2025b) has a number of biodiversity specific measures relating to the construction phase. In consultation with the Project Ecologist, construction phase mitigation is also detailed in the CEMP for the following elements: » Appropriate Lighting for bats and other nocturnal wildlife » Timing of works and vegetation clearance **Surface Water Protection** During the Construction Phase, all works will be undertaken in accordance with the Outline Construction Environmental Management Plan (OCEMP) (OSL, 2025b). These measures will address the main activities of potential impact which include: • Control and Management of surface water runoff. • Control and management of shallow groundwater during excavation and dewatering. • Management and control of soil and materials. • Appropriate fuel and chemical handling, transport and storage. • Management of accidental release of contaminants at the site. • Control and handling of cementitious materials. The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Good construction management practices will minimise the risk of pollution from construction activities at the subject site including but not limited to: • Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors. • CIRIA, 2015. Environmental Good Practice on Site (C741). • Enterprise Ireland Oil Storage Guidelines (BPGCS005). • Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities. • CIRIA, 2007. The SuDS Manual (C697). • UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG). • CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648). • Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters. **Timing of Works and vegetation clearance** Works likely to cause disturbance to nesting birds and resting or hibernating herpetofauna should be timed to take place outside the breeding bird season and in line with best practice i.e. during the period September – February inclusive for birds, See Table 11-32 regarding optimal timings for vegetation clearance for a range of species groups. As shown in Table 11-32, the optimal period for vegetation clearance in an overall context is during September and October.

Aspect	Mitigation
	Any clearance of scrub on-Site should take place during the period (February to March inclusive) in line with the strict timing of vegetation clearance stated in the Wildlife Act 1976 and subsequent amendments. All treelines and hedgerows currently in place should be retained and reinforced with native species where practicably possible as part of the Proposed Development. **Construction Phase Lighting** Overnight lighting will be minimised as much as possible with any essential overnight lighting directed away from natural habitats along the boundaries of the Site (i.e., the woodland, hedgerows and scrub areas interspersing the Site). Where overnight lighting cannot be avoided in these areas due to health and safety concerns, the lighting within the Proposed Development will be designed and installed to minimise the impact on local wildlife and in accordance with the Bat Conservation Trust guidelines on artificial lighting and bats (BCT 2023) **Waste Management** As best-practice, all construction-related rubbish on-site e.g., plastic sheeting, netting etc. should be kept in a designated area on-site and kept off ground level so as to protect small fauna (such as small mammals) from entrapment and death. **Pre-Construction Amphibian, Reptile and Mammal Surveys** Pre-construction surveys will be carried out no more than 3 months prior to Site clearance to assess the likely presence of breeding birds, amphibians, common lizard or small mammals, with particular attention paid to all brash stockpiles and removable hedgerows on Site. **Reduction of Nise Related Impacts** Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction/Infill Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing. **Invasive Species Management** Transport Infrastructure Ireland (2020) guidance 'The Management of Invasive Alien Plant Species on National Roads – Technical Guidance' will be consulted with regards the treatment, removal and disposal of invasive flora at the Site. **Biosecurity Measures** For the Construction Phase the contractor will prepare a project specific IAPS standard operating procedure document, in advance of work commencement. The document should be prepared by an IAPS specialist and should cover the bio-security measures to be taken, including the maintenance of records, to screen for the introduction of IAPS onsite, and to enable their tracing if such an introduction occurs; and to ensure no transmission of IAPS offsite.

