GLL PRS Holdco Limited

"Deer Park, Howth"
Large-scale Residential Development (LRD)
for lands adjoining Howth Demesne
Deer Park, Howth
Co. Dublin

VOLUME I
NON-TECHNICAL SUMMARY

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Document Control Sheet

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Table of Contents

Table of Figures

Table of Tables

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. Briefly, the Applicant, GLL PRS Holdco Limited, intends to apply permission for a Large-scale Residential Development (LRD) to develop 135 apartment units on a proposed development site of approx. 1.5 hectares, on lands adjoining Howth Castle Demesne, Deer Park, Howth, Co. Dublin.

1.1 The Applicant

GLL PRS Holdco Limited, is part of Glenveagh, a leading Irish home builder founded in 2017, whose vision is to build high-quality homes that support sustainable communities Their focus on people, homes and communities has created successful developments nationally by understanding that well planned, well designed and well-built homes is the essence of thriving communities.

Glenveagh are focused on three core markets - suburban housing, urban apartments and partnerships with local authorities and state agencies. Since the Initial Public Offering (IPO), the company have opened 23 sites, delivering more than 3,200 units (1,350 no. units in 2022), and project the delivery of over 2,700 units in 2024. In the financial year of 2023, the Group received granted permissions for approximately 4,600 units over twenty applications.

1.2 Screening for Environmental Impact Assessment

The proposed development does not fall within development classes set out in Part 1 of Schedule 5 and EIA is therefore not mandatory.

The proposed development falls within the category of an 'Infrastructure Project' listed in Schedule 5, Part 2 (10) (b) of the PDRs, which provides that a mandatory EIA must be carried out for projects including inter alia:

'10b) (i) Construction of more than 500 dwellings'

The proposed development is for 135 residential units and is significantly below the 500 dwellings threshold. Accordingly, it does not meet or exceed the threshold of 500 dwellings and EIA is therefore not mandatory.

'10b) (iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere. (In this paragraph, "business district" means a district within a city or town in which the predominant land use is retail or commercial use.)'

The proposed development site is surrounded by residential development, a golf course and demesne lands and does not satisfy the definition of business district. The applicable area threshold is therefore 10 hectares, and the proposed development site is 1.53 hectares. Accordingly, an EIA is not mandatory.

1.2.1 Sub-threshold Development

In cases where a project is listed in Part 2 but is sub-threshold i.e. it does not meet stated criteria such as in this case the number of houses and area of the proposed development site, it is necessary for the competent authority, in this instance Fingal County Council, to undertake a case-by-case examination to determine whether the proposed development is likely to have significant effects on the environment and therefore requires EIA. Where the assessment concludes that this is the case, the application for development must be accompanied by an EIAR.

The criteria for determining whether development listed in Part 2 of Schedule 5 should be subject to an EIA are set out in Schedule 7 of the PDRs; and the information to be provided by the Applicant to the Competent Authority for the purposes of screening sub-threshold development for EIA is set out in Schedule 7A. The information requirements are set out in detail in Volume II.

It concludes that the main likely potential effects of the proposed development on the environment are as follows:

i. Temporary potential effects locally on human health, air quality and noise and vibration from the construction phase.
ii. Temporary effects on the local road network, specifically Sutton Cross from the construction phase and in particular if the proposed development overlaps with the construction phase of the adjacent Claremont development.
iii. Potential temporary to permanent effects on key ecological features including European Designated Sites, downstream aquatic environment and species which commute/feed within the proposed development site and/or immediate vicinity.
iv. Potential permanent effect on the townscape and the wider Howth area when viewed from elevated locations and in combination with the approved Claremont development.
v. Potential permanent effect on cultural heritage in particular built heritage i.e. the demesne wall, Architectural Conservation Area (ACA) and local Protected Structures.

To conclude with certainty that the proposed development, having regard to the nature, size and location would not result in likely significant effects on the environment, it is our professional opinion that this sub-threshold project requires EIA to fully address the likely significant environmental effects identified in this screening stage.

1.3 Content of Environmental Impact Assessment Report

This EIAR is presented as 3 no. volume (NTS, EIAR and Appendices to EIAR) and it provides the following information:

a) A description of the project comprising information on the site, design, size and any other relevant features of the project;
b) A description of the likely significant effects of the project on the environment;
c) A description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
d) A description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics and an indication of the main reasons for the options chosen, taking into account the effects of the project on the environment;
e) A non-technical summary; and,
f) Any additional information specified in Annex IV of the Directive/Schedule 6 to the 2001 Regulations, as amended, relevant to the specific characteristics of the project and to the environmental features likely to be affected.

As is required by Annex IV of the 2014 Directive, the EIAR addresses matters including proposed demolition works (albeit minor), risks to human health, major accidents / disasters, biodiversity, climate change and cumulative effects with other existing and/or approved projects.

1.4 Competency

It is a requirement that the EIAR must be prepared by competent experts. For the preparation of this EIAR, GLL PRS Holdco Limited 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** below. 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	Significance	Lead Consultant
1	Introduction	McCutcheon Halley Planning Consultants	Rachel Condon
2	Project Description	McCutcheon Halley Planning Consultants	Rachel Condon
3	Alternatives	McCutcheon Halley Planning Consultants	Rachel Condon
4	Population & Human Health	McCutcheon Halley Planning Consultants	Rachel Condon

Chapter	Aspect	Significance	Lead Consultant
5	Landscape & Visual	ÀIT Urbanism	Margaret Egan
6	Material Assets: Traffic & Transport	DOBA	Eoin Munn, Jurek Gozdek, Narendra Jillelamudi
7	Material Assets: Built Services	DOBA	Paul Doyle & Donnachadh O'Brien
8	Material Assets: Waste	Byrne Environmental	Ian Byrne
9	Land & Soils	DOBA	Paul Doyle & Donnachadh O'Brien
10	Water & Hydrology	DOBA	Paul Doyle & Donnachadh O'Brien
11	Biodiversity	Enviroguide	Liam Gaffney
12	Noise & Vibration	AWN Consulting Limited	Abe Scheele
13	Air Quality	AWN Consulting Limited	Aisling Cashell & Ciara Nolan
14	Climate	AWN Consulting Limited	Aisling Cashell
15	Cultural Heritage - Archaeological	John Purcell Archaeological Consultancy	John Purcell
16	Cultural Heritage - Built Heritage	Flynn Architects	Sinéad Flynn
17	Interactions of the Foregoing	McCutcheon Halley Planning Consultants	Rachel Condon
18	Summary of Mitigation Measures	McCutcheon Halley Planning Consultants	Rachel Condon

1.5 Methodology

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

- *Guidelines on the Information to be Contained in Environmental Impact Reports (EIAR) (Environmental Protection Agency (EPA), May 2022).*
- *Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (EU, 2017).*
- *Environmental Impact Assessment of Projects: Guidance on Scoping (EU, 2017).*
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).*

In addition, specialist disciplines have had regard to other relevant guidelines and where relevant these are noted in individual chapters of the EIAR, see Volume II.

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 largely based on the terminology set out in the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022) reproduced in **Table 2** below.

Table 2 Impact Rating Terminology

Quality of Effect	
Positive	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of and ecosystem, or by removing nuisances or improving amenities.
Neutral	No effects of 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 Effect	
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 Effect	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effect	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effect	An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment.
Very Significant Effect	An effect which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effect	An effect which obliterates sensitive characteristics.
Duration of Effects	
Momentary	Seconds to minutes
Brief	Less than 1 day
Temporary	Less than 1 year
Short-term	1-7 years
Medium-term	7-15 years
Long-term	15-60 years
Permanent	Over 60 years
Extent and 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	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	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
Do Nothing	The environment as it would be in the future should the subject project not be carried out.
Worst Case	The effects arising from a project in the case where mitigation measures substantially fail.
Indeterminable	When the full consequences of a change in the environment cannot be described.
Irreversible	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
Residual	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
Synergistic	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

1.6 Scoping

The purpose of scoping is to identify the information to be contained in an EIAR and the methodology to be used in gathering and assessing that information. Applicants are not required to seek a Scoping Opinion.

The scope was also informed by:

- the Design Team and specialists engaged to prepare the EIAR;
- Guidance was provided by Fingal County Council during the Section 247 pre-planning meeting, LRD Meeting and LRD Opinion;
- Matters discussed related to conservation, scale and massing, visual impact, tree retention, public open space, traffic and surface parking layout, daylight and sunlight and surface water strategy; and
- A detailed narrative of the pre-planning meetings and LRD Opinion is contained in the Planning Statement and LRD Opinion Response that accompanies this application under separate cover.

1.7 Cumulative Projects

In August 2018, the Department of Housing, Planning and Local Government issued Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment. The Guidelines summarise "cumulative effects" in the following way at page 40;

> *"Effects are not to be considered in isolation but cumulatively i.e., when they are added to other effects. A single effect on its own may not be significant in terms of impact on the environment but, when considered together with other effects, may have a significant impact on the environment. Also, a single effect which may, on its own, have a significant effect, may have a reduced and insignificant impact when combined with other effects".*

Cumulative effects are not limited to projects, and it is necessary to also consider relevant Plans. Within the immediate environs of the proposed development site, there are three relevant projects:

1. Claremont: The proposed development site is bounded by Howth Road (R105) to the north and beyond that a brownfield site, former 'Techrete' site, that received approval (Reg. Ref: 306102) for a high-density mixed-use development including 512 apartments, 2 shops, a crèche, a café and a restaurant across 4 buildings up to 8 storeys in height. This development is currently under construction and the construction programme or this development is stated as c. 36 months in the application documents.
2. Deer Park Hotel: To the southeast of the proposed development site, planning permission Reg. Ref: F22A/0372 was issued for the replacement of the existing "Deer Park Hotel" building (and all associated structures) with a new 142-bed hotel, including: a bar, restaurant, gym/spa facility, swimming pool, retail, meeting rooms, bar and function area, external dining areas, photovoltaic panels, ESB substation, 170-space car park, and a new vehicular access. This was granted permission by Fingal County Council in July 2023. Subsequently, first and third party appeals were lodged to An Bord Pleanála in August 2023 and a decision is pending.
3. Howth Castle: Further southeast of the proposed development site, planning permission Reg. Ref: F22A/0046 proposed the refurbishment/redevelopment/change of use for part of the existing Howth Castle buildings, Stable Block and attendant lands including the demolition of some farm buildings, the refurbishment and construction of new buildings, and a change of use of part of the lower and upper ground floors of the castle and adjoining stable block and stable yard from primarily residential use to hospitality and tourist retail use. The site includes Protected Structures (Ref: 0556 and 0557). This was permitted by Fingal County Council in February 2023. A first party appeal (Reg. Ref: ABP 316113) was submitted to An Bord Pleanála in March 2023 and is yet to be determined.

Accordingly, each chapter of this EIAR assesses the cumulative effect of this proposal in combination with the above-mentioned developments, as relevant.

Individually, each specialist consultant has reviewed under construction, permitted and or under consideration development in their defined zones of influence and, based on expertise, they have identified projects relevant to their discipline that may interact to produce a cumulative effect. A full list of 'cumulative projects' in is provided as Appendix 1-1, of Volume III.

Wastewater from the proposed development will be treated at Ringsend Wastewater Treatment Plant (WWTP) prior to its discharge to Dublin Bay. The cumulative effect of the additional loading on the treatment plant is assessed in the Material Assets: Built Services chapter, the Biodiversity Chapter and in the Appropriate Assessment Screening Report and Natura Impact Statement that accompanies this application under separate cover.

1.8 Consultation

A dedicated website for this proposed development is established and all application documents, including this EIAR, are available at www.deerparkhowthlrd.ie.

Additionally, prior to lodging this application, the required information has been issued to the Department of Housing, Planning and Local Government's EIA Portal. The purpose of this tool is to inform the public, in a timely manner, of applications that are accompanied by an EIAR.

Pre-planning consultation and LRD meetings were held with Fingal County Council in September and December 2023 in advance of lodging this application. An LRD Opinion was received in January 2024. Guidance received has been integrated into the proposed design and, in turn, is assessed in this EIAR.

Where relevant specialists engaged with prescribed bodies individually, the details of advice received are provided in the individual chapters of this EIAR.

2 Development Description

2.1 Introduction

The proposed development is for the construction of 135 new homes, a Large Scale Residential Development, at Deer Park, Howth, Co. Dublin.

The development will consist of:

I. two blocks ranging in height from 3-5 storeys providing 135 residential units comprising:
   a) 63 one-bedroom units
   b) 72 two-bedroom units;

II. a public open space area of 1,676 sq.m and communal open space with an area of 890 sq.m;

III. 63 surface car parking spaces, including 4 accessible parking spaces and 13 electric vehicle (EV) charging spaces, and 6 motorcycle spaces;

IV. 410 bicycle parking spaces, including 342 secure resident bicycle spaces and 68 visitor spaces;

V. Partial demolition of three sections of the existing demesne northern boundary wall, which fronts Howth Road to facilitate vehicular access in the northwestern corner (8m) and two separate pedestrian/cyclist access points (1.5m and 3m respectively) along the centre and eastern side of the northern boundary wall;

VI. Works to protect and conserve the remaining extant northern and eastern demesne boundary wall;

VII. undergrounding and relocation of existing ESB overhead lines and diversion of the existing distribution gas pipe around the perimeter of the site;

VIII. Works to facilitate bicycle infrastructure upgrades and drainage connections along Howth Road; and

IX. ESB kiosks, rooftop solar photovoltaics, waste storage and plant rooms, drainage, single storey bicycle storage buildings, boundary treatment, public lighting, and all ancillary site and development works to enable the proposed development.

2.2 Site Context

The proposed development site is located in Deer Park, Howth, to the south of the Howth Road (R105), and to north-west of Howth Castle. The proposed development site (1.53 ha) encompasses undeveloped greenfield land of which 1.10ha is zoned for residential development under the Fingal County Development Plan 2023-2029 (FCDP). The proposed development is confined to the residential (RA) zoning. The balance of the application area (3,107 sq.m) is zoned high amenity (HA) which comprises densely covered trees with an east-west alignment and grassland.

A small portion of the residential zoned lands and the lands zoned HA are part of the 'other areas' or buffer area[1] of the Howth Special Amenity Area Order (SAAO). The designation of an SAAO recognises the area's natural beauty, its special recreational value, and the need for nature conservation within the area.

Figure 1 Subject Site and surrounds (Source: John Fleming Architect (JFA))

The proposed development site is enclosed along its northern and eastern boundary by the historic Howth estate demesne walls and mature trees. This is the only feature of built heritage existing within the proposed development site. The demesne wall is not listed as a protected structure.

There is no existing pedestrian or vehicular access to the proposed development site from Howth Road. A combination of mature hedgerow and wall forms the western site boundary and beyond it are low rise residential dwellings that form ribbon type development in a westerly direction toward

[1] No definition of 'buffer area' is provided in the FCDP.

Sutton Cross. The extensive tree belt (approx. 25-30 years old) with an east-west alignment delineates the boundary with the golf course to the south.

The proposed development site is approx. 120m northwest of Howth Castle (RPS ID0556) and approx. 100m west of St Mary's Church (RPS ID 0594), both of which are identified as protected structures in the FCDP Record of Protected Structures (RPS). The historic demesne woodland surrounds and offers screening to these buildings and their setting.

Howth Castle and part of its wider demesne land is within an Architectural Conservation Area (ACA), as depicted in **Figure 2** below. The boundary of the ACA is limited to a core area surrounding Howth Castle together with the entrance as depicted below. A small portion of the proposed development site is located in the ACA. The area is limited to 102sq.m and the works proposed will provide a wider concrete footpath and the provision of a new stepped pedestrian access.

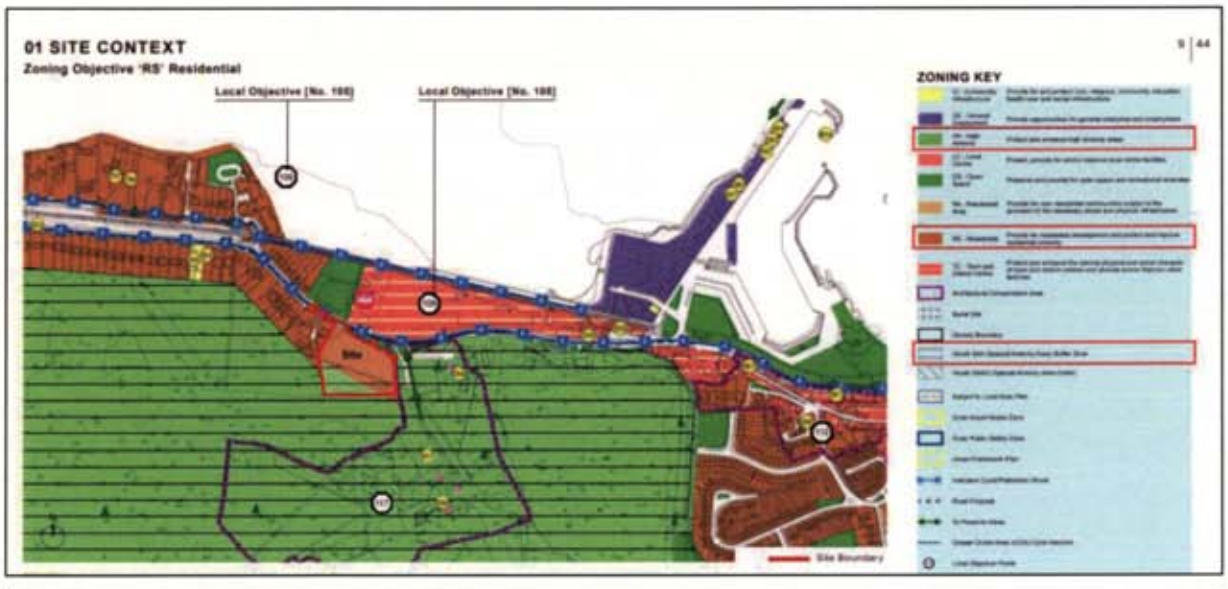

Figure 2 Zoning Map

The site is less than 500m (5-minute walk time) from Howth DART station and c. 200m (2 minutes' walk) from a bus stop served by the H3 and 6 Dublin Bus routes along Howth Road. All above services link Howth with Dublin City Centre. Public transport capacity surveys were undertaken, and the existing capacity of the bus and DART services is sufficient to cater for the development.

Howth Village and Sutton Cross are also easily accessible on foot, by bike or by public transport. A cycle lane traverses the front of the proposed development site on Howth Road and extends towards the city centre. Further detail in relation to the existing public transport capacity analysis is also set out in the accompanying **Traffic and Transport Assessment** and **Mobility Management Plan** prepared by Transport Insights.

Howth offers amenities including the town centre, which provides an array of services for daily needs. The proposed development site is also located close to local childcare facilities, primary and secondary schools, and sporting facilities. An assessment of the available services and social infrastructure is included in the accompanying **Community and Social Infrastructure Audit**, prepared by MH Planning.

Further details in relation to the capacity of the existing and proposed childcare facilities and schools is set out in the accompanying **Childcare Demand Assessment** and **School Demand Assessment**, also prepared by MH Planning.

2.3 Design Rationale

The proposed development seeks to deliver a high quality, high density (approx. 123 units per hectare (uph)) residential development, that makes sustainable use of a strategically located zoned development site, being:

A. within walking distance of a town centre, Howth, that is within Dublin City & Suburbs;
B. served by Dublin Bus and DART services, with the DART station located less than 500m from the proposed development site; and
C. has access to high quality open space amenities locally and a wealth of social infrastructure.

The local cultural and natural heritage assets are both sensitivities and opportunities for development lands in their vicinity and the proposed development is cognisant of these assets.

The proposed layout seeks to:

1. Respond to the sensitivities in the receiving environment ensuring protection of the historical setting of Howth Castle Demesne is preserved whilst facilitating high quality housing.
2. Create a permeable interconnected series of paths through, and to, the Site maximising its proximate location to Howth village centre and Howth dart station.
3. Retain the existing demesne wall whilst creating a strong built frontage along Howth Road reflective of the land use zoning.

2.4 Proposed Layout

The proposed development two offset buildings, ranging in height from 3-5 storeys, working with the topography of the site. Each block is broken down into two volumes and each portion of the four volumes is provided with a lift a stair core, providing four in total. The buildings are labelled A-D with Block A and B situated along the western portion of the site and Block C and D located in the eastern portion of the site. The staggered approach to the layout of the buildings footprint further increases the capacity for scenic views and daylight while enhancing dual aspect.

Block C and D are set back (19m-24m) from the north-eastern and eastern boundary, behind the existing mature tree belt that lines the Howth Castle entrance, that will be further reinforced via the inclusion of additional trees within the proposed development site. The rear volume of Block D, located closest to the eastern boundary and Howth Castle gates, steps down to 3 storeys to ensure that the appearance of the built form, particularly when travelling in a westerly direction along Howth Road from Howth centre, does not dominate the Howth Demesne entrance.

The proposed buildings will sit within significant areas of open space that serve a variety of functions including passive open green spaces, kick about spaces, quiet spaces, and exercise areas. To the east

of the buildings, a new public open space is proposed and the proposed openings to the existing demesne boundary wall will enable public access and provide for permeability throughout the site.

Communal open space is located between the two blocks. The central communal courtyard garden includes a retractable roof pergola allowing for social gatherings to occur year-round, thereby increasing the functionality of this space. The open spaces are linked using a shared surface approach to facilitate pedestrian/cyclist movement and permeability.

An existing tree belt is located along the southern boundary of the site and the proposed building footprint has been designed to ensure minimal impact to the tree belt occurs. A small quantum of tree area is proposed removal to facilitate the development, and this will be offset by additional planting resulting in an increase in the number of trees throughout the site including supplemental planting along the eastern boundary, acting as a natural extension to the historic demesne woodlands.

2.5 Height

The heights range from 3-5 storeys with the lower height (3 storeys) provided for Block D closest to the eastern boundary of the adjoining ACA. A small portion of the site is located within the ACA (102sq.m) in the northeastern corner however this is limited to works to provide a wider concrete footpath and the provision of a new stepped pedestrian access along Howth Road. The front volumes range from 4-5 storeys in height with setbacks ranging from 4.4m-7.1m provided for the upmost level as they front Howth Road, as depicted in **Figure 3** below.

The layout would create a strong built frontage to the road, on the road's approach to the town centre, while retaining a visual connection between the buildings to the woodlands and upland to the south. The development is separated from existing low density residential development to the west by the proposed at grade car parking and sufficient separation distances ranging from 26m – 44m to ensure that no impacts in terms of visual, amenity or privacy will occur as a result.

Figure 3 Upper-level setbacks along Howth Road (Source: JFA)

2.6 Principle Development Statistics

The principal development statistics of the proposal are as shown below:

Table 3 Key Development Statistics

Development Statistics	
Site Area	1.53ha
Net Developable Area	1.10 ha (zoned RS portion)
Total GFA	11,247.6 sq.m
No. of Units	135
Unit Mix	63 no. 1 bedroom units (47%) – 2 person 72 no. 2 bedroom units (53%) – 4 person
Plot Ratio	1.02
Site Coverage	26%
Tenant Amenities & Facilities	Internal Bike and Bin Storage External retractable covered pergola area External Bike Storage buildings Play areas
Density	123 units per hectare (uph)
Building Height	3-5 storeys
Car Parking	63 spaces
Bicycle Parking	410 spaces (incl. visitor spaces)
Dual Aspect Units	55%
Public Open Space	1,676 sq.m
Communal Amenity Space	890 sq.m

Quantum of tree removal	-10 trees to be removed from the site (approx. surface area of 300sq.m)
Proposed trees	268 – Overall surface area of proposed trees = 3,362sq.m

2.7 Materiality

The front volumes provide recessed balconies along the northern boundary and on the north eastern and north western corners so that the buildings present simple, clean forms to the Howth Road corridor and to the adjoining Howth Castle entrance. The rear volumes include projecting balconies, taking advantage of the views of the surrounding landscape and seascape from the apartments.

A feature of the proposed buildings is the large window openings, intended to take maximum advantage of the visual amenities of the site environs and also of benefit for maximising daylighting of the proposed units.

The façade design is informed by this objective to provide large window openings, with the elevations all variations of simple grid patterns of glazing framed by grey/buff brick. Metal cladding is provided for the lift core vertical elevations to create visual interest between the blockwork. The balconies are made up of metal post and rail, resulting in a lightweight appearance. As a result of the large windows framed by light and dark colour blocks, recessed balconies and the variations in material, the perception of massing/scale will be reduced.

Swift bricks are also proposed on the south and west elevations of Blocks B and D as an enhancement measure for this endangered bird species, that migrate to Ireland from South Africa each summer and traditionally nest in crevices or the eaves of buildings.

2.8 Open Space

2.8.1 Communal Open Space

A generous quantity of communal open space is proposed (890 sq.m), in excess of the required quantum stipulated by the Design Standards for New Apartments (2023).

A combination of hard and soft landscaping is proposed in the communal open space area. Socialising spaces, including an outdoor pergola with seating and a retractable canopy, which will provide a meaningful residential amenity area is also proposed within this space. It is envisaged that this space will be useable all year round and will create a safe space for residents of all ages to interact whilst providing a level of passive surveillance within the communal open space area.

2.8.2 Public Open Space

The public open space (POS) (1,676 sq.m) is proposed to the northeast of the proposed development site and comprises a series of spaces such as a kick about space, seating areas, lawns and accessible space with a quiet corner cabin.

The proposed quantum of POS meets the quantitative requirements of the FCDP (15% of the developable area). The overall standard of providing 2.5 hectares per 1,000 population will be met in the form of a contribution in lieu.

Circulation in this space is arranged as a loop for walkers and for children to enjoy playful experiences. A grove of existing trees to the south will be reinforced with new tree planting to form an attractive open woodland grove with a carpet of spring flowering bulbs.

The proposed POS is sheltered to the north and east by the historic demesne wall. The space is designed as a gated public garden to allow free movement throughout the space from dawn to dusk. Access to the public open space will be provided off Howth Road and this area is proposed to be taken in charge.

A large play area (175sq.m) for toddlers and children under 6, a large play area (130sq.m & 60sq.m) for children under 12 including sensory needs. The open space play area proposed in the High Amenity zoning, adjacent to Block B, provides calisthenics fitness equipment and timber stepping logs orientated towards older primary school children and teenagers.

In general, the paved components of the proposed landscape sequence will be characterised by durable materials and bespoke detailing sprinkled throughout such as wooden benches situated in planted enclaves.

2.8.3 Private Amenity Space

Private amenity space is predominately balconies with ground floor units incorporating private terraces.

The rear volumes provide for projecting balconies, taking advantage of the visibility of the surrounding landscape and seascape from the apartments. The front volumes provide recessed balconies along the northern boundary and on the north eastern and north western corners so that the buildings present simple, clean forms to the Howth Road corridor and to the adjoining Howth Castle entrance.

2.8.4 Hedgerows and Trees

An overarching aim of this proposal is to proposal is to utilise boundary trees as key features, in creating a harmonious relationship between the existing natural infrastructure and the new built environment. An **Arboricultural Impact Assessment** was undertaken by John Morris Arboricultural Consultancy and is submitted with this planning application under separate cover.

There is an existing tree belt located along the southern boundary of the proposed development site which influenced the proposed layout. The objective was to maximise the retention of this tree belt, whilst facilitating a suitable development. Blocks B and D have been designed to minimise incursion to the existing tree belt.

To provide working space to the outside of Block D, a 5m setback is proposed, which requires the removal of trees from the existing tree line. This setback will allow sufficient space for construction activities to progress. The position of Block D is cognisant of the root protection areas of the retained

trees and includes these within the design of the proposed reinforced grass path. Furthermore, this creates space for future canopy growth as trees mature. A new row of Scots Pine is proposed to be planted post-construction which will be located approx. 6m from the façade.

The project arborist considered the total combined canopy cover which may be removed to cater for the development of Block D would be approx. 136 sq.m. 5 additional trees located around the proposed development site (outside of the tree belt) are also proposed to be removed however this will be offset by an additional 269 trees to ensure a net gain in the number of trees is facilitated on-site. In terms of the new tree canopy, based on 5 years post planting, the estimated area for the new tree cover is 3,362sq.m which represents a significant increase in tree cover.

To mitigate the impact of the proposed development on breeding birds, the hedgerow/tree line along the eastern, southern, and western site boundary, as well as a number of standalone trees throughout are to be retained.

2.9 Access, Car & Bicycle Parking

Vehicular access the development is proposed via the construction of a priority-controlled junction on the R105 Howth Road at the western side of the northern boundary. Two further active travel (pedestrian/cyclist) accesses are proposed in the centre and eastern parts of the northern boundary wall.

These entrances will require openings to be made in the demesne wall. The remainder of the existing demesne wall which traverses the northern and eastern boundary will remain in-situ and works will be undertaken to ensure its conservation.

The scheme proposes 63 car parking spaces for residents, at surface level, with 4 spaces allocated for accessible parking. 13 spaces are allocated for electric charging, with the remaining spaces future-proofed for EV charging. 6 motorcycle spaces will also be provided.

The quantum of car parking proposed is below the maximum standards prescribed in the Fingal County Development Plan. The basis for the reduction is set out in the **Traffic and Transport Assessment** that accompanies this application under separate cover.

To support a transport modal shift, 410 bicycle parking spaces will be provided, comprising 342 secure resident bicycle spaces and 68 visitor spaces. The proposed site layout is highly accessible by sustainable modes of transport, while also being located adjacent to planned dedicated active travel links.

The available public transport connections include the DART, whose terminus in Howth is located less than 500 metres (5 minutes' walk) from the proposed development site. The station is served by DART services from Bray/ Greystones to Howth at daytime headways of 10-20 minutes, with a c. 30-minute travel time to the City Centre. A substantial frequency increase is expected following implementation of the proposed DART+ Coastal North scheme, with a Railway Order application to An Bord Pleanála to be submitted in the summer of this year (2024).

The proposed development site is also served by urban bus services, namely the H3 and the 6, with the nearest stops located c. 200 metres (2 minutes' walk) away from the Site. Both services link Howth with Dublin City Centre and run at 30-minute and 60-minute headways, respectively.

2.10 Drainage & Water Supply

A **Confirmation of Feasibility** (COF) (Appendix 10.4) and **Statement of Design Acceptance** (Appendix 10.5) have been received from Uisce Éireann (UÉ) and are included as appendices to this EIAR.

2.10.1 Surface Water

Details of the proposed surface water drainage infrastructure is provided as part of Chapter 10 (Volume II) and the **Infrastructure Design Report (IDR)** and the **Engineering drawing package** prepared by DOBA Consulting Engineers which accompanies this application.

The design of the surface water infrastructure for the proposed development complies with the policies and guidelines outlined in the Greater Dublin Strategic Drainage Study (GDSDS), the CIRIA Sustainable Drainage Systems (SuDS) Manual and the Fingal Co. Co. SuDS Guidance.

There is existing surface water infrastructure located to the northwest of the proposed development in the form of an existing 300mm diameter surface water sewer. A new gravity connection is proposed to this existing sewer.

2.10.2 Foul Water

The wastewater drainage layout is provided as part of the **Engineering drawing package** prepared by DOBA Consulting Engineers. The proposed wastewater drainage network has been designed in accordance with the principles and methods set out in Irish Water's Code of Practice for Wastewater Infrastructure and the Building Regulations Technical Guidance Document Part H.

There is existing foul water infrastructure located to the northeast of the proposed development in the form of an existing 400mm diameter concrete wastewater sewer, which flows northwards.

The proposed wastewater network will collect effluent from the proposed new development via a main wastewater drainage network and will discharge to the existing municipal sewer by gravity to the existing 400mm diameter wastewater sewer to the north-east of the proposed development site.

The wastewater generated will discharge to the Deer Park Wastewater Pumping Station (WwPS) and eventually Ringsend Wastewater Treatment Plant (WwTP), where it is treated and ultimately discharges into Dublin Bay.

2.10.3 Water Supply

The watermain layout is provided as part of the **Engineering drawing package,** prepared by DOBA Consulting Engineers. The proposed watermain layout and connections, valves, hydrants, and meters have been designed in accordance with the principles and methods set out in Irish Water's Code of Practice for Water Infrastructure and the Building Regulations Technical Guidance Document Part B.

There is existing water supply infrastructure located to the north of the proposed development in the form of an existing 9" cast iron watermain and an existing 160mm diameter molecular-oriented PVC (MoPVC) watermain.

A new 150mm diameter looped watermain with 100mm diameter spurs with associated Bulk Flow Meters as required to serve each individual block of apartments shall be installed within the proposed development site.

The estimated peak hour water demand generated by the proposed development is 4.10 l/s.

2.11 Services

2.11.1 Electricity

A new underground cable shall connect into the existing network and route through the proposed development to serve 2 ESB kiosks located close to the vehicular entrance along the western boundary and in front of proposed Block A.

