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Environmental Impact Assessment Report, Volume 1 – Non Technical Summary (NTS)

Shankill Property Investments Ltd

March 2025

SEA GARDENS PHASE 2

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1. Introduction & Methodology

Shankill Property Investments Limited (the applicant) is seeking permission from Wicklow County Council (WCC) for a proposed development on a site of approximately 11 hectares, located largely within the former Bray Golf Club lands off the Dublin Road (Regional Road R761), off Ravenswell Road, west of Harbour Road, and south of Northern Access Road, in Bray, County Wicklow. This proposed development pertains to Sea Gardens Phase 2, which is part of the Sea Gardens Masterplan (previously known as the Harbour Point Masterplan). The Masterplan has been developed by the applicant in collaboration with a multidisciplinary team.

In summary, the application for Sea Gardens Phase 2 proposes a mixed-use development comprising residential (c. 41,013 sq.m), retail/retail services (c. 8,155 sq.m), and commercial (c. 10,778 sq.m) spaces. The residential component will comprise 341 residential units (94 houses, 106 duplex units, and 141 apartments located in Blocks E and H). In addition, a hotel is proposed in Block I, a public house in Block E, a childcare facility and a medical centre in Block H, and retail/retail services units distributed in Blocks E, G, H and I. The proposed development will also provide private, communal, and public open spaces, along with car and bicycle parking for residents and visitors. An internal road network for vehicles, cyclists, and pedestrians will connect to the existing transport networks. All associated development infrastructure will also be provided, including public lighting, hard and soft landscaping, utilities, drainage, and clearance, demolition and removal of existing structures on site.

The proposed heights are as follows: houses will be 2-3 storeys, duplex units will be 2-3 storeys, Block E will be 3-15 storeys, Block G will be 1-2 storeys, Block H will be 3-4 storeys and Block I will be 3-7 storeys.

Sea Gardens Phase 2 will complement the permitted Sea Gardens Phase 1A (construction of which is nearing completion) and Phase 1B, as well as the future Phase 3, which will be the subject of a separate application. Phase 3, located adjacent to the River Dargle, is expected to accommodate approximately 362 residential units above a podium, including approximately 14,000 sq.m of retail and other uses. This area has been included in the current application for Sea Gardens Phase 2 to allow for temporary use during construction for storing materials and site facilities.

The proposed Sea Garden Phase 2 lands are the subject of this application to Wicklow County Council and are hereafter also referred to as 'the Site', or the 'proposed development'.

The Site location, and proposed layout plan are presented below in Figure 2-1 and Figure 2-2 respectively. A schedule of the planning and engineering drawings included in the planning application is included in Appendix 1.2 of Volume 3 of the EIAR.

This non-technical summary presents a general overview of the proposed mixed-use development and an assessment of all associated potential environmental impacts. Refer also to the main Environmental Impact Assessment Report (EIAR) submitted as part of this planning application. The EIAR is presented in three volumes as follows;

Volume 1 - Non-Technical Summary (NTS);

Volume 2 - EIAR; and

Volume 3 - EIAR Appendix 1 to Appendix 14.

The proposed development has been screened against the types of development, various processes and activities listed in Schedule 5 Part 1 of the Planning and Development Regulations as amended (2001-2025), including S.I. No. 296 of 2018 – European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 which came into operation on 1st September 2018. The proposed development is not a category of project which requires and EIAR in accordance with Schedule 5 Part 1.



The proposed development has been screened against the types of development, various processes and activities listed in Schedule 5 Part 2 of the Planning and Development Regulations. In accordance with Section 10(b)(i) of Schedule 5 Part 2, an Environmental Impact Assessment Report (EIAR) is required if the proposed development is for more than 500 dwelling units or has an area of more than 20 hectares.

In accordance with Section 13. Changes, extensions, development and testing, of Schedule 5 Part 2, an EIAR is required if 'Any change or extension of development already authorised, executed or in the process of being executed (not being a change or extension referred to in Part 1) which would:-

- i. result in the development being of a class listed in Part 1 or paragraphs 1 to 12 of Part 2 of this Schedule, and
- ii. result in an increase in size greater than –
 - 25 per cent, or
 - an amount equal to 50 per cent of the appropriate threshold, whichever is the greater.'

In accordance with Section 15 of Schedule 5 Part 2, an EIAR is required if: 'Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development, but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7'.

Although the Proposed Development is below the relevant threshold i.e. below the threshold of 500 dwelling units in Section 10(b)(i), Schedule 5 Part 2 of the Planning and Development Regulations, 2001 as amended, it is considered that an EIAR is required for the following reasons:

- In accordance with Section 13(i) the proposed development, in combination with Phases 1 and 3 of the development (detailed further above) would result in the development of a housing development comprising more than 500 dwellings units, and therefore a development of Class 10(b)(i);
- In accordance with Section 13(ii) the proposed development would result in an increase in the size of an existing development by more than 25%; and
- In accordance with Section 15, based on the nature and scale of the proposed development, the potential for significant environmental impacts cannot be ruled out at the EIA Screening stage.

As part of the EIAR process, an environmental scoping exercise was carried out. The purpose of the exercise was to define the exact scope of the EIAR. It was concluded that the proposed residential development is not expected to result in significant impacts in terms of radiation. Therefore, this topic was not considered further within this EIAR. The following environmental topics have been fully assessed within the EIAR document;

- Chapter 4 Population and Human Health;
- Chapter 5 Biodiversity;
- Chapter 6 Land, Soils & Geology;
- Chapter 7 Water;
- Chapter 8 Air Quality
- Chapter 9 Climate;
- Chapter 10 Noise & Vibration;
- Chapter 11 Landscape and Visual Impact Assessment;
- Chapter 12 Traffic Impact Assessment;
- Chapter 13 Material Assets (Waste and Utilities);
- Chapter 14 Cultural Heritage (Architectural and Archaeological Heritage); and,
- Chapter 15 Risk Management (Major Accidents & Disasters)



The EIAR has been prepared by competent experts. Consultation was undertaken with statutory organisations at various stages of the pre-planning process and subsequently informed the preparation of this EIAR document. All comments and feedback received from the environmental consultees are addressed in full within the EIAR.

Cumulative impacts for environmental factors have been addressed within the EIAR (refer to Chapter 16, Volume 2 – EIAR). Interactions between impacts on various environmental factors have also been addressed within the EIAR (refer to Chapter 17, Volume 2 – EIAR). All mitigation and monitoring commitments detailed within the EIAR have been included in a separate compendium ‘a schedule of environmental commitments’ presented within the EIAR (refer to Chapter 18, Volume 2 – EIAR). A summary of residual effects are presented within the EIAR (refer to Chapter 19, Volume 2 – EIAR).



2. Project Description

2.1 Nature and Extent of the proposed development

Sea Gardens Phase 2, which is the subject of this planning application, forms part of the Sea Gardens Masterplan (previously known as the Harbour Point Masterplan) located on the former Bray Golf Club Lands off Ravenswell Road and the Dublin Road, Bray, Country Wicklow (here after referred to as the 'proposed development' or 'the Site').

The Site is bound by the permitted Phase 1 Coastal Quarter SHD (Phase 1A: Reference ABP-311181-21 & Phase 1B: ABP-314686-22) part of which is currently under construction in the North, by the Irish Rail Dublin-Rosslare main rail line in the East, by the River Dargle in the South and by existing residential developments to the West.

Refer to Figure 2-1 (Drawing presented in planning application: BRA-HWS-02-ZZ-D-A-10100_P01).



The Site is within Wicklow County Council (WCC) bounds.

Most of the proposed development lands are located within a former golf course, Bray Golf Club, first established in the late nineteenth century and characterised by open ground covered by short grass with mature trees and scrub in places. The southern and eastern portions of the Site are located on low-lying level ground, while the ground rises slightly towards the north elsewhere. A temporary construction compound and car park occupy the centre of the Site while the northern portion of the Site contains some stockpiled soil. The western extent of the Site is located within the former garden of Ravenswell House as depicted on the historic OS maps. An existing road orientated north-south divides the eastern and western portion of the development Site. The southeast margin of the Site, adjacent to the River Dargle, is occupied by a car park and access road (now closed). The boundary to the river is defined by a modern concrete flood relief wall and drainage ditch.

There is significant existing foul drainage infrastructure present within Site. A foul rising main and a trunk foul sewer enter the Site at the northern boundary of the Phase 1 lands and turns east then south along the Site boundary where it finally crosses the River Dargle at the south of the Site. There are also two gravity foul sewers to the south of the Site. These sewers run from west to east across the Site where they outfall to the trunk sewers previously discussed.

There is an existing Uisce Éireann underground foul water storage tank close to the western boundary of the proposed development Site. The existing tank was constructed by Dun Laoghaire Rathdown County Council in 2007 – 2008 and is a critical piece of infrastructure associated with the Bray Pumping Station to the south of the River Dargle. As confirmed by Shankill Property Investments Ltd., this tank was installed under a 999-year subterranean lease allowing the surface area above to be incorporated into the future build out of the lands including capacity to accommodate substantial fill and an Uisce Éireann service vehicle driving above it.

The purpose of the existing Uisce Éireann underground foul water storage tank is to store foul and/or storm water during exceedance events at Bray Pumping Station. During storm events, the tank and its associated infrastructure are utilised to limit the expected incidence of discharge from the Bray Pumping Station storm overflow to the Irish Sea to 3no. times per bathing season and if practical via. the foul outfall to 7no. times per bathing season.

While the Site is private with no formal public access, it is currently used as a car park/site compound for the current construction works for the permitted Phase 1 development.

The proposed demolition works includes 1no. derelict cottage and associated outbuildings, and the removal of existing roads and hard standing surfaces / base slab associated with the now demolished golf clubhouse.

Sea Gardens Phase 2 proposes a mixed-use development comprising residential (c. 41,013 sq.m), retail/retail services (c. 8,155 sq.m), and commercial (c. 10,778 sq.m) spaces. The residential component will comprise 341 residential units (94 houses, 106 duplex units, and 141 apartments located in Blocks E and H). In addition, a 3-5 star hotel with 150 bedrooms is proposed in Block I, a public house in Block E, a childcare facility and a medical centre in Block H, and retail/retail services units distributed in Blocks E, G, H and I. The proposed development will also provide private, communal, and public open spaces, along with car and bicycle parking for residents and visitors. An internal road network for vehicles, cyclists, and pedestrians will connect to the existing transport networks. All associated development infrastructure will also be provided, including public lighting, hard and soft landscaping, utilities, drainage, and clearance, demolition and removal of existing structures on site. Building heights proposed are as follows: houses will be 2-3 storeys, duplex units will be 2-3 storeys, Block E will be 3-15 storeys, Block G will be 1-2 storeys, Block H will be 3-4 storeys and Block I will be 3-7 storeys.

The proposed development also includes the closure of vehicle access to the Ravenswell Road from the R761 and seeks to amend previously permitted development under Reg. Ref. WCC Ref. 2460455 to include the construction of a new vehicle access at Dublin Road/Upper Dargle Road Junction and modifications to the associated permitted landscaped area.



Sea Gardens Phase 2 will complement the permitted Sea Gardens Phase 1A (construction of which is nearing completion) and Phase 1B, as well as the future Phase 3, which will be the subject of a separate application. Phase 3, located adjacent to the River Dargle, is expected to accommodate approximately 362 residential units above a podium, including approximately 14,000 sq.m of retail and other uses. The building heights in Phase 3 will range from 6-9 storeys. This area has been included in the current application for Sea Gardens Phase 2 to allow for temporary use during construction for storing materials and Site facilities.

For Sea Gardens Phase 2, the proposed houses and duplexes range in height from 2 to 3 storeys (8.9m to 11.7m), with the proposed Block E ranging in height from 3 to 15 storeys (57.9m), Block G ranging from 1 to 2 storeys (11.5m), Block H ranging from 3 to 4 storeys (21.5m) and Block I ranging from 3-7 storeys (35.4m).

The application Site is 11 hectares (ha), of which ca. 10.9ha is being developed as the proposed residential development with the remaining 840m² being utilised to facilitate utility connections to the existing watermain network along Upper Dargle road (refer to the Engineering Planning Report (Doc. Ref: 0088726DG0005) for further details). A (NET) developable area of 5.6ha results from the deduction of the ca. 2.2ha open space from the gross site area and 3.1ha commercial plots and non-developable land; and residential densities of 66 units per hectare are achieved through the use of a variety of housing typologies including apartments, duplexes and housing dwellings as shown in Figure 2-2.

It is proposed that the following existing access roads will be used for the proposed development:

- Access road to the school;
- Pedestrian link at the River Walk along the River Dargle;
- Access via the Fran O'Toole Bridge; and
- Vehicle and cycle access via the Harbour Road through the underpass

Various types of finishes and facades are proposed for the buildings within the development site which are detailed in the accompanying Architectural Design Statement (BRA-HWS-02-ZZ-R-A-05002). A Building Life-cycle Report conducted by Aramark (2025) included in this planning application guided the material selection.

Following the completion of tree surveys there are 302no. trees within the Site, 45no. trees will be retained and proposed works will require the felling of 257no. trees. Such trees will be compensated for, by extensive planting of over 1000no. trees, over 170,000 no. shrubs, over 600m of hedgerows, woodland screening, rain gardens, bulb planting and wildflower areas throughout the proposed development Site. Strong links are established through the Central Park and on to Coastal Gardens biodiversity corridor along the eastern boundary of the Masterplan lands. Refer to the Landscape Design Strategy (BSLA, 2025) submitted to support this application.



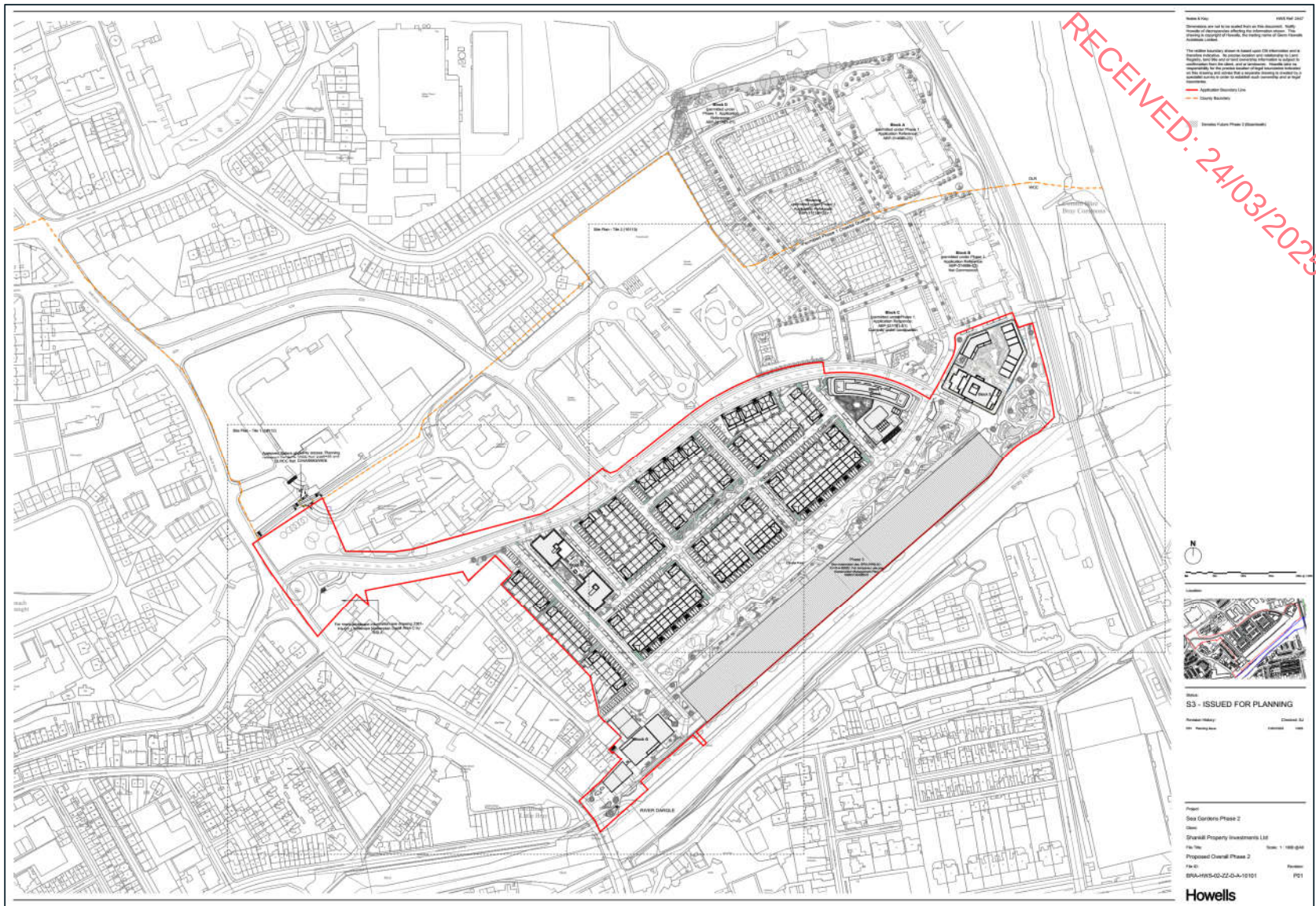


Figure 2-2 - Proposed Site Layout

The Wicklow Development Plan requires 15% of the Site area to be set aside for Public Open Space which is 16,478 sqm. Within the proposed design the Public Open Space allowance is 18,458 sqm.

The overall Landscape Masterplan features a number of key amenity areas each with its own character as summarised below and presented in Figure 2-3. All spaces have been considered and designed within the wider context of relevant policies and guidelines (Bray LDP and Wicklow Development Plan) aimed at preserving, enhancing and managing the county's natural and built landscapes. The landscape strategy promotes sustainable development, protecting biodiversity and enhancing the visual and environmental quality of the landscape.

1. Western Entrance: 2505.83 m²

Designed to link the proposed development to the wider public realm of Bray Main St, local shops and bus routes and therefore has important role in announcing the scheme. The plaza design aims to serve the wider community as well as residents of Sea Gardens - welcoming locals and visitors with a multi-use public space for daily activities such as coffee, seating areas and the occasional events space.

2. Central Park: 15952.29 m²

This significant open space links the east and western areas of the development and will provide for a large number of amenities to locals and visitors. The design proposal includes for the retention of some existing mature trees, proposed tree and shrub planting, open lawns and kick about areas, wildflower meadows, rain gardens intertwined with nature trails, stepping stones, climbing boulders, a large formal play area with climbing equipment, games tables and walking and cycling routes

3. Coastal Gardens: Not Included

Creates a strong link to the form a part of Phase 1a and Phase 1b Sea Gardens. The gardens provide an amenity space to the south east corner of the site, adjacent to the railway line and the River Dargle. The design proposals include proposed trees and shrub planting, screening to the rail line, connection to existing and proposed cycle routes, play area and seating areas. Coastal Gardens does not form part of the overall Public Open Space Calculations.