Aspect	Mitigation
Noise & Vibration	A suite of noise and vibration control measures will be employed by the contractor during the construction phase. **Selection of Quiet Plant** The potential for any item of plant to result in exceedance of construction noise thresholds will be assessed prior to the item being brought onto the site. The least noisy item of plant will be selected wherever practicable (e.g., plant items with sound attenuation incorporated. **Noise Control at Source:** The following measures will be implemented, by the appointed contractor to control noise at source. These measures relate to specific site considerations: • For mobile plant items such as dump trucks, cranes, excavators and loaders, the installation of an acoustic exhaust, utilising an acoustic canopy to replace the normal engine cover and / or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB. Mobile plant will be switched off when not in use and not left idling. • For percussive tools such as pneumatic concrete breakers and tools a number of noise control measures include fitting a muffler or sound reducing equipment to the breaker 'tool' and ensuring any leaks in the air lines are sealed; • Where compressors, generators and pumps are located in proximity to NSLs and have the potential to exceed the construction noise thresholds, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation; and • Resonance effects in panel work or cover plates can be reduced through stiffening or the application of damping compounds, while other noise nuisance can be controlled by fixing resilient materials in between the surfaces in contact. **Screening:** Screening is an effective method of reducing CNLs at a receiver location and can be used successfully as an additional measure to other forms of noise control. The effectiveness of a noise screen will depend on the height and length of the screen, its mass, and its position relative to both the source and receiver. Standard construction site hoarding (2.4 m in height) with a mass per unit of surface area greater than 7 kg/m2 can provide adequate sound insulation. This is recommended, as a minimum around all site boundaries of the proposed development site. **Hours of Work:** Working hours will be restricted to 07:00 to 19:00 Monday to Friday & 08:00 to 16:00 on Saturdays. Sunday or Bank Holiday work will only take place periodically at the agreement with Cork City Council. Similarly, any other out of hours working will be only permitted by arrangement with site management and Cork City Council. **Liaison with the public** A designated Community Liaison Officer (CLO) will be appointed to site during construction works **Monitoring** During the construction phase the contractor will carry out noise monitoring at representative NSLs to evaluate and inform the requirement and / or implementation of noise management measures. **Vibration Control** Vibration from construction activities will be limited to the values set out in Table 12 3 to avoid any form of potential cosmetic damage to buildings and structures.

Aspect	Mitigation
Air Quality	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 earthworks, construction and trackout activities. 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. **Communications** • Develop and implement a stakeholder communications plan that includes community engagement before works commence on site. Community engagement includes explaining the nature and duration of the works 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. 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 a 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 site 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).

Aspect	Mitigation
	• 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. **Measures Specific to Construction** • 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.

Aspect	Mitigation
	Measures Specific to Trackout • 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 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. **Monitoring** • 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.

Aspect	Mitigation
Climate	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.
Cultural Heritage	Licenced archaeological monitoring will be conducted during the construction phase. Should archaeological features or deposits be revealed during these investigations, both the National Monuments Service and the Planning Authority will be consulted. All newly identified archaeological sites will be preserved in situ or by record and sufficient time and resources will be allowed to resolve all archaeological matters. Preservation in situ will require the relocation of the element of the development beyond the area of archaeological sensitivity. Preservation by record will require the excavation of the archaeological material and such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht, and the Islands). This work will be funded by the developer.

Table 8 Operational Phase Mitigation Measures

Aspect	Mitigation
Population & Human Health	The proposed development is of a high quality design that incorporates generously sized units with integrated energy efficiency measures and an abundance of open space. The impact assessment section did not identify likely significant negative environmental impacts on population and human health arising from the operational phase of the proposed development. Accordingly, mitigation measures are not proposed.
Landscape & Visual	During the operational phase, it is recommended to reinforce the existing treelines by including tall tree planting with high content of evergreen species along the boundaries touching the proposed development.
Material Assets: Traffic & Transport	The following summarises the construction and operational phase mitigation; • Schedule construction traffic outside peak hours. • Implement noise barriers and limit construction hours. • Employ dust suppression techniques (e.g., water spraying). • Establish clear signage and detours for pedestrians. • Implement a Mobility Management Plan to promote sustainable transport options. • Enhance public transport services and facilities (e.g., bus stops, shelters). • Install pedestrian crossings, bike lanes, and safety signage. • Encourage use of electric vehicles and provide EV charging stations. Implement noise-reduction measures (e.g., sound barriers, landscaping).
Material Assets: Built Services	• Implement a Surface Water Management and Maintenance Plan • Implement the ESB Quality Assurance system for construction of electrical services infrastructure • Implement the Openeir Quality Assurance system for construction of telecommunication services infrastructure
Material Assets: Waste	The following summarises the Operational Phase mitigation • The Operator / Buildings Manager will ensure that all waste leaving the Site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities. • The Operator / Buildings Manager 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. The Operator / Buildings Manager 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.
Land & Soils	No significant effects are anticipated during the operational phase. Therefore, no mitigation measures have been proposed.