There are existing overhead lines traversing the proposed development site supplying an existing ESB service within the area which will be diverted around the site, underground, in accordance with ESB Standards. Discussions have taken place with ESB regarding the undergrounding of the existing overhead ESB line and the most likely alignment is illustrated in the planning application documentation.

2.11.2 Gas

The proposed development site is traversed by a gas networks Ireland (GNI) 90 PE-80 4 bar distribution gas pipe. The Applicant proposes to divert this distribution gas pipe around the site.

2.11.3 Telecommunications

The supply of telecommunications infrastructure to the proposed development site will be provided by way of a connection to a telecoms control room from the existing EIR telecommunication networks and new proposed Virgin Media Network on Howth Road.

2.11.4 Energy Strategy

An **Energy Statement** prepared by IN2 accompanies this application under separate cover. The design intent is to achieve at least an A2 Building Energy Rating.

The Energy Statement confirms that the proposed apartments will comply with Part L of the Building Regulations (as amended) (NZEB). The strategies proposed are:

- U-values for floor and roof will exceed the building regulation backstops;
- Using a specified Glazing U-Value target;
- Better performance air permeability than the backstop, adding to building air tightness;
- High performance thermal bridging;

- Mechanical Extract Ventilation with Heat Recovery via heat pump; and
- Exhaust Air Source Heat Pump to provide Space Heating (via radiators) and Domestic Hot Water

2.11.5 Site Lighting

A **Site Lighting Report** prepared by IN2 accompanies this planning application under separate cover. The report contains the design layout and accompanying calculations for the proposed site lighting scheme for the proposed development.

The external lighting has been prepared in accordance with best practice documentation. Cognisant that bats are light-sensitive species and tend to avoid roosting or foraging in areas subject to artificial illumination, the project bat ecologist has reviewed and agreed the strategy.

2.11.6 Waste Management

An **Operational Waste Management Plan** (OWMP) prepared by Byrne Environmental accompanies this EIAR (Appendix 8.1) and should be referred to in conjunction with this section. The objective of the OWMP is to maximise the quantity of waste recycled by providing sufficient waste recycling infrastructure, waste reduction initiatives and waste collection and waste management information to the residents of the development.

Within the scheme, communal waste storage areas are proposed at ground floor level. Residents will be provided with waste recycling and waste disposal information by the site's Facility Management Company who will be responsible for providing clean, safe and mobility impaired accessible communal waste storage areas. It is expected that a single Waste Collection contractor shall be engaged to remove all mixed domestic waste and recyclable wastes from the waste storage areas and from individual houses on a weekly basis.

2.12 Construction of Proposed Development

2.12.1 Programme

The development will be constructed as one project, but with basic sub-phases such as bulk dig and super-structure erection. An outline of the construction phases is provided within the accompanying Construction Environmental Management Plan (CEMP) however, this is subject to change based on the contractor's construction programme. Based on other developments of a similar scale and complexity, it is considered that the construction works will take approximately 18 months upon commencement. The proposed staffing levels during the construction phase are anticipated to be 50 people on average.

2.12.2 Phasing

The two blocks together with all ancillary development works will be constructed over a singular programme. It is not intended to release the development in phases. Once the development is fully complete it will then be released.

2.12.3 Construction Hours

The proposed construction hours are (subject to the restrictions imposed by the local authority):

- 07:00 to 18:00 Monday to Friday (excluding bank holidays) and
- 08:00 to 13:00 Saturdays.

No site activity will be allowed on Sundays and Public Holidays.

Deviation from these times will only be in exceptional circumstances where prior written approval has been received from the planning authority.

2.12.4 Construction Access

The proposed construction access will be the proposed access on northwestern boundary i.e. the primary access (vehicular/cyclist/pedestrian) proposed to serve the development during the operational stage. Sightlines will be 49 metres in both directions within a 60 km/h speed zone.

All HGV's during the construction phase will travel to and from Sutton Cross using Howth Road(R105). This route was chosen as it is the shortest and minimises the effect the development has during the construction phase on Howth Village. Upon reaching Sutton Cross, traffic will take the most direct route to the nearest major roads infrastructure, i.e. the M50/M1.

2.12.5 Site Compound and Parking

The temporary parking of staff or delivery vehicles will not be permitted on adjacent roads and in this regard, it is proposed that construction parking spaces shall take place on the site. A dedicated area will be utilised to accommodate deliveries and welfare facilitates as necessary. A small, dedicated compound will be constructed as part of the early works to accommodate construction vehicles and loading, unloading and storage, as necessary. This will be located the car park of the proposed development site, away from adjoining noise sensitive receptors.

The appointed contractor will be required to implement an efficient logistics programme for ordering and delivery of materials and in so far as is possible, the storage time of materials on site will be kept to a minimum. The Contractor will encourage use of public transport where possible and will actively discourage parking on the surrounding residential roads, by construction operatives involved in the project. Parking for construction staff will be wholly contained within the proposed development site.

2.12.6 Construction Traffic

Over the course of the construction programme the total number of large vehicle movements is estimated as follows (large vehicles are assumed to include spoil lorries, concrete trucks, large rigid delivery vehicles and HGV's):

- No. of private vehicles per day from staff and site visitors - 20
- No. of light good vehicles per day from subcontract staff - 15
- No. of heavy goods vehicles per day including skip trucks (typical day) – 10-15 two way trips
- No. of heavy goods vehicles per day (peak days) – 20-25 two way trips

2.12.7 Construction Waste

A project specific **Resource & Waste Management Plan** (RWMP) has been prepared by Byrne Environmental and can be found at Appendix 8.2 (Volume III).

The RWMP will be implemented throughout the construction phase of the development to ensure that:

- All site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- All waste materials are segregated into different waste fractions and stored on-site in a managed and dedicated waste storage area.
- All waste materials generated by site activities are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Act 1996 (as amended) and all applicable regulations relevant to waste management.
- Recycled aggregates are used where possible to minimise the use of virgin materials.
- Materials which have a % of recycled material contained within them e.g. asphalt may include recycled glass or recycled asphalt.
- Where material surpluses arise, they shall be stored to prevent damage and re-used on other projects or returned to the supplier.

The project Engineer DOBA Consulting Engineers have estimated that c. 8,305m3 of topsoil will be excavated to facilitate the development and exported from the site.

Soils at the site have been classified following WAC testing by Ground Investigations Ireland and the completion of a Waste Classification Assessment. The Waste Classification Report is included as an Appendix to the RWMP. The assessment concluded that on-site soils may be classified as non-hazardous.

2.13 Monitoring

A **Construction and Environmental Management Plan** (CEMP) is included with this application. A CEMP demonstrates the applicant's commitment to implement the proposed development so as to avoid or minimise the potential environmental effects resulting from construction activities.

The CEMP will be updated to address any changes required by planning conditions and will be agreed with the planning authority prior to the commencement of development.

Aspects addressed within the CEMP include but are not limited to; noise and vibration; dust and air quality; traffic and vehicle management; pollution incident control; and protection of vegetation and fauna.

The appointed contractor will be required to implement this CEMP throughout the course of the construction phase. All personnel will be required to understand and implement the requirements of the plan.

2.14 Commissioning

The testing and commissioning of services (drainage, watermain, gas, electricity) will be completed in accordance with relevant codes of practice.

2.15 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.

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 PDRs identify that reasonable alternatives may include project design proposals, location, size and scale, which are relevant to the proposed development and its specific characteristics. The PDRs 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 Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, 2022 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 for the proposed development and sets out the main reasons for choosing the development as proposed. The assessment of alternatives is considered under the following headings:

i. 'Do-Nothing' Alternative
ii. Alternative Locations
iii. Alternative Uses
iv. Alternative Project Design

3.1 Do-Nothing Alternative

The 'do-nothing' alternative is a general description of the evolution of the key environmental factors of the site and environs if the proposed project did not proceed. Each chapter of this EIAR includes a description of the 'Do Nothing' alternative and should be referenced in conjunction with this Chapter.

The proposed development site would remain in its current condition, impermeable, predominately greenfield and it would not fulfil its residential zoning objective. Accordingly, there would be an adverse effect on population, as this approach would fail to address the shortage of homes in Dublin City and Suburbs. This is critical in the context of the low volume of land available for development in Howth owing to the high amount of land subject to environmental designations. 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.

When compared with the proposed development, the key difference between the Do-Nothing and the proposed development is the delivery of new homes, and its consequential negative effect for population when compared with the alternative, the delivery of 135 new homes.

The Do-nothing alternative is an inappropriate and unsustainable approach that would result in the inefficient use of a strategically located and easily serviced landbank of zoned residential lands located in proximity to existing and planned high-frequency transport. With the mitigation measures proposed in this EIAR and having regard to the findings that no significant effects on the environment are expected with such measures in place, the comparative environmental effects are not considered sufficient to rule out the proposed development.

3.2 Alternative Locations

The suitability of the proposed development site for residential development is confirmed by the 'RS' – Residential zoning designation in the extant Fingal County Development Plan 2023-2029 (FCDP), which was subject to Strategic Environment Assessment (SEA). The Core Strategy of the FCDP provides a residential capacity for Howth across 20 hectares with the potential to deliver 500 units.

In terms of availability, the above confirms that limited residentially zoned land is available particularly given no appreciable new residential land was zoned as part of the FCDP. For the majority of the headland, the land is deemed to be in an area of outstanding natural beauty and thus it is unsuitable for delivery of large scale residential development.

Howth is in Dublin City and Suburbs, the site is close to public transport, social infrastructure and amenities and under the ownership of the Applicant, therefore in this context, there is no reasonable alternative location.

3.3 Alternative Uses

At a settlement level, Howth is identified as a Consolidation Area within the Metropolitan Area given its location in proximity to Dublin City and key transport links. The planning policy approach is to gain maximum benefit from existing transport, social, and community infrastructure through the continued consolidation of the city and its suburbs. Future development should happen in a planned and efficient manner utilising opportunities to achieve increased densities where appropriate. In this way the National Planning Framework objective of compact growth can be achieved.

In summary, urban consolidation and compact growth offer multiple environmental benefits by promoting more efficient land use, reducing energy consumption and emissions, improving air and water quality, preserving open space, promoting sustainable infrastructure, and enhancing resilience to climate change. These strategies are essential for creating healthier, more sustainable, and resilient cities in the face of ongoing urbanisation and environmental challenges.

The alternative to compact growth would be urban sprawl with consequent environmental impacts such as increased private vehicle traffic which would contribute to air pollution through emissions of pollutants which impact the climate and health. Sprawl reduces the permeability of the land, leading to increased stormwater runoff and flooding. This overwhelms drainage systems, causes erosion, and carries pollutants into water bodies, further degrading water quality.

The FCDP establishes the overall guiding principles for development of the proposed development site which has two zoning designations, 'RS' Residential and High Amenity 'HA'.

The bulk of the application area is 'RS' and the zoning objective is to:

Provide for residential development and protect and improve residential amenity.

This objective is supported by a vision to:

Ensure that any new development in existing areas would have a minimal impact on and enhance existing residential amenity.

The permissible in principle use classes for 'RS' zoned lands is as follows:

Permitted in Principle		
Bed and Breakfast	Childcare Facilities	Community Facility
Education	Guest House	Office Ancillary to Permitted Use
Open Space	Residential	Residential Care Home/ Retirement Home
Retirement Village	Sheltered Accommodation	Traveller Community Accommodation
Utility Installations		

Figure 4 Residential – Permitted In Principle Uses (Source: FCDP)

In principle, an application for any one or a combination of the uses listed above could be progressed on the site subject to compliance with other policies and objectives in the FCDP. Having regard to the site's residential zoning designation the reasonable alternative scenario for development of the proposed development site is:

i. A residential led mixed use scheme incorporating some permitted in principle uses; or,
ii. A residential development.

3.3.1 Mixed Use Scheme

Consideration was given to developing a residential-led mixed use scheme on the proposed development site. This approach would integrate a quantum of amenities to support daily living needs such as a community facility or childcare etc.

A Social Infrastructure Audit (included under separate cover) was undertaken at the early stage of the project to ascertain the amenities and services available locally. It concluded that Howth is well served

by high quality public transport together with services and amenities. However, the wealth of amenities available means that vast areas of the peninsula are sterilised from development, in order to protect the environment. While there is an abundance of open space in Howth, a deficit in open space to support active play areas was identified.

The Childcare Demand Report (included under separate cover) established that there is adequate capacity available locally and a childcare facility is currently under construction on the former Techrete site (Claremont) located opposite the site on Howth Road.

Although community facility, childcare facility and education uses are permitted in principle the site is zoned Residential and therefore it is appropriate to develop a residential scheme particularly given the facilities which are currently under construction on the neighbouring site. The Claremont scheme which is currently under construction on the former Techrete site opposite the proposed development site will deliver 2 shops, a creche a café and a restaurant which will complement and enhance the existing mix of uses in the town centre.

3.3.2 Residential Scheme

Having regard to the above, a reasonable alternative is a residential scheme. Given this is the preferred option, **Table 4** below outlines the anticipated environmental effects of progressing a residential scheme on the proposed development site.

Table 4 Anticipated Environmental Effects of a Residential Scheme

Aspect	Quality & Effect	Notes
Population & Human Health	Positive and Very Significant	Delivery of a significant quantum of homes at an accessible location proximate to amenities
Biodiversity	Positive & Significant	The residential development would necessitate the inclusion of open space and having regard to policies in the Development Plan biodiversity enhancement measures would be included. The proposal will retain most of the tree belt located to the south and also result in an increase of trees by approx. 250 across the site.
	Neutral & Slight	Stripping of the existing meadow area will be required to facilitate the development.
Climate	Positive and Very Significant	Introducing homes at this location would support a modal shift owing to the site's excellent accessibility to the town centre and public transport.
Air Quality	Positive and Very Significant	Reduction in car usage brought by adhering to maximum car parking rates and by proximity to public transport would have a positive effect on local air quality.
Water	Neutral & Not Significant	Uisce Eireann has confirmed that the waster connection is feasible without upgrades. The wastewater connection is feasible subject to upgrades.
Land & Soils	Neutral & Not Significant	A residential development would require a change in land use. This change is deemed acceptable in principle having regard to the site's zoning designation 'RS' and the SEA prepared that assessed the environmental effects of the FCDP. To facilitate a residential development, removal of soils would be required. Having regard to the extensive areas protected in the peninsula, the loss of soils and subsoils is not deemed significant.

Aspect	Quality & Effect	Notes
Traffic & Transport	Positive and Very Significant	Capacity issues at Sutton Cross are existing and is beyond the scope of any individual application. Residential development at this location would promote a modal shift and the general impact on traffic would be positive.
Cultural Heritage: Built Heritage	Positive and Significant	The development site is enclosed along its northern boundary by the Howth Castle demesne wall. To facilitate access to the proposed development site, this requires access at this location. When carried out in a sensitive manner, this would afford the opportunity to rehabilitate the wall which is in decline.
Cultural Heritage: Archaeology	Indeterminable	The baseline archaeological environment does not appear to be significant. Archaeological testing was carried out and ten test trenches were excavated across the site where no archaeological features were identified. However, owing to the cultural heritage present in the immediate environs previously unidentified sub surface archaeology may be encountered at the construction phase.
Landscape & Visual	Positive and Moderate	The carrying capacity of the proposed development site to accommodate development is confirmed at a strategic level by its continued zoning designation. The Building Height Guidelines require development proposals to increase density at appropriate locations subject to meeting performance based criteria, including visual impact. Residential development of the site would introduce a change to the existing landscape and the degree of visual impact would be dependent on the quality of design. This is safeguarded through development management policies. Development of the site, at a scale that complements the currently under construction Claremont Site (Former Techrete site), will result in a unified and progressive landscape and built form.

3.3.3 Preferred Use of Residential Zoned Land

The suitability of the proposed development site for residential development is confirmed by the zoning designation in the extant Fingal Development Plan 2023-2029, which was subject to Strategic Environment Assessment (SEA).

The primary difference between the 2 scenarios is that a residential scheme would deliver a greater quantity of much-needed homes. When this is compared with a mixed-use development, with a lower residential yield and the historically low conversion of zoned lands in Howth to residential development, the effect on population would be adverse.

Accordingly, it is concluded that use of the site for residential development is the optimum use of the proposed development site having regard to the outcome for population i.e. delivery of housing.

3.4 Alternative Design (including size & scale)

3.4.1 Previous SHD

It is acknowledged that there was a previous SHD application (ABP Reg. Ref: 310413) proposed on the site which was permitted by An Bord Pleanála (ABP) and later quashed under Judicial Review.

Notwithstanding the fact that the proposal has been quashed, the scheme was deemed appropriate by ABP albeit much reduced from that originally proposed.

The below provides a summary of the enhanced outcomes of the subject proposal in comparison to the SHD proposal:

- Enhanced proposal for cultural heritage in relation to the greater setbacks proposed to the entrance to Howth Castle
- A larger quantum of public open space is proposed (1,890sq.m versus 1,161sq.m)
- The tree belt to the south is retained as opposed to the substantial removal proposed as part of the previous SHD
- A greater quantum of trees are proposed as part of the subject application
- The SHD site coverage proposed 37% versus the proposal which provides 26%
- 90 car parking spaces were proposed versus 63 proposed which will reduce traffic generation
- Enhanced permeability will result as 3 points of access are proposed as opposed to the previous 2 points of access.

3.4.2 Layout

The development is comprised of two buildings with four lift and stair cores of staggered form arranged side-by-side, aligned north-south. Each building is divided into a front and rear volume, with the two volumes offset so that the floorplan is staggered. The buildings are labelled A-D with A and B situated along the western portion of the site and C and D located in the eastern portion of the site.

A layout was prepared which, whilst retained the tree belt located to the south for the most part, was not deemed to be satisfactory.

Commentary was received seeking that the woodland belt be retained in its entirety due to its function as a valuable screening and a biodiversity corridor. The block layouts have been shifted from the initial design stages to ensure that limited impacts to the tree belt located to the south of the proposed development site occurs. The following layout is proposed which amended the footprint to ensure minimal impact to the tree belt.

The position of Block D is cognisant of the root protection areas of the retained trees and includes these within the design of the proposed reinforced grass path. Furthermore, this creates space for future canopy growth as trees mature. To provide 5m of working space to the outside of Block D, this requires the removal of trees from the existing tree belt. To retain the full line would provide a working space of 3.6m (max) which may not be feasible for construction. Notwithstanding this, a new row of Scots Pine is proposed to be planted post construction which will be located approx. 6m from the façade.

3.4.3 Height & Scale

A key environmental consideration with respect to considering the height and scale for Blocks A & C relates to its location to the west of the proposed development site adjacent to existing low rise development and likely effects on existing residential amenities.

During the design development, 2 alternative approaches were considered:

1. A 5 storey building;
2. A 4-5 storey building with the front volume setback

In terms of the visual impact, Development of the site under either alternative would have a moderate effect i.e. locally there will be a noticeable visual change. As a result, setbacks ranging from 4.3m-7m have been applied to the front volumes of Blocks A & C to soften the appearance of the development on approach from Howth Road.

Having regard to the positive visual and urban design effect that would emerge through creating a balanced urban edge (i.e. north and south of Howth Road), providing a stepped approach in the building height across Blocks A and C was deemed appropriate and reasonable and this design has been adopted.

Following the initial concept design, a uniform 5 storey development across the two staggered buildings was developed. Commentary from Fingal County Council was received in relation to the proposal outlining that the uniform 5 storey height does not sensitively respond to the historic setting i.e. the entrance avenue Howth Castle.

Setbacks ranging from 19m-24m are proposed to the western boundary wall and this alternative design together with the reduced heights avoids any sense of excessive enclosure, or crowding of the historic setting (the boundary wall, the gate or the woodland). To further mitigate any likely significant effect, tree planting inside the eastern boundary was strengthened to contribute further to the softening of the development's presence, despite its urban character and scale.

3.4.4 Recessed Balconies

The initial balconies proposed for Blocks A and D along Howth Road were provided with projecting balconies. This resulted in excellent daylight and sunlight being received to the apartments and private open space areas and created visual interest along the front elevations whilst maximising views of the sea to the north.

To create a more clean elevation along Howth Rod, given the prominent views afforded to the site on approach from Howth Road, recessed balconies were considered. However, there was concern raised regarding how the design would affect the daylight received to the apartments and private open spaces areas. The built form was tweaked to ensure that, where possible, dual aspect apartments were provided and window sizes were increased to ensure maximum amenity to the apartments was received. A daylight and sunlight assessment was carried out on the proposed scheme which excluded projecting balconies along the front elevations of Blocks A and C along Howth Road.

Therefore, the proposed open spaces exceed the BRE's recommendation for sunlight to open spaces and should appear adequately sunlit throughout the year.

Given only minor tweaks were required to incorporate recessed balconies along Howth Road, recessed balconies have been included.

3.4.5 Swift Bricks

A key environmental consideration with respect to considering the materials of some of the proposed elevations was the inclusion of swift brick boxes. The brick materials of the elevations of Blocks B and D have been updated to include swift bricks along elevations which will result in a biodiversity net gain. Swift bricks are a good option as they provide safe, permanent, low-cost nesting sites for Swifts for the lifetime of the building.

With regard to a biodiversity enhancement opportunity, the provision of Swift bricks was recommended in the design of the blocks as an enhancement measure for this endangered bird species, that migrate to Ireland from South Africa each summer and traditionally nest in crevices or the eaves of buildings.

Having regard to the positive effect that would emerge through creating safe, permanent, low-cost nesting sites for Swifts for the lifetime of the building, this would have an imperceptible effect on the proposed elevations whilst enhancing biodiversity across the proposed development site.

3.4.6 Access Route

The proposed development site is enclosed on its northern boundary with Howth Road by the existing demesne wall. The alternatives available to facilitate access to the site are:

1. Use the existing entrance to Howth Castle and Deer Park Golf Course
2. Create a new entrance

The existing entrance to the demesne is off the Howth Road. It is considered that intensifying the use of this entrance would have a significant adverse effect on particularly on the protected gates that are set back from the public road in the avenue.

The alternative, to create a new entrance along the northern boundary would have a moderate effect on the demesne wall. There is precedence for interventions in the northern boundary wall to facilitate access as evidenced by the access to Tig Bhride, dwelling located immediately west of the proposed development site. The wall is not protected and is not within the Howth Castle ACA, therefore direct impacts on protected built heritage do not arise. The wall was visually assessed by the project conservation architect and it was concluded that its integrity is undermined due to lack of maintenance and ivy growth. The works proposed to the wall offer an opportunity to restore the remainder of the wall and safeguard it into the future. This is a direct significant and positive effect for cultural heritage. Having regard to the identified adverse effect of using the existing demesne entrance for the proposed development and the very significant positive effect that could be achieved for the wider wall as part of the work to create an entrance on the northern boundary, creating a new entrance is the preferred alternative.

This measure limits the possible impact of additional traffic movements resulting in additional emissions and potential disturbance to the ecological context. Therefore, the option to use the existing route of the adjoining operational pit located to the west of the site was deemed impractical in consideration of the impacts on the environment and biodiversity.

4 Population & Human Heath

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

4.1 Baseline Environment

The proposed development site is located within the Electoral District (ED) of Howth which comprises the entire Howth Peninsula area. Howth ED was selected as the study area of this Chapter.

The application site is 1.53 ha, encompasses 1.1 ha of greenfield land zoned for Residential development (RS) within the Fingal County Council administrative area. The objective of the RS Zoning is to provide for residential development and to protect and improve residential amenity. The balance (0.36 ha) of the application area is zoned High Amenity (HA), and the objective is to protect and enhance high amenity areas. The proposed residential development is confined to the area zoned for residential purposes.

A small portion (102sq.m) of the northeastern corner of the proposed development site falls into the Howth Castle Architectural Conservation Area (ACA); however, this portion relates only to works to provide a wider concrete footpath and the provision of a new stepped pedestrian access.

Figure 5 Land Use Zoning and Specific Objectives (Source: FCDP, edited by MHP)

4.2 Sensitive Receptors

For the purpose of this chapter, the primary sensitive receptors are:

I. Existing residential dwellings in the vicinity of the proposed development site, in particular, existing low-rise suburban residential dwellings located to the west;
II. Users of the public road network, specifically Howth Road, the user of Baltray Park, attendance of St. Mary's Church and Deerpark Montessori School, the golf club and the wider demesne lands;
III. Future occupants of the former Techrete lands (Claremont SHD) for which permission has been granted (Reg. Ref. 306102) for a mixed-use development.
IV. Howth Castle located to the south-east of the site

4.2.1 Population

According to Census 2022, the population of the study area is 8,399 people. This represents a 1.3% (105 person) increase in population between 2016 and 2022, significantly lower than the increase in Fingal County (11.6%) and the State (8.1%) in the same period. The average age of those residing in Howth ED was 45.3 in 2022, which represents an increase from an average of 44.2 in 2016.

4.2.2 Households

There are 3,126 households in the Howth study area in 2022 where 57% (1,775) are identified as 1-2 persons households. The average number of children per family by Local Electoral Area of Howth-Malahide for 1-2 bedrooms is 1.26 (below the national average of 1.34 and Fingal county of 1.42). Further, the number of families with no children increased by 11% nationally and Howth ED has identified 925 families without children.

4.2.3 Housing Delivery

There are 3,607 residential units in the study area, which includes occupied and unoccupied dwellings. This represents a minor increase (+80) compared to the Census 2016 housing stock data. Within this, the stated private households amount to 3,125. Of this figure, 87% of the stock are listed as houses/bungalows and 13% are apartments/flats. An examination of the household types identified that apart from dwellings/bungalows, flats and apartments are the most common type of accommodation among those areas in which renting from a private landlord dominates.

4.2.4 Owner Occupancy

Across the study area, 84% of the housing stock is owner-occupied, and 13% is rented either through a private landlord or from a public body.

4.2.5 Deprivation Index

The Pobal Deprivation Index indicated that the overall score for Dublin County was 2.69, Howth ED was 6.99, and Howth Small Area was 9.88, which are all 'Marginally above average'.

4.2.6 Employment

The industries that people are engaged in work within the Howth ED are Commerce & Trading (35.4%) is the largest sector, followed by Professional Services (23.2%) and Other (14.2%) with Transport & Communications (12.7%), Manufacturing Industries (6.2%), and Public Administration (4%).

4.2.7 Social Infrastructure

Social infrastructure includes a wide range of services and facilities, including education, health, community, cultural, play, faith, recreation and sports facilities that contribute to the quality of life. This application is accompanied by a **Social Infrastructure Audit**, **Childcare Demand Assessment** and **School Demand Assessment**, which should all be read in conjunction with this chapter. Essentially these reports confirm that sufficient facilities in this regard are available in the area which can adequately provide for the anticipated population provided as part of this development.

4.2.7.1 Education and Childcare

Nine childcare facilities were identified within 2.5km of the proposed development site, of which five were located within 15-min walking (or less) and two are c. 500 metres distance from the proposed development site. There are at least 514 places provided by existing and permitted facilities, meaning the future demand arising from the proposed development can be comfortably accommodated.

The Childcare Demand Report, which accompanies this application under separate cover, establishes that combined there is an estimated demand for 307 childcare spaces in the Howth ED (existing (244 no.) + Claremont, Techrete (42 no.) & Santa Sabina (6 no.)) and there are at least 523 no. places provided by the existing and permitted facilities within the Howth ED (434 no. existing spaces, 57 no. spaces in the Claremont, and 32 no. spaces in the Santa Sabina development). This means that the future demand arising from the proposed development (15 childcare spaces) can be comfortably accommodated. There is no requirement for the provision of a childcare facility as part of this development proposal having regard to the existing geographical distribution and capacity of childcare facilities existing and permitted in the catchment, particularly the childcare facility currently under construction at the opposite side of Howth Road at Claremont.

In relation to primary and post-primary school facilities, there are eight primary and five post primary schools within the 4.5km catchment.

The School Demand Assessment that accompanies the proposed development demonstrates that there is latent capacity within the catchment to cater for the school aged population generated by the proposed development which will be further supplemented by delivery of the planned new primary school (Belmayne Educate Together Secondary School (ETSS) permanent building) to be delivered in September 2024 and a post-primary school (Gaelscoil Ghráinne Mhaol) in Donaghmeade/Howth which was announced to be delivered in 2021 but is currently deferred.

4.2.7.2 Health Services and Wellbeing

There is a wide range of Health and Wellbeing facilities located in the Howth ED area, including 3 no. of GPs, a dental clinic, 5 no. of physiotherapy, 3 no. of pharmacies an optician and a beauty clinic.

4.2.7.3 Community and Sport Facilities

A large number of social and community facilities are located within the Howth ED, catering to all age groups and interests. Additionally, a wide range of sports facilities, as well as other smaller sporting clubs and venues, are located in close proximity to the proposed development site.

In conclusion, the Social Infrastructure Audit concluded that the proposed development site is well-serviced by existing provision of services and facilities, well distributed geographically within c. 15 min distance, and within close proximity to a transport hub and, therefore capable to accommodate existing and future demand derived from the proposed development.

4.2.7.4 Public Transport and Accessibility

Howth DART station is less than 500m (5-minute walk time) from the proposed development site offering frequent DART services to Dublin City Centre and as far south as Greystones. The DART operates a service to the city centre every 20 minutes. The Dublin Bus services in the area provide direct linkage to the city centre via Bus Connects along Howth Road towards the city centre. Most notably the H3, a Spine Route with a frequency of service every 30 mins, and radial route 6 with services offered every 60 mins.

The proposed development site is also highly accessible to the national, regional, and road networks.

4.2.7.5 Air Quality

The proposed development site is situated within Air Zone A and the Air Quality Index in the Dublin City Region is graded as 3 – Good.

4.3 Do Nothing Scenario

A 'do nothing' scenario, which is to say not developing these lands, would represent a lost opportunity to develop lands for residential use in close proximity to the centre of the Howth village. Thus, the site would remain under-utilised and it would not contribute to increasing the provision of housing in this area.

4.4 Potential Significant Effects

4.4.1 Construction Phase

4.4.1.1 Population

It is estimated that during peak construction, there will be an average of 50 people employed on site. It is not anticipated that this will generate a temporary increase in population locally as employees will travel to the proposed development site from their existing place of residence. The likely impact on the population is thus **neutral and not significant**.

4.4.1.2 Economy and Employment

A vital characteristic of the proposed development in terms of its potential economic impact relates to its capital value, of which a significant portion will be for the purchase of Irish sourced goods and services. The construction phase (approx. 18 months) will provide a boost for the local construction sector in terms of employment generation (average of 50 people employed on-site), capital spend on materials and construction labour costs, and it will generate additional spending on the local economy (retail and local shops). It will complement the new retail, commercial and community uses that are currently under construction on the adjoining Claremont site.

In addition to direct employment, there will be substantial off-site employment and economic activity associated with the supply of construction materials and provision of services, such as professional firms supplying financial, architectural, engineering, legal and a range of other professional services to the project, and additional spending in local shops and other local retail services and as a consequence of the presence of construction staff during the construction phase.

The overall predicted impacts associated with the construction phase on the working population and local economy are **likely** and will have a **positive, temporary/short-term, not significant** effect.

4.4.1.3 Human Health

Construction sites pose potential risks to the health and safety of the public. However, access by the public would be considered trespassing on private property. In the absence of mitigation, the effect would likely be **negative,** with an effect that might range from **slight to profound** depending on the magnitude of the incident.

In the absence of standard construction mitigation measures, likely significant impacts would arise from construction traffic, noise, dust, and visual effects. It is noted that the potential for effects on population and human health during the construction phase are dealt with in this EIAR under the more specific topics of the environmental media by which they might be caused including landscape and visual, air quality, traffic and noise.

4.4.1.4 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.

In the absence of mitigation, the anticipated impact on residential amenity would be **local** and of **temporary to short-term** duration with a **moderate** significance.

Specific potential for effects on residential amenities during the construction phase is dealt with in this EIAR under the more specific topics of the environmental media by which they might be caused including air, traffic and noise.

4.4.2 Operational Phase

4.4.2.1 Population

Regarding population, the proposed residential scheme will result in a generally positive alteration to the existing greenfield site which will serve to the growing population of the area. It is anticipated that the proposed development will accommodate a projected full-time population of approximately 370 persons[2]. Overall, the likely impact of the proposed development of the operational phase on population is determined to be a **moderate-significant**, **positive** and **long-term**.

The **Childcare Demand Assessment** that accompanies this application notes that the scheme would generate a demand for 15 spaces in conjunction with the provision of 72 units capable of accommodating families on the proposed development site. The cumulative demand for childcare in Howth ED is established to be 244 spaces. There is capacity for 226 spaces within the 2.5km catchment, a phone survey on the 15th of May 2024 confirmed that the 4 facilities within the catchment have 27 available spaces within their facilities. There are at least 89 childcare spaces provided by permitted (and under construction) facilities (Techrete & Santa Sabina), meaning the future demand arising from the proposed development (15 childcare spaces) can be comfortably accommodated. The impact of the proposed development on childcare facilities is determined to be **locally neutral** with an **imperceptible** significance.