4. Residential Areas including Community Garden: COS: Duplexes Amenity: 387.83 m² COS: Block H 387.83 m² / COS: Community Garden CG: 790.50 m

Residential streets are defined by street trees, planting pockets and seating areas and quieter home-zones. Green links are formed to the Community Garden. This is a smaller scale amenity space, the design includes fruit bearing tree and shrub planting, herbaceous and herb beds, small play elements for younger children, seating and lawn area.

5. Southern Access Street: Not included

Connection from Southern Cross road, this green connection does not form part of the overall Public Open Space Calculations but provides additional amenity. The proposed design includes, a small dog park (increasing public surveillance), retention and management of existing trees, woodland whip planting increasing age diversity to existing stock.



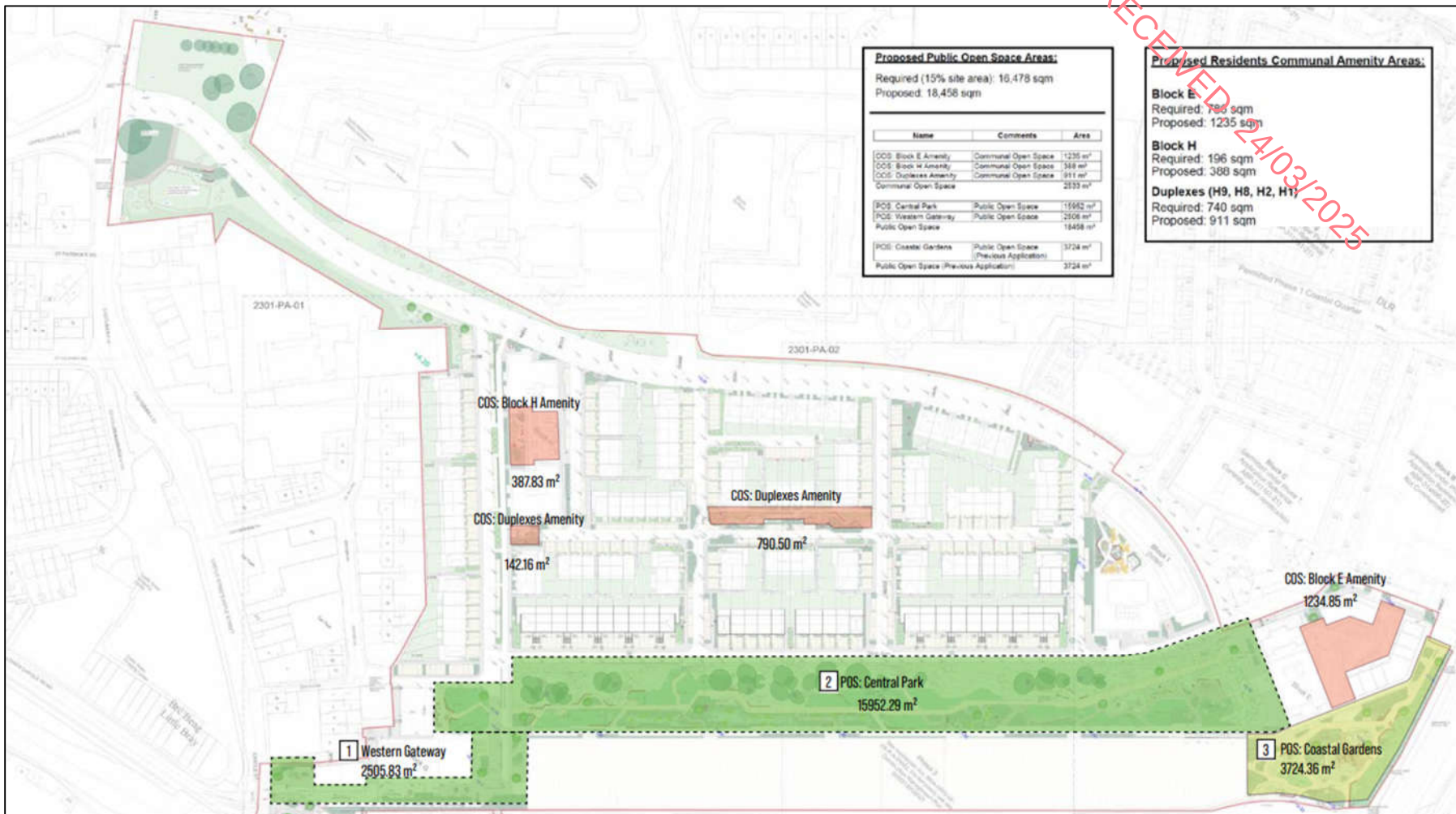


Figure 2-3 - Proposed Key Amenity Areas (Refer to the Landscape Design Strategy Report (BSLA) submitted as part of this planning application)

The proposed development is in line with the County Wicklow Play Policy as the open space provision provides opportunities for play areas within the residential, Central Park and Coastal Gardens of Sea Gardens Phase 2.



Figure 2-4 - Proposed Play Provision (Refer to the Landscape Design Strategy Report (BSLA) submitted as part of this planning application)

The landscape and engineering design of this development incorporates SuDS measures including modular permeable paving, swales, tree pits and underground storage capacity. Trees and other planting have been incorporated within the design so as to create an attractive streetscape.

A Daylight and Sunlight Assessment Report has been prepared by 3D Design Bureau (2025), and Wind Microclimate Modelling has been undertaken by B-Fluid Dynamic Consultants (2025), which are being submitted to support this planning application.

There are houses and duplex units within the proposed development as well as apartment blocks (Block E and H), mixed use areas (Block H) and a hotel (Block I). The houses, duplexes and apartment blocks have different dwelling typologies, as presented in Table 2-1. The housing mix and typologies are presented in Figure 2-6 below.

Table 2-1 - House, Duplex and Apartment Typologies

Houses, Duplexes and Apartments	Unit Type	Number of Units
Houses	RH1 3 Bed, 5 Person House	62
	RH2 4 Bed, 8 Person House	12
	RH3 4 Bed, 8 Person House	6
	RH4 4 Bed, 8 Person House	14
	94	
Duplexes	RD1 (Lower) 2 Bed, 4 Person Duplex	4
	RD1 (Upper) 3 Bed, 5 Person Duplex	4
	RD2 (Lower) 2 Bed, 4 Person Duplex	16
	RD2 (Upper) 3 Bed, 5 Person Duplex	16
	RD3 (Lower) 2 Bed, 4 Person Duplex	19
	RD3 (Upper) 3 Bed, 5 Person Duplex	19
	RD4a (Lower) 2 Bed, 4 Person Duplex	10
	RD4a (Upper) 3 Bed, 5 Person Duplex	10
	RD4b (Lower) 2 Bed, 4 Person Duplex	4
	RD4b (Upper) 3 Bed, 5 Person Duplex	4
	106	
Block Apartments	E 1 Bed, 2 Person Apartment	9
	2 Bed, 4 Person Apartment	83
	3 Bed, 5 Person Apartment	4
	3 Bed, 6 Person Apartment	5
	4 Bed, 8 Person Apartment	8
	109	
Block Apartments	H 1 Bed, 2 Person Apartment	18
	2 Bed, 4 Person Apartment	12
	3 Bed, 5 Person Apartment	2
	32	
Total	341	

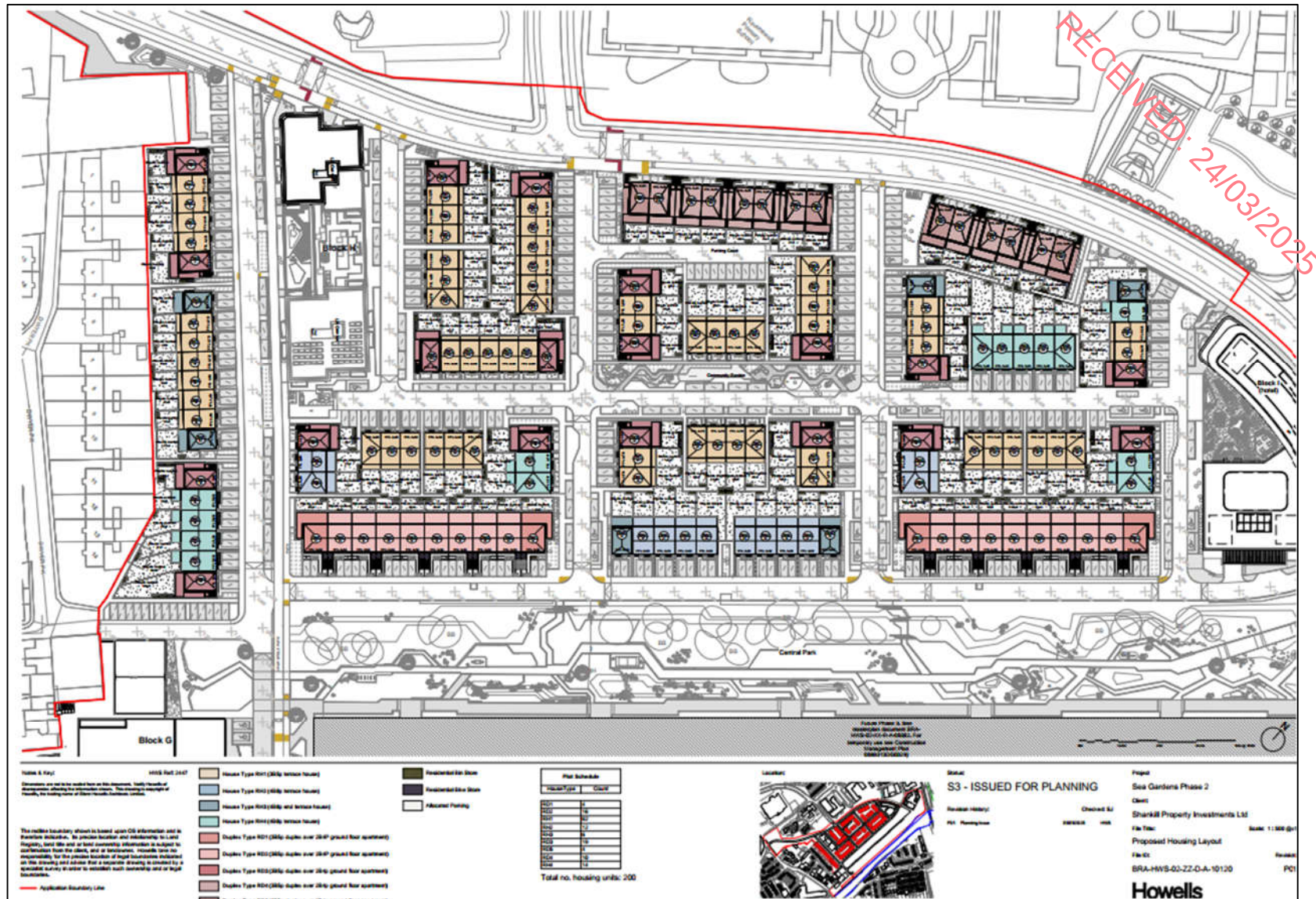


Figure 2-6 - Proposed Housing Layout



2.2 Preliminary Phasing

It is proposed that the construction of the proposed development will consist of two phases and is anticipated to run for four years between Quarter 3- 2025 and March 2029 as illustrated in Figure 2-7 and Figure 2-8:

- Phase A – Commence Q3-2025, Complete December 2027
- Phase B – Commence January 2026, Complete March 2029

It must be noted however that this phasing plan is preliminary and may be subject to revision at a later stage of the development.

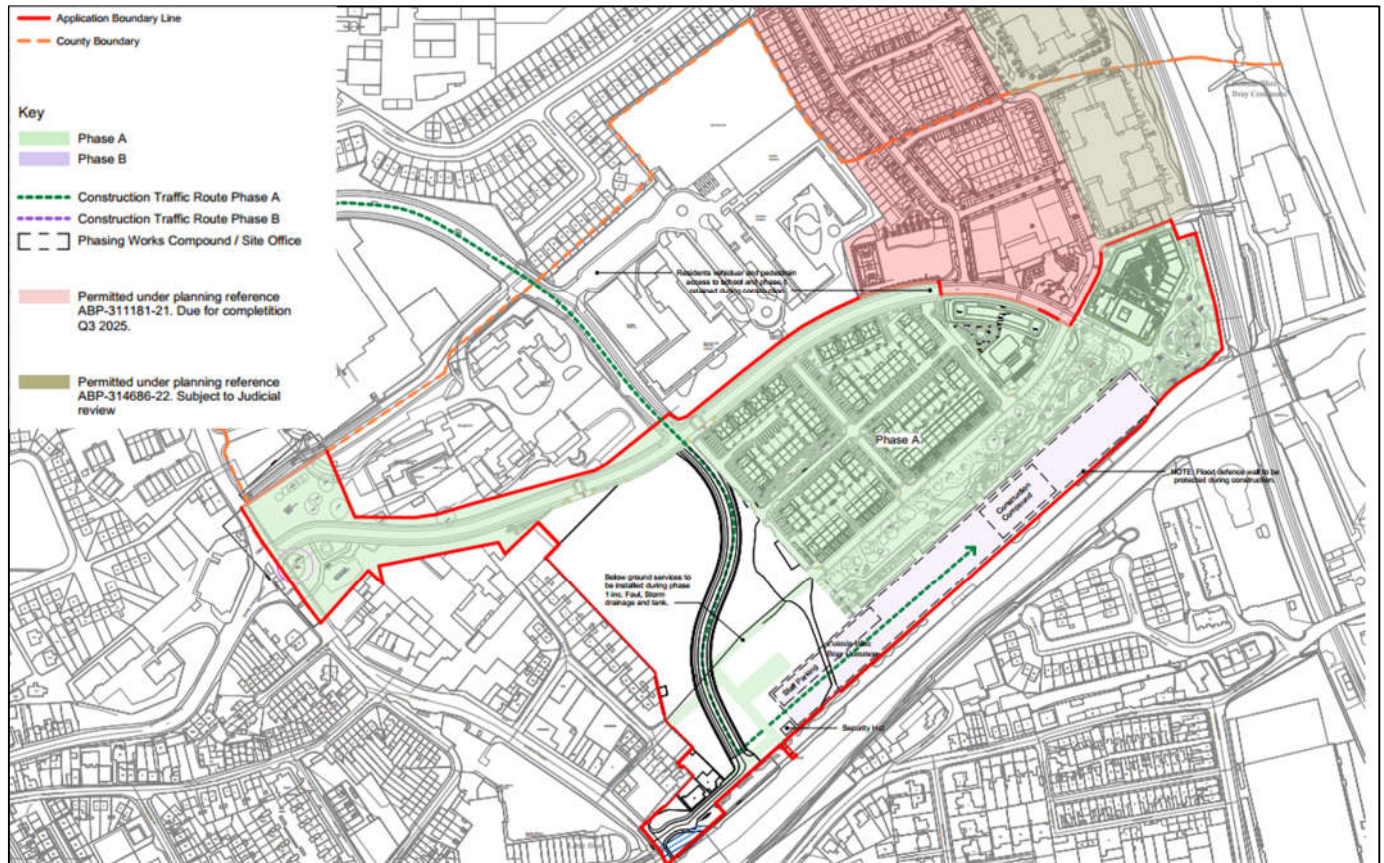


Figure 2-7 - Preliminary Construction Phasing - Phase A of the proposed development

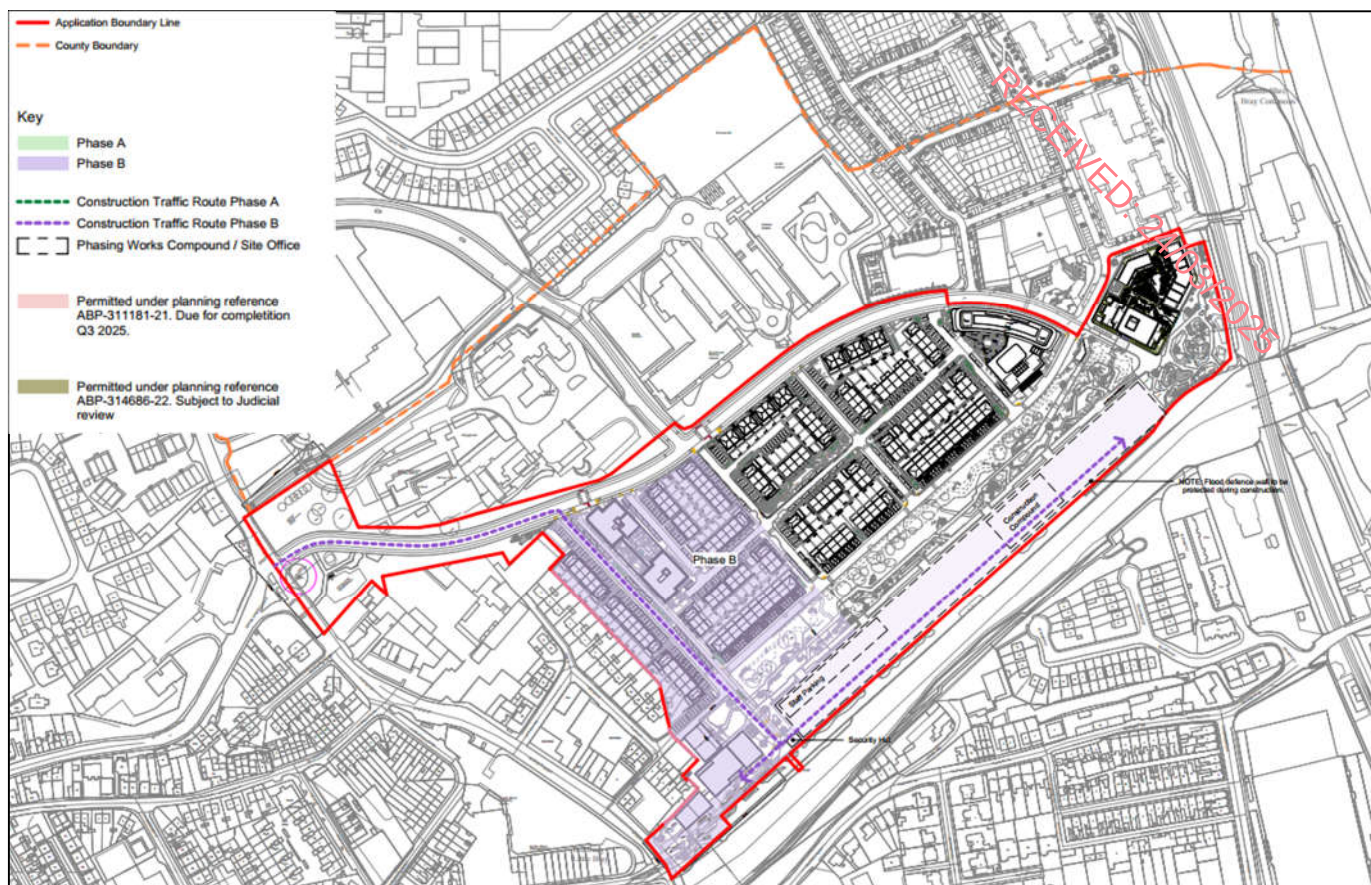


Figure 2-8 - Preliminary Construction Phasing - Phase B of the proposed development

2.3 Construction Aspects

Construction works will take place between 7am and 7pm Mondays to Fridays inclusive, and between 7am and 2pm on Saturdays, with no works taking place on Sundays or Public Holidays (unless agreed via. written approval from the planning authority in exceptional circumstances).