Aspect	Mitigation
Water & Hydrology	The following mitigation measures will be implemented 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) will 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 Glasheen Stream, Twopot River, Curragheen River, as well as groundwater bodies, including the Ballinhassig East GWB underlying the site. • The surface water drainage strategy integrates various measures, including attenuation ponds, rainwater harvesting, permeable paving and downstream defenders. These features will effectively manage surface water flows, directing them to an underground attenuation pond 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. • 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. To mitigate these risks, the design of the development and its drainage infrastructure will ensure 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.

Aspect	Mitigation
Biodiversity	The following mitigation measures will be implemented as part of the Proposed Development during the operational phase. **Surface Water Protection** Regular maintenance of surface water treatment facilities in accordance with best practice and manufacturers guidelines is required to keep the drainage system in adequate working order and to allow continued filtration of the surface water. **Landscape Management** Pollinators and foraging bats will be promoted through the management of the soft landscaping on-Site during the lifetime of the development, see landscape strategy prepared by SRLA (2025). **Biodiversity Enhancement Measures** **Swift Brick:** A project ecologist will be instructed to oversee the installation of the swift bricks or boxes, and calling system, during the construction phase or after the development has been completed, depending on which option is decided upon by the design team. **Bat Boxes:** Common bat species were observed foraging on the site during the bat surveys. The boxes will provide roosting opportunities for local bat populations and help to increase the availability of suitable roost features in the area. A total of 3-5 bat boxes is recommended to be installed within the central hedgerow spine in areas of low light and human disturbance. These boxes will be erected under supervision of the project ecologist and monitored for bat activity in the years post construction. **Amphibian and Reptile Hibernacula:** It is recommended to enhance the natural areas of the Site for amphibian and reptile use by providing suitable refuge and hibernacula **Bee Hotels:** Nesting boxes designed for solitary bees will be installed within suitable areas of the Site, near areas of flowering meadows or within the central hedgerow spine. **Wildflower Meadows:** The Landscape Plan includes the planting of wildflower meadows. It is recommended that wherever possible proposed wildflower areas are allowed to regenerate naturally by way of the existing seedbank within the soils present on Site. In addition, this can be supplemented by locally sourced wildflower seeds where necessary.
Noise & Vibration	A suite of noise and vibration control measures will be employed by the contractor during the operational phase. **Building Services Noise** With consideration at the detailed design stage, the selection and location of plant items within the proposed development and associated buildings will ensure that noise emissions from any mechanical and electrical building services plant do not exceed the relevant noise criteria within Section 12.4.4. **Creche Noise** As outlined within section 12.9.2.2 noise related to the proposed creche will result in a not significant effect. Notwithstanding this the operation of the creche will be limited to within the daytime hours and not cause noise nuisance that exceeds the internal noise criteria presented within Section 12.4.4. **Inward Impact** Mitigation against inward noise from the N40 road is listed by the way of enhanced glazing treatments at the specified facades
Air Quality	No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be not significant.

Aspect	Mitigation
Climate	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 14.8.1 of Chapter 14 as incorporated design mitigation. No further operational phase mitigation is proposed.
Cultural Heritage	No archaeological, architectural or cultural heritage effects are predicted during the operational phase of the proposed development; therefore, no mitigation measures are proposed.