As outlined in the **School Demand Assessment** which accompanies the application under separate cover, it is estimated that the proposed development will generate 24 primary school children and a requirement for 16 post-primary school places. It is noted that there are eight primary schools and five post-primary schools with the study area (4.5km catchment, equivalent to 15-minute cycling time or 30-minute drive time). Overall, the impact of the proposed development on primary and post primary schools is determined to be **locally neutral** with a **not significant** effect.

There is a wealth of existing amenities in the wider area including sports and recreational facilities. The increase in population will place additional demands on existing amenities but will also provide a critical mass to support the delivery of social infrastructure. Within the proposed development a series of public and communal open spaces are planned that will ensure future occupants benefit from access to a range of recreational opportunities within the site. The proposed communal and public open spaces incorporate play areas for toddlers, primary school children and teenagers that will further enhance the provision locally and the effect is deemed **positive**.

Development of the site at Howth would deliver a critical mass of growth in population that would ensure the long-term viability of public transport infrastructure presented in the area. The effect is thus determined to be **moderate-significant**, **positive**, and **permanent**.

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[2] Estimated future population based the national household average of 2.74.

4.4.2.2 Employment and Economy

The potential employment opportunities will be limited given that residential is the predominant land use proposed. Notwithstanding this, there will be some employment created in the servicing and maintenance of the apartment buildings and for the upkeep of the landscaped areas. The economic impact of the operational phase on the immediate area would therefore **be positive permanent**, and given the modest nature of employment opportunities, of **imperceptible** significance.

The new residential population will generate additional spending within the Howth area which will likely have a **permanent, slight,** and **positive** impact on local economic activity generated through the multiplier effect.

4.4.2.3 Health & Residential Amenity

The proposed scheme minimises carparking and prioritises both pedestrian and cyclists. 410 bicycle spaces (342 no. secure bicycle parking and 68 visitor bike spaces), which equates to approx. 3 bicycle parking spaces per unit. The layout provides for the segregation of pedestrians and traffic and incorporates the principles of universal access 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 predicted effect of these combined measures on the health and wellbeing of future occupants is **significantly positive**.

The integration of energy efficient measures into the design will provide for healthier living standards for future occupants and less dependence on fossil fuels for energy generation. This coupled with the carparking (63 surface car parking spaces which equates to 0.47 no. of space per unit). This lower rate will result in significant CO_2 savings, promote a modal shift, will contribute to improved air quality and the impact is likely to be **locally significantly positive** and of **permanent duration**.

Achieving a high quality living environment requires an integrated and balanced approach when designing a scheme. In this regard, the proposed new home benefit proportions and layouts that meet modern living expectations. The configuration of the proposed development in 2 buildings of four blocks proposes a modest height (3-5 storeys), 37% of the total application area is retained as open space and this is a **positive** effect. High quality and sufficient quantum of open space is critical to health and well-being and is an important design consideration where higher density development to achieve compact growth is an overarching objective.

There are significant benefits for population and human health in pursuing this approach, bringing people closer to where they can access daily living needs, improving air quality and reducing greenhouse gas emissions.

There are significant benefits for population and human health in pursuing this approach, bringing people closer to where they can access daily living needs, improving air quality and reducing greenhouse gas emissions.

The design of the proposed apartments includes a combined Living, Kitchen, Dining (LKD) format. This results in a layout with generously proportioned deep floor plans that exceed minimum requirements, see Housing Quality Audit (HQA).

Dual-aspect dwellings greatly enhances the likelihood that the internal environment of a dwelling will perform well and have a positive effect on the well-being of the occupants. The design maximises the number of dual-aspect apartments to achieve the many inherent benefits of this approach. These include better daylight, a greater chance of direct sunlight for longer periods, natural cross-ventilation, a greater capacity to address overheating, a choice of views, greater flexibility in the use of rooms, and more potential for future adaptability by altering the use of rooms. The proposed development site is central and accessible, so under SPPR 4 of the Design Standards for New Apartments 33% of the apartments should have dual aspect. Within the proposed development 74 units or 55% are dual aspect. This is determined to be a **Very Significant Positive**.

To provide private amenity space, each apartment benefits from access to balconies and ground floor terraces. The position of balconies is carefully considered to avoid overlooking thereby providing quality private amenity space. The effect of these measures is **positive**.

This application is accompanied by a **Daylight & Sunlight Report** prepared by BPC Engineers and should be referenced in conjunction with this chapter. In terms of amenity areas (public and communal amenity area), the report demonstrates that communal amenity areas, located on the ground floor of each block and dedicated roof garden, and public open space will have excellent levels of daylight and will receive a level of sunlight in excess of the recommended levels (Sunlight BRE Guidelines 'at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March'). The analysis demonstrates that the design of the amenity space is positive in this regard.

Achieving the high quality design e.g. large windows, generous room sizes and private amenity space results in a deep floor plan for LKDs and this can affect daylight penetration. The design incorporates extensive glazing to mitigate this.

Overall, it is determined that the design would provide future residents with a high quality and comfortable living environment and the effect is **positive**.

The **Daylight & Sunlight Report** presents the results of an assessment of the effect the proposed development would have on the level of daylight and sunlight received by existing neighbouring residential properties located to the west. The analysis demonstrates that the proposed development would not result in a perceptible level of reduction to the daylight or sunlight received by the existing properties. The proposed development would also have an imperceptible effect on the level of sunlight received by the gardens of the neighbouring properties. Therefore, it is concluded that the design of the proposed scheme is favourable in terms of impact as no existing properties will experience any noticeable drop in levels of daylight or sunlight and the effect is **neutral** and **imperceptible**.

4.4.2.4 Local Services & Amenities

The proposed development provides high quality communal and public open space. The communal amenity space is laid out with a hierarchy of uses including passive recreational areas and play space for children. The public open space is conveniently located to the north of the proposed development site where it will be most accessible. The inclusion of high-quality landscaping proposals and dedicated play areas is determined to be locally **positive** with a **permanent duration.**

The Social Infrastructure Audit, submitted with the application, demonstrates that there is sufficient infrastructure within the study area. The proposed development site incorporates dedicated play areas within the communal and public open space, as detailed in the Landscape Plan provided under separate cover.

There is a latent capacity to cater for the proposed development and support the needs of the likely childcare, primary and post-primary school population generated by the scheme. Please refer to the Childcare Demand Report and School Demand Assessment included with this application under separate cover. Accordingly, the impact is deemed locally **neutral** with a **significance** that at worst would have a **moderate effect**.

4.5 Cumulative Effects

The approved Claremont scheme at the former Techrete site (Reg. Ref: ABP 306102) together with this proposed development will provide 647 new homes in Howth. Having regard to the historical low delivery of homes in the area and the housing crisis that exists across Dublin City and Suburbs, this is a **Very Significant Positive** effect.

The Claremont scheme includes play areas dedicated to different age groups. Together with the proposed development site, the realisation of new amenities, particularly play areas is deemed **Very Significant** and **Positive**.

The proposed development together with the Claremont scheme will increase demand on local infrastructure and services. This will include increased demand on potable water supply, foul water treatment capacity, gas supply, electricity supply, and telecommunication (fibre/broadband) capacity. There will be an increased demand on creche, primary and secondary schools in the locality. The supporting reports included with this application demonstrate together with Confirmation of Feasibility from Uisce Éireann that the cumulative effect will be **neutral** with a significance ranging from **slight** to **moderate**.

Allowing people to live in close proximity to reliable public transport infrastructure (DART Howth Station) will contribute toward reducing dependence on car-based travel and this will be positive in the context of greenhouse gas emission reductions. Furthermore, these developments will generate additional population locally and the consequent effect will be increased demand for local services. The effect is **locally moderate** with a **permanent** effect.

4.6 Mitigation

4.6.1 Incorporated Design

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 including segregated pedestrian entrances which is strategically located proximate to the village of Howth will encourage sustainable modes of outdoor access for a wide age group.

4.6.2 Construction Phase

A **Construction and Environmental Management Plan (CEMP)** included in the application documentation and a **Resource Waste Management Plan (RWMP)** (Appendix 8.2, Volume III) for the proposed development are included in the application documentation. The CEMP & RWMP will be further updated by the contractor, agreed with Fingal County 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 CEMP and RWMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.

Project supervisors for the construction phase will be appointed in accordance with the Health, Safety and Welfare at Work (Construction) Regulations 2021 (as amended), and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phases.

Adherence to the construction phase mitigation measures presented in this EIAR will ensure that the construction of the proposed development will have an **imperceptible** and **neutral** impact in terms of health and safety during the **short-term** duration of the works.

4.6.3 Operational Phase

The proposed development is of a high quality design that incorporates generously sized dwellings 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.

4.7 Residual Impact Assessment

The residual effect of the proposed development for population and human health is determined to be **significantly positive** having regard to the delivery of much needed new homes in a location that has the carrying capacity in terms of both services and amenities to support the population generated by the scheme.

Allowing people to live in close proximity to their daily living needs and with access to more than one mode of public transport (DART & Bus) to access employment locations is a **significant positive** effect for population and human health.

4.8 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.

5 Landscape & Visual

GLL PRS Holdco. Limited intends to apply to Fingal County Council for permission for a Large-scale Residential Development on lands adjoining Howth Demesne, Deer Park, Howth, Co. Dublin, with a total site area of approx. 1.5 ha.

The Deer Park development site lies within Land-Use Zoning **RS** and **HA** in the Fingal Development Plan 2023-2029.

Land Use Zoning Objectives:

RS: Provide for residential development and protect and improve residential amenity.

Objective: Ensure that any new development in existing areas would have a minimal impact on and enhance existing residential amenity.

HA: Protect and enhance high amenity areas

Objective: Protect these highly sensitive and scenic locations from inappropriate development and reinforce their character, distinctiveness and sense of place. In recognition of the amenity potential of these areas opportunities to increase public access will be explored.

The landscape character of the Howth Head landscape as a whole is described in the Fingal County Development Plan 2023-2029, Chapter 9, Green Infrastructure and Natural Heritage, as a Coastal Landscape Character Type with Exceptional Landscape Value; its Landscape Sensitivity is considered High. Given the current nature, visual presentation and the context of the land-use of the Deer Park site itself, the landscape sensitivity generally would be considered medium to high, and therefore its capacity for change and improvement is considered to be medium.

The landscape condition of the site can be described as undulating, falling towards Howth Road with some panoramic views of the harbour and Irish Sea from higher points within the site. There are some vertical structures such as ESB poles/overhead wires crossing through the site reducing its visual sensitivity. Sections of the historic 'Deerpark' wall have been replaced and rebuilt with lesser quality materials in places, particularly along the east of the site. There is substantial vegetation growth on sections of the wall which appear to be damaging to the wall itself. Views into the site are generally from the north, northeast and northwest. There is some visual enclosure along the northern and western boundaries due to the presence of the existing historical stone wall. There is more substantial visual enclosure from the east, south and southeast because of the substantial tree coverage on these edges.

The land use to the west and northwest is residential. Land use to the north-east is residential (high density) currently under construction. Howth town, harbour and Dart Station are located to the east, northeast of the site.

In general, the landscape sensitivity of the general locality of the site and its immediate adjacent land uses would be considered low to medium given its suburban nature which is undergoing change with the new high density Claremont development under construction. Substantial road, construction and

advertising signage adjacent to the entrance to Howth Castle along poor quality public realm locally detracts substantially from the overall landscape setting, compounded by the temporary effects of construction parking locally. The construction of Claremont, a 4-7 storey development to the northeast of the site will substantially alter the character of the landscape character when complete. It will change from suburban to urban in nature and will be seen as an extension of the urban built environment of Howth town itself.

The lands at Deer Park are an underused greenfield land bank located within walking distance of Howth town centre. The site is served by Dublin Bus and DART services (less than 500m to the northeast), and is in close proximity to coastal amenities, beaches, open spaces, coastal walks and golf course. Howth town, harbour and Howth Head combine to provide a wealth of amenities for residents of the local community, and also serves as a destination for visitors.

The site itself is part of a former agricultural land use associated with and formerly part of the wider historic Howth Castle Demesne. The stone wall boundary to the north and east of the site are part of the historic structures of the Howth Castle Demesne. The Howth Castle Architectural Conservation Area (ACA) is located to the immediate east and southeast of the site. A small portion of approximately 102 sq.m of the ACA is located in the northeastern corner of the proposed development site where the proposed pedestrian footpath and pedestrian access are proposed. There are a number of protected structures within the ACA and the effects of the proposed development on the cultural heritage and views to the ACA have been considered in the Landscape and Visual assessment chapter.

A substantial area of Howth Head, further east and south of the site, has a Special Amenity Area Order (SAAO) for its protection, and in recognition of its recreational and amenity value. The southern part of the subject site lies within a High Amenity area and within the southern extents of the Howth Head buffer zone.

A detailed tree survey was undertaken by the project arboricultural consultant. The majority of the trees on site will be retained with additional tree planting proposed as part of the landscape proposals. The following trees will be removed to facilitate the proposed development:

G102: Tags 174-222 Birch Tree group (Betula spp): Approximately 89sq.m to facilitate the proposal

G103: Tags 5317-5346 Scots Pine Group (Pinus sylvestris): Removal of 5no. Scots pine to allow 5m working space/access for construction.

Tree No. 68 (No Tag No: single stem growing from hedgerow)

Tree No. 2(P), Rowan (Sorbus Aucuparia), street tree, to facilitate site lines on Howth Road.

Other trees that are in poor condition will be retained and allowed to naturally decline in their current locations: these include a Yew tree (Taxus baccata) (Tag No. 5354) and a Sycamore (Acer pseudoplatanus) (Tag No. 5353). The existing mixed species hedgerows will be retained. Some will require cutting back and supplementary planting to enhance future vigour.

In terms of ecology and assessment of local flora and fauna, the biodiversity of the site has been assessed within Chapter 11 : Biodiversity. The site is made up of an unmanaged grassland field with

low species diversity with the majority of the site consisting of rank dry meadows and grassy verges (GS2) habitat. The southern boundary of the site is made up of mixed broadleaved/conifer woodland (WD2), while the eastern boundary of the site is comprised of mature mixed broadleaved woodland (WD1). There is a mature hedgerow (WL1) habitat with encroaching bramble scrub (WS1) on the western boundary of the site. The northern and eastern boundaries include a stone wall (BL1) which is rendered for the most part. The woodland habitats (WD1, WD2) and hedgerow (WL1) are considered to be of local importance with a higher value. All other habitats are considered to be of local importance with a lower value or negligible ecological value. No rare or protected plant species were recorded on site. The project ecologist, landscape architects and arboriculturist have worked closely with the design team to ensure the retention of the important local habitats of value, and have presented designed in mitigation measures or design solutions, monitoring and future management guidance for the enhancement of these valued elements.

These built, cultural and natural heritage assets present sensitivities to and opportunities for development of the underutilised lands at Deerpark. In conjunction with existing residential amenity adjacent to the site, the ecological value of the site and the retention of the majority of its tree and hedgerow coverage, the following sensitivities have also been considered in the design process of the proposed development at the subject site at Deer Park:

- It's Historical landscape setting
- Its proximity to protected structures of Howth Castle Demesne Architectural Conservation Area (ACA)
- Its proximity to a High Amenity Area (including a southern portion of the site)
- Its proximity to the Special Amenity Area Order (SAAO) of a large area of Howth Head (including a buffer zone on the southern portion of the site)
- Its proximity to protected /preserved views (Fingal County Development Plan 2023-2029)
- The topography of the site
- Its proximity to Howth Road and adjacent suburban residential development
- Proximity to Howth town and harbour
- The open, coastal landscape character type of the local and wider landscape that is highly sensitive

A full description of the proposed development is contained within Chapter 2 'Development Description', which can broadly be described as a large scale residential development aiming to deliver 135 dwellings with associated infrastructure works, set within a substantial landscaped scheme with passive and active recreational amenities.

The proposed Large Scale Residential Development (LRD) is 3-5 storeys in height with the public elevation predominantly facing the Howth Road set back from the historical stone wall boundary of the Howth Demesne and the preserved views along the avenue entrance to Howth Castle as a design response to its sensitive historical landscape context.

Architectural treatments such as recessed balconies address the corner of the Howth Road frontage. The architectural materials and design are sensitively considered to take account of the significance

of the sites' location adjacent to the gate to Howth Castle and the entrance to Howth town and harbour.

The massing of the proposed buildings themselves are broken down into two blocks to maximise available sunlight. The breakdown of the two blocks (Block A with Block B, Block C with Block D) create three distinct areas of public realm, with both soft and hard landscape materials as part of a high-quality landscape site plan for the site.

To the east of the proposed 3-5 storey-built environment, there is a proposed public open space with two pedestrian access point formed through two proposed openings in the existing historic Deer Park stone wall leading to a sheltered public garden.

A central communal courtyard style garden is defined between the two blocks with a sheltered pergola allowing for social gatherings. To the west of the blocks is the proposed vehicular entrance into the site through an opening in the historic boundary wall. Parking has been located as close to the entrance as possible with parking bays broken up with street trees.

The proposals seeks to balance the need to provide increased density while being mindful of the existing local residential amenity and the historical context of the entrance to Howth Castle.

The proposed 'Build to Sell' development includes 135 no apartments in a mix of 1 and 2 bedrooms, over 3-5 floors. The ground floors contain the bin, bike stores and plant rooms. Both blocks face the open landscaped garden and woods to the golf club.

Connectivity has been carefully considered within the overall design as well as the aim to create a sense of place by designing an attractive residential area set within and adjacent to a historical landscape setting.

The design team have collaborated to ensure that the proposed development:

- Remains sensitive to the visual and historical context of the Howth Castle Demesne ACA and amenity of existing adjacent dwellings
- Remains sensitive to designated Preserved Views (Fingal County Development Plan 2023-2029)
- Provides generous levels of public and communal open spaces.
- Provides safe vehicular, pedestrian and cycle access.
- Provides a new open activated residential area with ease of connectivity to Howth town and harbour.
- Provides a mix of 1, and 2 -bedroom units which are in short supply locally.

The proposed development will be highly permeable to residents with looping pathways linking the public open space, communal garden and main entrance. To the south of the site is the wooded amenity landscape of the Howth Golf Course lands which forms a backdrop to the proposed development.

In the southwest an area (within the zoned area of High Amenity) will be re-wilded and a small allotment area will be set aside for residents' use. Bicycle parking is provided across the site and has

have been carefully considered in terms of accessibility and security for bike users. Bin stores are centrally located and can be accessed from either side for greater accessibility.

The landscape site plan retains the majority of the trees and hedgerows on site and proposes substantial additional multilayered planting proposals. In conjunction with the soft planting proposals, the hard landscape elements are designed to provide sustainable urban drainage systems within the scheme, combined with a careful choice of lighting, street furniture and signage to provide a high quality public realm with substantial open space and connectivity for pedestrians, cyclists and vehicular use.

The Landscape and Visual chapter of the EIAR was prepared to assess the potential significant effects of the proposed development on the landscape, views and visual amenity of the study area of the subject site itself at Deer Park in Howth, as well as the surrounding landscape context including views to and from the site from the wider landscape that are considered as representative sensitive receptors. The chapter should be read in conjunction with Appendix 5.1 Visual Assessment and Appendix 5.2 Photomontages.

Twenty-three views points were identified as sensitive views (or sensitive receptors). The photography of the existing (or baseline) views were taken by 3D Design Bureau in November 2023. Winter views show the existing trees and vegetation when they are not in leaf to allow greater visibility of the proposed development from a viewpoint; summer views show existing trees and vegetation in leaf which provides much more screening.

The proposed development was then superimposed on the existing view as per 3D Design Bureau's technical methodology.

All twenty three views are presented on two viewpoint maps and were assessed to establish the landscape and visual effects of the proposed development on the local and wider sensitive receptors through all stages of the proposed development. Cumulative effects were also considered and included relevant projects currently in the planning process as well as the Claremont development on the former Techcrete site on the north side of the Howth Road, to the northeast of the Deer Park site. The Claremont development, which will be 4-7 storeys when complete, is currently under construction, was modelled by 3D Design Bureau to determine its' visibly from the 23 chosen viewpoints.

The summary of the assessment of the likely potential significant effects of the construction and operational stages are presented in Tables 5.9 to 5.13.

There are no post operational mitigation measures as all mitigation has been considered and designed in during the design and consultation process. Generally, the landscape and visual effects will be considered adverse and moderate to significant in the short term when construction works are underway and will terminate upon completion of the development. The landscape and visual effects during the operational stage will generally be considered as ranging from having 'No effect' as they will not be visible due to the relative low height of the proposals, to a 'Positive' effect where the

proposals can be seen given the well-considered design, site layout and presentation of the scheme as a whole.

The significance of the effects is considered generally as 'Slight' to 'Moderate' where the scheme is visible, mainly from the west and eastern approaches of the Howth Road. Some views of the upper levels of Howth Head will be removed from locations on the Howth Road, but these are not considered to be adversely significant given the visual clutter of the existing overhead wire scape that detracts from these views in the existing scenarios or views. Due to the site layout and relative low height of the proposals, the likely effect on Preserved Views is considered neutral and slight. The visual effect of the local protected structures is also considered neutral and slight. It is considered that the proposed development will not have any significant adverse effects on the landscape and visual amenity of the subject site, adjacent Architectural Conservation Area of the Howth Castle Demesne, or on the small section of the ACA to the northeast, or on residential lands adjacent to the site. It is not anticipated that there will be any significant adverse effects on the cultural heritage or historic landscape context of the subject site, it's biodiversity or local residential amenity. It is likely that that there will be positive significant effects in the long term on biodiversity, landscape and visual amenity, on the local and future population and human health.

The cumulative effects are considered mainly in the form of the Claremont scheme currently under construction on the north side of Howth Road. The scheme will be 4-8 storeys in height when complete and will be substantially higher and visible in the landscape and against the seascape of the Irish Sea and coastline that than proposed scheme at the subject site. The proposed development at the Deer Park site will be largely visually absorbed and visually contained within its landscape setting due to the presence and retention of trees to the south, southeast and east of the site itself. The two developments when complete will transform a suburban road corridor into Howth town and harbour, currently in transition in terms of landscape character, to an urbanised road/streetscape. This will be seen as an expansion of the built environment of Howth town as a metropolitan urban area along the Howth Road corridor.

Monitoring and management of the development will be undertaken through the implementation of the Construction and Environmental Management Plan. A qualified arboricultural consultant and or Arboricultural Clerk of Works (ACoW) will be employed prior to commencement of demolition and constructions works to monitor and supervise any tree removal and ensure tree protection measures are in place and maintained. Archaeological monitoring will be undertaken during the construction stage of the project. A conservation consultant will monitor and supervise the protection of the historic stone wall and the removal of three sections of the wall. A qualified Ecological Clerk of Works (ECoW) will be employed prior to commencement of demolition and construction works to provide ecological consultancy to the construction team.

6 Material Assets: Traffic & Transport

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

6.1 Existing Environment

The ca. 1.5-hectare site is located to the northwest of Howth, Co. Dublin, as shown in Figure 6 below. The site is a greenfield plot bounded by Howth Road to the north, Howth Castle Access Road to the east, low-density residential development and an undeveloped plot to the west, and a golf course to the south. The site is noted to be located ca. 80 metres from the nearest bus stops on Howth Road and less than 500 metres from Howth Railway Station.

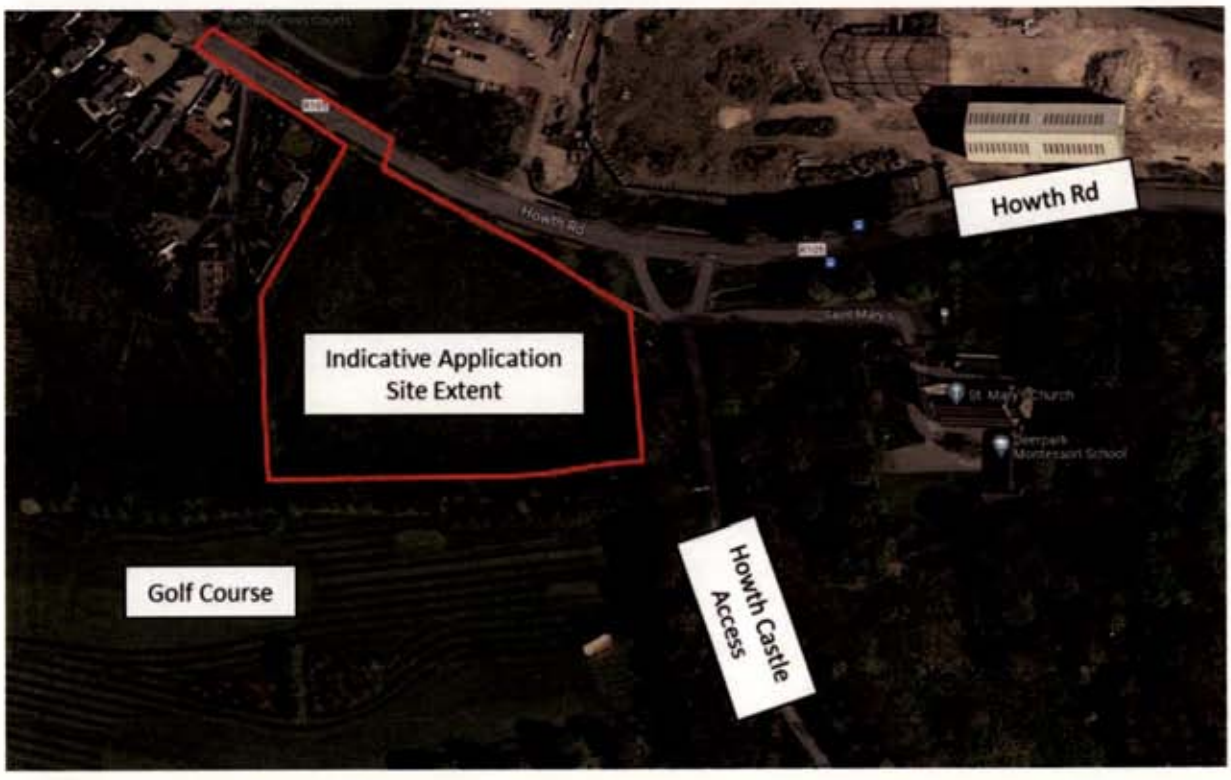

Figure 6 Development Site Location

The site is generally well accessible, with the available public transport services, including the DART supplemented by Dublin Bus services, enabling access to a significant part of north Dublin City and Dublin City Centre in under 60 minutes. Many key employment areas such as Dublin Airport, the Docklands, and Dublin City University (DCU) campus are accessible within that timeframe. A public transport capacity assessment was undertaken to demonstrate sufficient capacity exists on the available public transport services to accommodate the existing demand, the demand generated by the current proposed development, and the demand generated by identified relevant committed or proposed third-party developments.

6.2 Proposed Development

The proposed development comprises the delivery of 135 no. dwellings including 63 no. 1-bedroom units and 72 no. 2-bedroom units across two offset blocks ranging in height from 3-5 storeys, in addition to landscaping and all supporting infrastructure.

Transport characteristics of the proposed development includes:

- 63 no. car parking bays, including:
  - 4 no. wheelchair accessible spaces; and
  - 13 no. EV charging points;
- 6 no. motorcycle parking spaces;
- 342 no. resident/ long stay cycle parking spaces, including:
  - 296 no. stacked bike parking spaces;
  - 28 no. bicycle lockers; and
  - 18 no. cargo bike parking spaces;
- 68 no. visitor/ short stay cycle parking spaces.

All car parking spaces shall be located in a surface car park including 2 no. cul-de-sac parking aisles, each with a turning head.

Vehicular access to the proposed development shall be accommodated via a newly constructed site access junction from R105 Howth Road, which adjoins the site's northern boundary

6.3 Impact Assessment Approach

In order to identify the impact of the development proposals on the local road network, it is first necessary to establish background traffic conditions under the assumption of no changes to the underlying land use arrangements. For this purpose, a Do-Nothing scenario has been defined, assuming the proposed development does not go ahead. Subsequently, a Do-Minimum scenario has been developed to reflect relevant third-party developments identified in the Study Area that have been deemed likely to cause growth in background traffic volumes on the road network in the Study Area, beyond that assumed in the Do-Nothing scenario. Finally, a Do-Something scenario has been defined as reflecting the demand generated by the proposed development in addition to all items included in the Do-Minimum scenario.

In undertaking the traffic impact assessment, the following junctions have been considered:

- 4-Arm, Signal Controlled R105 Howth Road/ R106 Station Road/ Greenfield Road Junction
- 4-Arm, Priority Controlled R105 Howth Road/ Church Road Junction
- 3-Arm, Signal Controlled R105 Howth Road/ Offington Park Road Junction
- 3-Arm, Priority Controlled R105 Harbour Road/ Church Street Junction

In the traffic impact analysis, three future years have been considered, namely the proposed development's Year of Opening (YoO, 2025), Year of Opening + 5 years (YoO+5, 2030), and Year of Opening +15 (2040).

6.3.1 Do-Nothing Scenario

By scaling up the collected traffic data using standard Transport Infrastructure Ireland (TII) growth factors, future background traffic volumes have been forecast for the proposed development's assumed year of opening (YoO, 2025), year of opening + 5 years (YoO+5, 2030) and the year of opening + 15 years (YoO+15, 2040). This scenario has been deemed unrealistic given the presence of committed and proposed third-party developments in the study area, and has formed the basis for developing the Do-Minimum scenario (described below).

6.3.2 Do-Minimum Scenario

The FCC planning file for the wider Howth Peninsula area to the east of Cross has been interrogated to identify relevant third-party developments, which could potentially generate an increase in traffic on the road network in the Study Area in excess of that reflected by the general background traffic growth. By doing so, 5 no. developments have been deemed sufficiently substantial to merit an individual consideration over and above the application of general background traffic growth factors. Those developments are as follows:

- Balscadden SHD, comprising 180 no. residential units;
- Claremont SHD, comprising 512 no. residential units (in addition to ca. 2,900 sqm retail floor area);
- 60 Main Street, Howth, comprising 36 no. residential units;
- Graymount, Dungriffin Road, Howth, comprising 32 no. residential units; and
- Seafield SHD, Santa Sabina, Greenfield Road, Sutton, comprising 143 residential units.

The trip generation of the above developments has been quantified by reference to unit trip rates from the industry-standard TRICS database and the trip rates provided in the relevant development's planning documentation.

6.3.3 Do-Something Scenario

The traffic generation of the proposed development has been quantified based on unit (i.e. per apartment) trip rates extracted from the industry-standard TRICS database. In the Do-Something scenario, the thus obtained traffic volumes have been superimposed onto the Do-Minimum flows to produce a traffic forecast accounting for both the proposed development and the relevant third-party developments.

6.4 Impact Assessment

6.4.1 Demolition Phase

The demolition phase of the proposed development will be very minor, only including removal of three sections of an existing boundary wall. As such, the scale of works involved will be minimal, with no significant effects anticipated.

6.4.2 Construction Phase

No significant traffic related construction phase impacts are anticipated.

Based on figures provided by the design team, it is estimated that 50 no. contractor staff vehicle trips and 10-15 no. heavy goods vehicle (HGV) trips would occur during weekday peak hours.

Given the temporary nature of the construction related traffic, the impact of the estimated construction traffic is expected to be minimal.

Construction traffic activity is expected to take place between 07:00hrs and 19:00hrs, Monday to Friday and between 08:00hrs and 14:00hrs on Saturdays (subject to planning conditions). Construction related traffic will access/ egress the site from the access point along the northern boundary of the site (via the R105 Howth Road). The construction programme is estimated to last ca. 18 months.

An Outline Construction Traffic Management Plan (CTMP) is to be submitted as part of planning application documentation and outlines the anticipated haul route and construction signage.

6.4.3 Operational Phase

In the Do-Something scenario, traffic volumes associated with the current proposed development's delivery will result in individual arm traffic flows increasing by up to 1.6% at critical junctions compared to the Do-Minimum, depending on time of day and assessment year.

The proposed development is anticipated to result in an increase in traffic significantly below the threshold outlined in Section 2.1 of TII's Traffic and Transport Assessment Guidelines (May 2014) sets out thresholds for production of a Traffic and Transport Assessment.

6.5 Modelling Results

As agreed with FCC during scoping, traffic modelling has been undertaken at the four-arm, signal controlled R105 Howth Road/ R106 Station Road/ Greenfield Road Junction (Sutton Cross) using industry-standard LinSig software package. The modelling was intended to enable a more detailed performance assessment of that junction, which experiences significantly higher traffic volumes compared to the remaining three junctions considered.

The results of traffic modelling demonstrate that the existing R105 Howth Road/ R106 Station Road/ Greenfield Road Junction (Sutton Cross) currently operates within capacity in both the network AM and PM peak hours. Capacity utilisation is expected to not exceed ca. 82% on two critical arms, i.e. the western (Dublin Road) and southern (Greenfield Road) arms in the development's Year of Opening + 15 years (2040) during the AM peak hour, with other arms expected to remain with a wider spare capacity margin.