The general phasing of the construction stage will be as follows:-

- **Site Mobilisation:** Secure Site, establish Site access and Site compound (including parking, welfare facilities and canteen, Site offices, storage areas and temporary utilities / services), establish internal traffic routes and haul routes, establish all necessary environmental protection measures (tree, water course, well protection etc.), mobilise machinery, equipment and materials;
- **Site Clearance:** Remove existing topsoil and stockpile for reuse onsite or offsite removal (as required), survey and mark out various elements of the construction works as required;
- **Demolition:** Demolish existing house and remove existing hardstanding onsite and remove waste offsite.
- **Ground Improvements Works:** For the houses and apartments, install vertical drains into the ground below the proposed houses and rear gardens. Place reusable surcharge fill over the footprint of the proposed building structures. Monitor ground settlement through a series of survey points. Once settlement has stabilised, remove surcharge fill, and construct foundations.
- **For the roads,** install vertical drains into the ground below the proposed roads. Controlled Modulus Columns and Vibrostone Column to be installed to satisfy road and services design. Services to be installed within the vibrostone column area and then build up road to design levels.
- **Utilities diversions:** Existing rising main and gravity return drains that serve the storm holding tank will be diverted ca.30m southwards to avoid proposed structures;

- Develop Site Infrastructure: Install attenuation areas and drainage network, roads and services and key ancillary services;
- Construction: Construct the proposed development on a phased basis, as per the preliminary phasing plan presented in Figures 2-7 and 2-8. Phase A and Phase B will be delivered over a maximum period of ca. 48 months;
- Landscaping: Landscape each of the residential properties and establish public open space lands; and,
- Site Demobilisation: Removal of all machinery, equipment, materials and residual waste from Site, decommissioning of all temporary utilities/ services, removal of all temporary units from the Site compound, removal of Site fencing and signage, and final reinstatement.

Typical machinery used onsite during the construction phase will include mechanical excavators, dumper trucks, bull dozers, piling rigs¹, concrete delivery trucks, mobile cranes, and mobile elevating work platforms (MEWP).

2.3.1 Site Compound/ Site Office

As depicted in Figures 2-7 and 2-8 above, the Site compound for each of the 2no. phases, and the Site office will be located in various strategic locations across the Site.

2.3.2 Traffic Management

The proposed transport routes of all machinery entering and egressing the Site, for the full duration of the ca. 48 month phased construction period shall be through the proposed entrance off the existing access route west of the main Site. All construction activities will be managed and informed by a Construction Traffic Management Plan (CTMP) which will be implemented by the Contractor. The details of the CTMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-Site.

2.3.3 Environmental Management

The construction of the proposed development will be in accordance with the Construction Environmental Management Plan (CEMP) submitted as part of this planning application (which takes account of the Schedule of Environmental Commitments presented within this EIAR). This document will be further developed and added to within the project specific Detailed CEMP which will be prepared by the Contractor in advance of the construction phase and will be fully implemented onsite for the duration of the construction phase of the project. Environmental monitoring will be carried out during the construction phase as detailed in Chapter 18 - Schedule of Environmental Commitments, Volume 2 of this EIAR.

2.3.4 Waste Management

The construction of the proposed development will be in accordance with the Construction Resource and Waste Management Plan (RWMP) (AtkinsRéalis, 2025) submitted as part of this planning application prepared in accordance with the relevant following guidance '*Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects*' (EPA, 2022). The Construction RWMP provides a mechanism for monitoring and auditing waste management performance and compliance for the duration of the project. The document also provides a detailed overview of key waste management considerations for the project at this preliminary stage, while also allowing for further enhancement as the project progresses through to the detailed design and construction stages. This document will be further developed and added to within the project specific Detailed Resource and Waste Management Plan which will be prepared by the Contractor in advance of the construction phase and will be fully implemented onsite for the duration of the construction phase of the project.

¹ Based on the results of the geotechnical investigation it is likely that piling will be required.

2.4 Operational Aspects

2.4.1 Landscaping

A large number of existing (former golf course) trees will be removed from the Site to facilitate its redevelopment. This removal of woody vegetation from the lands, along with the reduction in permeable grassland area, would have biodiversity effects, specifically a reduction in habitat. In compensation, it is proposed to retain existing trees where possible (specifically in the Central Park) – while allowing for the lands' use in accordance with the site's Strategic Site designation – and to supplement the retained trees with additional planting of trees, shrubs and ground covers to create a densely vegetated park. The species have been selected by the project landscape architect in consultation with the ecologist, for maximum habitat/biodiversity value.

2.4.2 Volume and Profile of Usage

This development will be used on an all-year round basis with the main users being the residents of the residential units, followed by the users and staff of the proposed hotel, crèche, medical centre, retail units and mixed use commercial units, communal open space and playground and pedestrians and cyclists who may utilise the proposed pedestrian / cyclist paths on a regular basis.

2.4.3 Waste Management

The operation of the proposed development will be in accordance with the Operational Waste Management Plan (WMP) (AtkinsRéalis, 2025) submitted as part of this planning application.

2.4.4 Surface Water Management System

Surface water generated from the proposed residential development will be conveyed through a proposed surface water network including SuDS. The surface water from a portion of the proposed development in the northeast, adjacent to Phase 1 of the development (permitted and currently under construction) will be connected to the surface water drainage network of Phase 1 and the remaining surface water will be attenuated on site prior to final discharge at Qbar greenfield run-off rates. The restricted discharge from the proposed site will be conveyed via a new surface water sewer within the site before discharge to the receiving River Dargle via a pump.

The proposed storm drainage network for the development is as indicated on the planning drawings BRA-ATK-ZZ-02-DR-C-52201 & BRA-ATK-ZZ-02-DR-C-52202. The proposed measures included within the design are summarised as follows:

- Swales within Open Space / Park areas adjacent to roads;
- Permeable paving in light traffic areas (parking bays);
- Green roofs to suitable apartment blocks;
- Green courtyards to suitable apartment blocks;
- Green corridors / park areas;
- Sealed underground concrete attenuation tank;
- Filter drains in rear gardens; and,
- Tree pits.

2.4.5 Foul Effluent

The proposed development will be catered by a proposed 225mm diameter foul sewer with a single outfall to the existing foul line at the Dargle Stream which finally discharges to the Uisce Éireann Pumping Station. A portion of the



proposed development will use the existing 225mm foul line north of the development and rest of the development will use the proposed foul network to discharge into the existing foul line near the River Dargle.

Foul water from the proposed development will connect to the local foul water network as detailed above, with final treatment to be at Shanganagh Waste Water Treatment Plant (WwTP). The Shanganagh WwTP has recently been subject to an upgrade and as such has the capacity to accept the additional foul water the proposed housing development would generate. Uisce Éireann has confirmed that the plant has capacity to adequately process the additional input from the operational demand presented by the proposed Sea Gardens Phase 2 development; refer to the Engineering Planning Report (document reference; 0088726DG0005) submitted with this application for Confirmation of Feasibility (COF) letter issued by Uisce Éireann on the 31/01/2025.

Each property will have a separate wastewater connection in accordance with Uisce Éireann requirements. The proposed foul drainage layouts are indicated on drawings BRA-ATK-ZZ-02-DR-C-52205 & BRA-ATK-ZZ-02- DR-C-52206.

2.4.6 Potable Water

Potable water supply for the site has been designed in accordance with the Irish Water (Uisce Éireann) Code of Practice for Water Infrastructure 'IW-CDS-5020-03' and Standard Construction Details 'IW-CDS-5020-01'. The proposed water supply layout is indicated on drawing BRA-ATK-ZZ-02-DR-C-53201/53203. The drawing displays the proposed water supply for the Sea Gardens Phase 2 development (to which this application applies) supplied off the recently constructed watermain within the permitted Phase 1 development. The entire existing Phase 1 water supply network has been designed and constructed to include a capacity allowance for the entire proposed Sea Gardens Phase 2 development. Each property will have its own separate supply off the proposed watermain along with a boundary box in accordance with Uisce Éireann standard construction details. For the proposed apartment blocks and commercial building, a manifold chamber will be used in accordance with IW- CDS-5020-03 section 3.14. In line Fire Hydrants will be located on the watermains in accordance with Uisce Éireann standard construction details and "2006 Building Regulations" (Part B Fire Safety), the system has been designed so that no Fire Hydrant is greater than 46m from any building. Requirements for internal dry risers or sprinkler systems will be carried out by the Fire Engineer and Mechanical engineer as set out in the Fire Cert Application.

Uisce Éireann has confirmed that water connection is feasible without infrastructure upgrade by Uisce Éireann and that an additional connection point will need to be looked at during application stage. Refer to the Engineering Planning Report (document reference; 0088726DG0005) submitted with this application for Confirmation of Feasibility (COF) letter issued by Uisce Éireann on the 31/01/2025.



3. Alternatives

3.1 Consideration of Reasonable Alternatives

3.1.1 Alternative Designs

The Sea Gardens Phase 2 area has consistently been a predominantly residential area in the various masterplans that have been prepared. A number of the key design iterations which were considered during the current design process, and how the overall design evolved taking account of site-specific design, engineering and environmental constraints, is summarised below.

3.1.1.1 Masterplan Development

The Masterplan has gone through numerous design iterations. The final masterplan (Masterplan 04, Figure 3-8, Volume 2 of this EIAR) prioritized attractive and well-connected routes for both pedestrians and cyclists. A network of green corridors, pedestrian lanes, and cycle paths were designed in to ensure easy and direct connections to key areas of the development, including residential spaces, public amenities, and transport options. The final Phase 2 design provides pedestrian connections from the Western Gateway via Fran O'Toole Bridge, from the Market Square through the underpass to the Harbour and a new connection to the Dublin Road via the new Southern Access Road.

The final overall Sea Gardens Masterplan prioritizes public transport connectivity, ensuring the development is easily accessible by bus and other forms of public transport. The plan carefully balances the density of land uses with the site's location and surrounding environment. It ensures that the development density aligns with the site's access to public transport, local services, and amenities. The Phase 2 final proposal provides a complementary and interconnected range of open spaces, green corridors, and landscaped areas that are carefully designed to create and conserve ecological links.

The layout of homes for Phase 2 Sea Gardens within the Masterplan has been re-organised to reduce the risk of flooding.

The future Luas extension, as set out in the Greater Dublin Area Transport Strategy, is anticipated to run through the future development and terminate at the Bray Dart Station via a proposed Transport Bridge. Although this extension is not anticipated to be developed until 2040, the final iteration Masterplan for the development lands takes cognisance of the provision of the Luas extension and its interface with the development.

3.1.1.2 Block Design Alternatives and Design Considerations

The proposed Sea Gardens development site is located adjacent to Bray Harbour which is an important site for waterbirds³. A Swan Sanctuary is located ca. 100m from the proposed development site. BirdWatch Ireland has stated Bray Harbour is of "international and national importance" for Mute Swans, with swans occurring in Bray Harbour populations in numbers of international and national importance⁴.

The development of Sea Gardens Phase 2 has been cognisant of bird collision risk and the new proposed blocks have been designed so as to minimise the factors influencing bird collision risk.

³ https://birdwatchireland.ie/app/uploads/2023/08/iwebs_trends_OT907_Bray_Harbour.html

⁴ <https://www.irishtimes.com/news/environment/warning-issued-over-risk-of-swan-deaths-at-new-bray-bridge-1.4668724>

3.1.1.3 Pedestrian Bridge to Harbour

A pedestrian bridge linking the river walkway to the harbour area under the railway bridge was initially considered. The purpose of the proposed pedestrian bridge over the River Dargle was to provide for additional connectivity to and from the proposed development and to reduce the reliance on the underpass for pedestrians. An early sketch showing the bridge location is presented in Figure 3-12, Volume 2 of this EIAR. This option was not further considered as part of the final design layout. It was not considered to be an optimal design from an engineering and environmental perspective, specifically with respect to flood levels and extents, climate change, sustainability and biodiversity considerations.

3.1.1.4 Southern Access Road and Road for Sisters Of Charity (RSOC)

A two way carriageway and single lane entry options linking the Southern Access Road to the Road for Sisters Of Charity (RSOC) were considered. The proposed Southern Access Road is located as further north as possible to optimise the developable area. This is favourable to the development to better accommodate Block H which includes the creche. The design team were able to maintain the link between the new Southern Access Road and the existing junction. The level of the road was designed taking into consideration the surplus fill on site available to re-use and to avoid the need for retaining walls.

3.1.2 Alternative Construction Processes

A number of options were considered for the proposed ground improvement works required due to the highly compressible material (very soft to soft cohesive material consisting of interbedded peat, clay and organic silt) encountered throughout the site as confirmed during site investigation. In response to this finding, the following ground improvement techniques to facilitate the development were considered:

- Do Nothing - Option 1
- Surcharge - Option 2
- Vertical drains – Option 3
- Controlled Modulus Columns (CMC) – Option 4
- Mass Soil Mixing – Option 5
- Surcharge with Mass Soil Mixing – Option 6

Taking account of the existing ground conditions and the nature of the proposed development, the selected proposed ground improvement techniques include a combination of Option 2, 3 and 4.

4. Population and Human Health

The impact of the proposed development on the broader human environment has been assessed for both the construction and operational phases. The proposed development will not have a significant adverse effect on any of the adjoining land uses or properties. Commercial / retail activities in the vicinity of the development, specifically the town of Bray will not be impacted by traffic associated with the proposed development. The development will not impact adversely on existing recreational and educational activities in the immediate vicinity of the existing site; access to Ravenswell Primary School and Coláiste Ráithín will not be impacted by the proposed development.

Taking account of the nature and extent of the Proposed Development, detailed impact assessments which have been completed in respect of land soils and geology, water, air quality and climate, noise and vibration and traffic (presented in Chapter 5 to Chapter 15, Volume 2 of this EIAR), analysis of childcare and school provision and proposed mitigation measures, no residual adverse impacts to population or human health are anticipated as a result of the Proposed Development. All identified potential key risks associated with unplanned events occurring have been evaluated, and do not pose an unacceptable risk to human health.

The overall impact on population and human health will be positive (ranging from slight to moderate) and permanent, as the Proposed Development will provide employment and will also benefit the local economy through spin-off activities and will provide high-quality housing at a sustainable level to the local community. The provision of onsite facilities, including pedestrian and cyclist facilities, high-quality amenity open space, medical centre and childcare via a childcare facility, will also result in a positive contribution to the mental health and wellbeing of the residents and local amenity users.

In relation to Population and Human Health, the proposed residential development will not result in any direct or indirect significant adverse impacts, during the construction or operational phases.

5. Biodiversity

5.1 Introduction

The biodiversity chapter identifies, quantifies and evaluates potential effects of the proposed development on protected sites, habitats, species and ecosystems. It considers impacts to ecological receptors and proposes mitigation and enhancement measures to offset or reduce the identified impacts. A Natura Impact Statement has also been prepared for the proposed development and accompanies this application.

5.2 Methodology

A desk study was carried out to collate the available existing ecological information on the development Site. Field surveys included consideration of semi-natural habitats, terrestrial mammals, birds and bats. Lands located within the proposed Site boundary and immediately adjacent to the proposed Site were surveyed.

5.3 Survey Results

There are no habitats within the development Site of greater than local value. No ecological features of regional, national or European importance will be impacted by the proposed development. This Site comprises semi-natural habitats including; Scattered Trees and Parkland (WD5); Treeline (WL2), Scrub (WS1), Dry Meadow and Grassy Verges (GS2) and predominantly Amenity Grassland (GA2). There are no watercourses or surface water features within the development Site, however, the site borders the River Dargle at the southern extents of the Site. Part of the development Site has been previously cleared of vegetation during works associated with construction of the River Dargle flood defences. Bat activity was low and activity was mainly concentrated along scattered trees within the Site. Overall, the proposed development Site is considered to be suitable for foraging and commuting bats due to the presence of connectivity to other suitable habitats in the wider landscape. A series of bat surveys did not identify any roosting bats within the development Site. The development Site is utilised by foraging badgers and foxes. Whilst no badger setts were found within the development Site, there is a known breeding badger sett located in lands to the north (outside) of the development site. The site is within the territorial range of the sett and evidence of badger activity was found around the development site extents. One singular invasive plant Japanese knotweed was recorded within the site extents.

5.4 Potential impacts

Potential impacts on the ecological receptors within the zone of influence of the proposed Sea Gardens Phase 2 development during the construction and operation phases have been assessed. Potential impact through the construction and operation of the development include; Physical Damage / Habitat Loss; Disturbance to fauna and Changes in Water Quality.

Due to the location, nature, extent and duration of the proposed works at the development Site and with the inclusion of mitigation measures, the development will not have an impact on any European site. Similarly, the proposed development will not have an affect any nationally designated conservation areas such as National Heritage Areas / proposed National Heritage Areas. The development will result in a permanent loss in habitats ranging in value from negligible ecological value (e.g. amenity grassland) to local importance (higher value) (e.g. Scattered Trees and Parkland). There are no habitats on Site of greater than local value. No ecological features of regional, national or European importance will be directly impacted by the proposed development. Semi natural habitat of similar ecological value will be replaced as part of the landscape strategy and thus the habitat loss impact will be temporary.



Habitat/species loss/damage via spread of invasive species can be avoided with the inclusion of biosecurity measures and the impact of invasive species of local biodiversity will be imperceptible.

Loss of trees and grassland during construction will impact on commuting and foraging bats and may reduce the available insect prey species and also reduce the feeding area available for bats in some locations. In the absence of mitigation, it is considered that the removal of foraging and commuting habitat would be a long-term significant negative impact at the local geographic scale. Temporary lighting required during the construction phase may cause disturbance to bats commuting through or feeding at the proposed Site. In the absence of mitigation, disturbance of bats due to construction phase lighting would have short-term significant adverse impact at the local geographic scale.

During the construction phase there will be a loss of grassland and trees which will lead to a reduction in foraging habitat for larger mammals. The construction phase may also temporarily disrupt foraging habits and commuting routes. In the absence of mitigation, it is considered that the removal of foraging and commuting habitat would be a long-term significant adverse impact on badgers at the local geographic scale. Otters are known to frequent the River Dargle adjacent to the development Site and drainage outfall works are proposed on the river bank and these works have the potential to adversely affect the water quality of the river, however, all construction activities will proceed in line with project specific surface water mitigation measures. Contamination of the River Dargle from construction related activities such as excavated materials, silt, sediment or other pollutants will be prevented by these mitigation measures. Therefore, potential adverse impacts to otters using the River Dargle are mitigated so as to be not significant. No significant impacts on any other large mammals are expected as a result of the proposed development.

