11. Landscape & Visual

11.1 Introduction

This chapter assesses the potential landscape and visual impacts of the proposed Sea Gardens Phase 2 development in Bray. The chapter should be read in conjunction with the booklet of verified views, produced by 3D Design Bureau, contained in Appendix 11.1, Volume 3 of the EIAR.

The landscape and visual impact assessment (LVIA) was carried out by Richard Butler MILI MIPI of Model Works Ltd. Richard has degrees in landscape architecture and town planning and is a member of the Irish Landscape Institute and the Irish Planning Institute. He has over 25 years' experience in development and environmental planning, specialising in LVIA. In the last number of years, Richard has prepared LVIA EIAR chapters for the following projects among others:

- Guinness Quarter, James's Street, the Liberties, Dublin;
- Project Montrose (former RTE lands), Donnybrook, Dublin;
- St Vincent's Hospital and Residential Development, Fairview, Dublin;
- Sandford Road LRD, Dublin;
- Emmet Road SHD, Inchicore, Dublin;
- O'Devaney Gardens SHD, Dublin;
- Dublin Arch (Connolly Quarter);
- Augustine Hill (Ceannt Station), Galway;
- Pembroke Quarter (Irish Glass Bottle and Fabrizia sites) Phases 1, 1b, 2, A, Ringsend, Dublin.

11.2 Methodology

The LVIA was prepared with reference to:

1. *Guidelines for Landscape and Visual Impact Assessment*, 3rd edition, 2013 (GLVIA), published by the Landscape Institute;
2. *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*, 2022, published by the EPA;
3. *Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment*, 2018, published by the Department of Housing, Planning and Local Government.

The EPA guidelines 2022 provide a general methodology and impact ratings for all EIA topics. The GLVIA provides specific guidelines for landscape and visual impact assessment. Therefore, a combination of the EPA guidelines and the GLVIA has informed the methodology for this assessment.

For the method used by 3D Design Bureau in the production of the verified views, refer to their method statement at the end of the verified views report, in Appendix 11.1, Volume 3 of the EIAR.

11.2.1 Key Principles of the GLVIA

11.2.1.1 Use of the Word 'Townscape'

The GLVIA recommends that the word 'townscape' be used (instead of landscape) in urban areas, where a proposed development's receiving environment is dominated by built elements. The GLVIA defines townscape as *"the landscape within the built-up area, including the buildings, the relationships between them, the different types of urban spaces, including green spaces and the relationship between buildings and open spaces"*. Since the subject site is located in the urban environment of Bray, the word townscape is generally used in this chapter.

11.2.1.2 Assessment of Both 'Townscape' and 'Visual' Effects

The GLVIA requires that effects on views/visual amenity be assessed separately from the townscape effects, although the two topics are inherently linked.

- 'Townscape' results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations and spatial distribution of these elements create variations in landscape/ townscape character. Landscape/Townscape effects assessment identifies the changes to this character which would result from the proposed development, and assesses the significance of those effects on the landscape or townscape as a resource.
- Visual effects assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area's visual amenity.

11.2.2 Methodology for Assessment of Townscape Effects

The assessment of potential townscape effects involves (a) classifying the sensitivity of the townscape, (b) classifying the potential magnitude of townscape change which would result from the proposed development, and (c) combining these factors to arrive at an assessment of significance of the effects - and the quality of the effects (positive, neutral or negative).

11.2.2.1 Townscape Sensitivity

The sensitivity of the townscape is a function of its character, which may be determined by its land use pattern, urban grain, building typologies and architecture, cultural and natural heritage elements (including topography, vegetation and drainage features), and the quality of the public realm. These factors determine the value that is placed on the townscape. The policy pertaining to the area (e.g. the land use zoning), and any related trend of change, are taken into account. The nature and scale of the proposed development are also considered (a particular townscape can have varying sensitivity to different development types). Five categories are used to classify sensitivity, as set out in (Table 11-1).

Table 11-1 - Categories of Townscape Sensitivity

Sensitivity	Description
Very High	Areas where the townscape exhibits very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The townscape character is such that its capacity to accommodate change is very low. These attributes are recognised in policy or designations as being of national or international value and the principal management objective for the area is protection of the existing character from change.
High	Areas where the townscape exhibits strong, positive character with valued elements, features and characteristics. The townscape character is such that it has limited/low capacity to accommodate change. These attributes are recognised in policy or designations as being of

Sensitivity	Description
	national, regional or county value and the principal management objective for the area is the conservation of existing character.
Medium	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.
Low	Areas where the townscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such townscapes are generally unrecognised in policy and the principal management objective may be to facilitate change through development, repair, restoration or enhancement.
Negligible	Areas where the townscape exhibits negative character, with no valued elements, features or characteristics. The character is such that its capacity to accommodate change is high; where development would make no significant change or would make a positive change. Such townscapes include derelict industrial lands, as well as sites or areas that are designated for a particular type of development. The principal management objective for the area is to facilitate change in the townscape through development, repair or restoration.