The impact of any development at the subject site is expected to only be incremental, with negligible differences between the Do-Nothing, Do-Minimum, and Do-Something scenario outputs for each respective year. Overall, the presented modelling outputs demonstrate that the proposed development will not give rise to any noticeable impact on junction performance, notwithstanding the existing capacity pressures arising due to high background traffic volumes.

There will therefore be no significant effect arising from the proposed development, as confirmed by outputs of the traffic modelling.

6.6 Cumulative Impact

6.6.1 Construction Phase

As noted above, five relevant proposed or permitted third-party developments have been identified that due to their location, land use, and scale could potentially give rise to cumulative traffic impacts on the road network within the Study Area. Two of these developments are expected to be completely or largely finished before ground is broken on the current proposed development. The remaining developments' traffic generation in the construction phase would most likely be lower than in the operational phase. Furthermore, any cumulative impact of the third party developments' operation and construction and the proposed development's demolition or construction phase would be transient in nature and not significant, given the proposed development's low construction and demolition phase trip generation. Overall, it is expected that any cumulative traffic impact prior to completion of the third party developments and the current proposed development will be smaller than their cumulative operational phase impacts. As such, no significant cumulative effects are likely to arise in the demolition or construction phase.

6.6.2 Operational Phase

The assessment presented herein has considered the proposed development's operational phase impacts in the context of relevant proposed and permitted third-party developments, with the Do-Nothing scenario representing none of the considered developments taking place, the Do-Minimum scenario representing the impact of the third-party developments only, and the Do-Something scenario representing the cumulative impact of the third-party developments and current proposed developments.

The traffic impact assessment has shown the cumulative traffic impact to be minor, particularly in comparison to the impact of the committed developments only. The traffic modelling outputs demonstrate that the increase in traffic volumes associated with the committed and current proposed developments is unlikely to have a tangible impact on the performance of the critical R105 Howth Road/ R106 Station Road/ Greenfield Road Junction (Sutton Cross). As such, no significant cumulative effects have been identified in this transport impact analysis.

6.7 Mitigation

6.7.1 Incorporated Design

The proposed development's design includes multiple features aimed at promoting sustainable mobility choices and minimising risks associated with vehicle and people movements within the site. The proposed development's mobility features are noted to be compliant with Design Manual for

Urban Roads and Streets (DMURS), with a detailed compliance statement included in the application package.

6.7.2 Demolition & Construction Phases

As part of the demolition and construction phases, a number of mitigation measures will be implemented. These are as follows:

- In order to minimise the potential impact on the local road network surfaces, road cleaning will be implemented on site during the earliest construction phase to mitigate against material such as dust, earth, debris etc. from entering the local road network, as required.
- Furthermore, parking of all construction vehicles including staff vehicles will take place within the bounds of the subject site.
- Haul route along the R105 Howth Road will be strictly adhered to by construction vehicles so as not to have an undue impact on the local road network.

6.7.3 Operational Phase

As part of the operational phase, several mitigation measures are proposed, including:

- Promotion of active travel and development of active travel infrastructure in accordance with measures outlined within the Mobility Management Plan prepared in support of the development. A commitment to undertake regular travel surveys as required has also been made by the Applicant.
- Provision of a moderate quantum of car parking, which shall strike a balance between avoiding overspill parking onto the local road network, whilst also avoiding an overprovision of parking which could lead to dominance of car use within the development. This is in accordance with Sustainable Residential Developments and Compact Settlements, Guidelines for Planning Authorities, 2024.

6.8 Residual Impact Assessment

The implementation of the mitigation measures detailed in the Construction Management Plan, as included in this planning application package, will ensure that the residual impact on the local receiving environment is both managed and minimised. There is no risk of the additional HGV movements associated with the construction to become a permanent feature on the local road network.

There will likely be a slight increase in traffic on the local road network in the vicinity of the application site as a result of the proposed development during its operational phase, however the mitigation measures implemented, including both "hard" design measures and soft measures set out in the MMP (as included in the application package), will ensure that the impact is minimised and continuously managed. As demonstrated by the numerical traffic impact analysis presented above, the forecast increase in network traffic volumes is unlikely to adversely affect congestion patterns or vehicular delays.

Overall, no significant effects are forecast at demolition, construction, or operational phases.

6.9 Monitoring

6.9.1 Construction phase

During the construction phase, the following monitoring actions will be implemented (expanded upon in the CMP):

- Compliance with construction vehicle routing plan
- Compliance with construction vehicle internal circulation, loading/ unloading, and parking plan;
- Monitoring of internal and external road conditions (including surface cleaning); and
- Compliance with restrictions on construction activities' timing.

6.9.2 Operational Phase

As part of the MMP process, the following actions will be undertaken during the proposed development's operational phase:

- Informed by a residents and visitors travel survey, the MMP should be updated within 3 months of site occupation; and the Action Plan tailored to meet the specific requirements of its residents and visitors.
- A resident and visitor travel survey should be carried out annually thereafter, forming the baseline from which the MMP's future performance is measured and additional/ amended interventions identified.
- A review of the actions carried out or due should be carried out by the MMP Coordinator every six months. This should take the form of a memo to the apartment scheme's management company, documenting actions implemented, residents' feedback etc.

7 Material Assets: Built Services

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

7.1 Existing Environment

The subject site is located in lands at Deer Park, Howth Road, Howth Co. Dublin and is c. 1.5 Hectares and currently greenfield. Howth is located to the East of Dublin city and forms a peninsula into the Irish Sea. The site is bounded to the west by residential dwellings. Howth Castle and St. Marys Church to the south and east of the subject site have a separate access road from the R105 Howth Road. The proposed vehicular entrance to the site is located to the north west of the site adjacent to R105 Howth Road and provides the requisite sightlines for vehicles exiting the site. It is also intended to use this entrance during the construction phase. The south is bounded by the Deer Park Golf Club. The land surrounding the site is a mixture of residential, commercial and recreative use.

7.1.1 Surface Water Drainage

There is no formal surface water drainage on the subject site. The Applicant commissioned a Ground Penetrating Radar (GPR) and Topographical Survey to confirm the location and the invert level of the existing 300mm dia. surface water sewer to the north-west of the subject site to facilitate a new gravity connection from the proposed development.

7.1.2 Waste Water Drainage

There is no formal wastewater drainage on the subject site. Uisce Éireann GIS mapping indicates the presence of an existing 400mm dia. concrete Wastewater sewer located to the north-east of the subject site which flows northwards. The Applicant commissioned a Ground Penetrating Radar (GPR) and Topographical Survey to confirm the location and the invert level of the existing 400mm dia. wastewater sewer to facilitate a new gravity connection from the proposed development.

7.1.3 Water Supply

There is no existing watermain connection into the subject site. There is existing water supply infrastructure located to the north of the proposed development in the form of an existing 9" cast iron watermain and an existing 160mm dia. Molecular-oriented PVC (MoPVC) watermain. The existing water supply is illustrated on Engineering drawing C-0005.

7.1.4 Electrical Supply

There is no existing ESB supply to the site but there is existing below ground (red) and overhead (green) cabling that traverse the site. Consultation has taken place with ESB with regard to the diversion of the existing overhead lines to below ground and to the provision of a new kiosks on the site. No concerns have been raised by ESB Networks during the consultation process about these proposals.

7.1.5 Telecommunications

There is existing Eir infrastructure located along the Howth Road. Virgin Media have plans in place to install infrastructure along the Howth Road.

7.1.6 Gas Supply

There is an existing 90mm 4bar gas main within Howth Road which traverses the site. Consultation has taken place with GNI with regard to the diversion of the existing medium pressure gas main. No concerns have been raised by GNI during the consultation process about this proposal.

7.2 Impact Assessment

7.2.1 Do Nothing Scenario

7.2.1.1 Surface Water Drainage

If the proposed development was not to proceed, there would be no increase in the design surface water flows to the existing storm water network and thus would be a neutral, imperceptible, long-term effect. The site is zoned for development and it is likely that in the absence of this subject proposal that a development of a similar nature, with a similar surface water flow, would be progressed on the site that accords with national policy for compact growth. If the proposed development were not to proceed there would be no increase in the design surface water flows to the existing storm water network and no significant effect will arise.

7.2.1.2 Wastewater Drainage

If the proposed development was not to proceed, there would be no increase in the design wastewater flows to the existing wastewater network and thus would be a neutral, imperceptible, long-term effect. The site is zoned for development and it is likely that in the absence of this subject proposal that a development of a similar nature, with a similar wastewater discharge, would be progressed on the site that accords with national policy for compact growth. If the proposed development was not to proceed, there would be no increase in the design wastewater flows to the existing wastewater network and no significant effect will arise.

7.2.1.3 Water Supply

If the proposed development was not to proceed, there would be no increase in the demand on the existing water supply network and thus would be a neutral, imperceptible, long-term effect. However, the site is zoned for development and having regard to planning policy that supports consolidation of the built environment and high-density development it is likely that in the absence of this subject proposal that a development of a similar nature, with similar water demand requirements, would be progressed on the site. If the proposed development was not to proceed, there would be no increase in the demand on the existing water supply network and no significant effect will arise.

7.2.1.4 Electricity

If the proposed development was not to proceed, there would be no increase in the demand on the existing electricity networks and thus would be a neutral, imperceptible, long-term effect. However, the site is zoned for development and it is likely that in the absence of this subject proposal that a development of a similar nature, with similar demand requirements, would be progressed on the site that accords with National policy for compact growth. If the proposed development was not to proceed, there would be no increase in the demand on the existing electricity networks and no significant effect will arise.

7.2.1.5 Telecommunications

If the proposed development was not to proceed, there would be no increase in the demand on the existing telecommunications networks and thus would be a neutral, imperceptible, long-term effect. However, the site is zoned for development and it is likely that in the absence of this subject proposal that a development of a similar nature, with similar demand requirements, would be progressed on the site that accords with National policy for compact growth. If the proposed development was not to proceed, there would be no increase in the demand on the existing telecommunications networks and no significant effect will arise.

7.2.1.6 Gas

If the proposed development was not to proceed, there would be no increase in the demand on the existing gas networks and thus would be a neutral, imperceptible, long-term effect. However, the site is zoned for development and it is likely that in the absence of this subject proposal that a development of a similar nature, with similar demand requirements, would be progressed on the site that accords with National policy for compact growth. If the proposed development was not to proceed, there would be no increase in the demand on the existing gas networks and no significant effect will arise.

7.2.2 Demolition & Construction Phase

7.2.2.1 Surface Water Drainage

During the construction phase, surface water shall be discharged to onsite settlement tank prior to discharging to the existing surface water network to the west of the site and onwards to the Irish Sea. The following are the likely significant effects of the proposed scheme in the absence of mitigation measures during the construction stage:

- Mobilisation of sediments and harmful substances during the construction phase, due to exposed soil and earth movement/excavation, which may be flushed into the public surface water network during rainfall events.
- Accidental spills of harmful substances such as petrol/diesel or oil during the delivery and storage of harmful substances or by leakages from construction machinery. Construction materials such as concrete and cement are alkaline and corrosive and can cause pollution in watercourses

- Potential for building materials or silts to be washed into the Surface Water system, causing blockages and pollution. Waterborne silt can arise from dewatering excavations, exposed ground, stockpiles and site roads. Heavy siltation or grit in the Surface Water runoff would lead to maintenance issues for the receiving surface water network
- Temporary dewatering measures will be necessary to manage water within excavations. Water collected in temporary excavations shall be pumped to settlement ponds on site and treated before discharge to the existing watercourses subject to agreement with Fingal County Council.

In the absence of mitigation measures, these potential effects are considered to be adverse, moderate and temporary and not significant.

7.2.2.2 Wastewater Drainage

The Contractor's welfare facilities for construction personnel will be located on site and temporary wastewater effluent from these facilities shall be discharged to the existing wastewater network to the north of the site at a flow rate subject to the conditions of a temporary connection from Uisce Éireann. The following are the likely significant effects of the proposed scheme in the absence of mitigation measures during the construction stage:

- Temporary discharge from excavations could potentially lead to siltation, surcharge and flooding within the public Wastewater system.
- Effluent from the Contractor's temporary welfare facilities could potentially lead to flooding within the sewerage system.

In the absence of mitigation measures, these potential impacts are considered to be adverse, significant and temporary.

7.2.2.3 Water Supply

During the Construction Phase, the Contractor shall install temporary welfare facilities on site for construction personnel via a temporary connection to the existing water supply network in agreement with Uisce Éireann. The water demands during the Construction Phase arising from the Contractor's welfare facilities on the existing Water Supply network are considered to be a neutral and imperceptible effect with a temporary duration. The water demands during the Construction Phase will not be significant.

7.2.2.4 Electricity

Electricity will be required for the construction activities for temporary lighting, equipment use etc. It is anticipated that a temporary connection to existing spurs at the site boundary will facilitate electricity supply to the site during construction, subject to the appropriate agreements. The power demands during the construction phase on the existing electricity network are considered to be a imperceptible, neutral and short-term effect. Where the excavation strategy or temporary works require any temporary diversion of local services or utilities on the site perimeter, this would be undertaken with prior agreement of the relevant service provider. A negative, moderate, short-term effect is identified where utility diversions are required. The existing overhead 10kV/20kV power-

lines which traverse the subject site are to be undergrounded and diverted. These works will require a temporary power outage of approximately 2 days, which shall be confirmed by the ESB, on the network in order to facilitate the connection and is considered a moderate, negative and temporary effect. The electricity demand during the Construction Phase will not be significant.

7.2.2.5 Telecommunications

Telecommunications will be required for the construction activities. It is anticipated that a temporary connection to existing spurs at the site boundary will facilitate telecommunications supply to the site during construction, subject to the appropriate agreements. The telecommunications demands during the construction phase on the existing telecommunications network are considered to be a imperceptible, neutral and temporary effect. The telecommunications demand during the Construction Phase will not be significant.

7.2.2.6 Gas

The existing 90mm dia. 4 bar gas main which traverses the subject site is to be diverted. These works will require a temporary gas supply outage of approximately 2 days, which shall be confirmed by GNI, on the network in order to facilitate the connection and is considered a moderate, negative and temporary effect. The diversion of the gas main during the Construction Phase will not be significant.

7.2.3 Operational Phase

7.2.3.1 Surface Water Drainage

Surface Water run-off from the existing undeveloped greenfield site flows over-land in a northerly direction towards the Irish Sea or soaks into the existing ground. The estimated greenfield run-off rates for the subject site is 4.81 l/s. The proposed development, shall implement SuDS measures to achieve a 2-stage treatment process which will intercept Surface Water run-off and treat the water by a minimum of two stages of filtration and treatment through Nature Based SuDS (NBS) measures and conveying this water to storage facilities. The proposed discharges from the development to the existing surface water sewer to the west of the site is limited to 4.81 l/s which is the permitted equivalent greenfield run-off rates. The impacts on Surface Water discharge from the site are neutral, imperceptible and permanent. The impacts on Surface Water discharge from the site will not be significant.

7.2.3.2 Wastewater Drainage

Wastewater from the proposed development will drain northwards to the existing Deer Park Howth Wastewater Pumping Station (WwPS) prior to being pumped to the Ringsend Waste Water Treatment Plan (WwTP). The Uisce Eireann Confirmation of Feasibility (CoF) dated May 2024 notes that a wastewater connection is feasible subject to upgrade works being carried out by Uisce Éireann on an existing 225mm dia. wastewater sewer on Dungriffin Road. Additionally, UÉ have provided a Statement of Design Acceptance in respect to the proposed Wastewater drainage layout and design. The impacts on the existing wastewater network are considered to be neutral, not significant and permanent.

7.2.3.3 Water Supply

Uisce Éireann have advised, through the Connection and Developer Services (CDS) confirmation of feasibility letter which confirmed that connection from the proposed development to the existing Water Supply network can be facilitated through the connection of the proposed development's water infrastructure to the existing 160mm dia. Molecular-Oriented PVC (MOPVC) watermain on the Howth Road via a new 150mm watermain. Additionally, UÉ have provided a Statement of Design Acceptance in respect to the proposed Water Supply layout and design. As such, it is considered that the impacts on the existing Water Supply network are considered to be neutral, not significant and permanent.

7.2.3.4 Electricity

The proposed development will increase the demand on the electricity supply system. However, it is expected that infrastructural requirements for future development will be accommodated by ESB Networks. Therefore, the impact of the proposed development on the electricity supply network is expected to be neutral, not significant and permanent.

7.2.3.5 Telecommunications

The additional demand on the existing Eir telecommunication s network is not deemed to have any material impact on the surrounding area as there is sufficient capacity in the telecoms network system to manage the additional demand created by the development. The likely impact from the operational phase on the telecoms network is likely to be imperceptible, long term and neutral effect. The additional demand on the existing Eir telecommunications network will not be significant. Virgin Media have plans in place to deliver Virgin media network down Howth Road to serve the site as well as providing availability of their fibre network solution to neighbours. Therefore, it is considered that the impact of the proposed development on the future Virgin Media infrastructure will give rise to significant, positive and long-term effect.

7.2.3.6 Gas

It is not proposed to provide gas as a utility within the proposed development. Therefore, it is considered the impact on the existing gas network are neutral, imperceptible and permanent. As it is not proposed to provide gas as a utility no significant effect will arise.

7.3 Cumulative Impact

There are a number of granted planning permissions for activities/plans/projects which may be in construction at the same time as the proposed development: All elements of the project have been cumulatively assessed together for their overall impact and the project has then been assessed in combination with the other existing, consented or planned projects as listed in the EIAR Chapter.

7.3.1 Surface Water Drainage

The policies of Fingal County Council for the provision of separate Wastewater and Surface Water Drainage systems, together with sustainable drainage systems to treat and attenuate Surface Water discharge in all new developments, shall result in an equivalent stormwater discharge to the existing

300mm dia. surface water sewer in rainfall events, resulting in a neutral, long-term and imperceptible effect.

7.3.2 Wastewater Drainage

Wastewater from the proposed development will drain northwards to the existing Deer Park Howth Wastewater Pumping Station (WwPS) prior to being pumped to the Ringsend Waste Water Treatment Plan (WwTP). The Uisce Eireann Confirmation of Feasibility (CoF) dated May 2024 notes that a wastewater connection is feasible subject to upgrade works being carried out by Uisce Éireann on an existing 225mm dia. wastewater sewer on Dungriffin Road. Additionally, UÉ have provided a Statement of Design Acceptance in respect to the proposed Wastewater drainage layout and design.

The 2012 Ringsend Wastewater Treatment Plant application for planning permission (Ref. PL.29N.YA0010) was for a population equivalent of 2.04 million and was predicated on the findings of the 2005 Greater Dublin Strategic Drainage Study (GDSDS). The GDSDS set out the drainage requirements for the Greater Dublin Area (GDA) up to 2031. The GDSDS relied on the Regional Planning Guidelines (RPGs) and the National Spatial Strategy (NSS) in order to estimate the future projected population increases for the GDA. The studies indicated a predicted growth in population from 1.2 million in 2002 to just over 2 million in 2031 for the GDA region. The permitted 2019 revised upgrade planning permission (Ref. ABP-301798-18) for Ringsend Wastewater Treatment Plant was for a population equivalent of 2.4 million. The first phase of upgrade works are complete which included a 400,000 PE extension for the plant. The full upgrade works to cater for a population equivalent of 2.4 million are planned to be completed in 2025. Both applications were subject to EIA and therefore accompanied by an EIAR. Additionally, both applications were accompanied by an AA screening report and a NIS. Under the heading of "*Potential impact – Discharge of treated effluent, impacts on water quality, effects on qualifying interests*", the NIS for the Ringsend Wastewater Treatment Plant 2019 revised upgrade state that, "*In the operational phase, the proposed upgrade of the Ringsend WwTP Component will result in an increase in the plant capacity and also an improvement in the final effluent quality. This will result in a reduction in the licensed parameters discharged into the receiving water, with significantly reduced quantities in respect of ammonia and phosphorous.*" The EIAR concludes that assessment considered potential cumulative impacts arising from the construction and operation of the Proposed WwTP Component in accordance with the EIA Directive and corresponding guidelines. It has done so mainly through the integration of cumulative impacts in the undertaking of baseline surveys and the development of models that assess emissions that relate to Water, Odour, Noise, Air Quality and Traffic. The Proposed WwTP Component is not likely to give rise to any significant or interactive cumulative impacts. In effect, the impact of the proposed development has already been assessed as part of the application process for the existing planning permissions pertaining to Ringsend Wastewater Treatment Plant. Notwithstanding the above, the proposed development, contributing less than 0.1% of the population equivalent of the total catchment of the Ringsend WwTP, will have an imperceptible impact on the wastewater capacity, in terms of flows, relative to the total amount of wastewater currently being received at Ringsend Wastewater Treatment Plant. In support of this view, Irish Water has provided a Confirmation of Feasibility (CoF) dated May 2024 which notes that a wastewater connection is feasible subject to upgrade works being carried out by Uisce Éireann

on an existing 225mm dia. wastewater sewer on Dungriffin Road. Additionally, UÉ have provided a Statement of Design Acceptance in respect to the proposed Wastewater drainage layout and design. Uisce Éireann is in control of this infrastructure and the purpose of the Confirmation of Feasibility Letter and Statement of Design Acceptance is to confirm the viability of the Proposed Development with respect to its potential effect on the capacity of Ringsend Wastewater Treatment Plant as the receiving infrastructure. By providing a Confirmation of Feasibility Letter and Statement of Design Acceptance, Uisce Éireann has confirmed that, based on current projected infrastructure, the Proposed Development can be accommodated within the drainage network.

7.3.3 Water Supply

The effect of the water demand on the Uisce Éireann supply network has been assessed by Uisce Éireann as part of the Pre-Connection Enquiry process. The assessment uses a model of the Dublin area Water Supply network. Through the pre-connection enquiry process, UÉ assess the feasibility of a connection for all proposed developments prior to granting a connection to their system or deciding on whether network upgrades are required to facilitate same. Where the proposed demand cannot be catered for by the network, Uisce Éireann advise this in their pre-connection enquiry response, citing that either network upgrades are necessary to facilitate the water demand of the proposed development, or potentially, that the scale of development cannot be catered for without large scale upgrades to the network. Uisce Éireann have provided confirmation through the Pre-Connection Enquiry process that the proposed development can be facilitated through the connection of the proposed development's water infrastructure to the existing 160mm dia. Molecular-Oriented PVC (MOPVC) watermain on the Howth Road via a new 150mm watermain. This correspondence confirms that the assessment of the existing Water Supply network that includes a review of the effect on the existing Water Supply network from both existing and all other known proposed developments is acceptable. The cumulative effects is neutral, not significant and long term.

7.3.4 Electricity

Any redevelopment in the area resulting in an intensification of land use or increased density of occupation would likely lead to an increase in demand on the electricity supply network. While there is substantial existing electricity supply infrastructure in place, continued cumulative development will tend to necessitate future provision of new electricity supply infrastructure with increased capacity. The cumulative effect is a neutral, not significant and short-term effect.

7.3.5 Telecommunications

Eir have been contacted and utility maps received from them. Eir have no raised any concerns about availability of network in the area. Therefore, it is considered that the cumulative impact of the proposed development on the telecom's infrastructure will not be significant, with neutral long-term effects. Virgin Media have plans in place to deliver Virgin Media network on the Howth Road and into Howth. This will be available to serve the site as well as providing availability of their fibre network solution to neighbours. Therefore, it is considered that the cumulative impact of the proposed development on the Virgin Media infrastructure will give rise to significant positive long-term effects.

7.3.6 Gas

Any redevelopment in the area resulting in an intensification of land use or increased density of occupation would likely lead to an increase in demand on the gas supply network. As it is not proposed to provide gas as a utility within the proposed development, it is considered the impact of the proposed development on the existing gas network is neutral, imperceptible and permanent.

7.4 Mitigation

7.4.1 Incorporated Design

The design has been prepared based on relevant codes of practice, design guidance and in consultation with relevant local and statutory authorities to ensure best practice design, considering the effect on local and wider network for water supply, foul and surface water drainage, gas supply, electrical network and the telecommunication network. The development will be constructed to the Part L Near Zero Energy Building (NZEB) standard which will result in an improved thermal performance along with the incorporation of renewable technology, accordingly, the demand on energy infrastructure will be reduced.

7.4.2 Demolition & Construction Phase

7.4.2.1 Surface Water Drainage

The Contractor shall prepare and implement a Construction Phase Surface Water Management Plan that ensures avoidance and minimisation of effects. Surface Water storage in excavations shall be directed to on-site settlement ponds, where silt removal will be facilitated prior to discharge off site at a controlled and agreed rate in accordance with the greenfield runoff rates for the site. In order to reduce and minimise the risk on impacting the existing water environment from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas or chemical storage containers. This is a positive, imperceptible and brief effect. No significant effect will arise.

7.4.2.2 Wastewater Drainage

The construction phase discharge of Wastewater to the existing 400mm wastewater sewer to the north of the subject site shall comply with the conditions of a temporary connection from Uisce Éireann. During construction, all new sewers shall be pressure tested and CCTV surveyed in accordance with the Uisce Éireann Standards to identify potential defects and such defects, should they arise, shall be repaired prior to the connection. This is a positive, imperceptible and brief effect. No significant effect will arise.

7.4.2.3 Water Supply

During construction, the temporary connection off the existing 160mm dia. MOPVC shall comply with the conditions of a temporary connection from Uisce Éireann. The watermains shall be tested in

accordance with the requirements of Uisce Éireann prior to connection. This is a positive, imperceptible and brief effect. No significant effect will arise.

7.4.2.4 Electricity

The ESB shall install the new incoming supply to the proposed development. The ESB shall also liaise with residents and keep existing customers fully informed of any brief outages which may be required due to the diversion and undergrounding of the existing overhead 10kV/ 20kV line or connections to the proposed development. The Contractor shall ensure that construction works on site adhere to the ESB Networks / HSA "Code of Practice for Avoiding Danger from Overhead Electricity Lines". This is a positive, imperceptible and brief effect. No significant effect will arise.

7.4.2.5 Telecommunications

The relevant utility provider shall install the new incoming supplies to the proposed development and shall liaise with existing customers to advise of possible outages in order to facilitate the connections. The works shall be carried out such that they minimise disruption to surrounding areas. This is a positive, imperceptible and brief effect. No significant effect will arise.

7.4.2.6 Gas

GNI shall liaise with residents and keep existing customers fully informed of any brief outages which may be required due to the diversion of the existing 90mm dia. 4 bar gas main which traverses the site. It is not proposed to provide gas as a utility within the proposed development. Therefore, it is considered the impact of the proposed development on the existing gas network is neutral, imperceptible and permanent. No significant effect will arise.

7.4.3 Operational Phase

7.4.3.1 Surface Water Drainage

Surface Water runoff from the proposed development will be managed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS), CIRIA SuDS and the requirements of the Fingal County Council Water Services Department. The Surface Water management proposals shall serve to reduce the overall impact of the proposed development on the existing environment. The features to be maintained include all SuDS features. This is a positive, imperceptible and permanent.

7.4.3.2 Wastewater Drainage

Uisce Éireann shall implement an operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. This is a positive, significant and permanent.

7.4.3.3 Water Supply

The proposed Water Supply system shall be commissioned and subject to a, as a minimum, monthly operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. This is a positive, significant and permanent.

7.4.3.4 Electricity

The proposed electricity supply system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. This is a neutral, moderate and long-term effect.

7.4.3.5 Telecommunications

The proposed telecommunications system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. This is a neutral, moderate and long-term effect.

7.4.3.6 Gas

It is not proposed to provide gas as a utility within the proposed development. Therefore, it is considered the impact of the proposed development on the existing gas network is neutral, imperceptible and permanent. GNI shall commission the diverted gas main and be subject to regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. This is a neutral, moderate and long-term effect.

7.5 Residual Impact Assessment

7.5.1 Demolition & Construction Phase

7.5.1.1 Surface Water Drainage

Considering the above-mentioned mitigation measures which are designed to avoid and prevent any adverse issues arising during construction, any residual effects on the built services during the construction phase are brief, temporary and imperceptible, where surface water drainage service is unavoidably disrupted to facilitate the construction phase. No significant effect will arise.

7.5.1.2 Wastewater Drainage

Considering the above-mentioned mitigation measures, which are designed to avoid and prevent any adverse issues arising during construction, any residual effects on the built where wastewater drainage services are unavoidably disrupted to facilitate the construction phase are brief, temporary and imperceptible. No significant effect will arise.

7.5.1.3 Water Supply

Considering the above-mentioned mitigation measures, which are designed to avoid and prevent any adverse issues arising during construction, any residual effects on the built services during the construction phase are brief, temporary and imperceptible, where supply is unavoidably disrupted to facilitate the construction phase. No significant effect will arise.

7.5.1.4 Electricity

Considering the above-mentioned mitigation measures, which are designed to avoid and prevent any adverse issues arising during construction, any residual impacts on the built services during the construction phase are considered to brief, temporary and imperceptible except where service is unavoidably disrupted to facilitate the construction phase. No significant effect will arise.

7.5.1.5 Telecommunications

Considering the above-mentioned mitigation measures there will be no residual impact to the telecommunications infrastructure following the construction phase. Any residual impacts on the built services during the construction phase are brief, temporary and imperceptible, where service is unavoidably disrupted to facilitate the construction phase. No significant effect will arise.

7.5.1.6 Gas

Considering the above-mentioned mitigation measures, there will be no residual impact to the gas mains following the construction phase. Any residual impacts on the built services during the construction phase are brief, temporary and imperceptible, where service is unavoidably disrupted to facilitate the construction phase No significant effect will arise.

7.5.2 Operational Phase

7.5.2.1 Surface Water Drainage

The provision of a Sustainable Urban Drainage System (SuDS) for the proposed development will ultimately limit Surface Water run-off to 4.81 l/s from the existing subject site which is the allowable green-field run-off rate. This is a neutral, imperceptible and permanent effect.

7.5.2.2 Wastewater Drainage

Wastewater from the proposed development will drain north to the existing Deer Park Howth Wastewater Pumping Station prior to being pumped west to the Ringsend Waste Water Treatment Plan (WwTP). The Uisce Eireann Confirmation of Feasibility (CoF) dated May 2024 notes that a wastewater connection is feasible subject to upgrade works being carried out by Uisce Éireann on an existing 225mm dia. wastewater sewer on Dungriffin Road. Additionally, UÉ have provided a Statement of Design Acceptance in respect to the proposed Wastewater drainage layout and design. It is considered that the residual effects on the existing Wastewater network will be neutral, not significant and permanent.

7.5.2.3 Water Supply

It is considered that the residual effects on the existing Water Supply network will be neutral, not significant and permanent.

7.5.2.4 Electricity

The proposed development will increase the demand on the electricity supply system. However, it is expected that infrastructural requirements for future development will be accommodated by ESB Networks. This is a neutral, moderate and short-term effect.

7.5.2.5 Telecommunications

The proposed development will increase the demand on the telecommunications systems. However, it is expected that infrastructural requirements for future development will be accommodated by utility service providers. This is a neutral, moderate and short-term effect.

7.5.2.6 Gas

It is not proposed to provide gas as a utility within the proposed development. Therefore, it is considered the impact of the proposed development on the existing gas network is neutral, imperceptible and permanent.

7.6 Monitoring

The following Table summarises the Construction Phase mitigation and monitoring measures.

Table 5 Summary of Construction Phase Mitigation and Monitoring

Likely Significant Effect	Quality	Significance
Contamination of local surface water sewer	Testing Prior to Connection to public network	Ongoing inspections by Applicant's Engineer
Wastewater Drainage system	Testing & commissioning of new network	Ongoing inspections by Applicant's Engineer and Uisce Éireann
Contamination of local water supply from new connections	Testing Prior to Connection to public network	Ongoing Inspections by IW and Applicants Engineers
Impact of ESB diversion on public supply	Testing and commissioning of diverted network	ESB to monitor all works
Impact on existing Telecommunications network	Testing and commissioning of new network connections	Utility provider to monitor all works
Impact on existing gas network	Testing and commissioning of diverted gas main	GNI provider to monitor all works

The following Table summarises the Operational Phase mitigation and monitoring measures.

Table 6 Summary of Operational Phase Mitigation and Monitoring

Likely Significant Effect	Quality	Significance
Silting/blocking of SuDS	Regular maintenance regime	Periodic inspections by management company
Potential leaks in wastewater system	Regular maintenance regime	Periodic inspections by Uisce Éireann.
Leakage and water loss from water supply system	Construction in accordance with UÉ COP. Metering of supply.	Review and assessment of water meter readings. Water Audit by Uisce Éireann.
Increase in electrical load	Regular monitoring & maintenance	ESB periodic inspections

Likely Significant Effect	Quality	Significance
Increase on existing network	Regular monitoring & maintenance	Telecommunications provider
Diverted gas main	Regular monitoring & maintenance	GNI periodic inspections

8 Material Assets: Waste

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

8.1 Existing Environment

The baseline environment is characterised by the nature of the existing site and the local and regional waste management infrastructure that serves the Howth area in which the site is located.