There will be a net loss of semi-natural habitats within the proposed development area (grassland, trees, treeline) and the loss of trees in particular will have a localised effect on nesting and feeding resources for local passerine species. Waterbirds (bar occasional common gulls) were not recorded within the Site during 2020 surveys. There is no evidence of the project site being used by field feeding waterbird species. The site is considered not to be of prime value as a roosting or feeding area for waterbirds associated with the neighbouring coastal waters and no adverse impacts to waterbirds or wildfowl are anticipated. In the absence of mitigation, the loss of habitat for breeding birds within the development site is considered a permanent slight negative effect on passerine bird species at a local geographic scale.

As part of this assessment the potential pollution pathways were identified for the development including; surface-water run-off during construction; via groundwater during construction (hydrogeological pathway); environment via surface-water run-off (operational phase) and via discharge of treated foul effluent (operational phase). The proposed project has the potential to impact on a local surface waterbody; River Dargle through the release sediment and contaminants from the construction and operational phases. Given the lack of waterbodies onsite and provision of Sustainable Drainage Systems as well as measures incorporated into the projects Construction Environmental Management Plan and design elements (operational foul to be treated appropriately) the River Dargle will not experience a reduction in water quality as a result of proposed development.

5.5 Mitigation and enhancement measures

The incorporation of significant landscaped areas; Central Park, Western Gateway, Entrance Roadway and the Coastal Gardens including extensive tree planting, woodland screening planting, expansive areas of shrubs and wildflower planting is a significant part of the design which has been developed in order to minimise disturbance and loss of foraging and commuting habitat for local bat, badger and bird species. The incorporation of sensitive lighting into the lighting plan will reduce the impacts to commuting and foraging bats once the development is operational. The inclusion into the design of pollinator friendly species (wildflower areas, shrubs), numerous bird nesting boxes and insect boxes aims to enhance the development site in terms of wildlife habitat and refuge.

Removal of vegetation such as grassland and parkland trees will be carried out outside the breeding bird season from 1st March to 31st August inclusive. Biosecurity measures will be in place to remove the singular knotweed plant and reduce the likelihood of spread or introduction of invasive plant species.



The inclusion of SuDS measures will reduce surface water run-off to greenfield rates. Although the risk of any significant impact on water quality of the River Dargle is considered to be extremely low given the lack of running water features on the site, best practice will be implemented at all times in relation to all construction activities to avoid any accidental pollution events occurring on site or polluting the ground water table.

5.6 Residual impacts

The ecological assessment has demonstrated that through iterative project design and assessment, and the identification of appropriate ecological mitigation measures, the residual ecological impacts of the development proposals are not expected to be significant and are expected to be localised to the Site and immediate environs. Local populations of bats, badgers and birds may suffer some disruption and habitat loss in the short term but, as the greater part of the Site is of low ecological value, habitat losses to development are not significant. Some minor beneficial effects are expected and some opportunities for enhancement measures are presented.

6. Land, Soils and Geology

6.1 Receiving Environment

This chapter addresses the receiving land, soils and geology environment within and in the vicinity of the Site in Bray, Co. Wicklow, and potential associated impacts arising from the proposed Phase 2 development. Historic land- use at the site was greenfield before being developed as the former Bray Golf Club (based on a review of available historic mapping and aerial photography). The Site is bounded by the permitted Phase 1 Coastal Quarter SHD (Phase 1A: Reference ABP-311181-21 & Phase 1B: ABP-314686-22) part of which is currently under construction in the North, by the Irish Rail Dublin-Rosslare main rail line in the East, by the River Dargle in the South and by existing residential developments to the West. The Site is mainly grassed, as a result of its former use as a golf course. The site slopes from the northwest to the River Dargle in the southeast. The levels range from 7.2m AOD on the northern boundary to 1.47m AOD on the southeast boundary.

The site is generally underlain by topsoil, glacial till, and clay/ silt/ sand/ gravel, with localised areas underlain by made ground. Bedrock is present at depths ranging from ca. 13.3m to ca. 23 meters below ground level (mbgl) at various locations across the Phase 1 and Phase 2 lands. Bedrock generally comprises mudstone / siltstone / sandstone bedrock of the Maulin Formation.

6.2 Construction Land, Soils & Geology Impacts

Stripping of topsoil and subsoil during the construction phase will be carried out in a controlled manner and stockpiles of materials will be protected to minimise the impact on land, soils and geology. Some C&D waste will be generated via. localised demolition works. Approximately 60% of the excavated material will be reused onsite with surplus material moved offsite in accordance with all relevant waste legislation. Bedrock will be encountered in localised areas during piling required as part of the proposed foundation works. Proposed ground improvement works could result in dust generation. There could be an impact on land, soils and geology from potential fuel leaks during refuelling or maintenance of vehicles. Temporary onsite groundwater and gas monitoring wells could provide a conduit for potential contamination of soils and bedrock.

However, the employment of good construction management practices, and mitigation and monitoring measures (as set out in Chapter 6, Volume 2 – EIAR) will serve to minimise any risk of pollution to geology and soils from construction activities.

6.3 Operational Land, Soils & Geology Impacts

Soils beneath Block H (in the western portion of the Site) could pose a potential ground gas issue due to elevated levels of carbon dioxide within a localised area. However, the employment of mitigation measures (as set out in Chapter 6, Volume 2 – EIAR) will ensure that potential impacts on infrastructure do not occur during the operational phase.

6.4 Conclusion

The proposed development will not have a significant residual adverse impact on land, soils and geology (and associated human health) given the mitigation measures proposed during the detailed design and demolition and construction phase of the development. In addition, no likely significant adverse effects with respect to land, soils and geology, have been identified when considered cumulatively with other projects and developments within the region.



7. Water

This section addresses hydrology (i.e. surface water) and hydrogeology (i.e. groundwater) in the vicinity of the proposed Phase 2 development, the potential impacts of the proposed development (including potential flood risk) and mitigation where required.

The site slopes from the northwest to the River Dargle in the southeast. The levels range from 7.2m AOD on the northern boundary to 1.47m AOD on the southeast boundary.

In terms of hydrology there are no reported surface water features within the proposed development.

There are two rivers located in the general vicinity of the proposed development. The Rathmicheal Stream is located immediately north of the proposed development and flows in an easterly direction prior to discharge to the Irish Sea. The River Dargle is located immediately south of the proposed development, and also flows in an easterly direction prior to discharge to the Irish Sea. Bray harbour is located ca. 50m south east of the Site and is an important amenity for the local population. The proposed development is located ca. 100m from the Irish Sea. Killiney Bay geological heritage area is located ca. 30m east of the Site. The nearest European site is Bray Head Special Area of Conservation (SAC) which is located along the coastline ca. 1.7km south of the project site. However as presented in Chapter 5 – Biodiversity, Volume 2 of this EIAR, there is no viable connectivity between the proposed development and any European site.

Regional surface water quality for the Rathmicheal Stream and River Dargle is reported by the EPA (2025) to have 'Good' water quality status for the 2016-2021 monitoring period. Regional coastal water quality for the Irish Sea east of the Site is reported by the EPA (2025) to have 'High' water quality status for the same period. Regionally the water quality status of Bray South Promenade during the 2024 summer bathing water season was reported to be 'excellent' (EPA, 2025). Surface water sampling data available along the River Dargle, confirms that baseline surface water quality in the River Dargle, upstream and downstream of the proposed development is generally good. The Site is hydraulically connected to the River Dargle and the Irish Sea.

Groundwater vulnerability beneath the general vicinity of the proposed development is predominantly 'Moderate' (M) in the northern portion of the Site, and 'Low' (L) in the southern portion of the Site. Measured groundwater levels during 6no. monitoring events (carried out between October to December 2020) ranged from 4.49 to 4.98 mbgl in the northwestern portion of the Site (ROH01), to 0.2 to 0.87 mbgl immediately south of the Site, adjacent to the River Dargle (ROH04) (IGSL, 2021). 2024 groundwater levels beneath the proposed Phase 2 development lands range from approximately 1.35mbgl (BH307) along the southern site boundary, to 2.45mbgl (BH308) in the northern portion of the Site.

Groundwater flow is expected to follow topography in general southerly, and south easterly directions, towards the River Dargle (in the south) and the Irish Sea (in the south east). Continuous groundwater level monitoring carried out between 6th October and 12th December 2020 confirmed a maximum tidal range in groundwater levels of ca. 0.6m in the vicinity of the southern portion of the Site (ROH04) (IGSL, 2021). 2024 perched water levels (WS06B, WS07B, and WS08B) beneath the proposed Phase 2 development lands ranged from 1.10 mbgl (0.67mOD) to 2.10 mbgl (1.81mOD).

It is likely that effective rainfall percolates vertically and flows within the saturated estuarine silts, sands and gravels beneath the general vicinity of the Site. Shallow groundwater flowing beneath the proposed development discharges to the River Dargle in the south, and to the Irish Sea, in the south east.

Regional baseline groundwater quality within the general vicinity of the Site, is of 'Good' status for the 2016 to 2021 period (EPA, 2025). Groundwater sampling was carried out at 1no. groundwater monitoring and 3no. perched water monitoring locations in 2024. No contaminants of potential concern with regards to environmental risk have been identified within the perched water or groundwater beneath the Site.



There are 7no. registered wells and springs within the general vicinity of the Site. However no groundwater abstraction wells or springs are known to be present within the Site boundary, and there are no group water scheme or public water supply abstraction points, or designated group water scheme or public water supply Source Protection Areas within the vicinity of the Site (GSI, 2025).

Given the nature and location of the proposed development, there will be no impact on regional or local groundwater resources or on surface water flows in the River Dargle. The focus of this assessment is therefore on potential groundwater, surface water and coastal water quality impacts that may be associated with the proposed development.

During the demolition and construction phase there is potential for degradation in groundwater, surface water and coastal water quality resulting from potential pollution caused by construction activities including cement handling. This is likely to result in temporary, moderate and slight adverse effects to groundwater, surface water and transitional water quality.

During the operational phase groundwater, surface water and coastal waters (Irish Sea) may be at risk of becoming impacted through occasional fuel / oil leaks; unplanned events (traffic collision, emergency onsite fuel / oil spill, fire water arising from a property fire); or routine site maintenance; and subsequent storm water discharge. This is likely to result in temporary slight adverse effects to groundwater and surface water quality.

Mitigation measures will be implemented during both the demolition and construction phase, and operational phase to avoid these potential effects. Site specific mitigation measures are detailed within Chapter 7, Volume 2 of this EIAR. A maintenance programme for the proposed surface water drainage system will be implemented.

Taking account of proposed mitigation measures, no significant adverse impacts are anticipated to the receiving water environment arising from the proposed development during the demolition and construction, or operational phases. No human health risks as a result of groundwater or surface water impacts are likely to occur.

A standalone Flood Risk Assessment (FRA) has been prepared and submitted with this planning application. The overall finding from the FRA, which includes detailed hydraulic modelling, is that identified potential flood risks are sufficiently addressed, and states the following;

- *'The Sea Gardens Phase 2 development site is protected from fluvial and tidal flooding by the existing River Dargle Flood Defences. Risk of pluvial flooding to the development is low, with some local ponding potentially occurring at the low-lying areas of the site, behind the River Dargle Flood Defences. This is alleviated through an existing drainage ditch and culvert to the river. The risk of groundwater flood risk is low.*
- *A hydrological analysis and hydraulic modelling were undertaken to analyse the risk of flooding to the site in the absence of defences and during an exceedance event. Three scenarios have been modelled: the fluvial 1% AEP event, tidal 0.5%AEP event and Hurricane Charlie extreme fluvial event. This were modelled for three conditions: undefended condition, defended baseline (no proposals) and defended with proposals.*
- *The dominant flood event at the site location is the tidal 0.5%AEP event. The highest flood level nearest to the site was found to be 3.2m AOD. This level is used to set the flood protection level for the site, with a 300mm allowance for freeboard. As such, the flood protection level is set at 3.5m AOD.*
- *In order to understand residual risks to the development and any impacts it might have to other sites, an overtopping exceedance scenario was run. The modelling demonstrates no rise in flood levels outside of the site and the maintenance of existing flow paths within the site to channel and remove water from Little Bray and Dwyer Park to the river.*
- *The flood risk management strategy of the site comprises of:*
 - *Locating residential (highly vulnerable) properties away from flood risk;*
 - *Raising residential properties and key access routes above the flood protection level of 3.5m AOD. Some localised roads including those to the north and south of Block G have levels below 3.5m AOD to allow for maintenance of the exceedance flow path from Dwyer Park through the linear park as shown in Figure 4-12' (of the 2025 FRA report presented in Appendix 7.1).*



- *'Where raising of levels is not possible, demountable barriers and a water exclusion strategy is proposed for retail units (less vulnerable development).*
- *The proposed development comprises of 'highly and less vulnerable development', and partially lies within Flood Zone A. Therefore, a Justification Test in accordance with the OPW Guidelines is required. Both the Development Plan and Development Management Justification Tests are passed.*
- *This FRA demonstrates that the risks relating to flooding can be managed and mitigated to acceptable levels and therefore comply with DoEHLG / OPW planning guidance and the Wicklow County Council Development Plan 2022-2028 objective CPO 14.09'. (ARUP, 2025).*

In summary, there are no anticipated significant residual adverse effects, or significant cumulative effects to groundwater, surface water or coastal waters, provided mitigation measures proposed during the demolition and construction, and operational phases are implemented. No residual flood risk has been identified.



8. Air Quality

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on air quality associated with the proposed development at Bray, Co. Wicklow.

In terms of the existing air quality environment, baseline monitoring data available from similar environments indicates that levels of nitrogen dioxide, particulate matter less than 10 microns and less than 2.5 microns are generally well below the National and European Union (EU) ambient air quality standards.

Impacts to air quality can occur during both the construction and operational phases of the proposed development. With regard to the construction stage the greatest potential for air quality impacts is from fugitive dust emissions impacting nearby sensitive receptors. In terms of the operational stage air quality impacts will predominantly occur as a result of the change in traffic flows on the local roads associated with the proposed development.

The UK Institute of Air Quality Management guidance was used to assign a high level of sensitivity to dust soiling impacts to the area in the immediate vicinity of the proposed development. The local area is considered of low sensitivity to human health impacts from dust emissions. The scale and nature of the construction works were reviewed, and it was determined that a high level of dust control was required for the construction phase of the proposed development. Once the dust mitigation measures outlined in Chapter 8, Volume 2 of this EIAR are implemented, dust emissions are predicted to be short-term, negative and imperceptible and will not cause a nuisance at nearby sensitive receptors. Construction phase traffic can also impact air quality, particularly due to the number of HGVs accessing the site. Construction phase traffic levels were reviewed and it was found that the change in traffic was not of the magnitude to require a detailed assessment, therefore the impact is considered short-term and neutral.

The TII guidance PE-ENV-01106 details a methodology for determining air quality impact significance criteria for TII road schemes and infrastructure projects however, this significance criteria can be applied to any development that causes a change in traffic. The potential impact of the proposed development on ambient air quality in the operational stage when compared to the EU limit values is considered long-term, localised, negative, slight and non-significant.

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

9. Climate

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on climate associated with the proposed development located in Bray, Co. Wicklow.

9.1 Baseline Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 60.6 Mt CO_{2e} in 2023. This is 2.27 Mt CO_{2e} higher than Ireland's annual target for emissions in 2023. EPA projections indicate that Ireland has used 63.9% of the 295 Mt CO_{2e} Carbon Budget for the five-year period 2021-2025. Further reduction measures are required in order to stay within the budget requirements.

9.2 Potential Impact of the Proposed Development

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 project's vulnerability to climate change and identifies adaptation measures to increase project resilience.

Greenhouse Gas Assessment

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

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough to meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "*PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document*". There will be a slight increase in the traffic on the local road network which will result in some minor increases in CO₂ emissions. These have been assessed as a small fraction of Ireland's transport sector 2030 emissions ceiling.

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

Climate Change Risk Assessment

A CCRA was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog; wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is not considered significant.



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

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

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

9.4 Cumulative Impact of the Proposed Development

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

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

10. Noise and Vibration

AWN Consulting Ltd has assessed the noise and vibration impacts associated with the construction and operational phases of the proposed residential development Bray, Co. Wicklow.

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

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are typically dominated by train movements. Distant road traffic was also audible.

The construction phase will involve site preparation, foundation construction, general construction works and landscaping, the assessment has determined that there is the potential for some temporary, moderate to significant noise impacts when works are undertaken within 30m of the receptor locations. However, these occurrences will only be temporary, and the vast majority of the construction works will take place at distances of greater than 45m from the receptors where no significant impacts are predicted and the construction criterion will be complied with.

Vibration impacts during the construction phase has the potential to be perceptible, however, it will be not significant and will be well controlled through the adherence to strict limit values.

During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area required to facilitate the development is predicted to be of imperceptible to slight impact and long-term along the existing road network with the exception of Junction 1, Arm C. Further detailed calculations have been undertaken for this junction and it has been determined that whilst the change in noise level will be high due to the low levels of traffic currently using the route, the overall predicted future noise level of 54 dB is considered typical of an urban environment area and the local noise environment, hence the overall impact is negative, not significant to slight and long term.

The operational noise from the development will be designed to ensure the prevailing background noise environment is not increased by a significant level such that potential adverse noise impacts are avoided. Once noise emissions from operational plant and activities are designed in accordance with BS 4142 Methods for Rating and Assessing Industrial and Commercial Sound, resultant residual noise impact from this source will be negative, not significant and permanent.

The potential for inward noise effect on the proposed development has been assessed. The assessment was carried out with reference to the guidance contained in Professional Practice Guidance on Planning & Noise (ProPG), BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings (BSI); and the local and national Noise Action Plans relevant to the area. The assessment has identified facades where upgraded acoustic glazing and ventilation will be required. With the implementation of these measures it is expected that the impact will be neutral, not significant and permanent. In terms of inward vibration, the assessment indicates that impacts will be not significant and long-term.



11. Landscape and Visual

11.1 Bray Urban Morphology and Townscape Character

Historically, the townscape of Bray was centred on the bridge over the Dargle River. The bridge was the centre-point of the urban area and the Dargle was the east-west spine of the town. The north-south spine was formed by Main Street south of the river, and Castle Street/Dublin Road (Little Bray) north of the river. There were clear variations in character between the northern and southern parts of the town. The Dargle River corridor was also of distinct character. It featured several larger buildings, including a brewery, mill, church, hotel, and at the strand the Martello tower.

Following the arrival of the railway line in 1854, Bray underwent a period of rapid growth and change. The town expanded towards the east and south, with several new character areas added to the townscape. These included the Promenade, the harbour area, Quinsborough Road and the eastern Victorian streets parallel to the seafront (Meath Road, Sidmonton Road). There was a shift in the town's orientation towards the seafront. The river became somewhat peripheral (although the bridge remained a pivotal point in the urban structure).

The 20th century saw the further suburban expansion and infill of the town, so that the area between the seafront to the east, Bray Head and the Little Sugarloaf to the south, and the Dargle Valley and M11 to the west became fully occupied by urban development.

Since the turn of the 21st century, there has been a focus on finding opportunities for the town's growth, with two main areas identified. One is the Fassaroe area to the west of the M11, where a large mixed use, mixed density district is planned, served by an extension of the Luas line. The other is the former Bray Golf Club (which includes the subject site) north of the Dargle River between the bridge and the railway and coastline to the east. This area is designated for the expansion of the mixed use town centre and a significant quantity of residential development. Its designation coincided with a shift in planning policy towards compact growth and increased density.

Planning permission has been granted for the first phases of development of this area (the 'Coastal Quarter'), comprising a retail unit, café, a gym and juice bar, a creche and 571 no. residential units – in the form of houses, duplexes and four apartment buildings up to nine storeys tall. Construction is underway on this site, adjacent to the subject site. This heralds a significant change in the townscape of Bray, the establishment of a contemporary, mixed use, mixed density (including high density) quarter in the town.

In addition to these built elements, Bray is characterised by distinctive natural features including (1) the coastline (with a particularly wide beach), (2) Bray Head and the Little Sugarloaf, (3) the Dargle River valley, which is deep and steep-sided in places, and (4) the domed/convex topography between the seafront and the Dargle River. These natural elements amplify the character of the townscape.

In summary, although of compact form (due to the natural topographical constraints to its expansion), Bray is a large town and has the character or 'feel' of a larger town - or even a small city. This is due to its diversity and strength of townscape character.

In 2023, Bray had a population of 33,500. It is the largest town in Co. Wicklow and the 9th largest urban settlement in Ireland. In the Eastern and Midland Regional Spatial and Economic Strategy 2019-2031 (RSES), Bray is identified as one of three Key Towns in the metropolitan area of Dublin. Key Towns are described as *"Large economically active service and/or county towns that provide employment for their surrounding areas and with high-quality transport links and the capacity to act as growth drivers to complement the Regional Growth Centres"*.

Bray's place at the apex of the urban hierarchy of Co. Wicklow, its status as a Key Town in the Dublin metropolitan area (its functions being to accommodate above average population growth and drive economic growth), and the particular importance of the former Bray Golf Club lands (including the subject site) in fulfilling the town's growth potential, are important to note as these have implications for the evolution of the townscape.

11.2 The Site

The site of the proposed development is located between the permitted Coastal Quarter (to the north) and the Dargle River, extending south west along the riverside towards Fran O'Toole Bridge, and connecting to the Dublin Road to the west. The majority of the site was previously part of Bray Golf Club. Remnants of the golf course remain in the form of tree lines. The landscape has been heavily disturbed by preparatory works for the area's redevelopment, including the construction of a road that follows a winding route north-south across the site. Inside the northern boundary is a road leading to the Coastal Quarter (currently under construction). A pan handle extends west from the main body of the site to the Dublin Road (opposite the junction of Upper Dargle Road). This is a corridor of unused land between the neighbouring properties, which provides the potential for a road connection to the site from the Dublin Road.

11.3 Potential Townscape Effects

11.3.1 Townscape Sensitivity

Due to the scale of the proposed development (in terms of spatial extent and building height), it has the potential to cause both local and town-wide townscape change. The sensitivity of the receiving environment should thus be considered at two levels - the macro level (i.e. the character of Bray as a whole), and the local level (the site environs).

At the macro level, the combination of the Bray's development history and its natural topographic features have resulted in a townscape of diverse character - and appreciable strength of character.

At the local level, the townscape is undergoing a plan-led transformation, with the former Bray Golf Club in the process of redevelopment to create a contemporary, mixed use, mixed density (including high density) urban quarter as an extension to the existing town centre. This change has been facilitated by local, county and regional level policy. The RSES states that the former Bray Golf Course and Harbour Lands are "*designated for high density new mixed-use development with improved town centre functions*". (This is reiterated in the Wicklow County Development Plan 2022-2028.) The process of development of the area has been informed by a masterplan. Various enabling infrastructure has been installed (roads and flood defences), and Phases 1a and 1b of the masterplan (the Coastal Quarter) have been permitted. The local townscape is thus in a state of disturbance and transition towards a high density quarter. This creates capacity – indeed a requirement - for further change to realise the masterplan and consolidate the emerging townscape character.

There are however sensitivities in the area, and site characteristics requiring a considered/sensitive response. These include:

- The residential neighbourhood of Dwyer Park to the west of the site.
- The Seapoint Court neighbourhood across the river to the south.
- The potential visibility of tall development on the site from historic parts of the town. These include the Fran O'Toole Bridge, Main Street, the Promenade, Quinsborough Road, and the Commons area (People's Park).

There are also characteristics of the site and the local environs that constitute opportunities and contribute to the area's capacity to accommodate change. These include:



- The site's central location within the urban area, and the related access to public transport and a range of urban amenities and services. This is recognised by the site's designation as a strategic development/regeneration site, for which the County Development Plan includes the following objective, RPO 4.39:
"To promote the consolidation of the town centre with a focus on placemaking and the regeneration of strategic sites to provide for enhanced town centre functions and public realm, in order to increase Bray's attractiveness as a place to live, work, visit and invest in."
- The site's frontage to the Dargle River to the south. The river is one of the main arranging elements of the town, and development along the river corridor was historically characterised by larger buildings such as a brewery, mill, church, hotel, etc. The river provides a spatial buffer – or 'breathing space' – for larger buildings.
- The site's frontage to the railway line, the harbour industrial area and the coastline to the east. The coastline provides space to accommodate building height, and the small industrial harbour zone directly to the east of the site, is a low sensitivity receptor.
- To the north of the site is the Coastal Quarter (under construction), and three schools and a health centre, forming an institutional character area. As receptors these are of lower sensitivity to townscape change.

In classifying the receiving environment's sensitivity, it should be recognised that Bray is at the apex of the urban hierarchy in Co. Wicklow, with a stated function (in the RSES) of accommodating above average population growth and driving regional economic growth. The former Golf Club lands (including the site) are the specified location for the introduction of high density mixed use development to the townscape. Through the process of preparation of the County Development Plan, which was subject to Strategic Environmental Assessment (SEA), this was deemed an acceptable change in principle.

In conclusion, the townscape sensitivity of the receiving environment can be classified 'medium'. (Definition of medium sensitivity: *Areas where the townscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The townscape character is such that there is some capacity for change. These areas may be recognised in policy at local or county level and the principal management objective may be to consolidate townscape character or facilitate appropriate, necessary change.*)

11.3.2 Magnitude of Townscape Change

The magnitude of townscape change that would result from the development would be 'high'. (Definition of high magnitude of change (refer to Table 11.2): *Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the townscape, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the townscape.*)

The reasons for the high magnitude of change classification are as follows:

- At approximately 11 ha, the site is large for an urban infill site.
- The proposal includes a mix of uses including:
 - Block G, a cluster of three retail buildings of 1-2 no. storeys, fronting Ravenswell Road and the Dargle River beside Fran O'Toole Bridge;
 - Block H, a mixed use building of up to four storeys, containing a creche and a medical centre on the ground and first floors, and apartments on the upper floors;
 - Block I, a 150+ bed, seven storey hotel with conference centre, wedding venue and rooftop café/restaurant/bar;
 - An extensive neighbourhood of three storey houses and duplexes in a grid layout with private and communal open space at the centre of the blocks;
 - Block E, a 15 no. storey apartment building located at the eastern extent of the site. The building is deliberately of 'landmark scale' and positioned at the point of intersection of the river corridor and the coastline, the two

main topographical features and arranging elements of the townscape. In addition to its landmark height, the building has a distinctive Art Deco architectural treatment and light colouring, to catch the eye, for maximum visual effect and recognisability.

- The proposal includes a grid of new streets across the site, connecting to the surrounding streets and pedestrian routes. The proposal would see the sinuous road that currently traverses the site removed to allow for a traditional urban grid pattern of streets and blocks.
- The proposal includes a number of open spaces. Most notable is Central Park, a 4 acre linear space parallel to the Dargle River, between the built elements (above) and the site of the future 'River Quarter' alongside the river. Central Park extends the full length of the site, east to west, providing an open space/pedestrian link from Fran O'Toole Bridge through the new quarter to the harbour to the east. It is intended to retain as many as possible of the existing golf course trees in the space, and to supplement those with additional planting to create a densely vegetated space.

The development would complete the regeneration of a large proportion of the former Bray Golf Club lands, establishing a mixed use, mixed density (including high density) urban quarter adjacent to the existing town centre of Bray and visible from large parts of the town - and from distance along the coastline to the north. This would constitute a high magnitude of townscape change – at both the local and macro levels, changing the local townscape character and the character of Bray as a whole.

11.3.3 Significance of Townscape Effects

Construction Phase

Over the course of the estimated 48 month construction period, the site and immediate environs would be disturbed by construction activities including the erection of site hoarding, site clearance and levelling, haulage and storage of materials, general construction activity (including the operation of cranes) and the incremental growth of buildings on site (refer to the Construction Environmental Management Plan for specific breakdown of the construction process and timeline).

Construction is inherently disturbing of the landscape/townscape, and unsightly. However, (a) the construction phase is temporary, and (b) construction is a normal, necessary activity in the urban environment. Taking these factors into account, the significance of the townscape effects during construction would be 'moderate negative'. (EPA Definition of moderate significance: *An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.*)

Operation Phase

Measuring the magnitude of change (high) against the sensitivity of the receiving environment (medium), the significance of the townscape effects during operation would be 'significant'. (EPA Definition of significant effect: *An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.*)

In addition to classifying the significance of effects, EIA methodology requires the classification of effects as positive, negative or neutral. To inform this judgement, the proposal has been evaluated against the relevant 'Urban Design Criteria and Indicators' provided in the *Urban Design Manual - A Best Practice Guide*. The evaluation found the townscape effects can be classified 'significant positive', for the following reasons:

1. The proposed layout is an appropriate response to the natural and built elements of the surrounding townscape;
2. The proposed arrangement of uses (including the variations in intensity/density of use) is an appropriate response to the surrounding townscape;
3. The proposed arrangement of built form/height – including the location of the proposed landmark Block E - is an appropriate response to the sensitivities and opportunities inherent in the surrounding townscape;



4. The architectural design is an appropriate response to the context, successfully referencing/reflecting Bray's historic architecture and seaside resort character in a contemporary, high density quarter;
5. The proposed open space (public, communal and private) and streetscapes would complement the buildings and mix of uses in creating an attractive, and liveable mixed use town centre quarter.

11.3.4 Potential Visual Effects

Based on the analysis of the receiving environment, consideration of the proposed development (particularly the height of Block E) and relevant policy, and informed by the LVIA's for previous planning applications for development on the former Golf Club lands, 42 no. viewpoints were selected for detailed visual effects assessment. To inform the assessment, verified photomontages were produced for each viewpoint (these are contained in Appendix 11, Volume 3 of this EIAR). For each viewpoint, the following views are provided:

- **Existing View** (photograph)
- **Baseline/Permitted View** (Existing View + nearby permitted developments: (1) ABP-314686-22, (2) Wicklow Co. Co. Reg. Ref. 22188, and (3) Wicklow Co. Co. Reg. Ref. 22203))
- **Proposed View** (Baseline View + the proposed development)
- **Future/Masterplan View** (Proposed View + massing model of the currently envisaged 'River Quarter', Phase 3 of the Sea Gardens Masterplan and the subject of a future planning application)

The visual effects on the representative viewpoints, during construction and operation, are predicted to be as follows:

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
Dublin Road Corridor						
1	Dublin Road at the Coach Inn	Medium	Low	Low	Not significant negative	Slight positive
2	Dublin Rd at Upper Dargle Rd junction	Medium	Medium-High	Medium-High	Slight-moderate negative	Moderate-Significant positive
Dwyer Park						
3	Dwyer Park View A	Medium	Low	Low	Slight negative	Slight negative
4	Dwyer Park View B	Medium	Low-Medium	Low-Medium	Moderate negative	Slight neutral
5	Dwyer Park View C	Low-Medium	Low-Medium	Low-Medium	Moderate negative	Slight neutral
6	Castle St view along Dwyer Park	Medium	Medium-High	Medium-High	Not significant negative	Slight positive
Fran O'Toole Bridge and Main Street						
7	Fran O'Toole Bridge	Medium	High	High	Moderate-Significant negative	Very significant positive
8	Lower Main Street	Medium	Medium	Medium	Slight-moderate negative	Moderate positive
9	Upper Main Street	Medium	Medium	Medium	Moderate negative	Moderate positive

Residential Neighbourhoods West of Site						
10	People's Park, The Commons	Medium-High	Medium	Medium	Moderate negative	Significant positive
11	Beech Road, Old Connawood	Medium	Low	Low	Slight negative	Slight positive
Ravenswell Area North of the Site						
12	Ravenswell Road	Low	Low	Low	Not significant negative	Slight neutral
13	Ravenswell Road beside school	Medium	Medium-High	Medium-High	Moderate negative	Moderate-Significant positive
14	Ravenswell school campus	Medium	Low	Low	Not significant negative	Slight neutral
15	School campus above Ravenswell Road	Medium	High	High	Moderate negative	Significant positive
Dargle River East of Fran O'Toole Bridge						
16	Ravenswell Road near Fran O'Toole Bridge	Medium	High	High	Moderate negative	Significant positive
17	View East from Ravenswell Road	Medium	Medium	Medium	Moderate negative	Moderate positive
18	View East from south bank footpath	Medium	High	High	Moderate negative	Significant positive
19	View West from Ravenswell Road	Medium-High	Low	Low	Slight negative	Slight neutral
20	View west from south bank footpath	Medium-High	Medium	Medium	Slight negative	Moderate positive
21	View west from Eastern riverside point	Medium	High	High	Moderate negative	Significant positive
East of Site, the Harbour Area						
22	Pedestrian Path East of Coastal Quarter	Low	Negligible	Negligible	Not significant neutral	Not significant positive
23	Harbour Road at pedestrian entrance beneath railway	Low	Medium-High	High	Slight negative	Significant positive
24	Bray Harbour south wall	High	Medium-High	Medium-High	Moderate negative	Significant positive
25	Harbour Road	Medium-High	Medium	Medium	Moderate negative	Significant positive
Seapoint Road and Seapoint Court South of the Dargle River						
26	Seapoint Road near Milton Court	Medium	None	None	No effect	No effect
27	Seapoint Road at Duncairn Avenue	Medium	Low	Low	Slight negative	Slight positive
28	Seapoint Court, View A	Medium-High	Medium	Medium	Moderate negative	Significant positive
29	Seapoint Court, View B	Medium-High	Medium	High	Moderate negative	Significant positive
30	Seapoint Court, View C	Medium-High	Medium	High	Moderate negative	Significant positive
Quinsborough Road and Bray Train Station						
31	Quinsborough Road at Galtrim Park Junction	Medium	None	None	No effect	No effect

32	Quinsborough Road at Seymour Road	Medium	Low-Medium	Medium	Slight negative	Moderate positive
33	Station Road	Medium	Medium	Medium	Slight negative	Moderate positive
The Promenade and Bray Head						
34	Northern end of the Promenade	High	Low-Medium	Medium	Slight negative	Moderate positive
35	Middle stretch of the Promenade	High	Low	Low-Medium	Slight negative	Slight positive
36	Bray Head, cliff walk	High	Low	Medium	Moderate negative	Moderate positive
37	Bray Head, summit	High	Low	Low	Slight negative	Moderate positive
Dun Laoghaire Rathdown Area North of Bray						
38	Woodbrook Glen	Medium	Negligible	Negligible	Not significant neutral	Not significant neutral
39	Shanganagh Cemetery	Medium-High	None	None	No effect	No effect
Killiney and Dalkey						
40	Strathmore Road, Killiney	Medium	Low	Low	Not significant negative	Slight positive
41	Killiney Hill	High	Negligible	Negligible	Not significant negative	Slight positive
42	Sorento Terrace, Coliemore Road	High	Negligible	Negligible	Not significant negative	Not significant neutral

11.4 Mitigation Measures

11.4.1 Construction Phase

Construction is inherently disturbing of the landscape/townscape, and unsightly. The only effective mitigation for the landscape/visual effects of construction is site hoarding, which is only effective for ground level activity. When buildings under construction rise above ground level, they are exposed and unsightly. These impacts are unavoidable. No mitigation measures other than (a) the erection and proper maintenance of site hoarding and (b) best practice in site management are recommended for the construction phase. This assumes that all measures for tree protection during construction (as recommended in the *Tree Survey & Planning Report* (November 2024) by Independent Tree Surveys Ltd) would be implemented.

11.4.2 Operation Phase

Due to the large scale of the proposed development (in spatial extent and building height) and its prominent and important location in the town (alongside the Dargle River and the coastline, and adjacent to the town centre), the potential townscape effects have been classified 'significant', and the significance of the visual effects have been classified as 'moderate' or 'significant' for 23 no. of the 42 no. viewpoints.

These significant effects are intended. Block E is deliberately positioned on the axis of views along the Dargle River, and from Main Street, Quinsborough Road, Station Road, the Promenade, Bray Head and the coastline of Dublin to

the north. Block E is also deliberately tall (comparable to buildings in Dublin), so that it would catch the eye, be recognisable, and shift the character of Bray towards that of a satellite centre of the metropolitan city-region. It is not only Block E that would have significant effects. Block G (due to its riverside location beside Fran O'Toole Bridge), and even the modestly scaled houses and duplex neighbourhood, would have significant effects in some views – although these effects would be more local.

Importantly, the assessment found that the proposed buildings, whether of lesser or larger scale and intended to have local or town-wide visual presence, are of high design and material quality. No negative townscape or visual effects have been identified; all the predicted effects are either neutral or positive. Therefore, no mitigation measures are recommended for the operation phase of the development.

11.5 Do Nothing Scenario

If the proposed development did not go ahead:

- There would be no period (48 months estimated) of landscape/townscape disturbance and negative visual effects caused by construction activity on the site.
- The remaining parts of the former Bray Golf Club lands would remain disused and in places disturbed (by previous construction activity), but open/free of built form and featuring a large number of mature trees.
- The permitted Coastal Quarter and the neighbouring Ravenswell schools campus would remain separate/separated from the central urban area of Bray to the south.
- The planned introduction of a high density, mixed use quarter to the townscape of Bray, on the former Golf Club lands, adjacent to the existing town centre, would not be realised.
 - There would be no expansion of the town centre retail/commercial area;
 - There would be no substantial new residential population introduced to the town centre (beyond that already permitted in the Coastal Quarter);
 - There would be no new network of public open space on the former Golf Club lands;
 - There would be no network of streets and pedestrian paths across the former Golf Club lands improving the permeability/navigability of the townscape.
- The eastern stretch of the Dargle River, east of Fran O'Toole Bridge, would remain an underwhelming, peripheral element of the townscape of Bray, not fully realising its potential as a town centre green-blue corridor and spine of development and activity.
- A landmark building to mark the planned/new high density, mixed use quarter would not be introduced to the townscape. The (thus far partially permitted/developed) quarter would either not be visible or would not be sufficiently prominent/identifiable in views from other parts of the town (e.g. Main Street, Quinsborough Road, Station Road, parts of the Promenade, People's Park, the Dublin Road, Ravenswell north of the site, etc.). The new quarter would thus not be tied-in visually to the existing town, which might negatively affect the extent to which it becomes a magnet for and generator of activity.