Soils at the site have been classified as non-hazardous in the Ground Investigations Ireland Waste Classification Report January 2020 in accordance with the EPA (2018) Waste Classification Guidance – List of Waste & Determining if Waste is Hazardous or Non-Hazardous.

There are a number of licenced/permitted facilities within 30km of the site that can accept construction waste materials. There are a number of domestic municipal waste collection service providers who can serve the operational phase of the development.

8.2 Impact Assessment

8.2.1 Do Nothing Scenario

Should the site remain undeveloped there is a likely risk that it could be subject to illegal fly-tipping and the effect would be locally negative with a significance ranging from imperceptible to profound, depending on the magnitude of fly-tipping, with a duration of temporary to short-term depending on the responsiveness of the relevant authorities to any such situation.

8.2.2 Construction Phase

Construction wastes if not managed and segregated on-site in accordance with the site-specific Resource and Construction Waste Management Plan will have the potential to be difficult to separate into different waste streams to allow for further processing, recovery, re-use or to be recycled resulting in a negative, significant and short-term impact.

8.2.3 Operational Phase

Operational wastes if not managed and segregated at source in accordance with the site-specific Operational Waste Management Plan will have the potential to be difficult to separate into different waste streams to allow for further processing, recovery, re-use or to be recycled resulting in a negative, significant and long-term impact.

8.2.4 Cumulative Impact

Should the subject development other local developments be constructed during the construction phase of the subject site, there will be an increased demand on Regional Construction Waste Management Infrastructure including Waste Recovery and Waste Recycling Facilities to process construction wastes resulting in a negative, not significant and short—term impact.

If the subject site and other permitted developments are constructed and become operation in the future, there will be an increased demand on Regional Municipal Waste Management Infrastructure including Waste Recovery, Waste Recycling Facilities and Waste Disposal to process operational wastes resulting in a negative, not significant and long-term impact.

8.3 Mitigation

8.3.1 Incorporated Design

The design of the construction site will include a dedicated and secure compound containing bins, skips, and storage areas, into which all waste materials generated by construction site activities will be segregated and stored prior to off-site removal.

The Key Aspects that are designed into the operational development are:

- 3-Bin systems in each unit to encourage residents to segregate their waste at source
- Communal Bin Store to provide for Organic, Recyclable, Mixed Waste, Glass and WEEE waste storage
- Residents shall be provided with a Bulky Waste collection service

8.3.2 Construction Phases

The site-specific Resource and Construction Waste Management Plan includes specific details on how construction phase wastes and resources shall be controlled, managed and monitored throughout the construction phase.

8.3.3 Operational Phase

The site-specific Operational Waste Management Plan includes specific details on how operational phase municipal wastes shall be controlled, managed and monitored throughout the lifetime of the development

8.4 Residual Impact Assessment

The potential likely effects of construction waste will be negative, not significant and short--term. This conclusion is based on the implementation of the site-specific Resource and Construction Waste Management Plan through the construction phase of the development.

Construction phase wastes will be managed through design, management and waste reduction and recycling initiatives at the proposed development, it is predicted that the impact of the construction phase of the development is not likely to have a significant effect will not have a significant adverse impact on the receiving environment, or on local and regional waste management services or infrastructure and the development shall be managed shall to comply with Local Authority objectives for construction waste management.

The potential likely effects of operational waste will be negative, not significant and long-term. This conclusion is based on the implementation of the site-specific Operational Waste Management Plan through the lifetime of the development.

The development shall be designed to provide adequate domestic waste infrastructure and storage areas for all apartments. This will promote the appropriate segregation at source of domestic generated waste from all residential units at the development and thus reduce the potential for the generation of mixed un-recyclable waste streams. The operational phase of the development is not likely to have a significant effect on Regional waste infrastructure and the operation of the development shall be managed to comply with Local Authority objectives for domestic waste management.

8.5 Monitoring

The Project Resource and Construction Waste Manager will maintain a written record of all quantities and types of construction wastes generated, reused / recycled and exported off-site during the construction phase and shall aim to achieve a 13% reduction in construction waste generation in accordance with the *National Waste Management Plan for a Circular Economy 2024-2030.*

The Facility Management Company shall prepare an annual report for the Local Authority and residents of the development on the quantities of waste generated within the development to demonstrate how waste reduction and recycling targets are being achieved with regard to the municipal waste reduction and recycling targets defined in the *National Waste Management Plan for a Circular Economy 2024-2030.*

9 Land & Soils

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

9.1 Existing Environment

The subject site is located in lands at Deer Park, Howth Road, Howth Co. Dublin and is c. 1.5 Hectares and currently greenfield. Howth is located to the East of Dublin city and forms a peninsula into the Irish Sea. The site is bounded to the west by residential dwellings. Howth Castle and St. Marys Church to the south and east of the subject site have a separate access road from the R105 Howth Road. The proposed vehicular entrance to the site is located to the north west of the site adjacent to R105 Howth Road and provides the requisite sightlines for vehicles exiting the site. It is also intended to use this entrance during the construction phase. The south is bounded by the Deer Park Golf Club. The land surrounding the site is a mixture of residential, commercial and recreative use. Adjacent to the Howth Road to the north, the site is at a level of approximately +6.500m and gradually rises to a level of +14.000m towards the Deer Park golf course. The site, therefore, slopes towards the Irish Sea (Baldoyle Bay). There is no existing surface water infrastructure within the greenfield site. On Howth Road, to the north west of the site, there is an existing 450mm diameter surface water sewer that discharges north towards the coast. In addition, there is no existing wastewater sewer infrastructure within the site boundary. There is an existing 400mm diameter concrete wastewater sewer and manhole to the north of the site adjacent to Howth Road. The Baldoyle Bay is located c. 170m to the north of the subject site. This bay is a protected Natura European Site (Special Area of Conservation [SAC, site code IE0000199] and a proposed Natural Heritage Area (pNHA, site code 000199). There are a number of local streams in the vicinity of the site that form part of the Bloody Stream catchment (refer to Chapter 10). The Bloody Stream flows towards the bay c. 180 m east of the site (i.e., to the east side of St. Mary's Church). There is also a local stream which drains the lands of Howth Castle and flows to the bay c. 50m east of the subject site.

9.2 Soils

The EPA soil map of Ireland shows that at the location and surrounding area, the soil types found are predominantly Carboniferous Limestone till which is to be expected considering the greenfield location of the site. There is also Made (Made Ground) in the vicinity of the subject site associated with the Howth road and the urban area.

9.3 Quaternary Deposits

The Quaternary Period is the final stage of the geological time scale. This period includes the start of the Ice Age (approximately 1.6 million years ago), known as the Pleistocene Epoch right through to the postglacial period, known as the Holocene Epoch, which began 10,000 years ago and extends from the Pleistocene to the present day. The Pleistocene Epoch in Ireland began when there was a significant cooling of the Earth's climate, and was characterised by alternating extended periods of very cold conditions, during which time much of the country was covered by an ice sheet. These colder

periods were interspaced with warmer periods, known as interglacial, which lasted for approximately 10,000 years at a time. A subsoil map, produced by the GSI, indicates that the majority of the site and surrounding area is underlain by Till (TLs) and Gravels (GLs) derived from limestones. Site investigation carried out in 2019 show that the subsoil underlying the subject site is mainly sandy gravelly Clay (i.e., no gravels were detected).

9.4 Bedrock Geology

Inspection of available GSI data shows that the bedrock geology underlying the site and surrounding area is dominated by limestones of Carboniferous Age. The site and local area is underlain by Massive, unbedded lime mudstones of the Waulsortian Formation.

9.5 Impact Assessment

9.5.1 Do Nothing Scenario

In the event that the site is not developed it would remain in its current condition, a greenfield site. This scenario would not have any likely significant impact on land use or the soils and geology beneath the site. However, the site is zoned for development and 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 policy for compact growth within the existing built environment. It is likely that another development would also require excavation to facilitate development and the impact would thus be similar to this subject development.

9.5.2 Demolition Phase

Following the completion of site clearance and levelling, all structures will require traditional strip and pad foundations to be installed in accordance with the structural engineer specifications. Foundations will require moderate scale excavations, with formation levels extending to c. 2.5m BEGL founding within the stiff to very stiff boulder clays. Rock excavation will not be required and temporary works such as sheet piling or continuous flight auger or secant piling are not required It is expected during the excavation works that localised dewatering of the subsoils will be required to address perched groundwater as an indirect effect. It can be expected minor ingress of rainfall in the excavation during construction phase.

9.5.3 Construction Phase

During construction of the development, there is a risk of accidental pollution incidences from the following sources if not adequately mitigated:

- Spillage or leakage of oils and fuels stored on site.
- Spillage or leakage of oils and fuels from construction machinery or site vehicles.
- The use of concrete and cement during pad foundation construction.

9.5.4 Operational Phase

The change of land use from greenfield to residential is the main effect on the land environment. Potential for negative impacts on subsoils, geology and hydrogeology during operation are low. The storage volume of any liquid hazards is low and there will be no direct discharges to the water or soil environment during the operational phase. Leakage of petrol/ diesel fuel may occur from car park/road areas. However, given the petrol/oil interceptor system considered in the design (SuDS elements), this effect is considered unlikely. The implementation of the SuDS elements and the increasing of hard standing areas in 5,065m^2 decrease the potential vulnerability of the subsoils and groundwater regime. Therefore, these design measures are considered a positive effect on this component.

9.5.5 Cumulative Impact

The surrounding lands are largely zoned as 'HA – High Amenity', 'RS – Residential', 'OS – Open Space' and 'TC - Town and District Centre' under the Fingal Development Plan 2023-2029 (Fingal County Council, 2023). There are a number of granted planning permissions for activities/plans/projects which may be in construction at the same time as the proposed development. These are addressed in full in EIAR Chapter 9. Contractors for the proposed scheme will be contractually required to operate in compliance with the CMP which includes the mitigation measures outlined in this EIAR. The other developments aforementioned will also have to incorporate measures to protect soil and water quality in compliance with legislative standards for receiving water quality European Communities Environmental Objectives (Groundwater) Regulations (as amended). During operational phase, all developments are required to manage groundwater discharges in accordance with European Communities Environmental Objectives (Groundwater) Regulations (as amended) amendments. As such there is no likely cumulative significant effects on the natural groundwater regime.

9.6 Mitigation

9.6.1 Incorporated Design

The proposed development will be designed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) and will maintain run-off rates at the existing greenfield condition and improve storm water quality discharging to the public storm water system.

The SuDS will be addressed by the provision of the following elements:

- Interception storage: Green-Blue roofs, permeable paving, bio-retention areas, bio-retention tree pits, and oil/petrol interceptors,
- Attenuation storage: It is proposed to provide an attenuation tank within the site. This will be designed for the 1 in 100 year storm + 30% climate change, and will form the last part of the SuDS management train. A Hydrobrake will be fitted downstream the tank in order to restrict the flow to the greenfield equivalent runoff for the catchment area.

The SuDS measures proposed are linked in series, and this is commonly known as a SuDS Management Train, (SMT). The SMT ensures that rainwater falling on a site is captured, conveyed, stored, intercepted and removed of pollutants correctly and efficiently before it is discharged back into the surrounding water course or network.

9.6.2 Demolition & Construction Phases

Excavation will require soil excavation and infill. The re-use of topsoil for completion of the main site works and landscaping will be evaluated. If it is adequate, topsoil will be stored and protected in an appropriate manner on site for the duration of the construction works. Previous uses of the site and site testing has not indicated any evidence of soil contamination at the site. However, where any excavated material is found to be contaminated, an appropriate disposal method shall be selected depending on the type of contaminant found. Testing will be carried out in pre-construction works by the contractor to determine the soil classification; i.e. inert, non-hazardous or hazardous (WAC testing). Excess material arising from excavations shall be treated as a by-product in accordance with Article 27. During the construction phase, all excavations and exposed sub-soils in open cuts will be blinded and protected with clean broken stone as soon as possible after exposing the subsoil in order to prevent erosion. Silt and sediment barriers will be installed at the perimeter of earthworks construction areas to limit transport of erodible soils outside of the site. An appropriate dewatering system and groundwater management system specific to the site conditions will be designed and maintained. These will include measures to minimise any surface water inflow into the excavation, where possible, and the prolonged exposure of groundwater to the atmosphere will be avoided. The pumping of water will be carried out under the conditions of a Trade Effluent Discharge License issued to the construction contractor by Uisce Éireann. Qualitative and quantitative monitoring will be adopted to ensure that the water is of sufficient quality to discharge. The use of silt traps will be adopted if the monitoring indicates the requirement for same with no silt or contaminated water permitted to discharge to the receiving water environment. Any discharge of construction surface water or groundwater from excavations shall pass through appropriate filtration and sedimentation system, designed in accordance with "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (CIRIA C532)". A Construction Management Plan (CMP) is included with this application under separate cover. It will be adopted by the construction contractor prior to commencement of construction. The CMP will incorporate the mitigation measures outlined below as they relate to the construction phase. The CMP will include emergency response procedures in the event of a spill, leak, fire or other environmental incident related to construction. This is an active document which is continuously updated to manage risk during the construction programme. All relevant personnel working on the site will be trained in the implementation of the procedures. As a minimum, the manual will be formulated in consideration of the standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005.

- BPGCS005, Oil Storage Guidelines.
- Eastern Regional Fisheries Board, (2006), Fisheries Protection Guidelines: Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites..
- CIRIA 697, The SUDS Manual, 2007.
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004.

9.6.3 Accidental Spills and Leaks

To minimise any impact on the underlying subsurface strata from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas. Leakages of oil from oil stores will be prevented by storing these oils in bunded tanks which have a capacity of 110% of the total volume of the stored oil. Ancillary equipment such as hoses and pipes will be contained within the bunded storage container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal. Refuelling of construction machinery and vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated refuelling areas using a prescribed re-fuelling procedure. Plant nappies or absorbent mats to be place under refuelling point during all refuelling to absorb drips. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with. Should there be an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility 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. The pouring of concrete will take place within a designated area using a geosynthetic material to prevent concrete runoff into the soil/groundwater media. Pours will not take place during forecasted heavy rainfall. Washout of concrete transporting vehicles will not take place on site. Concrete trucks will be washed out off site at the source quarry. To reduce the volume of cementitious water, only concrete truck chutes will be washed down on site. The concrete trucks will wash down their chutes at a designated chute wash down area in the site compound. The location of the chute washdown area will be appropriately located. The system is sealed with no overflow discharge to the drainage system. In the event of a spillage on site, the dirty water drains in the immediate area will temporarily be blocked and the pH levels of the water in the associated settlement ponds will be monitored and if necessary will adjust the pH levels using CO2 entrainment. Any spillage will be cleared immediately and deposited in the Chute wash down area. In the case of drummed fuel or other chemical which may be used during construction containers will be stored in a dedicated internally bunded chemical storage cabinet and labelled clearly to allow appropriate remedial action in the event of a spillage.

9.6.4 Operational Phase

No mitigation measures have been considered during the operational phase as the SuDS elements incorporated in the design addresses any potential leakage from car parks. As stated above, these

measures ensure that any potential pollutants associated with car park areas will be captured, conveyed, stored, intercepted and removed.

9.7 Residual Impact Assessment

9.7.1 Demolition Phase

There are no likely significant negative impacts on the status of the local aquifer and on the land, geological or hydrogeological environment associated with demolition activities with mitigation measures aforementioned in place. The development will not have any effect on the Baldoyle Bay Natura site.

9.7.2 Construction Phase

There are no likely significant negative impacts on the status of the local aquifer and on the land, geological or hydrogeological environment associated with construction activities with mitigation measures aforementioned in place. The development will not have any effect on the Baldoyle Bay Natura site.

9.7.3 Operational Phase

There are no likely significant negative impacts on the status of the local aquifer and on the land, geological or hydrogeological environment associated with construction activities with mitigation measures aforementioned in place. The development will not have any effect on the Baldoyle Bay Natura site.

9.8 Monitoring

9.8.1 Demolition & Construction

During construction phase the following monitoring measures will be considered:

- Regular inspection of surface water run-off and sediments controls e.g. silt traps will be carried during the construction phase.
- Soil sampling to confirm disposal options for excavated soils.
- Regular inspection of construction/mitigation measures will be undertaken e.g. concrete pouring, refuelling, etc.

9.8.2 Operation Phase

There will be no requirement for soil or groundwater monitoring as there is no likely discharge to ground. Maintenance of the surface water drainage system and foul sewers as per normal urban developments is recommended to minimise any accidental discharges to ground.

10 Water & Hydrology

The assessment of Water & Hydrology is contained within Chapter 10 of Volume II.

10.1 Existing Environment

The subject site is located in lands at Deer Park, Howth Road, Howth Co. Dublin and is c. 1.5 Hectares and currently greenfield. Howth is located to the East of Dublin city and forms a peninsula into the Irish Sea. The site is bounded to the west by residential dwellings. Howth Castle and St. Marys Church to the south and east of the subject site have a separate access road from the R105 Howth Road. The proposed vehicular entrance to the site is located to the north west of the site adjacent to R105 Howth Road and provides the requisite sightlines for vehicles exiting the site. It is also intended to use this entrance during the construction phase. The south is bounded by the Deer Park Golf Club. The land surrounding the site is a mixture of residential, commercial and recreative use. Adjacent to the Howth Road to the north, the site is at a level of approximately +6.500m and gradually rises to a level of +14.000m towards the Deer Park golf course. The site, therefore, slopes towards the Irish Sea (Baldoyle Bay).

10.1.1 Hydrology

The proposed development site lies within the Liffey and Dublin Bay Catchment (Hydrometric Area 09), River Mayne sub-catchment (WFD name: Mayne_SC_010, Id 09_17) and Howth river sub-basin (WFD name: Howth_010, EU Code IE_EA_09H230880) (EPA, 2021). The Bloody Stream (WFD river waterbody IE_EA_09H230880; segment code 09_2176) flows from Howth Head (specifically from an old reservoir) towards the Baldoyle Bay coastal waterbody which includes Special Area of Conservation (SAC)/proposed Natural Heritage Area (pNHA). The Baldoyle Bay is located c.170m to the north of the subject site. This bay is a protected Natura European Site (Special Area of Conservation [SAC, site code IE0000199] and a proposed Natural Heritage Area (pNHA, site code 000199). The local lands are drained by the Bloody stream and a network of local streams which directly discharges to the Bay . The Bloody Stream flows towards the bay c. 180 m east of the site (i.e., to the east side of St. Mary's Church). In addition, the Claremont Beach is a sandy, gently sloping north facing beach which is located c. 150m to the north of the subject site.

The Uisce Eireann Confirmation of Feasibility (CoF) dated May 2024 notes that a water connection is feasible without upgrades and a wastewater connection is feasible subject to upgrade works being carried out by Uisce Éireann on an existing 225mm dia. wastewater sewer on Dungriffin Road. Additionally, UÉ have provided a Statement of Design Acceptance in respect to the proposed Wastewater drainage layout and design.

10.1.2 Water Quality

The Water Framework Directive (WFD) Directive 2000/60/EC (as amended) covers rivers, lakes, groundwater and transitional (estuarine) and coastal waters. In addition to protecting said waters, its objectives include the attainment of 'Good Status' in water bodies that are of lesser status at present and retaining 'Good Status' or better where such status exists at present. The WFD requires 'Good

Water Status' for all European waters to be achieved through a system of river basin management planning and extensive monitoring. 'Good status' means both 'good ecological status' and 'good chemical status'. The WFD status of the Bloody Stream is classified as not at risk. .The Irish Sea Dublin (HA 09) coastal waterbody hosts the Baldoyle Bay and according to the EPA information, has a 'Good' WFD status and is 'Not at risk' of not achieving good status. Water quality data is collected for nearby Claremont Beach bathing area and is reported by the EPA on www.beaches.ie. The EPA bathing status is not based on single events, rather it is based on a review of data over 4 years (based on data collected during the bathing season only). Bathing classes are determined as Excellent (highest cleanest class), Good (Generally good water quality), Sufficient (The water quality meets the minimum standard) and Poor (The water quality has not met the minimum standard). A review of this data for the last four years, shows that the Claremont Beach is classified as achieving Sufficient Water Quality in 2019 based on the assessment of bacteriological results for the period 2016 to 2019. Claremont Beach had a Sufficient Water Quality rating in 2018 and 2017 and achieved a Good Water Quality rating in 2016. The proposed development will not have any effect on the Bloody Stream or the Baldoyle Bay. Rating of Site Importance of the Hydrological Features

Based on the TII methodology (2009) (refer to Appendix 10.2), the criteria for rating the importance of hydrological features, the importance of the hydrological features at this site is rated as Extremely High Importance. This is based on the connectivity through surface water drainage with Baldoyle Bay SAC/pNHA EU Natura site which is located c. 170m to the north of the site.

10.1.3 Flood Risk

In accordance with the Site Specific Flood Risk Assessment carried out by DOBA and included under separate cover, there is no risk of flooding affecting the site from fluvial or coastal sources, since the site lies within Flood Zone C (i.e., where the probability of flooding from rivers is less than 0.1% or 1 in 1000). There is no evidence that the Bloody Stream results in any flooding on the proposed site, and it is separated by the west boundary of St. Marys Church and the access road to Howth Castle which would divert any flood water towards Howth Road. Therefore, the likelihood of flooding on site is low from either Tidal, Fluvial, Pluvial Surface Water or Groundwater.

10.1.4 Aquifer Classification

Groundwater can be defined as water that is stored in, or moves through, pores and cracks in sub-soils. Aquifers are rocks or granular deposits that contain sufficient void spaces, and which are permeable enough, to allow water to flow through them in significant quantities. The potential of rock or deposits to store and transport water is governed by permeability of which there are two types, intergranular and fissure permeability.

The GSI classifies the principal bedrock aquifer types as:

- Lk - Locally Important Aquifer – Karstified.
- Ll - Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones.
- Lm - Locally Important Aquifer - Bedrock which is Generally Moderately Productive.
- Pl - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones.

- Pu - Poor Aquifer - Bedrock which is Generally Unproductive.
- Rkd - Regionally Important Aquifer (karstified diffuse).

Reference to the GSI National Draft Bedrock Aquifer Map for the site indicates that the planning site is underlain by a Locally Important Aquifer (LI), which is described by the GSI as bedrock as 'moderately productive only in local zones' and is related to the Waulsortian Formation above described. The Water Framework Directive (WFD) Directive 2000/60/EC (as amended), covers rivers, lakes, groundwater and transitional (estuarine) and coastal waters. In addition to protecting said waters, its objectives include the attainment of 'Good Status' in water bodies that are of lesser status at present and retaining 'Good Status' or better where such status exists at present. The WFD requires 'Good Water Status' for all European waters to be achieved through a system of river basin management planning and extensive monitoring. 'Good status' means both 'good ecological status' and 'good chemical status'. The proposed development is located over the 'Dublin' (EU Code IE_EA_G_008) WFD groundwater body (GWB). The most recent WFD groundwater status (2013-2018) is 'Good' for this GWBs and the WFD environmental risk score is under review.

10.1.5 Aquifer Vulnerability

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrological characteristics that determine the ease with which groundwater may be contaminated generally by human activities. Due to the nature of the flow of groundwater through bedrock in Ireland, which is almost completely through fissures, the main feature that protects groundwater from contamination, and therefore the most important feature in protection of groundwater, is the subsoil (which can consist solely or of mixtures of peat, sand, gravel, glacial till, clays or silts). The GSI, EPA, and the Department of Environment, Heritage and Local Government (DoEHLG) have developed a programme of Groundwater Protection Schemes, with the aim of maintaining the quantity and quality of groundwater in Ireland, and in some cases improving groundwater quality, by applying a risk assessment approach to groundwater protection and sustainable development. As part of this scheme, the GSI have mapped the vulnerability of the country's aquifers. Reference to the GSI Vulnerability data indicates that the Proposed Development site is classified as having a 'High' aquifer vulnerability which indicates that the soil cover is 3-5m of low permeability soil at the site, given by the Tills deposits underlying the site. Site investigations carried out in 2023 show that the bedrock was not encountered at depths up to 15m below ground level. Therefore, the actual vulnerability at the subject site would be 'Low' according to Table 9.1 above.

10.1.6 Baseline Groundwater Quality

The EPA (EPA, 2023) groundwater monitoring data was reviewed and there are no groundwater quality monitoring stations within a 2.0 km radius of the Site or that are hydraulically connected to the Site (EPA, 2023).

10.2 Impact Assessment

10.2.1 Do Nothing

In the event that the site is not developed it would remain in its current condition, a greenfield site. This scenario would not have any likely significant impact on the hydrological environment. However, the site is zoned for development and it is likely that in the absence of this subject proposal that a development of a similar nature would be progressed on the site. It is likely that another development would require surface water drainage infrastructure and a connection to the water supply, the impact would thus be similar to this subject development.

10.2.2 Demolition & Construction Phase

Surface water runoff during the construction phase may contain increased silt levels or become polluted from construction activities. Runoff containing large amounts of silt can cause damage to surface water systems and receiving watercourses. Silt water can arise from dewatering excavations, exposed ground, stockpiles and access roads. During the construction phase at this site there is potential for an increase in run-off due to the introduction of impermeable surfaces and the compaction of soils. This will reduce the infiltration capacity and increase the rate and volume of direct surface run-off. The potential impact of this is a possible increase in surface water run-off and sediment loading which could potentially impact local drainage. Previous uses of the site (greenfield site) and site testing has not indicated any evidence of soil contamination at the site. During construction of the development, there is a risk of accidental pollution incidences from the following sources if not adequately mitigated:

- Spillage or leakage of oils and fuels stored on site.
- Spillage or leakage of oils and fuels from construction machinery or site vehicles.
- The use of concrete and cement during pad foundation construction.

Machinery activities on site during the construction phase may result in contamination of runoff into surface water. Potential impacts could arise from accidental spillage of fuels, oils, paints etc. which could impact surface water if allowed to runoff into surface water systems and/or receiving watercourses. Concreting operations carried out near surface water drainage points during construction activities have the potential to lead to discharges to a watercourse. Concrete (specifically, the cement component) is highly alkaline and any spillage to a local watercourse would be detrimental to water quality and local fauna and flora.

10.2.3 Operational Phase

Potential for likely significant impacts during operation are low. The proposed development does not require any bulk chemical storage and therefore the potential for water quality impact is negligible. Leakage of petrol/ diesel fuel may occur from car park/road areas. The stormwater drainage system comprises the following;

- Nature Based SuDS (NBS) features provided throughout including bioretention areas, bioswales, rain gardens, tree pits and green-blue roofs,

- As infiltration of surface water run-off to ground is not feasible, filtration system SuDS measures including filter drains and lined permeable paving will be implemented,
- A lined underground attenuation tank will be provided to surface water runoff arising from all storms up to and including a 1:100 Year + 30% Climate Change event, and finally,
- A hydrocarbon separator will be provided on the surface water outfall from the site prior to discharging to the public surface water sewer.

The attenuation system and associated hydrobrake will discharge following the characteristics of a greenfield run-off into the existing public surface water sewer located to the north-west of the site. As such the potential for silt laden runoff is low. The development will be fully serviced with separate wastewater and stormwater sewers which will have adequate capacity for the facility and discharge limits as required by Uisce Éireann licencing requirements. Discharge from the site to the public wastewater sewer will be sewage and grey water only due to the residential nature of the proposed development. The wastewater discharge from the site will join the public sewer and will be treated at the Uisce Éireann Ringsend Wastewater Treatment Plant (WwTP) prior to subsequent discharge to Dublin Bay. This WwTP is required to operate under an EPA licence and meet environmental legislative requirements as set out its licence. During the operational phase, there will be an increase in demand on water supply and wastewater public services. However, Uisce Éireann has confirmed that the public networks have sufficient capacity to accommodate the demand from the proposed development.

10.2.4 Cumulative Impact

The surrounding lands are largely zoned as 'HA – High Amenity', 'RS – Residential', 'OS –Open Space' and 'TC - Town and District Centre' under the Fingal Development Plan 2023-2029 (Fingal County Council, 2023). There is a Special Amenity Area Order (SAAO) buffer zone towards the south of the proposed development site. There are a number of granted planning permissions for activities/plans/projects which may be in construction at the same time as the proposed development which have been addressed within the EIAR chapter. Contractors for the proposed scheme will be contractually required to operate in compliance with the outline CMP which includes the mitigation measures outlined in this Environmental Report. There is potential for cumulative impacts to arise, as a consequence of the proposed development acting in-combination with the other developments aforementioned, on water quality in the downstream surface water environment. However, these developments will also have to incorporate measures to protect surface water quality in compliance with relevant legislative standards for receiving water quality (European Communities Environmental Objectives (Surface Waters) Regulations (as amended)). During operational phase, all developments are required to manage groundwater discharges in accordance with European Communities Environmental Objectives (Surface Waters) Regulations (as amended). As such there is no likely cumulative impact on the natural hydrological regime.

10.3 Mitigation

10.3.1 Incorporated Design

The proposed development will be designed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) and will maintain run-off rates at the existing greenfield condition and improve storm water quality discharging to the public storm water system. According to the Infrastructure Report, the flow associated to the greenfield condition is 7.91 l/s.

The SuDS will be addressed by the provision of the following elements:

- Interception storage: Green roofs, permeable paving, rain gardens and bioretention tree-pits,
- Attenuation storage: It is proposed to provide an attenuation tank within the site. This will be designed for all storms up to and including a 1 in 100 year storm + 30% climate change, and will form the last part of the SuDS management train. A Hydrobrake will be fitted downstream of the attenuation tank in order to restrict the flow to the greenfield equivalent runoff for the catchment area.

These elements will intercept any potential leakage of fuel from car park areas. The main source of pollutant is potentially from surface water run-off from the basement car park & access roads. The SuDS measures proposed are linked in series, and this is commonly known as a SuDS Management Train, (SMT). The SMT ensures that rainwater falling on a site is captured, conveyed, stored, intercepted and removed of pollutants correctly and efficiently before it is discharged back into the surrounding water course or network.

10.3.2 Demolition & Construction Phase

A Construction Environmental Management Plan (CEMP) is included with the planning application under separate cover and will be adopted by the construction contractor prior to commencement of construction. The CEMP incorporates the mitigation measures outlined below as they relate to the construction phase. The CEMP will include emergency response procedures in the event of a spill, leak, fire or other environmental incident related to construction. This is an active document which is continuously updated to manage risk during the construction programme. All relevant personnel working on the site will be trained in the implementation of the procedures.

As a minimum, the manual will be formulated in consideration of the standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site Guide (C811), 2023.
- BPGCS005, Oil Storage Guidelines.
- Inland Fisheries Ireland (IFI) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters, 2016.

- CIRIA 697, The SUDS Manual, 2015.

10.3.3 Operational Phase

No mitigation measures have been considered during the operational phase as the SuDS elements incorporated in the design, and presented in the Infrastructure Design Report prepared by DOBA submitted under separate cover, address any potential hydrocarbon leakage from the proposed basement car park. There are no other potential hazards during operation. The peak wastewater discharge is calculated at an average wastewater discharge of 5.012 litres/sec. Sewage will be collected in the public sewer and treated at Uisce Éireann's WwTP at Ringsend prior to discharge to Dublin Bay. In providing a permission for discharge to sewer, Uisce Éireann will have considered the capacity of their infrastructure (current and future capacity) and environmental impact. This WwTP is required to operate under an EPA licence (D0034-01) and to meet environmental legislative requirements. The Ringsend WwTP received planning permission for upgrading works in 2012. In June 2018, Uisce Éireann submitted a planning application for strategic infrastructure development to An Bord Pleanála seeking permission to further progress the upgrade of the Ringsend Wastewater Treatment Plant (WwTP) and In April 2019, Uisce Éireann was granted planning permission by An Bord Pleanála to further progress the upgrade of the Ringsend WwTP. The 2019 planning permission facilitated upgrading works to meet nitrogen and phosphorus standards set out in the licence and which are temporarily exceeded currently. The design includes aerobic granular sludge which will result in treatment of sewage to a higher quality than current thereby ensuring effluent discharge to Dublin Bay will comply with the Water Framework Directive (WFD) Directive 2000/60/EC (as amended), Urban Wastewater Treatment Directive (as amended) and Bathing water Directive (as amended). It is understood at this point in time that the upgrade to use of aerobic granular sludge and other phased upgrades will achieve a population equivalent of 2.4 million and are to be completed between by 2027 to 2028. As outlined in the EIAR provided with the 2018 planning submission, modelling has shown that the upgrades which are currently underway will result in improved water quality within Dublin Bay. The 2018 EIAR predicts that the improvement in effluent quality achieved by the upgrade will compensate for the increase in flow through the plant. The project is being progressed in stages to ensure that the plant continues to treat the wastewater (1.98 million population equivalent) to the current treatment levels throughout the delivery of the upgrade. The project comprises four key elements and underpinning these is a substantial programme of ancillary works:

1. Provision of additional secondary treatment capacity with nutrient reduction (400,000 population equivalent);
2. Upgrade of the 24 existing secondary treatment tanks to provide additional capacity and nutrient reduction, which is essential to protect the nutrient-sensitive Dublin Bay area; and
3. Provision of a new phosphorous recovery process.