11.6 Monitoring Requirements

Other than the monitoring of the health of the retained trees on the site during construction and for a period after construction, as recommended in the *Tree Survey & Planning Report* (November 2024) by Independent Tree Surveys Ltd), no monitoring of townscape or visual effects is required



12. Traffic

12.1 Receiving Environment

The proposed development offers to create a vibrant, interconnected community that fosters sustainability, accessibility, and well-being for all residents. The proposed development embraces the 10-minute neighbourhood concept minimising the need for private transport and embracing people being able to walk or cycle to neighbourhood supporting facilities within a 10-minute timeframe. It is recognised however that not every house will have all such facilities located within this timeframe.

The mixed-use nature of the wider development ensures that there is a range of facilities within easy walking distance of the entire development that provides a range of services including retail, commercial and community facilities that is designed to cater for the day to day needs of residents helping to reduce trips or that those trips can be undertaken by active means. External to the site Bray Town provides extensive retail, commercial and entertainment facilities.

In terms of walking, Bray town centre is accessible within 10 minutes, whereas Bray Dart Station can be reached within 15 minutes, many bus stops can be accessed within 5 minutes. In terms of cycling, this catchment is extended further north leading directly to Shankill within a 15-minute cycle. To the south, the catchment is extended further along the Dublin Road, Bray Town Centre and Bray Dart Station is within a 5-minute cycle.

It is considered that the proposed development is well located, granting opportunity to access both the bus services and the DART Rail services and employment opportunities in the local and wider environs via existing public transport.

Whilst not a requirement for the subject application, connectivity will be further enhanced in the coming years through the realisation of BusConnects, DART+, Bray DART Public Interchange, Luas Extension, GDA Cycle Network Plan, Bray and Environs Transport Strategy 2019 and the N11 Junction 4 to Junction 14 Improvement Scheme. WCC is currently undertaking a study to provide enhanced bus priority measures along the Upper Dargle Road to Castle Street. WCC are also undertaking a study to provide the Dargle River Greenway that will provide a segregated pedestrian and cycle route between La Vallee and Bray Town Centre.

12.2 Construction Traffic Impact

The overall traffic generation for the construction phase of the proposed development has been devised with the anticipated volumes of site excavation. It is demonstrated that the increase in traffic volumes on the M11 and Dublin Road is below 5% during both AM and PM peak hours of the adjacent road network.

It is therefore considered that the level of traffic impact during the construction stage is of an acceptable level in the short term. The reported impacts represent a short term slight negative impact due to construction traffic. A range of mitigation measures are proposed as part of an Outline Construction Traffic Management Plan which will be the responsibility of the Contractor to finalise and agree with the Planning Authority prior to commencing the works.

12.3 Operational Traffic Impact

The baseline traffic has then been grown in accordance with the growth in the number of person trips per day as determined by the NTA National Demand Forecasting Model. Based on this, the number of trips per day is expected to increase by a factor of approximately 0.8% per year. In reality, accounting for modal shift targets and national policy, it is likely that the vehicle trip growth rate will be less than the overall trip growth rate. However, taking a conservative approach, it was assumed that the overall growth factor applies to the baseline traffic.



The impact assessment accounted for the residential trip rate generated which comprised of commuting patterns, mode share, trips for different modes from different Residential Development. It also looked at the non-residential trip generations to calculate the total trips and distributions.

TII's Traffic and Transport Assessment Guidelines (May 2014) were used to determine thresholds for junction assessment based on the traffic data collected. It was found that following 3 no. of the total 6 no. junctions required assessment:

- (JTC 2) R761 North / Lower Dargle Road / R761 South / Ravenswell Road Car Park
- (JTC 4) R761 North / Upper Dargle Road / R761 West / R761 South / North Wicklow Educate Together Access (Referred to as Southern Access Road Junction)
- (JTC 5) R761 North / Chapel Lane / R761 South / Ravenswell (referred to as Northern Access Road Junction)

The existing Ravenswell Road is to be closed off for vehicles as instructed by Wicklow County Council. Due to this closure, the existing trips were redistributed onto Dublin Road. The following four scenarios were assessed in order to assess the operational impacts of the proposed site:

- **Scenario 1:** Existing Road Network (with Ravenswell Rd in operation)
- **Scenario 2:** Redistributed Ravenswell Road traffic with the opening of the Southern Access Road.
- **Scenario 3:** Scenario 2 with the addition of committed development traffic.
- **Scenario 4:** Scenario 3 with the omission of the right turning signal from the Dublin Road South towards the Southern Access Road.

Following the traffic assessment, two of the junctions were affected, namely the Southern Access Road junction and the Northern Access Road junction. The closure of the Ravenswell road impacted the Southern Access Road and Northern Access Road junctions as this redistribution increased the demand on the junction significantly and as a result the junction was found to be operating over capacity. For both junctions, Scenario 4 is anticipated to perform best in the AM Peak, while the level of service is anticipated to diminish in the PM Peak.

The assessment has been subject to sensitivity testing on the Southern Access Road junction and the Northern Access Road junction. As part of the sensitivity analysis, these junctions were assessed according to the configuration provided in the BusConnects scheme. For both junctions, scenario four is anticipated to be the preferred option and is therefore the recommended scenario.

12.4 Cumulative Traffic Impact

This assessment has been carried out with development and existing traffic utilising both the Northern Access Road Assess Junction onto the R761 Dublin Road and the upgraded Upper Dargle Road Signalised Junction (Central Access Junction) onto the Dublin Road referred to here as the Southern Access Road Junction. The Ravenswell Road Access is assumed to be closed to through traffic.

Both junctions are anticipated to perform over capacity as a result of the Ravenswell Road closure with the exception of Junction 2. For both junctions, Scenario 4 is anticipated to perform best in the AM Peak, while the level of service is anticipated to diminish in the PM Peak.

Within urban locations it is acceptable that junctions operate over capacity during certain periods of the day. In reality, further transfers to public transport coupled with increased opportunities for workers to travel off peak and indeed work from home will result in this scenario not being realised. The above reported impact represents a long term slight negative effect.



12.5 Conclusion

From a construction traffic perspective, it is considered that the level of traffic impact during the construction stage is of an acceptable level in the short term. The reported impacts represent a short term slight negative impact due to construction traffic. A range of mitigation measures are proposed as part of an Outline Construction Traffic Management Plan which will be the responsibility of the Contractor to finalise and agree with the Planning Authority prior to commencing the works.

From an operational traffic perspective, due to the proposed closure of Ravenswell Rd, the northern and southern access junctions are anticipated to operate over capacity. In order to mitigate against this impact, it is proposed that right-turn signal from the Dublin Road South towards the Southern Access Road be removed in order to improve level of service, particularly during the AM Peak. This mitigation measure is also anticipated to assist with cumulative impacts.

While this assessment does represent a traffic network that is over capacity, the proposed development will be heavily served by public transport and active travel modes. In reality, transfers to public transport coupled with increased opportunities for workers to travel off peak and indeed work from home will result in this scenario not being realised. The above reported impact represents a long term slight negative effect.

It is also expected that car ownership will be well below traditional suburban residential development rates. In anticipation of this, it is proposed to provide parking spaces to serve the housing units at an overall rate of 1.2/unit (not including commercial or visitor parking), which is below traditional the Wicklow development plan standards (1.5/unit). Two car club parking spaces are also provided so as to further reduce the need for car ownership.

In contrast to car parking provision, bicycle parking is proposed at a rate of 1 spaces per bedroom for long stay and 0.2 space per unit for short stay cycle parking, in line with the National Cycle Manual Standards and that of the Design Standards for New Apartments. All bike parking is secure and easily accessible.

In January 2021, the National Remote Work Strategy was published by the Department of Enterprise Trade and Employment which lays out the long-term strategy to promote home and remote working for public sector and private sector employees. The strategy mandates that 20% of the public sector workforce move to home and remote working in 2021.

Therefore, in addition to the significant opportunities to travel to work by active travel and public transport modes, residents of the Sea Gardens Phase 2 may avail of the home and remote working opportunities, including flexible working opportunities, as promoted by the National Remote Work Strategy. This change in work practice will reduce overall work trips and optimise flexible working opportunities that will enable residents to avoid travel to work and to also facilitate residents to commute to their place of employment outside of the peak traffic and travel periods.

In overall terms, the Sea Gardens Phase 2 development will be fully consistent with the National Planning Framework objective of compact growth in a location that will optimise the residents opportunities to travel by active travel and public transport modes, fully consistent with the overall objectives of the NTA Greater Dublin Area Transport Strategy.

The development therefore presents as an exemplar of integrated land use and transportation planning. This approach, of reducing the need to travel, shifting to more environmentally friendly modes and improving the efficiency of motorised transport modes, is echoed in the transport objectives of the current Wicklow County Development Plan, the Bray Municipal District Local Area Plan and the Bray and Environs Transport Study.

In this context, and in the more general context of rapidly changing lifestyles and work patterns it is anticipated that the impact of the proposed development on the existing road network will be modest and well within the carrying capacity of existing infrastructure, inclusive of public transport.



13. Material Assets

This assessment examines material assets serving the proposed development, in relation to existing and proposed built services (i.e. foul sewerage, surface water drainage, water supply, gas, electricity, and telecommunications utilities), and waste management.

13.1 Built Services

The Site is located within Bray, east of the R761, north of the River Dargle and south of Ravenswell Primary School and the St. John of Gods Community Centre. The Site of the proposed development is a former Golf Course located within Wicklow County Council (WCC) jurisdiction. Residential properties are located to the west of the Site and further north, with School Developments bordering the western Site boundary. Retail units are located further west of the proposed development Site with the railway line bordering the eastern Site boundary. Consultation with relevant bodies has been undertaken to determine existing utilities present in the vicinity of the Site. The current status of utilities serving the Site is summarised as follows:

- The existing site area is predominantly green field and therefore has not existing surface water drainage network. A small storm drainage network was constructed as part of the Southern Development road which travels from North to South through the site.
- There is significant existing foul drainage infrastructure present within Site. A foul rising main and a trunk foul sewer enter the Site at the northern boundary in Phase 1 and turns east then south along the Site boundary where it finally crosses the Dargle River at the south of the Site. There are also two gravity foul sewers to the south of the Site. These sewers run from west to east across the Site where they outfall to the above-mentioned trunk sewers. The foul main from Sea Gardens Phase 1 connects to a 450mm diameter concrete pipe which was built under the UÉ local network reinforcement project. The 450mm pipe flows from west to east and connects to the existing Foul main on the eastern end of the Site which flows south towards the Bray pumping station.
- There is currently an existing water supply infrastructure present on Site which was equipped for Sea Gardens Phase 1. The nearest water main capable of catering the proposed development, Sea Garden Phase 2, is to the north of the Site, where an existing 225mm diameter watermain is present.
- There are existing underground ESB services along the northern, eastern and southern Site boundaries as well as through the centre of the Site. There are overhead ESB services further west of the Site, and along the east of the Site on the opposite side of the railway track with none identified within the immediate vicinity of the Site.
- There are existing gas utilities in the south-western area / centre of the Site.
- Existing Eir ducting is located within the Site along the northern, eastern, southern boundaries as well as along the access road through the Site.
- There is existing street lighting along the access path to the school development with street lights towards the northern boundary of the Site leading to the underpass.
- A complete set of all utility / service plans received is presented in the planning application

Based on the proposed engineering design, which has been developed in consultation with the engineering and water services section of Wicklow County Council and other key stakeholders including Uisce Eireann, given the phased nature of the proposed development, along with proposed mitigation measures (set out in Chapter 13, Volume 2 of this EIAR) no residual significant impacts are anticipated with regards to existing or proposed utilities associated with the proposed development.

13.2 Waste

The Site is a former golf course. Based on all available evidence, including findings from the geotechnical investigation undertaken across the Site, and taking account of proposed mitigation measures, soils beneath the Site are not



considered to pose an unacceptable risk to human health, building and services, environmental receptors or third-party Sites.

The proposed development will be designed, planned, constructed and operated to minimise waste generation at every stage. The management of waste generated during the construction of the proposed development will be in accordance with the Outline C&D WMP submitted as part of this planning application. The following waste streams will be generated during the construction phase: native non-contaminated soils, mixed C&D waste, wood / timber, metal, paper, plastics and packaging, canteen / office waste, and other waste (comprising soiled paper, cardboard, plastics, cloth, insulation and plasterboard).

However all waste streams will be managed in accordance with statutory waste management and environmental requirements, regional waste related policy, best practice waste management guidance, and a project specific C&D WMP. As with any construction project, there is potential for nuisance issues to arise during the construction phase, associated with dust or waste materials impacting roads and footpaths adjacent to the proposed development. Mitigation measures will be implemented to manage these potential impacts.

The Contractor will be responsible for monitoring waste documentation for the full duration of the construction phase. The Contractor will track and monitor all waste volumes to be transported offsite. All waste records will be maintained onsite throughout the project, and will be made available for viewing by the Client, Employer's Representative and statutory consultees (WCC and EPA) as required.

During the operational phase, the proposed residential development has been designed to provide adequate domestic refuse storage areas for individual dwellings, within a paved collection area at the entrance to each home zone, and within communal waste collection areas for the commercial and apartment units and hotel.

The following primary waste streams will be generated during the operational phase: residual waste, dry recyclables and organic waste. In addition, the following waste streams will occasionally be generated by the residents of the proposed development: WEEE, batteries, fluorescent tubes, furniture, chemicals and textiles. However, communal waste collection areas will be clearly identified, secure, have adequate lighting and drainage, and will be easily accessible for bin collection crews. Each communal waste collection area will provide the following capacity for family households: 1100L residual waste, 1100L recyclable waste and 240L organic waste.

During the operational phase waste shall be collected on a fortnightly basis (for all houses and duplex units), on a weekly basis (for all apartment blocks and commercial units) and three times per week (for the hotel) by a commercial waste contractor who holds a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). All waste materials will be removed offsite to an appropriately permitted or licenced waste disposal / recovery facility. All such waste will be transported and disposed of in accordance with relevant waste management legislation (including but not limited to the Waste Management Act of 1996, 2001 and 2003 and all subsequent waste management regulations as amended). Mitigation measures will be implemented to manage these potential impacts.

Given the nature and location of the proposed development, along with proposed mitigation and monitoring measures (set out in Chapter 13, Volume 2 of this EIAR) no residual significant impacts are anticipated with regards to waste management associated with the proposed development.

14. Cultural Heritage

This section examines potential effects of the proposed development on archaeology, architectural and cultural heritage. The proposed development area is located within the townlands of Ravenswell and Bray Commons on the northern side of Bray town.

There are no recorded archaeological sites within the proposed development boundary, however the zone of archaeological potential associated with the historic town of Bray (WI004-001----) extends slightly within the southern portion of the development. There are an additional 14 recorded archaeological sites, one of which is a redundant record, within the surrounding 1km study area. The closest recorded archaeological site is the find location of a cross inscribed slab (WI004-001001-) circa 33m to the south of the development boundary. The artefact is now in the National Museum of Ireland (NMI Register 1965:50).

There are no structures listed within the Record of Protected Structures or National Inventory of Architectural Heritage within the development boundary. The western portion of the development is located within the former garden/landscape of Ravenswell House (Garden no. 4299) which is no longer extant.

Cultural heritage features within the proposed development lands include the townland boundary between Ravenswell and Bray Commons, however this does not have any surface expression within the site. A review of the Excavations Bulletin (1970– 2024) has revealed that a programme of archaeological monitoring of the Shanaghagh – Bray Main drainage scheme has been carried out within portions of the proposed development area. An inspection of the cartographic sources revealed that the proposed development area occupied a rural landscape until it was developed as a golf course at the end of the nineteenth century.

The western portion of the development area is located within the aforementioned garden of Ravenswell House. The first edition OS map depicts the former channel of the Bray River within the southeastern portion of the development. A review of aerial photographs and Lidar coverage of the site did not identify any previously unrecorded archaeological or cultural heritage features within the proposed development lands. A field inspection has been carried out as part of the assessment. This did not identify any previously unrecorded archaeological, architectural or cultural heritage sites. A geophysical survey has been carried out within available greenfield areas of the site (Licence No. 24R0160). The survey identified a small number of potential archaeological anomalies which were further investigated through a programme of archaeological testing (Licence No. 24E0428). This work confirmed the presence of one potential archaeological site, a burnt spread, within the proposed development area.

The proposed development will have a predicted permanent direct negative impact on this archaeological site. Mitigation in the form of preservation by record (excavation) of the burnt spread and monitoring of all groundworks associated with the development is therefore proposed. Following the implementation of mitigation measures, no significant impacts are predicted upon the archaeological resource. No impacts are predicted upon the architectural or cultural heritage resource as a result of the construction of the proposed development. There are no predicted impacts on the archaeological, architectural or cultural heritage resource as a result of the operation of the proposed development.

15. Risk of Major Accidents and Disasters

This section describes the risk of major accidents and disasters on the proposed development, and the risk of the Development in creating a new source of major accident. This includes vulnerability of the Proposed Development to natural disasters or a major accident from on and off-site, existing and future sources of hazards taking account of existing assessments under other regimes where applicable, e.g., Seveso designations relevant to the development site .

An Outline Construction Environmental Management Plan (CEMP) has been submitted as part of this planning application. This Outline Plan will be developed further by the Contractor into a Site / project specific Detailed CEMP and will list all environmental mitigation measures that will be implemented by all site personnel during the construction of this development, including the appointment of an Environmental Manager during the construction phase.

The Environmental Manager will be responsible for the preparation of an Environmental Incident Emergency Response Plan which should be made available to all relevant Site staff. Typically, emergency procedures would include contact details of key personnel in local authorities and statutory authorities including the National Parks and Wildlife Services (NPWS), Inland Fisheries Ireland (IFI), WCC and the Environmental Protection Agency (EPA). Emergency preparedness and response procedures (including the provision of suitable oil spill kits and absorbent material) should be clearly set out within the Detailed CEMP in the highly unlikely event of an environmental pollution incident onsite. It is noted that an Upper Tier Seveso Site, Zoetis Belgium S.A. Ireland Branch, is located c. 6km north of the Site. Given the distance from the Proposed Development it is therefore not considered to pose any potential risk of major accident and/or disaster to the Proposed Development.