Uisce Éireann have stated that all works to the Rinsgend WwTP are to be completed in 2025.

Even without treatment at the Ringsend WwTP, the peak effluent discharge, calculated for the proposed development as 5.012 litres/sec (which would equate to 0.045% of the current licensed

discharge at Ringsend WwTP [peak hydraulic capacity]), would not have a measurable impact on the overall water quality within Dublin Bay and therefore would not have significant effect on the current Water Body Status (as defined within the Water Framework Directive (WFD) Directive 2000/60/EC (as amended)). In any case, it is assumed that any water discharged from the EPA licensed Ringsend will not be likely to have a significant effect on the environment or on any European or other protected site.

10.4 Residual Impact Assessment

10.4.1 Demolition & Construction Phase

There are no likely significant impacts on the status of the water and hydrological environment associated with construction activities with mitigation measures aforementioned in place. No perceptible effects on the Baldoyle Bay Natura Site are expected.

10.4.2 Operational Phase

There are no likely significant negative impacts on the status of the water and hydrological environment associated with construction activities with mitigation measures aforementioned in place. No likely significant effects on the Baldoyle Bay Natura Site are expected.

10.5 Monitoring

10.5.1 Construction Phase

During the construction phase the following monitoring measures will be considered:

- Regular inspection of surface water run-off and sediments controls e.g. silt traps will be carried during the construction phase.
- Regular inspection of construction/mitigation measures will be undertaken e.g. concrete pouring, refuelling, etc.

10.5.2 Operational Phase

Following construction of the proposed Surface Water drainage network, pressure tests shall be carried out to assess the potential for leaks to occur in the newly laid sewers. In addition, the Contractor shall carry out periodic testing of the Surface Water discharge to ensure compliance in accordance with the requirements of the Fingal County Council Water Services Department. Following completion of the proposed drainage systems, a short-term flow and rainfall survey including the use of flow monitors and rain gauges shall be carried out to identify misconnections and allow for comparison with watermain meter readings to facilitate assessment and identification of any potential leakages. Following commissioning of the proposed Surface Water network, the management company shall implement a maintenance regime, as a minimum, monthly inspections to ensure that it operates in accordance with the design specification. The features to be maintained include the

piped Surface Water network and all SuDS features. Following construction of the proposed Wastewater drainage network, pressure tests shall be carried out in accordance with the Uisce Éireann Standards to assess the potential for leaks to occur in the newly laid sewers. Following completion of the proposed drainage systems, a short-term flow and rainfall survey including the use of flow monitors and rain gauges shall be carried out to identify misconnections and allow for comparison with watermain meter readings to facilitate assessment and identification of any potential leakages. Following construction of the prosed watermain infrastructure, pressure tests will be carried out in accordance with the Uisce Éireann Standards to assess the potential for leaks to occur in the newly laid watermains. The proposed watermain system will incorporate water meters at all points of connection to the public watermain network which facilitates ongoing monitoring of demand and assessment for potential leakage.

11 Biodiversity

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

The Biodiversity Chapter details the Ecological Impact Assessment (EcIA) of the Proposed Development, which assesses the potential effects of same on habitats and species; particularly those protected by National and International legislation or considered to be of particular nature conservation importance. This Chapter describes the ecology of the Site and surrounding area, with emphasis on habitats, plants, and animals, and will assess the potential effects of the Construction and Operational Phases of the Proposed Development on these ecological receptors.

11.1 Existing Environment

A detailed desk study, in combination with a suite of field surveys, was carried out regarding the Proposed Development. Field surveys included: habitat/flora (including rare/invasive plant species) surveys, breeding bird surveys, wintering bird surveys, mammal surveys and bat surveys. All surveys were carried out at the appropriate time of year, and no limitations that would prevent the robust assessment of potential impacts on ecological receptors were encountered in the preparation of this Chapter.

The potential for European or 'Natura 2000' sites to be impacted by the Proposed Development was assessed separately to this EIAR Biodiversity Chapter in the Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) reports that accompany this application under separate cover. These sites, namely Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), are therefore not assessed again as part of this Chapter. The following additional designated sites that are not designated as European sites e.g., Natural Heritage Areas (NHAs), proposed NHAs (pNHAs) and Ramsar sites, were considered in this Chapter: Skerries Island NHA (001218), Baldoyle Bay pNHA, Howth Head pNHA, North Dublin Bay pNHA, Ireland's Eye pNHA , Malahide Estuary pNHA, South Dublin Bay pNHA, Lambay Island pNHA, Rogerstown Estuary pNHA; Baldoyle Bay Ramsar Site (413), Broadmeadow Estuary Ramsar Site (833), North Bull Island Ramsar Site (406), Sandymount Strand/Tolka Estuary Ramsar Site (832) and Rogerstown Estuary Ramsar Site (412). As with the European sites, these sites were included in the assessment largely due to the potential for Special Conservation Interest (SCI) waterbird species to be disturbed/displaced should they travel to the Site or adjacent lands and use these areas as *ex-situ* habitat.

The AA Screening ruled out all pathways to European sites with the exception of an indirect Construction Phase surface water connection between the Site and Baldoyle Bay SAC (000199) and the North-west Irish Sea SPA (004236) should sediment/pollutants enter the local surface water drainage network. Although considered unlikely, this has been addressed through Construction Phase surface water mitigation measures in the NIS. The other non-European designated sites considered as part of this Chapter overlap with those SACs and SPAs assessed in the AA Screening and NIS and are designated for the same reasons e.g., the same waterbird species, habitats etc. The AA Screening and NIS therefore have assessed the potential impact of the Proposed Development on these other designated sites (NHAs, pNHAs, Ramsar sites) by proxy and they do not require further assessment as

part of this Chapter. Therefore, no designated Sites are considered further as key ecological receptors (KERs) in this Chapter.

The Site is made up of an unmanaged grassland field with low species diversity. The majority of the Site consisted of rank dry meadows and grassy verges (GS2) habitat. The southern boundary of the Site is comprised of mixed broadleaved/conifer woodland (WD2), while the eastern boundary of the Site is made up of mature mixed broadleaved woodland (WD1). The western boundary of the Site comprises mature hedgerow (WL1) habitat, with bramble scrub (WS1) encroaching into the Site. The northern Site boundary and eastern boundary both include a stone wall (BL1) which is rendered for the most part. The woodland Habitats (WD1, WD2) and hedgerow (WL1) at the Site are considered to be of local importance (higher value), all other habitats are considered to be of local importance (lower value) or negligible ecological value.

No rare or protected plant species were recorded on Site. Three non-native plant species were recorded along the northern Site boundary wall, namely, sycamore (*Acer pseudoplatanus*), butterfly-bush (*Buddleja davidii*) and Himalayan honey-suckle (*Leycesteria formosa*). None of these species are listed on the Third Schedule of S.I. 477/2011 and are considered to be 'risk of medium impact' invasive species. These species are considered to be of negligible ecological value and of no significant threat to the surrounding environment, but they are addressed in this Chapter as best-practice as they should be removed and disposed of appropriately to ensure no spread off Site.

Bat surveys undertaken in 2019, 2020 and 2023 recorded a total of four bat species: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's Bat (*Nyctalus leisleri*), and brown long-eared bat (*Plecotus auritus*) at or in the vicinity of the Site. The results of the activity surveys indicate a low level of bat activity at the Site. The trees on Site hold negligible – low bat roost potential and the mature trees along the Site's eastern boundary provide low bat roost potential. The vegetation features that make up the Site's boundaries provide moderate foraging and commuting habitat for local bats, with good connectivity to adjacent scrub, woodland, hedgerow and treelines habitats to the west, south and east of the Site. The central portion of the Site is open field and provides minimally suitable foraging/commuting habitat. The Site is considered to be of local importance (higher value) to the local bat population due to the presence of this suitable habitat.

Breeding bird activity was confirmed at the Site for two Green-listed species: blue tit (*Cyanistes caeruleus*) and magpie (*Pica pica*). No Amber-listed or Red-listed species of conservation concern in Ireland or Annex species under the EU Birds Directive were observed breeding on Site during the breeding bird surveys. The Site provides suitable foraging and nesting habitat for the majority of species recorded; through its hedgerow and woodland habitats and is therefore considered to be of local importance (higher value) to breeding birds.

No SCI bird species listed for nearby SPAs were recorded utilising the Site over the course of the 2023/24 winter bird surveys. A total of 36 non-SCI passerine bird species were recorded during the winter, comprising 25 Green listed, six Amber-listed, four Red-listed and one un-classified species (feral pigeon (*Columba livia domestica*)). The Site was not observed to support a significant wintering population of rare or endangered passerine species, with three out of the four Red-listed species only recorded flying over the Site; meadow pipit (*Anthus pratensis*), redwing (*Turdus iliacus)* and stock dove

(*Columba oenas).* The fourth Red-listed species; curlew, landed once briefly on the golf course to the south of the Site before flying off. Similarly, four of the six Amber-listed species were only recorded as fly-overs: cormorant (*Phalacrocorax carbo),* greenfinch *(Chloris chloris),* herring gull *(Larus argentatus)* and mallard *(Anas platyrhynchos).* The remaining Amber and Green-listed species recorded within the Site or in-flight overhead are common and widespread species associated with coastal areas, woodland and parkland habitats, and therefore the Site is considered to be of local importance (lower value) to wintering birds.

Limited evidence of mammal activity was observed during surveys of the Site. No signs of badger (*Meles meles*) were observed but suitable habitat to support badger exists within the Site and Deer Park Golf course. No signs of otter (*Lutra lutra*) were recorded during the field surveys and the Site does not contain suitable habitat for this species. Suitable habitat exists for West European hedgehog (*Erinaceus europaeus*) and red squirrel (*Sciurus vulgaris*) within the Site and its immediate surroundings, however, red squirrel is unlikely to use the Site due to the presence of invasive grey squirrel (*Sciurus carolinensis*), and the general rarity and limited distribution of red squirrel in Howth. As such, the Site is considered to be of local importance (higher value) to badger and West European hedgehog.

No evidence of common Frog (*Rana temporaria)* was recorded at the Site, and it is highly unlikely that a locally important population of breeding frogs is present at the Site, given the lack of suitable habitat. No evidence of common lizard (*Lacerta vivipara*) was recorded at the Site, and it provides suboptimal habitat for this species. It is therefore highly unlikely that a locally important population of breeding common lizard is present at the Site.

No protected fish or invertebrate species are considered to be at risk from the Proposed Development. The weak hydrological connection linking the Site to the Irish Sea (i.e., Construction Phase surface water entering local storm sewer network) is not deemed to pose a risk of significant impacts on fish species in the Irish Sea. No protected invertebrate species e.g., marsh fritillary butterfly (*Euphydryas aurinia*) were recorded at the Site during the surveys, nor does the Site hold suitable habitat for this species (i.e. the foodplant Devil's-bit scabious (*Succisa pratensis*)).

The following habitats and species were considered as KERs as part of the EcIA of the Proposed Development:

- Woodland Habitats (WD1, WD2);
- Hedgerow (WL1);
- Invasive Plant Species;
- Bat Assemblage;
- Potential Breeding Bird Assemblage;
- West European hedgehog; and
- European Badger.

11.2 Impact Assessment

11.2.1 Do Nothing

Should the Proposed Development not proceed, the lands within the Site would likely remain as they are in the short-term i.e., unmanaged grassland. Scrub would continue to encroach from the southern and western margins of the Site, forming dense thickets and widening the existing hedgerow along the western boundary. In the long-term the southern woodland belt would also continue to mature. The Site would likely slowly increase in its biodiversity value over time if the grassland was left unmanaged and vegetative succession allowed to take place.

11.2.2 Construction Phase

Potential Construction Phase impacts, in the absence of mitigation, were identified and can be summarised in quality and extent as ranging from *negative, short-term, slight to significant* at the *local scale*. These potential Construction Phase impacts take the form of habitat loss or damage, increases in noise emissions, direct mortality or disturbance of breeding birds, bats and/or mammals during vegetation clearance; inadvertent spread of invasive flora, entrapment of mammals in excavations and construction-related rubbish and light pollution impacts to nocturnal species e.g., bats.

11.2.3 Operational Phase

Potential Operational Phase impacts in the absence of mitigation, were identified and can be summarised in quality and extent as ranging from *negative, long-term, slight to moderate* at the *local scale*. A positive *long-term, slight* impact at the *local scale* was also identified as a result of the landscape plan proposed for the Site which includes an increase in tree-cover/habitat diversity. Operational Phase Impacts can be summarised as: a loss of habitat connectivity to mammals e.g., hedgehog and badger, and an overall increase in tree planting and diversity of habitats across the Site.

11.2.4 Cumulative Impact

No significant cumulative impacts involving the Proposed Development and other developments were identified.

11.3 Mitigation

11.3.1 Incorporated Design / Enhancement Measures

The public lighting design for the Proposed Development has been prepared with input from the Project Ecologist (Enviroguide) with potential impacts to bats considered and mitigated by design. As a result of this embedded mitigation Operational Phase impacts to bats via lighting will not occur and no additional mitigation is required.

Enhancement measures recommended for the Proposed Development include 32 'swift bricks' included within the apartment block facades and eight bat boxes located on suitably mature trees along the southern woodland belt; to provide new nesting and roosting habitat for both endangered

swifts (*Apus apus*) and the bats that utilise the Site. The preparation of a Biodiversity Hedgerow and Woodland Management Plan for the Site by an ecologist will maximise the ecological value of these habitats on Site for the lifetime of the Proposed Development.

11.3.2 Construction Phase

In terms of mitigation, an Ecological Clerk of Works (ECoW) will be instructed to ensure the following surveys and mitigation measures are followed as part of the Construction Phase. The Construction Phase mitigation measures recommended to address potential impacts include: a pre-commencement invasive plant species survey, Construction Phase tree protection, bat-friendly Construction Phase lighting, the timing of clearance works to take into account the breeding bird season and the hibernation season for mammals, bat precautions when felling trees, and the management of the construction site for mammals (including pre-clearance badger survey).

11.3.3 Operational Phase

Operational Phase impacts are mitigated by way of the provision of suitably sized 'hedgehog highways' along the boundary fencing to allow hedgehog and badgers to continue to access the Site.

11.4 Residual Impact Assessment

In terms of residual impacts, the mitigation measures detailed in this Chapter, along with the embedded design features e.g., public lighting and landscape plan, will be sufficient to ensure that any identified potential negative impacts to KERs associated with the Site will not be significant. The residual impacts expected for the proposed Development range from *imperceptible* to *negative, short-term, slight (not significant)* at the *local scale* due to the initial loss of small areas of vegetation at the Site and Construction Phase noise. Both impacts are considered short-term, and *positive, long-term, slight-significant* impacts at the *local scale* are expected once the landscape planting is complete and the bat boxes and swift bricks are installed. It is therefore considered that provided the mitigation measures proposed are carried out in full, there will be no significant negative impact to any valued habitats, designated sites or species.

11.5 Monitoring

The monitoring proposed of the Proposed Development includes: an ECoW to monitor the proposed mitigation and enhancement measures both pre, during and post-construction to ensure they are in place and operating effectively, and a Project Arborist to ensure retained trees and hedgerows are protected adequately for the duration of the Construction Phase.

12 Noise & Vibration

Chapter 12 of the EIAR provides information on the assessment of noise and vibration impacts on the surrounding environment during the construction and operational phases of the proposed Deer Park Howth development on lands adjoining Howth Demesne, Deer Park, Howth, Co. Dublin.

When considering the potential impacts, the key sources will relate to the short-term phase of construction and the long-term impacts associated with the development as a whole once operational.

Baseline noise and vibration surveys have been undertaken at the proposed development site and locality to characterise the noise and vibration environment. The existing and future noise and vibration environments across the development site and in the vicinity of the nearest existing NSLs are dictated by transportation sources in the study area and the surrounding road network including the Howth Road, Dublin Airport and rail associated with the local Dart line.

The general construction phase will involve site clearance, building construction works and landscaping, the assessment has determined that there is the potential for a **not significant, negative**, **slight** to **moderate significance,** and **short term** effect of noise impacts when works are undertaken within close proximity (25 – 40 m) of the nearest noise sensitive residential locations. The predicted construction noise levels at non-residential NSL 3, at 20m from works is predicted to be below the recommended noise criteria and therefore in accordance with a **significant** effect is predicted, a **negative**, **moderate to significant** and **short-term,** effect of impact is predicted. During the construction of cycle lanes predicted construction noise impact effects are a **not significant** effect is predicted, a **negative, slight to moderate** and **short-term effect of impact is predicted** for the nearest noise sensitive residential locations. For residential NSL's at a distance of 20m from the predicted effect of impact of works associated with surface water upgrades at distances of 20m at NSL 1 and 60m at NSL 2 with the mitigation measures in place is predicted to be a significant effect, based on Table 12.2 a **negative**, **moderate to significant** and **brief** effect of impact is predicted. .

The use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits and noise monitoring (where required) during this phase will ensure impacts are controlled to within the adopted criteria. Similarly, vibration impacts during the construction phase will be well controlled as there are no activities on site that have the potential to generate significant levels of vibration at the nearest noise sensitive locations. The impact associated with vibration is determined to be **negative**, **not significant** and **Long Term.**

During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area required to facilitate the development is categorised **as not Significant, negative, imperceptible** and **long-term** .

The predicted change in noise levels associated with mechanical and electrical services during the operational stage are determined to be **negative, long term** and **not significant**.

Cumulative noise levels associated with the construction phases have been considered cumulatively. The indicative effects of impacts of a **significant effect** which based on Table 12.2 is **slight to moderate - moderate to significant** and **short-term** is predicted.

At operational stage, cumulative noise impacts associated with the proposed development and other developments in the area are most likely to be associated with increase noise associated with traffic. An increase +3 dB represents a worst case scenario of a doubling in volume of traffic, representing a perceptible change with **moderate impact, moderate significance** and **long-term**. A highly unlikely scenario. The effect associated with building services plant, once designed to achieve the relevant noise criteria, is categorised as **negative, imperceptible** and **long-term**.

During the operational stage the dominant inward noise on the development will be associated with traffic on the Howth Road and aircraft and rail noise. The ProPg assessment has determined that The development site is categorised as a ***low to high Risk*** in accordance with ProPG.

Mitigation measures such as enhanced ventilation and glazing specifications have been proposed that would allow for good internal noise levels.

Prevailing vibration levels across the site are an order of magnitude lower than the level required to affect any damage to buildings in the proposed development. The effect of impact is therefore **Imperceptible**, **Not Significant** and **Long Term**.

13 Air Quality

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

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 National and European Union (EU) ambient air quality standards.

13.2 Impact Assessment

13.2.1 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, human health and ecological 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 three distinct categories: earthworks, construction and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most 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.

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 from any further assessment and the construction stage traffic emissions will have a ***direct, short-term, neutral*** and ***imperceptible*** impact on air quality.

13.2.2 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. The change in traffic associated with the operational phase of the proposed development did not meet the PE-ENV-01106 criteria requiring a detailed air dispersion modelling assessment. Therefore, it can be determined that during the operational

phase, the proposed development will have a ***direct, long-term, neutral*** and ***imperceptible*** impact on air quality.

13.3 Mitigation and Residual Effects (Post-Mitigation)

13.3.1 Construction Phase

Detailed dust mitigation measures are outlined within Section 8.7 of Chapter 8 to ensure that no significant nuisance 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 ***not significant***, posing no nuisance at nearby sensitive receptors (such as local residences).

13.3.2 Operational Phase

As the predicted concentrations of pollutants will be imperceptible no mitigation is required. The impact to air quality has been assessed as ***long-term, direct, neutral*** and ***imperceptible***, which is ***not significant.***

Cumulative Impact

13.3.3 Construction Phase

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 500m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken and relevant developments with the potential for cumulative impacts were identified.

There is a low risk of dust impacts associated with the proposed development. The dust mitigation measures outlined in Section 13.9 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 and the permitted cumulative developments are deemed ***short-term, localised, negative*** and ***imperceptible.***

13.3.4 Operational Phase

The direct impacts of the operational phase on air quality associated with the proposed development are predicted to be imperceptible. Cumulative impacts are considered ***direct, long-term, neutral*** and ***imperceptible.***

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

14 Climate

The assessment of Climate is contained within Chapter 14 of Volume II.

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 compliance with European Union's Effort Sharing Decision *"EU 2020 Strategy"* (Decision 406/2009/EC). The EPA estimate that Ireland had total GHG emissions of 60.76 Mt CO_2e in 2022. This is 3.72 Mt CO_2e higher than Ireland's annual target for emissions in 2022. EPA projections indicate that assuming full implementation of the Climate Action Plan and the use of the flexibilities available Ireland can achieve an emissions reduction of 30% by 2030.

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.

14.2.1 Construction Phases

Calculation of the GHG emissions associated with the construction of the proposed development was calculated using the online OneClick Carbon Designer for Ireland Carbon Calculator Tool and the online Transport Infrastructure Ireland Carbon Assessment Tool. GHG emissions associated with the proposed development are predicted to be a small fraction of Ireland's Industry and Buildings (Residential) sector 2030 emissions ceilings of 4 Mt CO_2e each. The proposed development will incorporate some mitigation measures which will aim to reduce climate impacts during construction and once the development is operational.

14.2.2 Operational Phase

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were not substantial enough the meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance *"PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document"*. The proposed development has incorporated a number of sustainability measures into the design of the development which will aid in reducing impacts to climate once operational.

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, fog, wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is not considered significant.

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

14.3 Mitigation and Residual Effects (Post-Mitigation)

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

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 state that the crux of assessing significance is *"not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050"*. The proposed development has been designed to reduce the impact on climate where possible during operation. The proposed development has incorporated some minimal measures to reduce climate change impacts. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered ***direct, long-term, negative*** and ***slight,*** which is 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.

14.4 Cumulative Impact

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that "for 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."

However, 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. Therefore, the assessment approach is considered to be inherently cumulative.

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.

15 Cultural Heritage: Archaeology

It is proposed to undertake a residential development at lands adjoining Howth Demesne, Howth, Co. Dublin. This technical summary is based on the Cultural Heritage Chapter provided in Volume II of the EIAR. Site visits have been undertaken in January 2021, a geophysical survey was undertaken in February 2021 and archaeological testing was undertaken in March 2024. This summary details the results of this assessment.

The methodology has been conducted based on the guidelines from the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (DAHRRGA.).

This assessment consists of a paper survey identifying all recorded monuments within the vicinity of the proposed development. Research undertaken for this report included an examination of legislative framework, the Record of Monuments and Places (RMP); Buildings of Ireland, Excavations Bulletin; historic maps; aerial photographs; place names and historic books and journals.

A site visit was also undertaken to assess the site for potential archaeological features. This assessed the works to date and the remainder of the site for visible archaeological features.

Planning permission is sought for a large-scale residential development on an overall site of approx. 1.5 hectares. The development comprises the delivery of 135 dwellings including 63 no. 1-bedroom units and 72 no. 2-bedroom units across two offset blocks ranging in height from 3-5 storeys. 63 car parking spaces including 4 accessible spaces & 13 EV charging spaces and 6 motorcycle spaces proposed at surface level. A total of 410 bicycle spaces are proposed including the provision of secure bicycle stores. Partial demolition of 3 sections of the existing northern boundary wall, which fronts Howth Road, proposed to facilitate vehicular and pedestrian access. Undergrounding and relocation of existing ESB overhead lines and diversion of existing distribution gas pipes around the site are also proposed.

15.1 Archaeological Impact

15.1.1 Recorded Monuments

The proposed development is not adjacent to any archaeological monuments. The closest site is located 80m to the east. This is St. Marys Church the site is listed in the RMP for Co. Dublin. Howth Castle is located to the south and contains a number of monuments listed in the RMP. The townland also contains a Neolithic Dolmen 800m south of the development.

15.1.2 Previous Archaeological Works

A field survey was undertaken across the site in January 2021. The northern boundary of the site is the Howth Road. The Deer Park Golf Club forms the southern boundary. The site was covered with grassland. Visibility on the ground was good. No potential archaeological features were noted.

A geo physical survey was undertaken by Joanna Leigh in February 2021. This covered the area of the site. The geophysical survey data was dominated by modern magnetic disturbance and multiple modern services. Some possible isolated pit-type responses have been identified; however, an archaeological interpretation is highly tentative. Possible former agricultural activity is suggested by multiple linear trends.

Archaeological testing was undertaken in March 2024 by the author (Licence 24E0310, Appendix 15. 1). Ten test trenches were excavated across the site. A series of drainage channels were identified during the works. Modern disturbance was recorded at the north. No archaeological features were identified during the works.

15.1.3 Cartographic Evidence

An examination of the cartographic evidence for the area of proposed development was undertaken. This involved the 17th century Down Survey, the Rocque Map, the first edition of the Ordnance Survey Map and its later editions, and the Cassini map for the area. No additional features indicative of archaeological remains were visible on the maps or the aerial photographs for the site.

15.1.4 Impact on the Subsurface remains

Works to date have not identified any archaeological remains in the study area. This includes the geo physical survey and archaeological testing that has taken across the site. There is however potential for further remains to be identified during construction works. Archaeological remains may exist within the site and be preserved below the current ground level. Excavation works may expose these remains. Development at the site would have a profound effect on any unrecorded sub surface remains.

15.2 Mitigation Strategies

There is potential for other remains to be uncovered during the construction phase. As a result, a suitably qualified archaeological consultant shall be appointed to undertake licenced archaeological monitoring of all excavation works during the construction phase of the development. This will be under license from the National Monuments Service of the Department of Housing, Local Government and Heritage.

Should additional archaeological or architectural heritage features, deposits or structures be uncovered during archaeological monitoring the NMS should be contacted and a strategy for the resolution of these features be formulated.

16 Cultural Heritage: Built Heritage

The assessment of Cultural Heritage – Built Heritage is contained within Chapter 16 of Volume II.

16.1 Existing Environment

The proposed site is located to the south of Howth Road, before the entrance to Howth Village on approach from the west on lands adjoining Howth Castle Demesne, Deer Park, Co. Dublin. The subject site historically was part of Howth Castle demesne, the remains of which are recognised as a designed landscape of National Importance. Features of Architectural Heritage Interest within the former demesne and in proximity to it, and that have the potential to be impacted by the proposed development include recorded monuments, protected structures, and the Howth Castle Architectural Conservation Area (ACA).

Howth Castle demesne describes the historic landscape associated with Howth Castle which was the family seat of the St. Lawrence family from the twelfth century. The present Howth Castle was probably established in the fifteenth century to replace an earlier structure that provided security and defence to the harbour. At that time the castle was relocated to higher ground taking advantage of stunning sea and mountain views along the north Dublin coast, as well as an axis view across Dublin bay to Dublin Castle. The relocation provided an opportunity for the 'improving landlords' to extend the grounds into an expansive ornamental landscape, which included new tree plantations, farm and parkland. The landscape was experienced through sequences of carefully curated avenues, walks and rides that connected to an array of natural and man-made features including existing ruins, defensive, ecclesiastic and archaeological sites, water features and new garden structures or follies. There were also formal, walled, wild and tropical gardens.

The proposed site is on part of the historic castle lands which was used as a deer park. A deer park is an enclosure associated with a castle, that had tall, strong boundaries intended to contain a herd. There are accounts of a deer park at Howth Castle from the seventeenth century.

The earliest identified view of the subject site is in the overmantel painting from c.1740. The site is in the background of the painting, to the extreme right of the frame. High enclosing walls are shown around a paddock filled with hay stacks. There are regularly spaced trees along the boundary to the coast, suggesting that they were part of a recent plantation. A high wall divides the deer park in two parts. Corr Castle stands alone towards the back of the rear enclosure while the subject site forms part of the near enclosure. Mixed trees are shown lining the entrance avenue. The entrance to Howth Road, where the gates and lodge were unbuilt and obscured by mixed and dense planting. The site of St. Mary's Church are just out of the frame while an ancient church, now in ruins, is painted in good condition, complete with roof and bell tower, in a walled enclosure surrounded by trees.

The first Ordnance Survey map of Howth confirms that the entrance to Howth Road was the primary access to the demesne in 1847, with the gates and lodge, designed by Richard Morrison recently completed. The deer park was also in use as a racecourse during the nineteenth century. The track followed the deer park boundary and spectators were housed in a stand at Corr Castle. Trees were

planted along the eastern boundary of the racecourse to screen it from view of the entrance gates and the approach avenue to Howth Castle which are directly to the east of the site.

The deer park was encroached upon through the late-nineteenth and twentieth centuries by linear residential developments along Howth Road, by the establishment of the Deer Park Golf Course in 1974, and by the construction of apartments around Corr Castle. Much of the historic boundary wall of the deer park has been removed or altered to facilitate entry to these developments. No trace of the racecourse remains.

Howth Castle is a protected structure and a recorded monument, rated of national importance by the NIAH for reasons of archaeological, architectural and artistic interest. The historic curtilage of the castle was impacted by piecemeal developments along Howth Road, and later was substantially altered with the construction of Deer Park Golf Course. This is acknowledged in the Howth Castle ACA Statement of Character which defines the curtilage of the castle in the modern context. The proposed site is largely outside of the boundary of Howth Castle ACA, but it remains within the attendant grounds of the protected structure.

The historic land-use was a deer park, characterised by open pasture with strong boundaries. The extant boundary wall is a legacy feature of this use, and is the only feature of built-heritage interest identified within the proposed site boundary. A golf course was established in the 1970s to the south of the proposed site. A belt of semi-mature trees running west to south-east across the site, divides the site into open pasture in the northern section, and golf-course to the south.

The proposed site is directly to the west of Howth Castle gate, and within the setting of St. Mary's Church (a protected structure rated of regional importance by the NIAH for reasons of Architectural, Artistic, Social and Technical Interest). Recorded monuments within Howth Castle ACA include a Church in ruins, which is to the south of the proposed site, and Corr Castle to the west. The historic architectural and visual relationships between these features and the proposed site has been lost in recent times, by the construction of the Golf Course, and modern apartment buildings.

Sensitive views, which include the proposed site, were identified during the design and pre-planning consultation processes. They include protected views to and from the Howth Castle ACA. Other views of the proposed site from within the castle grounds, including views from the castle, from the southern boundary of the National Transport Museum, from the ruined medieval church in the grounds of the castle and along the entrance avenue have also been assessed. Wide angle views towards the site from higher ground at the Deer Park Hotel, looking towards and across the castle building complex were examined with views of the site along Howth Road, on approach to and exit from Howth Village, on approach to and exit from the castle entrance and from St. Mary's church yard.

16.2 Impact Assessment

16.2.1 Do Nothing Scenario

In the 'do nothing' scenario, the proposed development would not be implemented and there would be no effect the on architectural heritage resource. Most of the features identified in this study are

outside the site of the proposed development, and their future condition would not be affected by a decision to do nothing. One feature of architectural heritage interest is identified within the proposed site boundary. This is the former deer park wall, which is in some disrepair associated with plant growth. In the 'do nothing' scenario the wall would remain in place and would likely to continue to deteriorate.

The proposed development area is zoned *RS Residential - to provide for residential development and protect and improve residential amenity* (Fingal County Development Plan 2023-2029). Given the zoning, and the location of the site, close to Howth Village and the public transport network, it is likely that the site will be developed.

The existing low density, linear developments to the west of the subject site have led to a series of piecemeal entrances created in the previously unbroken deer park wall, with sections altered and replaced over time. The continuation of this development approach would result in a continued degradation of the demesne wall, and a loss of fabric and character.

16.2.2 Construction Phase

One feature of architectural interest was identified on the subject site, which has the potential to be directly impacted during the construction phase. This is the boundary wall to the north and east of the site, which formed part of the historic deer park, and demesne boundary along Howth Road, beside the main entrance gates to Howth Castle. The proposed development includes alterations to three sections of the boundary wall to provide access to the development during the construction and operational phases, which requires some removal of historic fabric. The proposal also includes for repair and maintenance of the wall.

16.2.3 Operational Phase

Two features were identified which have the potential to be directly impacted during the operational phase of the proposed development. These are the demesne wall, the proposed alterations of which is described above, and the Howth Castle ACA.

The proposed openings in the demesne wall have been sensitively designed and detailed to a high standard. They will facilitate safe access to the site, raise awareness of the historic landscape behind the wall, and integrate the new community into the existing. With the proposed repair of the wall, the alterations will have a positive impact during the operational phase of the proposed development.

The proposed site works which are inside the Howth Castle ACA boundary include the widening of the existing footpath, and the provision of a stepped approach to the proposed pedestrian entrance. While these works are proposed to be located within the ACA boundary (102sq.m), they are minor in nature and do not involve removal or alteration of any existing or sensitive fabric. They will have a neutral impact during the operational phase of the proposed development. The works relate only to providing a wider concrete footpath and the provision of a new stepped pedestrian access.