Given that historical and existing land use at the Site is greenfield in nature, and that land use is characterised as '*mixed use*' within the Bray Municipal District Local Area Plan 2018, along with the fact that the Proposed Development is surrounded by residential and commercial buildings and characterised as '*TC-Town Centre*' and '*R-HD New Residential*'; this would indicate that the potential risk of major accidents and/or disasters is low. In addition, no significant risk of major accidents or disasters is associated with the Proposed Development, taking account of the nature and scale of this development.

Accordingly, the potential risk posed by a major accident and/or disaster has been considered and based on the low vulnerability of the proposal to such risk, and the unlikely potential occurrence of such an incident, the overall risk is considered to be low.



16. Cumulative Impacts

This Chapter assesses the potential for the proposed development to act in combination with committed developments in the vicinity to result in cumulative impacts on the environment. Each of the technical chapters within this EIAR (i.e. Chapters 4 to 15) have considered the potential for cumulative impacts with committed developments in the vicinity of the Site which are included in this Chapter.

A list of all committed developments, including the Sea Gardens Masterplan Development, which have been assessed by each individual specialist as part of this report is included in full in Chapter 2, Volume 2 of this EIAR. The results of the cumulative impact assessment for each environmental topic are presented in this Chapter.

In summary, there are no significant adverse cumulative environmental impacts anticipated as a result of the proposed development.

Population & Human Health

The potential cumulative impacts of the proposed Sea Gardens Phase 2 on population and human health have been considered together with all relevant developments in the immediate environment of the proposed development, which have been approved but are not yet built or operational.

Sea Gardens Masterplan Development - Sea Gardens Masterplan (previously referred to as the Harbour Point Masterplan Development) consists of 3 Phases. The Masterplan aims to establish three distinct areas within Sea Gardens: the Coastal Quarter (Phase 1A: ABP-311181-21 and Phase 1B: ABP-314686-22), Sea Gardens Phase 2, and Sea Gardens Phase 3. This document specifically addresses the design principles for Sea Gardens Phase 2. It is important to note that Phase 1A is nearing completion, and planning permission for Phase 1B has recently been granted. According to the Architectural Design Statement (Howells, 2025); *'The proposed development has been designed with careful consideration of the development and design guidance and standards set in the Wicklow County Development Plan 2022-2028. Although the Bray Municipal District Local Area Plan (LAP) 2018–2024 has expired, specific attention has been given to its objective SLO 3.'* Sea Gardens Phase 3 marks the final stage of the Sea Gardens Masterplan, bringing together the remaining elements of both commercial and residential development as outlined in the Local Area Plan. Chapter 4 –Population and Human Health of this Phase 2 EIAR was conducted to include the future proposed Phase 3 development lands. Based on the findings of this Population and Human Health assessment, and available masterplan details for the future Phase 3 development, as well as taking account of mitigation measures within Section 4.5 of Volume 2 of this EIAR which will be implemented as part of the Phase 2 development, there will be no significant effect on population and human health and no likely significant effect when considered cumulatively with the proposed future phases of the Sea Gardens Masterplan Development.

Aeval Ltd ABP – 30584419 - A planning permission for a strategic housing development on a site of 21.9 hectares generally bounded by the Old Dublin Road (R119) and St. James (Crinken) Church to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Corke Lodge and woodlands and Woodbrook Golf Clubhouse and car park to the south. The proposed development is within the townlands of Cork Little and Shanganagh, Shankill, County Dublin. Based on the location and nature of the Phase 2 development there will be no significant effect on the population and human health, and therefore no likely significant effect when considered cumulatively with this development.

Shankill Property Investment Limited, Seapoint Road, Ravenswell, Bray, Co. Wicklow, 22188 — demolition of 4 light industrial/commercial buildings including their extensions, change of use from light industrial/commercial to residential use, and the construction of a total of 54 no. apartment units across 2 no. blocks. Mitigation measures as identified within Section 4.5 of this EIAR will be implemented as part of the Phase 2 development.



As a result there will be no significant effect on population and human health from the Phase 2 development, and no likely significant effect when considered cumulatively with this change of use development.

Silverbow Ltd, ABP – 313442 - Demolition of existing buildings, construction of 139 no. apartments, creche and associated site works. Mitigation measures as identified within Section 4.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect population and human health from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Dún Laoghaire Rathdown County Council, ABP – 306583 – a residential development with ancillary commercial uses (retail unit, café and crèche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. Mitigation measures as identified within Section 4.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on population and human health from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Castlethorn Management Services UC, Dún Laoghaire Rathdown CC Ref: LRD24A/0482/WEB - Castlethorn Management Services UC Intends to apply for a Permission for a Large-Scale Residential Development comprising amendments to the permitted Strategic Housing Development (An Bord Pleanála Ref. ABP-305844-19 –Woodbrook Phase 1. Mitigation measures as identified within Section 4.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on population and human health from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Aeval Unlimited Company , Dún Laoghaire Rathdown CC Ref:LRD24A/0382/WEB - The proposed development is referred to as Woodbrook Phase 2 and consists of 479no. dwellings in a mixture of terraced and semi-detached houses, duplexes and apartments and a Neighbourhood Centre, ranging in height from 1 – 7 storeys. A number of mitigation measures as identified within Section 4.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on population and human health from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Uisce Éireann, Dún Laoghaire Rathdown CC Ref:D18A/0606 - Permission is sought for provision of water supply infrastructure. The development will consist of: 'A 10 year permission to facilitate construction in two phases'. In addition as stated in Section 2.6.7 above, as part of the strategic future planning of the Bray area Uisce Éireann have a completed a Drainage Area Study. Although only at concept stage, upgrades at the Bray Pumping Station and improvements to the network will be required to facilitate development in the area. Upgrades of the existing 900mm sewer along Ravenswell Road and the existing sewer within the southwestern portion of the site are planned. Access to the sewer will be required by Uisce Éireann for these upgrades and this has been considered as part of the preparation of this planning application. The Phase 2 development has been carefully designed to ensure continued access to UÉ personnel as required in the future. Mitigation measures as identified within Section 4.5 of Volume 2 of this EIAR will also be implemented as part of the Phase 2 development. As a result there will be no significant effect on population and human health from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.



Biodiversity

Cumulative impacts with the following plans and projects were considered during the preparation of this report and the accompanying Natura Impact Statement (AtkinsRéalis 2025).

Wicklow County Development Plan (CDP) sets out policies and objectives for the development of the county. The CDP aims to promote the sustainable development and improvement of the economic, environmental, cultural and social aspects of County Wicklow. The CDP also requires that any developments must be subject to AA process and that permitted developments comply with the requirements of the WFD, the relevant River Basin Management Plans and the Habitats Directive. A Strategic Environmental Assessment (SEA) was prepared for the CDP and it went through the AA process. The findings of which were integrated into the objectives of the CDP resulting in a plan that affords high levels of protection to the environment and Natura 2000 sites.

Granted Developments

A search of the Wicklow County Council Planning Search site was conducted in February 2025 to determine if there are any granted developments within the vicinity of the proposed development which could act in combination with the proposed development to give rise to cumulative impacts. This search identified numerous granted developments since 2020, the majority of which are small scale developments such as single residential properties, extension works and retention projects. Larger projects within the vicinity of the proposed development which were reviewed include:

- **Aeval Ltd ABP – 30584419** - A planning permission for a strategic housing development on a site of 21.9 hectares generally bounded by the Old Dublin Road (R119) and St. James (Crinken) Church to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Corke Lodge and woodlands and Woodbrook Golf Clubhouse and car park to the south. The proposed development is within the townlands of Cork Little and Shanganagh, Shankill, County Dublin.
- **Shankill Property Investment Limited, Seapoint Road, Ravenswell, Bray, Co. Wicklow, 22188** — demolition of 4 light industrial/commercial buildings including their extensions, change of use from light industrial/commercial to residential use, and the construction of a total of 54 no. apartment units across 2 no. blocks.
- **Silverbow Ltd, ABP – 313442** - Demolition of existing buildings, construction of 139 no. apartments, creche and associated site works
- **Dún Laoghaire Rathdown County Council, ABP – 306583** – a residential development with ancillary commercial uses (retail unit, café and crèche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares.
- **Castlethorn Management Services UC, Dún Laoghaire Rathdown CC Ref: LRD24A/0482/WEB** - Castlethorn Management Services UC Intends to apply for a Permission for a Large-Scale Residential Development comprising amendments to the permitted Strategic Housing Development (An Bord Pleanála Ref. ABP-305844-19 –Woodbrook Phase 1.
- **Aeval Unlimited Company , Dún Laoghaire Rathdown CC Ref:LRD24A/0382/WEB** - The proposed development is referred to as Woodbrook Phase 2 and consists of 479no. dwellings in a mixture of terraced and semi-detached houses, duplexes and apartments and a Neighbourhood Centre, ranging in height from 1 – 7 storeys.
- **National Transport Authority (ABP – 317742); BusConnects Bray to City Centre Core Bus Corridor Scheme.**



Planned Projects

Sea Gardens Masterplan Development - Sea Gardens Masterplan (previously referred to as the Harbour Point Masterplan Development) consists of 3 Phases. The Masterplan aims to establish three distinct areas within Sea Gardens: the Coastal Quarter (Phase 1A: ABP-311181-21 and Phase 1B: ABP-314686-22), Sea Gardens Phase 2, and Sea Gardens Phase 3.

Bray Sustainable Transport Bridge - A new bridge over the River Dargle, the Bray Sustainable Transport Bridge, is being proposed by Wicklow County Council (WCC). The location of this bridge is directly adjacent to the proposed development site. WCC detail that this bridge is still at design stage^[1] and as such bridge construction works will not occur at the same time as the proposed developments' small scale surface water drainage works on the Dargle riverbank. It is noted that the development and design of this bridge will necessitate an Environmental Impact Assessment Report^[2] (EIAR) with associated environmental mitigation measures and surface water protection measures as works will be occurring directly within and across the river channel. Given that the bridge works will not occur at the same time as the proposed developments' riverbank works and that the Bray Sustainable Transport Bridge, should it proceed, will require surface water protection measures and given that the proposed development works will not result in any significant water quality impacts to the River Dargle, it is considered that the two proposed projects will not act in combination to give rise to likely significant effects on any European site.

Cumulative Impacts to Designated Sites

Aeval Ltd, SHD Planning, Townland of Cork Little, Woodbrook, Shankill, Co. Dublin (Planning Ref: ABP30584419 – Granted February 2020); Permission for a Strategic Housing Development consisting of a residential-led development comprising 685no. residential units and 1no. childcare facility in buildings ranging from 2 to 8-storeys. This development is located ca. 750m north of the project. An Environmental Impact Assessment and Appropriate Assessment Screening Report were submitted as part of the planning application for this project which determined that significant environmental / ecological impacts are not anticipated.

Shankill Property Investments Ltd; Demolition of 4 light industrial/commercial buildings including their extensions, change of use from light industrial/commercial to residential use, and the construction of a total of 54 no. apartment units across 2 no. blocks. This project has been subject to a Natura Impact Statement which concludes: *'it has been concluded by the authors of this report that there will be no residual impacts and the proposed project will not have an adverse effect on the integrity of the Rockabill to Dalkey Island SAC or any other European site.'*

Silverbow Ltd. St. Anthony's Dwyer Park and No. 22 Dwyer Park, Bray; Demolition of existing buildings, construction of 139no. apartments, creche and associated site works. This development has been subject to the Appropriate Assessment process which concluded; *'on the basis of the best scientific knowledge available, that the possibility of any significant effects on any European Sites, whether arising from the project itself or in combination with other plans and projects, can be excluded.'*

Dún Laoghaire Rathdown County Council; A residential development with ancillary commercial uses (retail unit, café and crèche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. This development has been subject to the Environmental Impact Assessment process which stated; *'The AA Screening Report*

^[1] <https://storymaps.arcgis.com/stories/a6c4464a6898496992df9092ed1bd358v>

^[2] <https://www.pleanala.ie/en-ie/case/320608>

concluded that there would be no Likely Significant Effects on any European designated sites, either alone or in combination with other plans or projects’.

Castlethorn Management Services UC; Intends to apply for a Permission for a Large-Scale Residential Development comprising amendments to the permitted Strategic Housing Development (An Bord Pleanála Ref. ABP-305844-19 – Woodbrook Phase 1). This development has been subject to the Appropriate Assessment process, in which the AA Screening Report concluded: *‘The Article 6(3) Appropriate Assessment Screening Report prepared as part of this application concluded that the possibility of any significant effects on any European sites, whether arising from the project alone or in combination with other plans and projects, can be excluded.’*

Aeval Unlimited Company; The proposed development is referred to as Woodbrook Phase 2 and consists of 479no. dwellings in a mixture of terraced and semi-detached houses, duplexes and apartments and a Neighbourhood Centre, ranging in height from 1 – 7 storeys. This development has been subject to the Appropriate Assessment process, in which the AA Screening Report concluded: *‘there would be no likely significant effects on any European site as a result of the Proposed Development, either alone or in combination with other plans or projects.’*

National Transport Authority (ABP – 317742); BusConnects Bray to City Centre Core Bus Corridor Scheme. This development has been subject to the Appropriate Assessment process, in which the Natura Impact Statement concluded; *‘It has been objectively concluded by Scott Cawley Ltd., following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the Proposed Scheme and the effective implementation of the mitigation measures proposed that the Proposed Scheme will not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion’.*

In regard to the Sea Gardens Masterplan Development, due to the location, scale and nature of the Phase 1A, Phase 1B and Phase 2 developments and the future Phase 3 site and lack of viable pathways from any of the proposed development sites to any European site it is considered that the construction and/or operation of Phase 2, either alone or in combination, will not give rise to impacts on any European sites.

Given the elements of the different plans and projects described above, these plans and projects are not anticipated to act in-combination with the proposed development to affect any designated site.

Cumulative Impacts to Habitats

The proposed works will result mostly in the loss of habitat of negligible ecological importance (amenity grassland) and some small areas/habitats of local importance (treeline/scattered trees). On assessment of the proposed landscape plan and enhancements included in this development (such as native tree planting, pollinator species planting, bird nesting boxes and roof gardens) it is considered there will be a net gain and moderate positive impact for local biodiversity in the long term. Given that no significant adverse impacts are anticipated on habitats of high ecological value as a result of the proposed project, it is considered that the proposed project will not act in combination with other plans and projects to give rise to significant effects on habitats of high ecological value.

Cumulative Impacts to Species

The proposed development will result in slight temporary negative impacts to local bat and bird species and moderate impacts to local mammal species in the form of foraging badger.

The granted Aeval Ltd. SHD in Woodbrook is considered to be the only project within the vicinity which has the potential to act in combination with the proposed project to potentially affect protected species. This granted



development in Woodbrook may have a temporary impact on local badgers given the proximity of a badger sett and the detailed badger mitigation measures required to be undertaken for the Woodbrook development project.

The proposed landscape plan and enhancements ensures connectivity of habitats and foraging routes enabling local badgers to continue to have a territorial range over and foraging areas within Rathmichael woodlands and stream, the railway corridor and the large area of undeveloped lands on the east side of the railway line.

Cumulative impacts to local bats and bird species are considered to be imperceptible in the long term. Cumulative impacts of the proposed development with the granted Aeval Ltd. SHD in Woodbrook will lead to an overall reduction in badger foraging area, however the 2 no. projects do allow for badger mitigation in the form of habitat creation, habitat connectivity and the creation of wildlife corridors. As such it is considered cumulative impacts of the 2 no. projects will have a long term moderate negative impact of badgers at a local geographical level.

Cumulative Impacts to Aquatic Ecology

Impacts on surface water features and aquatic ecology are not anticipated from the proposed development as only small-scale works (i.e. 1 no. pipe outfall) are necessitated on the artificial banks of the River Dargle. The next phases of the proposed Sea Gardens Masterplan development will be designed in accordance with the Greater Dublin Regional Code of Practice for Drainage Works and Sewers (GDSDS). Cumulative impacts on the local surface water features are not anticipated.

Land, Soils & Geology

All relevant developments in the immediate environs of the proposed development, which have been approved but are not yet built or operational, have been considered. This section also considers relevant developments which have not yet been approved but which could if approved have a cumulative effect with the proposed development. There are a number of projects in the general area of the site under development however many of these comprise the very small developments such as one off houses or change in use of buildings and will not have a likely cumulative effect with the proposed development and as such are not considered further. The following developments have been identified as having the potential to give rise to cumulative effects with proposed development:

- **Sea Gardens Masterplan Development** - Sea Gardens Masterplan (previously referred to as the Harbour Point Masterplan Development) consists of 3 Phases. The Masterplan aims to establish three distinct areas within Sea Gardens: the Coastal Quarter (Phase 1A: ABP-311181-21 and Phase 1B: ABP-314686-22), Sea Gardens Phase 2, and Sea Gardens Phase 3. This document specifically addresses the design principles for Sea Gardens Phase 2. It is important to note that Phase 1A is nearing completion, and planning permission for Phase 1B has recently been granted. According to the Architectural Design Statement (Howells, 2025); *'The proposed development has been designed with careful consideration of the development and design guidance and standards set in the Wicklow County Development Plan 2022-2028. Although the Bray Municipal District Local Area Plan (LAP) 2018–2024 has expired, specific attention has been given to its objective SLO 3.'* Sea Gardens Phase 3 marks the final stage of the Sea Gardens Masterplan, bringing together the remaining elements of both commercial and residential development as outlined in the Local Area Plan. The baseline assessment presented in Chapter 6 – Land Soils and Geology of this Phase 2 EIAR was conducted to include the future proposed Phase 3 development lands. Based on the findings of this Land, Soils and Geology baseline assessment, and available masterplan details for the future Phase 3 development, as well as taking account of mitigation measures within Section 6.5, Volume 2 of this EIAR which will be implemented as part of the Phase 2 development, there will be no significant effect on land, soils and geology and no likely significant effect when considered cumulatively with the proposed future phases of the Sea Gardens Masterplan Development.