Visual impacts are also identified during the operational phase of the proposed development including an anticipated visual impact on the setting of Howth Castle ACA. This includes an impact on views on

approach to the main entrance gates, views from the entrance avenue, looking north towards the main gate, the view of Howth Castle from Muck Rock and certain views towards the proposed site from inside the ACA boundary. The proposed development will not impact on views in the immediate vicinity of Howth Castle, views towards the castle from the east lawn, views from the castle entrance or views along the north side of the castle building complex.

The proposed development will impact on wide views on approach to St Mary's Church from Howth Road and will be viewed when leaving the church grounds, behind the repaired historic boundary wall and the proposed planting.

The proposed development will impact on the setting of Howth Castle Gate, and on views towards the castle gates from Howth Road.

16.2.4 Cumulative Impact

Three projects were identified where there is potential for cumulative impact on the built heritage of the receiving environment. These are:

- F22A/0046 (ABP-316113-23 Permission Granted, Decision on Appeal Pending) which is an application for refurbishment and redevelopment of Howth Castle buildings which will have a positive impact on the built heritage character of the receiving environment.
- There is potential for a cumulative impact on the setting of Howth Castle ACA due to the carpark that is proposed to the south of the proposed site that is part of the Castle redevelopment, and which includes the removal of trees, opening up views from the National Transport Museum to the golf course, and the subject site beyond, and reducing the visual separation.
- F22A/0372 (ABP-317883-23 Permission Granted, Decision on Appeal Pending) which is an application for the replacement of Deer Park Hotel which will have a positive impact on the built heritage character of the receiving environment.
- There is potential for a cumulative impact on the setting of the Castle Gate and on St. Mary's Church due to the proposed new access road to the hotel, which would extend from the existing entrance to St Mary's Church, and avoid Howth Castle and the existing Castle Gate. Fingal County Council required that the road be omitted from the proposed development. This condition is under appeal.
- ABP-306102-19 (Granted and under construction) which is a strategic housing development comprising 512 units which is currently under construction to the north of the subject site, and between it and Howth Village.

There is potential for a cumulative impact on the setting of the Castle Gate, on St. Mary's Church and on the Howth Castle ACA due to the urbanising impact of the Claremont SHD and the proposed development.

16.3 Mitigation

16.3.1 Incorporated Design

The design of the site, and the layout of the proposed buildings has been carefully considered with regard to the visual impact of the development on the sensitive setting of neighbouring protected structures, the Howth Castle ACA and other significant views and vistas within the receiving environment.

The massing strategy balances the requirement to create a strong architectural presence at the gateway to the village of Howth, with the sensitivities of the demesne landscape. The buildings are set as far from the site boundaries as possible while retaining the existing significant trees, supplemented with new planting, especially along the east boundary, and to the south of the proposed buildings, to add to the existing screening between the site and the castle entrance, gates and avenue.

The forms are cranked and stepped in plan and section to respond to the existing topography, breaking up the blocks, allowing a through view on approach to the site, creating visual interest and providing relief, especially along Howth Road.

Projecting balconies have been eliminated from the front of Blocks A and C and from the end elevations. The fifth storey is set back from the road, breaking up the mass and reducing the impact. Green roofs are proposed for both blocks where they will be viewed from the above and to the south, significantly from Muck Rock. Except for solar panels, plant will housed inside the blocks and will not feature on views of the roof.

The design intention is for buildings of high-quality architectural design, coupled with precision detailing, using modern materials and a natural colour palette drawn out of the context. Elevations will be finished in selected brick, which is an attractive, hard-wearing and robust solution appropriate to the maritime context. Railings will be painted metal with high-performing metal windows.

The proposed openings in the demesne wall are minimal, and required to allow for safe pedestrian, bicycle and vehicular access to the site. They will read as minimal, modern interventions into the historic fabric to distinguish between new and old.

16.3.2 Construction Phase

One feature of built heritage interest was identified, which will be directly impacted during the construction phase of the proposed development. This is the demesne wall which is to be altered to facilitate new pedestrian and vehicular entrances. The predicted pre-mitigation construction phase impact is negative, significant and permanent.

Mitigation has been incorporated into the design which represents a minimal intervention to achieve the necessary access to the proposed development and successfully connect the new community to Howth Village. The alterations require removal of sections of the existing masonry which will be recorded and carefully taken down for re-use elsewhere in the repair of the walls, or in the landscaping proposals. The proposed openings shall be detailed to a high standard using high-quality material and

contemporary design, to announce and identify the new development. They will read as minimal, attractive, and modern interventions into the historic fabric to distinguish between new and old.

Indirect physical impacts are also anticipated to the demesne wall, which will be vulnerable to accidental damage as a result of the scale of the proposed construction works in its vicinity.

The proposed mitigation is monitor, record, protect and repair the historic fabric of the wall in adherence to best conservation practice; to the *Architectural Heritage Protection Guidelines for Planning Authorities;* and to the Advice Series issued by the Department's Built Heritage Advisory Unit. A methodology outlining the required monitoring, protection, recording, and monitoring of the historic fabric during construction, and specifying the proposed alterations and repairs of the wall is provided in Appendix 16-3. With these protections, the potential negative impact is eliminated, and a positive impact is predicted for the fabric of the demesne wall.

16.3.3 Operational Phase

There are no mitigation proposals for the operational phase of the proposed development, since the likely negative, significant effects arising as a result of the proposed development have been incorporated into the design mitigations.

16.4 Residual Impact Assessment

With mitigation, no significant adverse construction phase effects are predicted as a result of the proposed development.

Taking account of the incorporated design mitigation, no significant adverse operational phase effects are predicted as a result of the proposed development.

The anticipated residual effect on the setting of Howth Castle ACA, on the setting of St. Mary's Church and on the setting of Howth Castle Gate is neutral, moderate and long-term.

The anticipated residual effect on views from the entrance avenue to Howth Castle, is neutral, significant and long-term. The anticipated residual effect on views towards the proposed site from within Howth Castle ACA is neutral, slight and long-term.

16.5 Monitoring

The proposed works to the northern boundary wall are to be carried out under the supervision of a Conservation Architect and in line with the method statement included in Appendix 16-3 of the EIAR.

17 Interactions of the Foregoing

The Construction, Operational and cumulative impacts of the proposed development have been assessed within each chapter of the EIAR. In practice many impacts have slight or subtle interactions with other disciplines. This chapter highlights those interactions which are considered to potentially be of significant nature.

The potential impacts arising from the interactions were identified early in the preparation of the EIAR / design process and therefore have been avoided through (i) design measures or (ii) the specific mitigation measures outlined in the EIAR chapters and summarised in Chapter 15.

17.1 Population and Human Health

During the construction phase, the following aspects have the potential to interact with population and human health:

- **Landscape and Visual** - Construction processes and plant such as cranes used during the construction phase may give rise to visual impacts.
- **Material Assets – Traffic and Transport:** Increased construction traffic movements on the local road network during the construction phase may give rise to noise, dust, and road safety impacts.
- **Material Assets – Built Services:** Excavation during the construction phase may give rise to risks to human health from contact with live electricity lines or damage to live gas pipelines.
- **Noise and Vibration:** There is potential for effects on human health associated with noise during the construction phase which may impact upon amenity.
- **Air Quality:** There is potential for impact on human health from dust associated with construction activities and thus impacting air quality.

During the operational phase, the following aspects have the potential to interact with population and human health:

- **Landscape and Visual** - The landscape plan will impact the quality of the private, communal and public open spaces, which could impact people's health and well-being.
- **Material Assets – Traffic and Transport:** The proposed development's proximity to services, amenities, and high-quality public transport would interact with patterns of traffic and transport locally during the operational phase. Traffic flows within the site have the potential to create safety risks for pedestrians and cyclists.
- **Air Quality:** Energy efficient design within the proposed development may give rise to reduced electricity consumption by future residents, potentially decreasing dependence on fossil fuels for energy generation, resulting in improved air quality. There is potential for impact on human health from a deterioration in air quality associated with emissions from vehicles.
- **Climate:** Energy efficient design within the proposed development may give rise to reduced electricity consumption by future residents, potentially decreasing dependence on fossil fuels for energy generation, resulting in significant CO_2 savings.

The potential significant effects on population and human health arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.2 Landscape and Visual

During the construction phase, the following aspects have potential to interact with landscape and visual:

- **Population & Human Health:** The emergence of plant to facilitate the development resulting in short-term, slight to not-significant, neutral visual effects for the existing resident population and users of the surrounding road network.

During the operational phase, the following aspects have potential to interact with landscape and visual:

- **Population and Human Health** - The provision of new housing opportunities set within a high quality development with landscape and visual amenities and recreational opportunities, in close proximity to Howth town centre and harbour, with access to bus, dart, cycling and pedestrian infrastructure as well as a host of local amenities has been considered. The interaction of the future potential landscape and visuals effects of the proposed scheme with existing and future population and human health has the potential to have a significant positive effect in the long term.
- **Biodiversity** - The retention of the majority of trees and hedgerows within the site is part of the overall green infrastructure strategy of the overall landscape site plan and is essential for the retention of the 'historical demesne' aesthetic of the proposed development, providing instant visual and landscape amenity value. The proposed landscape and green infrastructure strategies that are proposed for the Deer Park site along with designed in mitigation measures for the flora and fauna on the site, biodiversity have the potential to have an interaction that can be described as a significant positive effect in the long term.
- **Cultural Heritage: Built Heritage** - The considered architectural design approach which includes the layout, massing, tiering and stepping of the roof line and facades of the proposed development, along with the subtle material palette of colours and materials en façade are enhanced by a considered landscape and green infrastructure strategy that addresses the existing and future green infrastructure of the site and its surrounds, as well as retaining the existing historic aesthetic of the adjacent Architectural Conservation Area of Howth Castle and Demesne and protected structures. The interaction of the future potential landscape and visuals effects of the proposed scheme with existing cultural heritage of the site and it's surrounds has the potential to have a significant positive effect in the long term.
- **Cultural Heritage: Archaeology** - There are no archaeological or cultural features recorded or identified within the site itself. It is recommended that archaeological monitoring of topsoil stripping takes place during the construction phase of the project as there is a low potential for small archaeological features or deposits to exist below ground. The potential effects of the interaction between the archaeological cultural heritage of the Deer Park site and the

landscape and visual effects of the proposed development are considered to be imperceptible and neutral. It is likely that there will be no significant adverse effects on interactions in this instance.

The potential significant effects on landscape and visual arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative impacts will occur.

17.3 Material Assets: Traffic and Transport

During the construction phase, the following aspects have the potential to interact with traffic and transport:

- **Noise and Vibration:** Construction traffic movements during the construction phase may give rise to localised noise and vibration effects.
- **Air Quality:** Construction traffic movements during the construction phase may give rise to increased vehicular emissions.
- **Climate:** Construction traffic movements during the construction phase may give rise to increased greenhouse gas emissions.
- **Population and Human Health:** Increased construction traffic movements on the local road network during the construction phase may give rise to noise, dust, and traffic disruption impacts, resulting in a negative impact on residential amenity.

During the operational phase, the following aspects have the potential to interact with traffic and transport:

- **Noise and Vibration:** Additional traffic movements during the operational phase may give rise to localised noise and vibration effects.
- **Air Quality:** Possible increases in traffic movements and reduced engine efficiency (due to congestion) during the operational phase may give rise to increased vehicular emissions. Increasing population at this location, close to high-quality public transport and with convenient access to services and amenities would interact with air quality in terms of the opportunity to reduce greenhouse gas emissions associated with car usage.
- **Climate:** Additional traffic movements associated with future occupants may give rise to increased greenhouse gas emissions; however, the overall impact of this interaction is not considered to be significant in EIA terms. The increasing population at this location, close to high-quality public transport and with convenient access to services and amenities would interact with climate in terms of the opportunity to reduce greenhouse gas emissions associated with car usage.
- **Population and Human Health:** The proposed development's proximity to services, amenities, and high-quality public transport would interact with patterns of traffic and transport locally during the operational phase.

The potential significant effects on traffic and transport arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.4 Material Assets: Built Services

During the construction phase, the following aspects have the potential to interact with built services:

- **Population and Human Health:** Excavation during the construction phase may give rise to risks to human health as a result of any excavation work in areas where built services exist through coming into contact with live electricity lines or damaging live gas or watermains.
- **Land and Soil:** Trench excavations to facilitate site service installation may give rise to the erosion of subsoils and subsequent sediment generation. Additionally, the installation of road and infrastructure services and storage systems during the construction phase will require removal of topsoil and earthworks.

During the operational phase, the following aspects have potential to interact with built services:

- **Water and Hydrology:** The proposed development may give rise to changes to surface water run-off, with impacts to water and hydrology. There will be an increased demand on potable water supply.
- **Climate:** The built services have an interaction with climate in the availability and use of non-greenhouse gas reliant power and heat sources.

The potential significant impacts on built services arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative impacts will occur.

17.5 Material Assets: Waste

During the construction phase, the following aspects have the potential to interact with waste:

- **Population and Human Health:** management of waste during the construction phase may give rise to increased levels of vermin, litter, and dust.
- **Land and Soils:** Excavation will require the removal of soils.
- **Material Assets - Traffic and Transport:** The movement of construction waste during the construction phase may give rise to impacts on traffic and transport.

During the operational phase, the following potential interact with waste is:

- **Population and Human Health:** increased domestic waste, if not managed appropriately may give rise to nuisance locally.

The potential significant effects on waste arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.6 Land and Soils

During the construction phase, the following aspects have the potential to interact with land and soils:

- **Water and Hydrology:** The introduction of impermeable surfaces and the compaction of soils during the construction phase may give rise to an increase in direct surface run-off and sediment loading which could potentially impact local drainage.
- **Material Assets – Built Services:** The installation of road and infrastructure services and storage systems during the construction phase will require removal of topsoil and earthworks.
- **Biodiversity:** the preparatory works have the potential to cause impact on the biodiversity of the site, through removal and disturbance of habitats and species.
- **Air Quality:** Land clearing, excavation, stockpiling of materials, and other activities during the construction phase may give rise to dust emissions; however, the overall impact of this interaction is not considered to be significant in EIA terms once the proposed mitigation measures are in place.
- **Cultural Heritage – Archaeological:** Site clearance works may impact on sub-surface archaeology.

No potential operational interactions are identified.

The potential significant effects on land and soils arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.7 Water and Hydrology

During the construction phase, the following aspects have the potential to interact with water & hydrology:

- **Material Assets Built Services**: The construction of the proposed services (water supply, drainage and IT etc.) may affect the local hydrological and hydrogeological environment as there is a risk of suspended solids run off.
- **Land and Soils:** Site preparatory works (i.e. site clearance, re-profiling etc.) during the construction stage have the potential to impact on the hydrology and hydrogeology due to the risk of solids becoming entrained in surface water runoff and accidental spills etc.
- **Biodiversity:** Impacts to water quality during the construction phase, such as accidental pollution/spillage events, may give rise to impacts on sensitive aquatic receptors, such as habitats and fauna, that are hydrologically linked to the site.

During the operational phase, the following aspects have the potential to interact with water & hydrology:

- **Material Assets Built Services:** There will be an increased demand on potable water supply and on the municipal drainage system.

The potential significant effects on water and hydrology arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.8 Biodiversity

During the construction phase, the following aspects have the potential to interact with biodiversity:

- **Land and Soils:** Bulk removal of soils, sands, and gravel during the construction phase may give rise to biodiversity impacts.
- **Water and Hydrology:** Impacts to water quality during the construction phase, such as accidental pollution events, may give rise to impacts on sensitive aquatic receptors, such as habitats and fauna, that are hydrologically linked to the site.
- **Air Quality:** The stripping of topsoil and excavation during the construction phase will remove some vegetation such as trees and scrub, and may give rise to dust emissions.
- **Noise and Vibration:** Increased noise levels during the construction phase may give rise to impacts on sensitive fauna such as birds within adjacent habitats.

During the operational phase, the following aspects have the potential to interact with biodiversity:

- **Water and Hydrology:** Impacts to water quality during the operational phase, such as accidental pollution events, which may give rise to impacts on habitats and fauna that are hydrologically linked to the site.

The potential significant impacts on biodiversity arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative impacts will occur.

17.9 Noise and Vibration

During the construction phase, the following aspects have the potential to interact with noise and vibration:

- **Material Assets – Traffic and Transport:** Construction traffic movements during the construction phase may give rise to localised noise and vibration effects.
- **Biodiversity:** Increased noise levels during the construction phase may give rise to impacts on sensitive fauna such as birds within adjacent habitats.
- **Population & Human Health** - There is potential for interaction with population and human health associated with noise generated during the construction phase.

During the operation phase, the following aspects have potential to interact with noise and vibration:

- **Material Assets – Traffic and Transport:** Additional traffic movements during the operational phase may give rise to localised noise.

The potential significant impacts on noise and vibration arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.10 Air Quality

During the construction phase, the following aspects have the potential to interact with air quality:

- **Population and Human Health:** Activities during the construction phase may impact air quality and give rise to health and dust nuisance issues.
- **Material Assets - Traffic and Transport:** Increased traffic movements during the construction phase may give rise to increased vehicular emissions.
- **Climate:** Air quality and climate are strongly linked, as the burning of fossil fuels during the construction phase may give rise to air quality effects.
- **Land and Soils**: Land clearing, excavation, stockpiling of materials, and other activities during the construction phase have the potential to give rise to dust emissions.
- **Biodiversity**: Stripping of topsoil and excavation during the construction phase will remove some vegetation such as trees and scrub, and may give rise to dust emissions.

During the operational phase, the following aspects have the potential to interact with air quality:

- **Population and Human Health:** There is potential for impact on human health from a deterioration in air quality associated with emissions from vehicles.
- **Traffic and Transport:** Possible increases in traffic movements and reduced engine efficiency (due to congestion) during the operational phase may give rise to increased vehicular emissions.
- **Climate:** Air quality and climate are strongly linked, as the burning of fossil fuels during the operational phase may give rise to both air quality and climate impacts.

The potential significant impacts on air quality arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.11 Climate

During the construction phase, the following aspects have the potential to interact with climate:

- **Air Quality:** Air quality and climate are strongly linked, as the burning of fossil fuels during the construction phase may give rise to both air quality and climate impacts.
- **Material Assets – Waste:** Waste management measures will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management measures.
- **Water and Hydrology:** Climate has the potential to interact with flood risk.
- **Traffic and Transport:** Construction traffic movements during the construction phase may give rise to increased greenhouse gas emission from vehicles.

During the operational phase, the following aspects have the potential to interact with climate:

- **Population and Human Health:** Energy efficient design within the proposed development may give rise to reduced electricity consumption by future residents, potentially decreasing dependence on fossil fuels for energy generation, resulting in significant CO_2 savings.
- **Air Quality:** Air quality and climate are strongly linked, as the burning of fossil fuels during the operational phase may give rise to both air quality and climate impacts.
- **Material Assets – Waste:** Waste entering landfill during the operational phase may give rise to increased embodied carbon emissions when compared to other waste management measures.
- **Water and Hydrology:** Climate has the potential to interact with flood risk.
- **Traffic and Transport:** Construction traffic movements during the operational phase may give rise to increased greenhouse gas emissions.

The potential significant impacts on climate arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.12 Cultural Heritage: Archaeological

During the construction phase, the following aspects have the potential to interact with archaeological heritage:

- **Land and Soils:** Site clearance works may impact on sub-surface archaeology.

No potential operational interactions were identified.

The potential significant impacts on archaeological heritage arising from these interactions have been considered within the relevant discipline and mitigation measures outlined where required. With mitigation measures in place, no significant permanent residual negative effects will occur.

17.13 Cultural Heritage: Built Heritage

During the construction phase, the following aspects have the potential to interact with cultural built heritage:

- **Landscape and Visual:** The proposed openings in the northern demesne wall will result in the removal of historic fabric. However, it is intended to reuse this fabric to carry out remediation works to the remainder of the wall. The emergence of construction plant and hoarding to secure the development site would interact with the landscape and visual environment in the short term.
- **Population and Human Health:** The proposed development will result in an increased population during its operational phase, including increased footfall in and around the architectural heritage assets. This will result in increased awareness of the recorded

monuments, protected structures, NIAH structures and heritage features which is positive. There is an associated potential for inadvertent damage to features.

During the operational phase, the following aspects have the potential to interact with cultural built heritage:

- **Landscape and Visual:** Indirect operational phase visual impacts are anticipated on the setting of Howth Castle ACA including the setting of the Castle Gates, and the setting of St. Mary's Church.

17.14 Conclusions

As outlined above, the proposed development has the potential to impact on various environmental aspects, with interactions and inter-relationships between these aspects as described above. The EIAR has considered these interactions and inter-relationships throughout the appraisal, firstly through the design and layout of the proposed developments, to avoid impacts where possible, and also in the definition of suitable mitigation measures to minimise the impacts.

No significant likely impacts arising from interactions are identified.

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.

This chapter of the EIAR summarises the proposed mitigation measures set out in Chapters 4 to 16 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 7 Incorporated Design Mitigation

Aspect	Mitigation Measures
Population & Human Health (Ch. 4)	The proposed development complies with the Building Regulations, covering matters such as structure, fire safety, sound, ventilation, conservation of fuel and energy, and access, all which safeguard users of the buildings and the health of occupants. The proposed development complies with the requirements of Part M of the Building Regulations and incorporates the principles of universal design so that the development will be readily accessible to all, regardless of age, ability, or disability. Pedestrians and bicycle traffic will be segregated from motorised traffic. Energy efficient measures are into the design to provide for healthier living standards for future occupants, reduced 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 including segregated pedestrian entrances which is strategically located proximate to the village of Howth will encourage sustainable modes of outdoor access for a wide age group.
Landscape & Visual (Ch. 5)	<u>Site Layout, Height, and Massing</u> The various elements of the development on site have been positioned in order to enhance the appearance of the scheme as a whole through the design of the site layout and built form. The proposed layout of the LRD presents as a 3-5 storey high density residential development, that has through several design iterations and consultation with the local authority been sensitively considered to take account of the significance of the sites' location adjacent to the adjacent Howth Castle and Demesne ACA (which 102sq.m of the subject site falls within), in particular the gated access to Howth Castle, as well as to the entrance to Howth town and harbour. The breakdown of the two blocks (Block A with Block B, Block C with Block D) create three distinct areas of public realm, and are set back from the historical Deerpark Wall to the north of the site, as well as the eastern boundary with the Howth Castle and Demesne ACA. The retention of the Deer Park wall as well the majority of the existing trees within the site are considered as positive measures that will enhance the overall quality and aesthetic of the proposed development generally. The site layout, height and massing is also cognisant of local preserved views, the High Amenity area to the south of the site as well the buffer zone to the Howth Head SAAO. The height of the proposals are of a considered scale that will not impact on the sensitive historical buildings within the Howth Castle and Demesne ACA, (St. Marys Church, Howth Castle) and will generally not break the canopy of existing trees within the wider demesne landscape setting.

Table 7 Incorporated Design Mitigation

	Architectural Materials and Treatments en Façade The proposed development has incorporated a number of design interventions that respond to the coastal and historic setting, that combined, assist in reducing the apparent massing of the built environment. These architectural interventions include setbacks and step downs of the blocks, with recessed balconies, recessed punctuations to the façade which assist in reducing the apparent length of the elevations. Earth and sand colour tones in the materially of the finishes soften the overall appearance of the built form, and include warm and neutral brick, warm browns to the metal claddings to the top floor setbacks, brown/green metal railings to the balconies. These earth and sand tones finishes are reflective of the colours in the immediate historical landscape setting and also in the local coastal setting. Landscape Proposals High-quality public and communal open spaces will be created for the use and amenity of the users of the development and the wider community. The creation of a universally accessible green public pedestrian route through the development will provide for safe pedestrian circulation. Where feasible, existing trees and perimeter hedgerows will be maintained, with appropriate monitoring, maintenance and management, and this existing planting will be enhanced and strengthened by additional planting of native broadleaf species and dense woodland and understory planting, which is important for the protection of local foraging and commuting bat populations as well as existing green infrastructure. Connectivity is an important consideration within the overall design as well as the objective to create a sense of place by designing an attractive residential area set within and adjacent to a historical landscape setting. In conjunction with the architectural design above, the landscape proposals are a sensitive response to the visual and historic landscape setting. The landscape proposals are a response to utilising the new connectivity through the proposed pedestrian, cyclist and vehicular access to the site through the proposed openings in the historical Deer Park Wall into the site itself. The proposed development is highly permeable to residents with looping pathways linking the public open space, communal gardens, amenity and recreational spaces within the scheme and to the wooded amenity landscape of the Howth Golf Course lands which forms a backdrop to the proposed development. An area in the southwest of the site zoned for High Amenity will be re-wilded and a small allotment area set aside for residents' use. Bicycle parking is provided across the site and has have been carefully considered in terms of accessibility and security for bike users. Bin stores are centrally located and can be accessed from either side for greater accessibility. The landscape design has considered the historical landscape setting, existing and future green infrastructure, biodiversity and sustainable urban drainage systems and materials. The future viability and management of the existing tree and hedgerows of the site are considered vital for the retention of the historic landscape aesthetic and for the future benefit of residents of the scheme and the wider community.
Material Assets: Traffic & Transport (Ch. 6)	Reduced car parking provision (ca. 0.5 space per apartment) to manage car ownership, and associated traffic and environmental impact to promote sustainable mobility choices. Ample cycle parking provision (ca. 2.5 spaces per apartment, or ca. 3.1 spaces per apartment when including visitor spaces) to promote sustainable mobility choices. Resident cycle parking located in secure, weather protected, and easily accessible enclosures, to promote sustainable mobility choices. Cargo bike parking (18 no. spaces) to be provided to facilitate sustainable movement of larger packages or groceries by residents.

Table 7 Incorporated Design Mitigation	
	The proposed development's mobility features are compliant with the Design Manual for Urban Roads and Streets (DMURS), minimising risks associated with vehicle and people movements.
Material Assets: Built Services (Ch. 7)	The design has been prepared based on relevant codes of practice, design guidance and in consultation with relevant local and statutory authorities to ensure best practice design, considering the effect on local and wider network for water supply, foul and surface water drainage, gas supply, electrical network and the telecommunication network. The development will be constructed to the Part L Near Zero Energy Building (NZEB) standard which will result in an improved thermal performance along with the incorporation of renewable technology, accordingly, the demand on energy infrastructure will be reduced.
Material Assets: Waste (Ch. 8)	All apartment units will contain a 3-bin domestic waste segregation at source system, in compliance with which will comply with *"Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities"* (DHPLG, 2022). This will encourage waste segregation at source. Appropriately sized communal waste storage areas will be provided to accommodate segregated domestic waste, glass and WEEE generated by the fully occupied development. These areas will have provision for extra capacity to store additional waste for contingency purposes. This will allow for separate Organic, Recyclable, Mixed Waste, Glass and WEEE waste streams.
Land & Soils (Ch. 9)	The proposed development will be designed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) and will maintain run-off rates at the existing greenfield condition and improve storm water quality discharging to the public storm water system. The SuDS will be addressed by the provision of the following elements: Interception storage: Green-Blue roofs, permeable paving, bio-retention areas, bio-retention tree pits, and oil/petrol interceptors, Attenuation storage: It is proposed to provide an attenuation tank within the site. This will be designed for the 1 in 100 year storm + 30% climate change, and will form the last part of the SuDS management train. A Hydrobrake will be fitted downstream the tank in order to restrict the flow to the greenfield equivalent runoff for the catchment area. The SuDS measures proposed are linked in series, and this is commonly known as a SuDS Management Train, (SMT). The SMT ensures that rainwater falling on a site is captured, conveyed, stored, intercepted and removed of pollutants correctly and efficiently before it is discharged back into the surrounding water course or network.
Water & Hydrology (Ch. 10)	The proposed development will be designed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) and will maintain run-off rates at the existing greenfield condition and improve storm water quality discharging to the public storm water system. The SuDS will be addressed by the provision of the following elements: Interception storage: Green roofs, permeable paving, rain gardens and bioretention tree-pits, Attenuation storage: It is proposed to provide an attenuation tank within the site. This will be designed for all storms up to and including a 1 in 100 year storm + 30% climate change, and will form the last part of the SuDS management train. A Hydrobrake will be fitted downstream of the attenuation tank in order to restrict the flow to the greenfield equivalent runoff for the catchment area. These elements will intercept any potential leakage of fuel from car park areas. The main source of pollutant is potentially from surface water run-off from the basement car park & access roads. The SuDS measures proposed are linked in series, and this is commonly known as a SuDS Management Train, (SMT). The SMT ensures that rainwater falling on a site is captured, conveyed, stored, intercepted and removed of pollutants correctly and efficiently before it is discharged back into the surrounding water course or network

Table 7 Incorporated Design Mitigation	
Biodiversity (Ch. 11)	The incorporated or 'embedded' mitigation included in the Proposed Development from an ecology perspective includes the suite of SuDS measures, and the bat friendly public lighting plan.
Noise & Vibration (Ch. 12)	External noise can enter rooms within dwellings through windows, ventilators, walls, roof and doors. In most cases, however, windows provide the main path and therefore, mitigation by design has focused on this building element to ensure that their insulation is adequate. All where identified as necessary, apartments shall have external windows that have acoustically rated windows to prevent break-in of external noise. The acoustic performance will meet the minimum requirements which shall apply to the overall glazing system when installed on site. In the context of the acoustic performance specification the 'glazing system' is understood to include any and all of the component parts that form part of the glazing element of the façade, i.e., glass, frames, seals openable elements etc. All exterior wall and door frames should be sealed tight to the exterior wall construction.
Air Quality (Ch. 13)	No design mitigation proposed.
Climate (Ch. 14)	Nearly Zero Energy Building As per the Energy Analysis Statement, the development will be a Nearly Zero Energy Building (NZEB) in accordance with the Part L requirements. In relation to the apartment units, these will aim to achieve a Building Energy Ratio (BER) of A2. The units will have an energy performance coefficient (EPC) that complies with NZEB (maximum permitted under NZEB requirements is <0.3). The units will also have a carbon performance coefficient (CPC) and renewable energy ratio (RER) that comply with NZEB requirements (maximum permitted CPC under NZEB requirements is <0.35 and RER is 0.20). The following items will assist in achieving the NZEB compliance: Energy efficient LED lighting will be utilised. Exhaust air source heat pump technology will be installed. A total of 28 PV solar panels will be installed on Blocks A to D to supplement renewable energy contribution provided by a decentralised heating system. The Building Life Cycle Assessment Report also states that the following measures in addition to those outlined above are being considered for the proposed development, which will have the benefit of reducing energy related impacts to climate during operation. These measures include: Use of natural ventilation. Use of natural light to reduce the need for artificial lighting. Extensive green roof system, including insulation to apartment block roofs and intensive green roof system, including insulation to roof terraces and podium terraces over basement. Long-lasting and durable materials will be chosen, where feasible, to reduce ongoing maintenance and replacement requirements. Proximity to public transport to reduce private car journeys and promote more sustainable travel options. 13 Electric Vehicle (EV) charging points will be provided In line with both the building regulations (TGD Part L, since 2021) as well as the Dublin City Development Plan. The provision of 410 bicycle parking spaces, including 342 secure bicycle spaces and 168 visitor spaces. The above measures will assist in optimising the energy consumed by the development and will also have the benefit of reducing the impact to climate during the operational phase of the development. Impacts from Climate Change A number of measures have been incorporated into the design of the development in order to mitigate against the impacts of future climate change. For example:

Table 7 Incorporated Design Mitigation	
	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.
Cultural Heritage: Archaeology (Ch. 15)	No design mitigation proposed.
Cultural Heritage: Built Heritage (Ch 16)	The design of the site and the layout of the proposed buildings have been carefully considered with regard to the visual impact of the development on the sensitive setting of neighbouring protected structures, the Howth Castle ACA, and other significant views and vistas within the receiving environment. The massing strategy balances the requirement to create a strong architectural presence at the gateway to the village of Howth, with the sensitivities of the demesne landscape. The buildings are set as far from the site boundaries as possible while retaining the existing significant trees, supplemented with new planting, especially along the east boundary, and to the south of the proposed buildings, to add to the existing screening between the site and the castle entrance, gates and avenue. The forms are cranked and stepped in plan and section to respond to the existing topography, breaking up the blocks, allowing a through view on approach to the site, creating visual interest and providing relief, especially along Howth Road. Projecting balconies have been eliminated from the front of Blocks A and C and from the end elevations. The fifth storey is set back from the road, breaking up the mass and reducing the impact. Green roofs are proposed for both blocks where they will be viewed from the above and to the south, significantly from Muck Rock. All plant (other than solar panels) will be housed inside the blocks and will not feature on views of the roof. The design intention is for buildings of high-quality architectural design, coupled with precision detailing, using modern materials and a natural colour palette drawn out of the context. Elevations will be finished in selected brick, which is an attractive, hard-wearing and robust solution appropriate to the maritime context. Railings will be painted metal with high-performing metal windows. The proposed openings in the demesne wall are minimal, and required to allow for safe pedestrian, bicycle and vehicular access to the site. They will read as minimal, modern interventions into the historic fabric to distinguish between new and old.

Table 8 Demolition & Construction Mitigation	
Aspect	**Demolition & Construction Phase Mitigation**
Population & Human Health (Ch. 4)	A final **Construction and Environmental Management Plan (CEMP)**, and **Resource Waste Management Plan (RWMP)** will be agreed with Fingal County 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 CEMP and RWMP and shall be required to comply with all legal requirements and best practice guidance for construction sites. The CEMP 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. All construction personnel will attend induction and training classes as required to ensure that the CEMP is effectively implemented. The CEMP will comply with all appropriate legal and best practice guidance for construction sites.

Table 8 Demolition & Construction Mitigation	
	Project supervisors for the construction phase will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013 (as amended), and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phases.
Landscape & Visual (Ch. 5)	Height of temporary stockpiles to be restricted to a practicable minimum to avoid impact on local sensitive receptors. Hoarding will be erected around site boundaries to reduce visual impact of construction works. Plant will be held in designated compound on site. Protective fencing will be installed around the RPA's existing boundary trees. Appropriate site management measures and work practices will be implemented to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish. Appropriate site hoardings will be put in place around the perimeter of the site where required to minimise the landscape and visual impact. Mitigation measures for the protection of the historic Deer Park wall present to the north and east of the site as per Chapter 16 Cultural Heritage: Built Heritage.
Material Assets: Traffic & Transport (Ch. 6)	Road cleaning to be implemented on site during the earliest construction phase to mitigate against material such as dust, earth, debris etc. from entering the local road network, as required. Parking of all construction vehicles, including staff vehicles, to take place within the bounds of the subject site. Haul route outlined within Chapter 12 will be strictly adhered to by construction vehicles so as not to have an undue impact on the local road network.
Material Assets: Built Services (Ch. 7)	<u>Surface Water Drainage</u> The Contractor shall prepare and implement a Construction Phase Surface Water Management Plan that ensures avoidance and minimisation of effects. Surface Water storage in excavations shall be directed to on-site settlement ponds, where silt removal will be facilitated prior to discharge off site at a controlled and agreed rate in accordance with the greenfield runoff rates for the site. All oils, solvents and paints used during construction will be stored within temporary bunded areas or chemical storage containers, to reduce and minimise the risk on impacting the existing water environment from material spillages. <u>Wastewater Drainage</u> The construction phase discharge of Wastewater to the existing 400mm wastewater sewer to the north of the subject site shall comply with the conditions of a temporary connection from Uisce Éireann. During construction, all new sewers shall be pressure tested and CCTV surveyed in accordance with the Uisce Éireann Standards to identify potential defects and such defects, should they arise, shall be repaired prior to the connection. <u>Water Supply</u> During construction, the temporary connection off the existing 160mm dia. MOPVC shall comply with the conditions of a temporary connection from Uisce Éireann. The watermains shall be tested in accordance with the requirements of Uisce Éireann prior to connection. <u>Electricity</u> The ESB shall install the new incoming supply to the proposed development. The ESB shall liaise with residents and keep existing customers fully informed of any brief outages which may be required due to the diversion and undergrounding of the existing overhead 10kV/ 20kV line or connections to the proposed development.

Table 8 Demolition & Construction Mitigation	
	The Contractor shall ensure that construction works on site adhere to the ESB Networks / HSA *"Code of Practice for Avoiding Danger from Overhead Electricity Lines"*. Telecommunications The relevant utility provider shall install the new incoming supplies to the proposed development and shall liaise with existing customers to advise of possible outages in order to facilitate the connections. The works shall be carried out such that they minimise disruption to surrounding areas. Gas GNI shall liaise with residents and keep existing customers fully informed of any brief outages which may be required due to the diversion of the existing 90mm dia. 4 bar gas main which traverses the site. It is not proposed to provide gas as a utility within the proposed development.
Material Assets: **Waste** (Ch. 8)	Construction Waste Management A dedicated and secure compound containing bins, and/or skips, and storage areas, into which all waste materials generated by construction site activities, will be established from the outset of construction activities, within the active construction phase of the development site. Spill kits shall be located within the site compound with clearly labelled instructions on how they shall be used to clean up fuel/oil spills to minimise the potential for ground contamination. All vehicle and plant oils and liquid construction materials shall be stored in secure impermeable storage units. All diesel-powered generators shall be inspected on at least a weekly basis by a delegate of the project manager to ensure it is not leaking diesel or oils. All empty containers containing residual quantities of oils, greases and hydrocarbon-based liquids shall be stored in a dedicated, clearly labelled impermeable container. To ensure that the construction contractor correctly segregates waste materials, the site construction manager will be responsible for ensuring all staff are informed (by means of clear signage and verbal instruction) and made responsible for ensuring site housekeeping and the proper segregation of construction waste materials. The Resource and Waste Manager (RWM) will be responsible for ensuring that a written record of all quantities and natures of wastes exported off-site are maintained on-site in a Waste File at the Project office. The RWM will be responsible for ensuring that all contracted waste haulage drivers hold an appropriate Waste Collection Permit for the transport of waste loads, and that all waste materials are delivered to an appropriately licenced or permitted waste facility in compliance with the following relevant regulations: *Waste Management (Collection Permit) Regulations 2007 – 2023 (as amended)* *Waste Management (Facility Permit and Registration) Regulations 2007 to 2023 (as amended).* *Waste Management Acts 1996 - 2011.* Prior to the commencement of the Project, the Resource and Waste Manager (RWM) shall identify a permitted Waste Contractor(s) who shall be engaged to collect and dispose of all inert and hazardous wastes arising from the project works. The RWM shall maintain copies of all Waste Collection Permits and copies of the Waste Facility Permit or Waste Licence to which waste materials are exported to. The RWM shall ensure that all Permits/Licences are within date. All waste soils prior to being exported off-site, shall be classified as inert, non-hazardous or hazardous, in accordance with *"Waste Classification Guidance – List of Waste & Determining if Waste is Hazardous or Non-Hazardous"* (EPA, 2018) to ensure that the waste material is transferred by an appropriately permitted waste collection permit holder and brought to an appropriately permitted or licensed waste facility. Resource Management

Table 8 Demolition & Construction Mitigation	
	Materials shall be ordered on an "as needed" basis to prevent over supply and to prevent damage to bulk orders stored on-site. Materials shall be stored and handled in a manner that minimises the generation of damaged materials. Materials shall be ordered in appropriate sequence to minimise materials stored on site. All staff and subcontractors shall be advised through inductions and toolbox talks on how to dispose of their waste correctly on-site. Broken concrete blocks and excess aggregate materials shall be segregated and stored off-site for use as hard standing material on future projects. This will result in the following positive impacts: Reduction in the requirement for virgin aggregate materials from quarries. Reduction in energy required to extract, process and transport virgin aggregates. Reduced HGV movements associated with the delivery of imported aggregates to the site. Reduction in the amount of landfill space required to accept C&D waste. Excess wood will be segregated in separate skips and sent for recycling. Plastic arising from general waste or packaging will be segregated and stored in separate skips. Metals waste shall be stored in dedicated skips. Topsoil that is stripped shall be retained for landscaping purposes.
Land & Soils (Ch. 9)	A Construction Management Plan (CMP) is included with this application under separate cover. It will be adopted by the construction contractor prior to commencement of construction. The CMP will incorporate the mitigation measures outlined below as they relate to the construction phase. The CMP will include emergency response procedures in the event of a spill, leak, fire or other environmental incident related to construction. This is an active document which is continuously updated to manage risk during the construction programme. All relevant personnel working on the site will be trained in the implementation of the procedures. As a minimum, the manual will be formulated in consideration of the standard best international practice including but not limited to: CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors. Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005. BPGCS005, Oil Storage Guidelines. Eastern Regional Fisheries Board, (2006), Fisheries Protection Guidelines: Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites.. CIRIA 697, The SUDS Manual, 2007. UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004. <u>Excavations</u> Excavation will require soil excavation and infill. The re-use of topsoil for completion of the main site works and landscaping will be evaluated. If it is adequate, topsoil will be stored and protected in an appropriate manner on site for the duration of the construction works. Previous uses of the site and site testing has not indicated any evidence of soil contamination at the site. However, where any excavated material is found to be contaminated, an appropriate disposal method shall be selected depending on the type of contaminant found. Testing will be carried out in pre-construction works by the contractor to determine the soil classification; i.e. inert, non-hazardous or hazardous (WAC testing). Excess material arising from excavations shall be treated as a by-product in accordance with Article 27 of the Waste Directive Regulations (2011).

Table 8 Demolition & Construction Mitigation	
	During the construction phase, all excavations and exposed sub-soils in open cuts will be blinded and protected with clean broken stone as soon as possible after exposing the subsoil in order to prevent erosion. Silt and sediment barriers will be installed at the perimeter of earthworks construction areas to limit transport of erodible soils outside of the site. An appropriate dewatering system and groundwater management system specific to the site conditions will be designed and maintained. These will include measures to minimise any surface water inflow into the excavation, where possible, and the prolonged exposure of groundwater to the atmosphere will be avoided. The pumping of water will be carried out under the conditions of a Trade Effluent Discharge License issued to the construction contractor by Uisce Éireann. Qualitative and quantitative monitoring will be adopted to ensure that the water is of sufficient quality to discharge. The use of silt traps will be adopted if the monitoring indicates the requirement for same with no silt or contaminated water permitted to discharge to the receiving water environment. Any discharge of construction surface water or groundwater from excavations shall pass through appropriate filtration and sedimentation system, designed in accordance with *"Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors"* (CIRIA C532). <u>Accidental Spills and Leaks</u> To minimise any impact on the underlying subsurface strata from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas. Leakages of oil from oil stores will be prevented by storing these oils in bunded tanks which have a capacity of 110% of the total volume of the stored oil. In the case of drummed fuel or other chemical which may be used during construction containers will be stored in a dedicated internally bunded chemical storage cabinet and labelled clearly to allow appropriate remedial action in the event of a spillage Ancillary equipment such as hoses and pipes will be contained within the bunded storage container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal. Refuelling of construction machinery and vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated refuelling areas using a prescribed re-fuelling procedure. Plant nappies or absorbent mats to be place under refuelling point during all refuelling to absorb drips. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as *"Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors"* (CIRIA 532, 2001) will be complied with. Should there be an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility. <u>Concrete and Cement</u> 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. The pouring of concrete will take place within a designated area using a geosynthetic material to prevent concrete runoff into the soil/groundwater media. Pours will not take place during forecasted heavy rainfall. Washout of concrete transporting vehicles will not take place on site. Concrete trucks will be washed out off site at the source quarry. To reduce the volume of cementitious water, only

Table 8 Demolition & Construction Mitigation	
	concrete truck chutes will be washed down on site. The concrete trucks will wash down their chutes at a designated chute wash down area in the site compound. The location of the chute washdown area will be appropriately located. The system is sealed with no overflow discharge to the drainage system. In the event of a spillage on site, the dirty water drains in the immediate area will temporarily be blocked and the pH levels of the water in the associated settlement ponds will be monitored and if necessary will adjust the pH levels using CO2 entrainment. Any spillage will be cleared immediately and deposited in the Chute wash down area.
Water & Hydrology (Ch. 10)	A Construction Management Plan (CMP) is included under separate cover and will be adopted by the construction contractor prior to commencement of construction. The CMP incorporates the mitigation measures outlined below as they relate to the construction phase. The CMP will include emergency response procedures in the event of a spill, leak, fire or other environmental incident related to construction. This is an active document which is continuously updated to manage risk during the construction programme. All relevant personnel working on the site will be trained in the implementation of the procedures. As a minimum, the manual will be formulated in consideration of the standard best international practice including but not limited to: CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors. Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site Guide (C811), 2023. BPGCS005, Oil Storage Guidelines. Inland Fisheries Ireland (IFI) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters, 2016. CIRIA 697, The SUDS Manual, 2015. <u>Management of Sediment Loading and Water Quality</u> During the construction phase, specific measures to prevent the release of sediment over baseline conditions in the downstream receiving water environment. These measures include, but are not limited to, the use of silt fences, silt curtains, settlement lagoons and filter materials. These measures will be maintained by the contractor to the satisfaction of Inland Fisheries Ireland for the entire construction period. Provision of exclusion zones and barriers (e.g. silt fences) between earthworks, stockpiles and temporary surfaces to prevent sediment washing into the existing drainage systems and hence the downstream receiving water environment. Compounds and internal access road will be graded so that all runoff is directed to the dirty water drains. A low mound will be constructed between the compounds / road and the clean water drain to ensure that runoff from the compound / road cannot flow into the clean water system. A wheel wash will be provided for heavy vehicles exiting the site to ensure that roads outside of the site boundary are clean. These can take the form of dry or wet wheel wash facilities. In the case of a wet wheel wash it is recommended that a designated bunded and impermeable wheel wash area is provided and that the resultant waste water is diverted to a settlement pond for settling out of suspended solids. The area of exposed ground will be kept to a minimum by maintaining where possible existing vegetation that would otherwise be subject to erosion in the vicinity of the development. The clearing of topsoil will be delayed until just before construction begins rather than stripping the entire site months in advance. Temporary drainage measures such as the underground rainwater harvesting tank, oil bypass separator and storm water settlement tank will be installed within the compound. Piped and channel drainage systems incorporating roadside gullies will be installed to collect storm water from the finished compound areas and internal access road. Collected storm water runoff will pass through the oil bypass separator before discharging to the storm water settlement tank.

Table 8 Demolition & Construction Mitigation	
	Excavation and stockpiling activities will be minimised during wet weather periods. Stockpiles of excavated soil and/or subsoil will be graded so as to shed water. Stockpiles of soil/subsoil will be restricted to less than 3m in height. Interception and channelling of surface water runoff over exposed soil/subsoil surfaces to sumps, silt traps or settlement ponds, will occur prior to discharge to existing drains or outfalls. Interception and diversion of surface water runoff away from open excavations will occur. Repeated handling of soil will be avoided and ideally all soil stockpiles will remain undisturbed pending later re-use for landscaping. Any discharge of construction surface water or groundwater from excavations shall pass through appropriate filtration and sedimentation system, designed in accordance with *"Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors"* (CIRIA C532). Fuel and Chemical Handling To minimise any impact on the underlying subsurface strata from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas. Leakages of oil from oil stores will be prevented by storing these oils in bunded tanks which have a capacity of 110% of the total volume of the stored oil. In the case of drummed fuel or other chemical which may be used during construction containers will be stored in a dedicated internally bunded chemical storage cabinet and labelled clearly to allow appropriate remedial action in the event of a spillage. Ancillary equipment such as hoses and pipes will be contained within the bunded storage container. Drainage from the bunded area(s) shall be diverted for collection and safe disposal. Refuelling of construction machinery and vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in designated refuelling areas using a prescribed re-fuelling procedure. Plant nappies or absorbent mats to be place under refuelling point during all refuelling to absorb drips. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as *"Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors"* (CIRIA 532, 2001) will be complied with. Should there be an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility. Concrete and Cement 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. The pouring of concrete will take place within a designated area using a geosynthetic material to prevent concrete runoff into the soil/groundwater media. Pours will not take place during forecasted heavy rainfall. Washout of concrete transporting vehicles will not take place on site. Concrete trucks will be washed out off site at the source. To reduce the volume of cementitious water, only concrete truck chutes will be washed down on site. The concrete trucks will wash down their chutes at a designated chute wash down area in the site compound. The location of the chute washdown area will be appropriately located. In the event of a spillage on site, the dirty water drains in the immediate area will temporarily be blocked and the pH levels of the water in the associated settlement ponds will be monitored and if necessary will adjust the pH levels using CO_2 entrainment. Any spillage will be cleared immediately and deposited in the Chute wash down area.

Table 8 Demolition & Construction Mitigation	
Biodiversity (Ch. 11)	Pre-clearance Invasive Species Survey and Management A pre-clearance survey of the Site will be conducted by a suitable qualified Ecologist before any clearance of vegetation or soil strip takes place. This survey will identify any locations of invasive plant species e.g., butterfly-bush and Himalayan honey-suckle, which are recorded along the northern Site boundary wall. These plants will be removed as per the species-specific guidance for each species included in "*The Management of Invasive Alien Plant Species on National Roads – Technical Guidance - GE-ENV-01105*" (TII, 2020). Tree Protection Measures Prior to any construction works being undertaken, protective tree fencing in compliance with BS 5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'* will be erected to prevent damage to the canopy and root protection areas of existing trees to be retained at the Site, particularly within the western hedgerow and southern woodland belt. This fencing will be signed off by a qualified arborist prior to construction to ensure it has been properly erected. No ground clearance, earthworks, stock-piling or machinery movement will be undertaken within these areas. The project Arborist will be instructed prior to commencement on Site to ensure that appropriate tree protection measures are in place. These measures will entail robust fencing around the root protection zones of all trees and hedgerows being retained on Site. An adequate level of signage will be provided to highlight 'no work zones' and ensure that Site creep and damage to retained habitats does not occur. The western boundary hedgerow and southern boundary woodland must be sufficiently protected for the duration of the Construction Phase to maximise their ecological value in the final landscape plan. The project Arborist, the project Ecologist and the Site Manager will work together to ensure these sections of hedgerow/woodland are protected for the duration of the works. Construction-Phase Lighting Any night-time lighting required during the Construction Phase for security etc., will be directed away from the boundary vegetation at the Site (i.e., away from hedgerows and woodland areas), and will not be directed skyward. Lighting will be focused into the centre of the Site and only on equipment and machinery that needs to be illuminated. The Project Ecologist acting as Ecological Clerk of Works (ECoW) for the project will review the Construction Phase lighting with the Contractor regularly during their site visits and make recommendations as required to ensure the lighting is maintained as bat friendly for the duration of the works. Timing of Vegetation Clearance To ensure compliance with the Wildlife Act 1976 as amended, the removal of areas of vegetation will not take place within the nesting bird season (March 1st to August 31st inclusive) to ensure that no significant impacts (i.e., nest/egg destruction, harm to juvenile birds) occur as a result of the Proposed Development. Should nesting birds be found, then the area of habitat in question will be noted and suitably protected until the ecologist confirms the young have fledged. The preferred period for vegetation clearance is within the months of September and October. Chapter 11 Biodiversity provides further guidance for when vegetation clearance is permissible. Information sources include British Hedgehog Preservation Society's "*Hedgehogs and Development*", and the *Wildlife Act 1976 as amended.* Where this seasonal restriction cannot be observed, a check will be carried out immediately prior to any Site clearance by an appropriately qualified ecologist, and repeated as required to ensure compliance with legislative requirements.

Table 8 Demolition & Construction Mitigation	
	Vegetation will be removed in sections, working in a consistent direction, to prevent entrapment of protected fauna potentially present (e.g., hedgehog). Bat Precautions when Felling Trees All trees on Site set for felling have undergone a preliminary bat roost assessment (PBRA) and are confirmed to be of low-negligible bat roost suitability. However, harm to individual bats is possible should they be present during the felling process, and it is possible that trees can become damaged in the time between the original PBRA survey and the tree felling taking place, which may increase the bat roost suitability of a tree. A pre-felling check will be conducted by a suitably qualified Ecologist of all trees to be felled at the Site prior to felling taking place to ensure that no changes have occurred and that no individual bats will be harmed. In the unlikely event that a roosting bat is found, no felling of the tree in question will take place and a derogation licence will be obtained from the NPWS to proceed. The Area around the tree will be protected with an appropriate buffer to prevent disturbance of the bat. Construction Site Management for Mammals Prior to any clearance of scrub or cutting back of hedgerows/woodland taking place a pre-construction badger survey of the Site will be conducted by a suitably qualified Ecologist to confirm whether badger have occupied the Site between the time of the mammal survey that informed this Chapter and the commencement of works on Site. Following best practices, all construction-related rubbish on site (e.g., plastic sheeting, netting etc.) will be kept in a designated area and kept off ground level to prevent the entrapment and/or death of small mammals such as hedgehogs. Trenches/pits must be either covered at the end of each working day or else must include a means of escape (e.g., a plank or objects placed in the corner of an excavation) for any animal which falls in, as species such as badgers will continue to use established paths across a site even when construction work has started. Any temporarily exposed open pipe system will be capped in such a way as to prevent animals gaining access while contractors are off site.
Noise & Vibration (Ch. 12)	**Noise** The contractor will ensure that all best practice noise and vibration control methods will be used, as necessary in order to ensure impacts at off-site noise sensitive locations are minimised. The best practice measures set out in BS 5228 (2009 +A1 2014) Parts 1 and 2 includes guidance on several aspects of construction site mitigation measures, including, but not limited to: selection of quiet plant, noise control at source, screening, liaison with the public, and monitoring. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise and vibration monitoring, where required Selection of Quiet Plant This practice is recommended in relation to static plant such as compressors and generators. Units will be supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item will be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action will be to identify whether or not said item can be replaced with a quieter alternative. Noise Control at Source If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control "at source" (the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier). For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping

Table 8 Demolition & Construction Mitigation	
	compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact. Referring to the potential noise generating sources for the works under consideration, the following best practice migration measures should be considered: Site compounds will be located in excess of 30m from noise sensitive receptors within the site constraints. The use lifting bulky items, dropping and loading of materials within these areas should be restricted to normal working hours. For mobile plant items such as dump trucks, excavators and loaders, the installation of an acoustic exhaust and or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB. Mobile plant should be switched off when not in use and not left idling. For concrete mixers, control measures should be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum. For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials. For compressors, generators and pumps, these can be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation. Demountable enclosures can also be used to screen operatives using hand tools and will be moved around site as necessary. All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures. Screening Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Construction site hoarding will be constructed around the site boundaries as standard. The hoarding will be constructed of a material with a mass per unit of surface area greater than 7 kg/m2 to provide adequate sound attenuation. In addition, careful planning of the site layout will also be considered. The placement of site buildings such as offices and stores will be used, where feasible, to provide noise screening when placed between the source and the receiver. With respect pipe installation works, Annex B of BS 5228-1:2009+A1:2014 provide typical details for temporary and mobile acoustic screens, sheds and enclosures that can be constructed on site from standard materials. Liaison with the Public A designated environmental liaison officer will be appointed to site during construction works. Any noise complaints should be logged and followed up in a prompt fashion by the liaison officer. Where a particularly noisy construction activity is planned or other works with the potential to generate high levels of noise, or where noisy works are expected to operate outside of normal working hours etc., the liaison officer will inform the nearest noise sensitive locations of the time and expected duration of the noisy works. Project Programme The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. During periods when high noise generating works such as demolition are in progress at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time. **Vibration**

Table 8 Demolition & Construction Mitigation	
	Review of the study area identifies vulnerable and protected structures in the vicinity such as Howth Castle and Howth Castle Gates. The vibration from construction activities will be limited, with detailed values set out in **Chapter 12: Noise and Vibration**. Magnitudes of vibration slightly greater than these are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Limit values have been provided for soundly constructed residential and commercial properties along with protected and vulnerable structures, and will be adhered to as follows: Limits have been recommended above for protected structures. Where vibration-heavy works are proposed near protected structures the relevant engineer or conservation expert should be consulted in advance of works adjacent.
Air Quality (Ch. 13)	The following dust mitigation measures shall be implemented during the construction phase of the proposed development. These measures are appropriate for sites with a medium risk of dust impacts and aim to ensure that no significant nuisance occurs at nearby sensitive receptors. The mitigation measures draw on best practice guidance from Ireland (DCC, 2018), 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 overall Construction Environmental Management Plan (CEMP) prepared for the site. <u>Communications</u> 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. <u>Site Management</u> During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions. Dry and windy conditions are favourable to dust suspension therefore mitigations must be implemented if undertaking dust generating activities during these weather conditions. A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out. <u>Preparing and Maintaining the Site</u> Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. Avoid site runoff of water or mud. Keep site fencing, barriers and scaffolding clean using wet methods. Remove materials that have 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. <u>Operating Vehicles / Machinery and Sustainable Travel</u> 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).

Table 8 Demolition & Construction 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) <u>Operations</u> 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. <u>Waste Management</u> Avoid bonfires and burning of waste materials. <u>Measures Specific to Earthworks</u> Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in small areas during work and not all at once. During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust. <u>Measures Specific to Construction</u> Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. <u>Measures Specific to Trackout</u> A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles. Avoid dry sweeping of large areas. Ensure vehicles entering and leaving sites are covered to prevent 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 log book. 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 permits.

Table 8 Demolition & Construction Mitigation	
	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.
Climate (Ch. 14)	Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate: Creating a demolition and construction program which allows for sufficient time to determine reuse and recycling opportunities for demolition wastes; Appointing a suitably competent demolition contractor who will undertake a pre-demolition audit detailing resource recovery best practice and identify materials/building components that can be reused/recycled. Materials will be reused on site where possible. 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. The project shall review and determine compliance with the requirements set out in the EU taxonomy in relation to circular economy. This is specific to reuse, recycling and material recovery of demolition and construction wastes. These measures are supported by Glenveagh Properties PLC's Net Zero Transition Plan 2023, published in March 2023, which identifies the sources of Glenveagh Properties PLC's emissions and proposes measures to reduce these. Specific measures are proposed to reduce GHG emissions during the construction phase: It is expected that all excavated material generated during the construction phase can be reused on site. This material re-use represents GHG savings of 67 tCO2e (if avoidance of worst-case landfill disposal is assumed); Other materials such as mixed construction and demolition waste, plastic, concrete, brick, tiles and ceramics and bituminous mixtures and will be diverted from waste processing by recycling or disposal in landfill, and will instead be reused on-site. This will reduce the associated CO2 by approximately 7 tonnes; Specific measures are proposed to reduce GHG emissions during the construction phase with the adoption of one of the two scenarios as described in Section and Section 14.9.1.1.2 which involve using recycled cement content in concrete products; and Use of timber as a lower carbon option for frames for the house units. 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 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.

Table 8 Demolition & Construction Mitigation	
	During construction, the Contractor will be required to mitigate against the effects of fog, lighting and hail through site risk assessments and method statements.
Cultural Heritage: Archaeology (Ch. 15)	Three openings are proposed for the boundary wall of the site. It is recommended that archaeological monitoring of these works take place by a suitable qualified archaeologist. All topsoil stripping carried out during the construction phase of the development should be archaeologically monitored by a suitable qualified archaeologist under licence to the NMS.
Cultural Heritage: Built Heritage (Ch 16)	Direct Impacts One feature of built heritage interest was identified, the demesne wall, which will be directly impacted during the construction phase of the proposed development. This wall is to be altered to facilitate new pedestrian and vehicular entrances. Mitigation has been incorporated into the design which represents a minimal intervention to achieve the necessary access to the proposed development and successfully connect the new community to Howth Village. The alterations require removal of sections of the existing masonry which will be recorded and carefully taken down for re-use elsewhere in the repair of the walls, or in the landscaping proposals. The proposed openings shall be detailed to a high standard using high-quality material and contemporary design, to announce and identify the new development. They will read as minimal, attractive, and modern interventions into the historic fabric to distinguish between new and old. Indirect Impacts Indirect physical impacts are also anticipated to the demesne wall, which will be vulnerable to accidental damage as a result of the scale of the proposed construction works in its vicinity. The proposed mitigation is record, protect and repair the historic fabric of the wall in adherence to best conservation practice; to the *"Architectural Heritage Protection Guidelines for Planning Authorities"*; and to the *"Advice Series"* issued by the Department's Built Heritage Advisory Unit. A methodology outlining the required protection, recording, and monitoring of the historic fabric during construction, and specifying the proposed alterations and repairs of the wall is provided in **Chapter 16: Cultural Heritage – Built Heritage**.

Table 9 Operational Phase Mitigation Measures	
Aspect	**Mitigation Measures**
Population & Human Health (Ch. 4)	No operational phase mitigation proposed
Landscape & Visual Impact (Ch. 5)	No operational phase mitigation proposed
Material Assets: Traffic & Transport (Ch. 6)	As detailed within the Mobility Management Plan (MMP), a Mobility Management Plan Coordinator (MMPC) is to be appointed following planning approval to manage and proactively coordinate all subsequent mobility management measures and undertake related data collection and reporting to measure their effectiveness. Residents to be informed about sustainable travel options available to them by means of new resident information packs, travel information on residents' noticeboard, and resident website (if applicable). TaxSaver and Cycle to Work schemes will be promoted among residents. Tours of cycling facilities available on site for new residents will be organised.

Table 9 Operational Phase Mitigation Measures	
	A cycle repair station including a pump will be installed in or at each resident cycle compound and in one location within the site adjacent to visitor cycle parking spaces. A resident and visitor travel survey will be undertaken within 3 months of first occupation of the site to enable updating and expanding the MMP. Resident and visitor travel surveys will be repeated every year, with the MMP provisions updated subsequently. The MMPC will review the actions carried out or due to be carried out every six months and document the actions and any feedback received in a written memo to the apartment scheme's management company.
Material Assets: Built Services (Ch. 7)	<u>Surface Water Drainage</u> Surface Water runoff from the proposed development will be managed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS), CIRIA SuDS and the requirements of the Fingal County Council Water Services Department. The Surface Water management proposals shall serve to reduce the overall impact of the proposed development on the existing environment. All SuDS features to be maintained. <u>Wastewater Drainage</u> Uisce Éireann shall implement an operational inspection and maintenance regime to ensure the system keeps operating within the design specifications. <u>Water Supply</u> The proposed Water Supply system shall be commissioned and subject to a monthly operational inspection and maintenance regime (as a minimum) to ensure the system keeps operating within the design specifications. <u>Electricity</u> The proposed electricity supply system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. <u>Telecommunications</u> The proposed telecommunications system shall be commissioned and subject to a regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications. <u>Gas</u> It is not proposed to provide gas as a utility within the proposed development. GNI shall commission the diverted gas main and be subject to regular operational inspection and maintenance regime, in accordance with the Utility providers procedures, to ensure the system keeps operating within the design specifications.
Material Assets: Waste (Ch. 8)	An Operational Waste Management Plan (OWMP) has been prepared by Byrne Environmental as a stand-alone report to accompany this application. The OWMP is defined by the following stages of waste management with regard to the Circular Economy and the Waste Hierarchy Stage 1 Occupier Source Segregation Stage 2 Occupier Deposit and Storage Stage 3 Bulk Storage and On-Site Management Stage 4 Off-Site Removal Stage 5 End Destination of wastes The Facilities Management Company shall maintain a weekly register detailing the quantities and breakdown of general mixed domestic waste, recyclable waste and organic waste wastes removed from the apartment aspect of the development. Supporting documentation shall be provided by the Waste Collection Contractor on a monthly basis.

Table 9 Operational Phase Mitigation Measures	
	The Facilities Management Company shall prepare an annual information report for all apartment residents detailing the quantities and waste types generated by the development for the previous year. The report shall include reminder information on the correct segregation at source procedures and the correct placement of wastes in the waste storage area. Other aspects of ongoing waste management continuous improvement shall also be stated
Land & Soils (Ch. 8)	No operational phase mitigation proposed
Water & Hydrology (Ch. 9)	No operational phase mitigation proposed
Biodiversity (Ch. 10)	Mammal Habitat Connectivity By fencing the boundaries of a Site, the land becomes fragmented and largely inaccessible to species such as hedgehog, which like to roam each night in search of food (garden pests e.g., slugs). This can easily be fixed by ensuring that the boundaries and barriers within and surrounding the site i.e., the external mesh fencing proposed for the Site, is permeable for hedgehogs. This will allow hedgehogs to move between the golf course lands and the Site's woodlands and hedgerows. This will be achieved by: Providing 13 x 13 cm holes at ground level at various locations along the external mesh fencing (Hedgehog holes). Leaving a sufficient gap beneath gates. Leaving brick spaces at the base of brick walls. Should badger activity be recorded at the Site during the pre-commencement check carried out by the Ecologist, provision will be made for larger mammal holes to allow badger to continue to utilise the Site. These measures will be agreed between the Ecologist and the Site Contractor. The inclusion of hedgehog highways will be included as part of the landscape design of the Site, specifically the external mesh fencing proposed. A variety of fence suppliers stock specific hedgehog-friendly fencing options, which can be easily incorporated at little or no additional cost. The 13 x 13cm holes can also be cut into mesh fencing on site quite easily. These simple measures will provide habitat connectivity at the Site for hedgehogs and reduce the impact of the land-use change on this species.
Noise & Vibration (Ch. 11)	No operational phase mitigation proposed
Air Quality (Ch. 12)	No operational phase mitigation proposed
Climate (Ch. 13)	No operational phase mitigation proposed
Archaeological & Cultural Heritage (Ch. 14)	No operational phase mitigation proposed