- **Aeval Ltd ABP – 30584419** - A planning permission for a strategic housing development on a site of 21.9 hectares generally bounded by the Old Dublin Road (R119) and St. James (Crinken) Church to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Corke Lodge and woodlands and Woodbrook Golf Clubhouse and car park to the south. The proposed development is within the townlands of Cork Little and Shanganagh, Shankill, County Dublin. Based on the location and nature of the Phase 2 development there will be no significant effect on land, soils and geology, and therefore no likely significant effect when considered cumulatively with this development.
- **Shankill Property Investment Limited, Seapoint Road, Ravenswell, Bray, Co. Wicklow, 22188** – demolition of 4 light industrial/commercial buildings including their extensions, change of use from light industrial/commercial to residential use, and the construction of a total of 54 no. apartment units across 2 no. blocks. Mitigation measures as identified within Section 6.5, Volume 2 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on land, soils and geology from the Phase 2 development, and no likely significant effect when considered cumulatively with this change of use development.
- **Silverbow Ltd, ABP – 313442** - Demolition of existing buildings, construction of 139 no. apartments, creche and associated site works. Mitigation measures as identified within Section 6.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on land, soils and geology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.
- **Dún Laoghaire Rathdown County Council, ABP – 306583** – a residential development with ancillary commercial uses (retail unit, café and crèche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. Mitigation measures as identified within Section 6.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on land, soils and geology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.
- **Castlethorn Management Services UC, Dún Laoghaire Rathdown CC Ref: LRD24A/0482/WEB** - Castlethorn Management Services UC Intends to apply for a Permission for a Large-Scale Residential Development comprising amendments to the permitted Strategic Housing Development (An Bord Pleanála Ref. ABP-305844-19 –Woodbrook Phase 1. Mitigation measures as identified within Section 6.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on land, soils and geology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.
- **Aeval Unlimited Company , Dún Laoghaire Rathdown CC Ref:LRD24A/0382/WEB** - The proposed development is referred to as Woodbrook Phase 2 and consists of 479no. dwellings in a mixture of terraced and semi-detached houses, duplexes and apartments and a Neighbourhood Centre, ranging in height from 1 – 7 storeys. A number of mitigation measures as identified within Section 6.5 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on land, soils and geology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.
- **Uisce Éireann, Dún Laoghaire Rathdown CC Ref:D18A/0606** - Permission is sought for provision of water supply infrastructure. The development will consist of: 'A 10 year permission to facilitate construction in two phases'. In addition, as part of the strategic future planning of the Bray area Uisce Éireann have a completed a Drainage Area Study. Although only at concept stage, upgrades at the Bray Pumping Station and improvements to the network will be required to facilitate development in the area. Upgrades of the existing 900mm sewer along Ravenswell Road and the existing sewer within the southwestern portion of the site are planned. Access to the sewer will be required by Uisce Éireann for these upgrades and this has been considered as part of the preparation of this planning application. The Phase 2 development has been



carefully designed to ensure continued access to UÉ personnel as required in the future. Mitigation measures as identified within Section 6.5 of this EIAR will also be implemented as part of the Phase 2 development. As a result there will be no significant effect on land, soils and geology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Water

All relevant developments in the immediate environs of the proposed development, which have been approved but are not yet built or operational, have been considered. This section also considers relevant developments which have not yet been approved but which could if approved have a cumulative effect with the proposed development. There are a number of projects in the general area of the site under development however many of these comprise the very small developments such as one off houses or change in use of buildings and will not have a likely cumulative effect with the proposed development and as such are not considered further. The following developments have been identified as having the potential to give rise to cumulative effects with proposed development:

Sea Gardens Masterplan Development - Sea Gardens Masterplan (previously referred to as the Harbour Point Masterplan Development) consists of 3 Phases. The Masterplan aims to establish three distinct areas within Sea Gardens: the Coastal Quarter (Phase 1A: ABP-311181-21 and Phase 1B: ABP-314686-22), Sea Gardens Phase 2, and Sea Gardens Phase 3. This document specifically addresses the design principles for Sea Gardens Phase 2. It is important to note that Phase 1A is nearing completion, and planning permission for Phase 1B has recently been granted. According to the Architectural Design Statement (Howells, 2025); 'The proposed development has been designed with careful consideration of the development and design guidance and standards set in the Wicklow County Development Plan 2022-2028. Although the Bray Municipal District Local Area Plan (LAP) 2018–2024 has expired, specific attention has been given to its objective SLO 3.' Sea Gardens Phase 3 marks the final stage of the Sea Gardens Masterplan, bringing together the remaining elements of both commercial and residential development as outlined in the Local Area Plan. The baseline assessment presented in Chapter 7 – Water of this Phase 2 EIAR was conducted to include the future proposed Phase 3 development lands. Based on the findings of this Water baseline assessment, and available masterplan details for the future Phase 3 development, as well as taking account of mitigation measures within Section 7.6 of Volume 2 of this EIAR which will be implemented as part of the Phase 2 development, there will be no significant effect on hydrology and hydrogeology and no likely significant effect when considered cumulatively with the proposed future phases of the Sea Gardens Masterplan Development.

In addition, the potential cumulative impacts with regards to flood risk from the proposed development, particularly in the context of the proposed Harbour Point Masterplan, were assessed within the Phase 2 FRA Report. Flood modelling has been undertaken to include Phase 3 development to ensure the cumulative impact of the potential future development with the Phase 2 development in place. The modelling has demonstrated that the overall impact of Phase 3 is considered insignificant and would be subject to further detailed modelling undertaken as part of a future planning application for Phase 3, where mitigation measures could be provided if needed.

Aeval Ltd ABP – 30584419 - A planning permission for a strategic housing development on a site of 21.9 hectares generally bounded by the Old Dublin Road (R119) and St. James (Crinken) Church to the west, Shanganagh Public Park and Shanganagh Cemetery to the north, Woodbrook Golf Course to the east and Corke Lodge and woodlands and Woodbrook Golf Clubhouse and car park to the south. The proposed development is within the townlands of Cork Little and Shanganagh, Shankill, County Dublin. Based on the location and nature of the Phase 2 development there will be no significant effect on hydrology and hydrogeology, and therefore no likely significant effect when considered cumulatively with this development.

Shankill Property Investment Limited, Seapoint Road, Ravenswell, Bray, Co. Wicklow, 22188 — demolition of 4 light industrial/commercial buildings including their extensions, change of use from light industrial/commercial to residential use, and the construction of a total of 54 no. apartment units across 2 no. blocks. Mitigation



measures as identified within Section 7.6 of Volume 2 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on hydrology and hydrogeology from the Phase 2 development, and no likely significant effect when considered cumulatively with this change of use development.

Silverbow Ltd, ABP – 313442 - Demolition of existing buildings, construction of 139 no. apartments, creche and associated site works. Mitigation measures as identified within Section 7.6 of Volume 2 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on hydrology and hydrogeology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Dún Laoghaire Rathdown County Council, ABP – 306583 – a residential development with ancillary commercial uses (retail unit, café and crèche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. Mitigation measures as identified within Section 7.6 of Volume 2 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on hydrology and hydrogeology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Castlethorn Management Services UC, Dún Laoghaire Rathdown CC Ref: LRD24A/0482/WEB - Castlethorn Management Services UC Intends to apply for a Permission for a Large-Scale Residential Development comprising amendments to the permitted Strategic Housing Development (An Bord Pleanála Ref. ABP-305844-19 –Woodbrook Phase 1. Mitigation measures as identified within Section 7.6 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on hydrology and hydrogeology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Aeval Unlimited Company, Dún Laoghaire Rathdown CC Ref:LRD24A/0382/WEB - The proposed development is referred to as Woodbrook Phase 2 and consists of 479no. dwellings in a mixture of terraced and semi-detached houses, duplexes and apartments and a Neighbourhood Centre, ranging in height from 1 – 7 storeys. A number of mitigation measures as identified within Section 7.6 of this EIAR will be implemented as part of the Phase 2 development. As a result there will be no significant effect on hydrology and hydrogeology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Uisce Éireann, Dún Laoghaire Rathdown CC Ref:D18A/0606 - Permission is sought for provision of water supply infrastructure. The development will consist of: 'A 10 year permission to facilitate construction in two phases'. In addition as stated in Section 2.6.7 above, as part of the strategic future planning of the Bray area Uisce Éireann have completed a Drainage Area Study. Although only at concept stage, upgrades at the Bray Pumping Station and improvements to the network will be required to facilitate development in the area. Upgrades of the existing 900mm sewer along Ravenswell Road and the existing sewer within the southwestern portion of the site are planned. Access to the sewer will be required by Uisce Éireann for these upgrades and this has been considered as part of the preparation of this planning application. The Phase 2 development has been carefully designed to ensure continued access to UÉ personnel as required in the future. Mitigation measures as identified within Section 7.6 of Volume 2 of this EIAR will also be implemented as part of the Phase 2 development. As a result there will be no significant effect on hydrology and hydrogeology from the Phase 2 development, and no likely significant effect when considered cumulatively with this development.

Air Quality

Construction Phase



There is the potential for cumulative construction dust impacts to nearby sensitive receptors if the construction phase of the proposed development coincides with that of other large-scale developments within 500 m of the site.

A review of the planned and permitted projects within the vicinity of the site was undertaken in order to identify developments with the potential for cumulative construction phase impacts. There is the potential for the construction phase of the proposed development to coincide with that of the permitted Phase 1 Coastal Quarter development (Planning Ref: SH202206), sustainable transport bridge project (Planning Ref: 21869) and the potential Phase 3 development in the wider masterplan.

The dust mitigation measures outlined in Chapter 8, Volume 2 of this EIAR will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development is short-term, direct, negative and not significant.

Operational Phase

There is the potential for cumulative impacts to air quality during the operational phase as a result of traffic associated with other existing and permitted developments within the area. The traffic data provided for the operational stage air quality assessment included specific cumulative developments within the area (permitted Phase 1 Coastal Quarter development (Planning Ref: SH202206) and potential Phase 3 development) (see Traffic and Transport Assessment and Chapter 12 Traffic, Volume 2 of this EIAR for further details).

The cumulative operational phase impact is assessed within Section 8.5.1 and was found to have a slight impact on air quality as per the TII significance criteria (Table 8.3, Volume 2 of this EIAR). The cumulative operational stage impact is long-term, localised, direct, negative, and slight which is overall not significant.

Climate

With respect to the requirement for a cumulative assessment the IEMA (IEMA, 2022) and TII (TII, 2022a) guidance on which the assessment is based states that:

“the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland’s trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland’s ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative”.

The traffic data used for the operational phase assessment included cumulative traffic from existing and permitted developments in the surrounding area and the full masterplan development. Therefore, this impact assessment is cumulative.

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

Noise and Vibration

The traffic data used to assess the operational stage impacts from noise and vibration included the cumulative traffic associated with the proposed development as well as other existing and permitted developments in the



local area where such information was available. Therefore, the cumulative impact is included within the operational stage impact for the proposed development.

In terms of construction noise, it's noted that construction works for other phases of the overall masterplan may be ongoing at the adjacent site simultaneous to this project. In this scenario elevated construction noise emissions due to cumulative noise are likely to occur at receptor locations equidistant to both sites, for instance the school situated at the west of the site. Cumulative impacts will need to be considered and managed during the construction phase. It is recommended that liaison between both construction sites is on-going throughout the duration of the construction phase. Contractors should schedule work in a co-operative effort to limit the duration and magnitude of potential cumulative impacts on nearby sensitive receptors.

In addition, the construction of the proposed Bray sustainable transport bridge has some potential to cause cumulative impacts. However, given the location of the potential receptors, the proposed bridge and the location of this development it is expected that this development's construction phase would be dominant in terms of construction noise impacting on the identified receptors due to its closer proximity. Hence, the sustainable transport bridge is unlikely to have any additional significant impact on the receptors.

All other known proposed or permitted developments are further than 300m from this proposed development and as a result will not cause a cumulative noise or vibration impact

Landscape and Visual

The assessment of potential townscape and visual effects in Volume 2 of this EIAR (Sections 11.4 and 11.5) took account of the following permitted developments in the site environs:

- ABP-314686-22: This development (the Coastal Quarter) directly to the north of the subject site includes 76 no. houses, 52 no. duplex units, 106 no. apartments in Blocks C (3-6 no. storeys) and Block D (4 no. storeys), and 337 no. apartments in Blocks A (4-7 no. storeys) and B (5-9 no. storeys). This development also includes the Market Square adjacent to the subject site (fronted on two of its three sides by the currently proposed hotel and Block E), and 'The Orchard', an open space containing a multi-use games area (MUGA).
- Wicklow Co. Co. Reg. Ref. 22188: This development is located to the south of the site across the Dargle River, on Wilton Court off Seapoint Road. The development comprises two apartment buildings, up to 6 no. storeys tall, fronting the river. This is an important change in the site's townscape context, as it introduces contemporary high density development to the Dargle River corridor in the town centre, on the south side of the river. This development is clearly visible in the photomontages for Viewpoints 19 and 26 in Appendix 11, Volume 3 of this EIAR .
- Wicklow Co. Co. Reg. Ref. 22203: This development is located adjacent to the site on Dwyer Park, set back from the Dargle River behind a part of the site (where Block G is proposed). The development is a change of use from a former warehouse (part of which remains on the site) to residential use, and the construction of a two storey building containing four apartments. This development is visible in the photomontage for Viewpoint 5 in Appendix 11, Volume 3 of this EIAR.

The townscape and visual effects of the proposed development would combine with the effects of these permitted developments to have more significant effects than the proposed development on its own. (Since these projects are already permitted (and in the case of the Coastal Quarter construction is well advanced), they were considered part of the baseline receiving environment for the purpose of the assessment. The townscape and visual effects predicted in EIAR Sections 11.4 and 11.5 therefore include the effects of these permitted neighbouring developments.)



For the most part, the predicted cumulative effects would result largely from the proposed development, with the effects of the neighbouring projects being secondary. This is due to the substantially larger scale of the proposed development (in spatial extent and building height), its central position between the three other projects, and its more prominent position in terms of visibility from the surrounding townscape.

Wherever the proposed development and the permitted neighbouring projects would combine to have cumulative townscape and visual effects, their effects would be mutually positive. This is because the developments would provide favourable/complementary context for each other. They are all part of or adjacent to a planned high density mixed use quarter, and the quarter as a whole would benefit from the scale and diversity (of use, plot/building typologies, building height, architecture) of the four projects combined.

This conclusion is supported by the following objective of the Wicklow CDP Development and Design Standards (DDS): *“Where a development takes the form of more than one structure (i.e. a number of apartment blocks or a multitude of individual houses), adequate variety in form, height, materials etc shall be employed, within an overall unified theme, to provide for visual diversity.”* [emphasis added] The four projects provide this variety.

On a similar note, the Building Height Guidelines development management criteria includes the following objective: *“On larger urban redevelopment sites, proposed developments should make a positive contribution to place-making, incorporating new streets and public spaces, using massing and height to achieve the required densities but with sufficient variety in scale and form to respond to the scale of adjoining developments and create visual interest...”* [emphasis added] The three neighbouring projects, although all of relatively high density compared to the wider Bray urban area, are comprised of smaller buildings than the proposed development. These projects would provide the step-down in scale required from the proposed development – specifically the landmark Block E at the core – to respond to the scale and character of the surrounding townscape.

Traffic

The assessment outlined in this chapter includes an evaluation of cumulative impacts, considering both permitted and committed developments in the surrounding area. It also incorporates future year modelled scenarios (+5 and +15 years) with and without development, accounting for traffic growth to reflect network growth. This approach aligns with the TII Traffic and Transport Assessment Guidelines.

Material Assets

With regard to proposed waste management strategies, no potential cumulative impacts are anticipated during the construction and operational phases of the proposed development. No cumulative impacts are anticipated during the construction or operational phases of the proposed development associated with built services.

Cultural Heritage

The recorded archaeological sites within the 1km study area with a surface expression comprise one early 19th century Martello Tower and a Battery as well as St John’s Church, built on the site of a medieval church. The remainder retain no discernible above ground expressions and, therefore, are not considered to have the potential for significant cumulative effects on their wider settings. Following the application of the site-specific archaeological mitigation measures presented in Chapter 14, Volume 2 of this EIAR, it is concluded that the proposed development will not act in combination with other developments to result in any significant cumulative impacts on the cultural heritage resource.



Risk of Major Accidents and Incidents

No potential cumulative impacts are anticipated during the construction and operational phases of the proposed development. No cumulative impacts are anticipated during the construction or operational phases of the proposed development.

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17. Interactions

This section describes interactions between impacts on various environmental factors. A summary matrix showing interdependencies between these environmental attributes is presented in the Table 17-1 below for the proposed development.

All potential interactions have been addressed as required throughout the EIAR. During each stage of the assessment contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been addressed.

The various interactions between environmental topics considered within the EIAR are further discussed in Chapter 17, Volume 2 of this EIAR.



Table 17-1 – Summary Interactions Matrix

	Chapter 4 Population Health		Chapter 5 Biodiversity		Chapter 6 Land, Soils & Geology		Chapter 7 Water		Chapter 8 Air Quality		Chapter 9 Climate		Chapter 10 Noise & Vibration		Chapter 11 Landscape & Visual		Chapter 12 Traffic		Chapter 13 Material Assets		Chapter 14 Cultural Heritage	
Construction / Operation	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
Chapter 4 - Population & Health			x	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x
Chapter 5 - Biodiversity	x	x			x	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x
Chapter 6 - Land, Soils & Geology	✓	✓	x	x			✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	✓	✓	x	x
Chapter 7 - Water	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	x	x	x	x	x	x	✓	✓	x	x
Chapter 8 – Air Quality	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	x	x	x	x	✓	✓	✓	✓	x	x
Chapter 9 – Climate	x	x	x	x	✓	✓	✓	✓	✓	✓			x	x	x	x	✓	✓	✓	✓	x	x



Table 17-1 – Summary Interactions Matrix (Continued)

	Chapter 4 Population & Health		Chapter 5 Biodiversity		Chapter 6 Land, Soils & Geology		Chapter 7 Water		Chapter 8 Air Quality		Chapter 9 Climate		Chapter 10 Noise & Vibration		Chapter 11 Landscape & Visual		Chapter 12 Traffic		Chapter 13 Material Assets		Chapter 14 Cultural Heritage	
Construction / Operation	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
Chapter 10 – Noise & Vibration	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗			✗	✗	✓	✓	✗	✗	✗	✗
Chapter 11 – Landscape & Visual	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗			✗	✗	✗	✗	✓	✓
Chapter 12 – Traffic	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✗	✗			✗	✗	✗	✗
Chapter 13 – Material Assets	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✓	✓			✗	✗
Chapter 14 – Cultural Heritage	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗		

18. Schedule of Environmental Commitments

A schedule of environmental commitments has been prepared, for ease of reference and clarity and to facilitate enforcement of all environmental mitigation and monitoring measures specified within Chapters 4 to 15, Volume 2 of this EIAR.

All mitigation and monitoring commitments detailed within the EIAR have been included in a separate compendium and are presented in Chapter 18 – Schedule of Commitments, Volume 2 of this EIAR.

These commitments have been incorporated into the Construction Environmental Management Plan (CEMP) submitted as part of this planning application. The CEMP is a live document which will be added to by the Contractor, and will include any future additional mitigation measures as may be required.



19. Residual Impacts

This chapter summarises the potential significant residual impacts which may result from the construction and operational phases of the proposed development. Refer to Chapter 4 to Chapter 15, Volume 2 of this EIAR for the full impact assessments.

Residual impacts are the final or intended impacts which occur after the proposed mitigation measures have been implemented. They refer to the degree of change that will occur after the proposed mitigation measures, as summarised in Chapter 18 (Schedule of Environmental Commitments) Volume 2 of this EIAR, have taken effect.

AtkinsRéalis



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