Note on definitions used in this assessment

The definitions in Table 11-1 (townscape sensitivity), 11.2 (magnitude of townscape change), 11.4 (viewpoint sensitivity) and 11.5 (magnitude of visual change) are not taken from either the GLVIA or the EPA Guidelines 2022. Both of these guidance documents require that classifications of sensitivity and magnitude of change (such as high, medium, low, etc.) be used in the assessment process (see EPA Guidelines Figure 3.4 and GLVIA Box 3.1, Paragraph 3.26 and Figure 3.5), but neither guidance document provides definitions for such classifications.

The GLVIA specifically avoids being prescriptive in this regard (GLVIA para 1.20): *"The guidance concentrates on principles... It is not intended to be prescriptive, in that it does not provide a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances."*

The EPA Guidelines state (in Section 3, p.49): *"While guidelines and standards help ensure consistency, the professional judgement of competent experts can play an important role in the determination of significance. These experts may place different emphases on the factors involved. As this can lead to differences of opinion, the EIAR sets out the basis of these judgements so that the varying degrees of significance attributed to different factors can be understood."*

The GLVIA and EPA Guidelines thus require that the factors used in arriving at significance conclusions (i.e., classifications of sensitivity and magnitude) should be explained in the EIAR, but the guidelines do not provide the explanations themselves.

It is for this reason that the definitions in Tables 11-1, 11-2, 11-4 and 11-5 are provided in this section. These definitions have been developed and refined by LVIA practitioners in Ireland and the UK, including the chapter author, over decades of practice. They are not standard, i.e., the definitions used in this assessment may differ from those used by other practitioners. However, the author considers them to be reasonable and appropriate for the purpose of classifying the significance of landscape/townscape and visual effects and the same definitions have been used in many previous LVIA reports/chapters prepared by the author and accepted by the planning authorities.

11.2.2.2 Magnitude of Townscape Change

Magnitude of change is a factor of the scale, extent and degree of change imposed on the townscape by a development, with reference to its key elements, features and characteristics, and any affected surrounding character areas (also known as 'townscape receptors'). Five categories are used to classify magnitude of change (Table 11-2).

Table 11-2 - Categories of Townscape Change

Sensitivity	Description
Very High	Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the townscape, and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the townscape.
High	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.
Medium	Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the townscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape.
Low	Change that is moderate or limited in scale, resulting in minor alteration to key elements, features or characteristics of the townscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the townscape.
Negligible	Change that is limited in scale, resulting in no alteration to key elements features or characteristics of the townscape, and/or introduction of elements that are characteristic of the context. Such development results in no change to the townscape character.

11.2.2.3 Significance of Effects

To classify the significance of effects the magnitude of change is measured against the sensitivity of the townscape using the guide in Table 11-3 below.

The matrix (Table 11-3) and the EPA chart (Figure 11-1) are only a guide to the classification of impact significance. The assessor also uses professional judgement informed by their expertise, experience and common sense to arrive at a classification that is reasonable and justifiable. In the EPA guidelines the chart below (Figure 11-1) is accompanied by a footnote that states: *"The depiction of significance classifications is indicative and should not be relied on as being definitive. It is provided for general guidance purposes"* (EPA guidelines Section 3, page 53; emphasis added). For example, according to the EPA chart a change of high magnitude affecting a receptor of medium sensitivity could be classified as either 'significant' *or* 'moderate'. That judgement must be made by the assessor.

Table 11-3 - Guide to Classification of Significance of Townscape and Visual Effects

Magnitude of Townscape/Visual Change	Sensitivity of the Townscape/View: Very High	High	Medium	Low	Negligible
Very High	Profound	Profound to Very Significant	Very Significant to Significant	Moderate	Slight
High	Profound to Very Significant	Very Significant	Significant	Moderate to Slight	Slight to Not Significant
Medium	Very Significant to Significant	Significant	Moderate	Slight	Not Significant
Low	Moderate	Moderate to Slight	Slight	Not significant	Imperceptible
Negligible	Slight	Slight to Not Significant	Not significant	Imperceptible	Imperceptible

The matrix (Table 11-3) above is derived from the EPA Guidelines 2022 (see below).

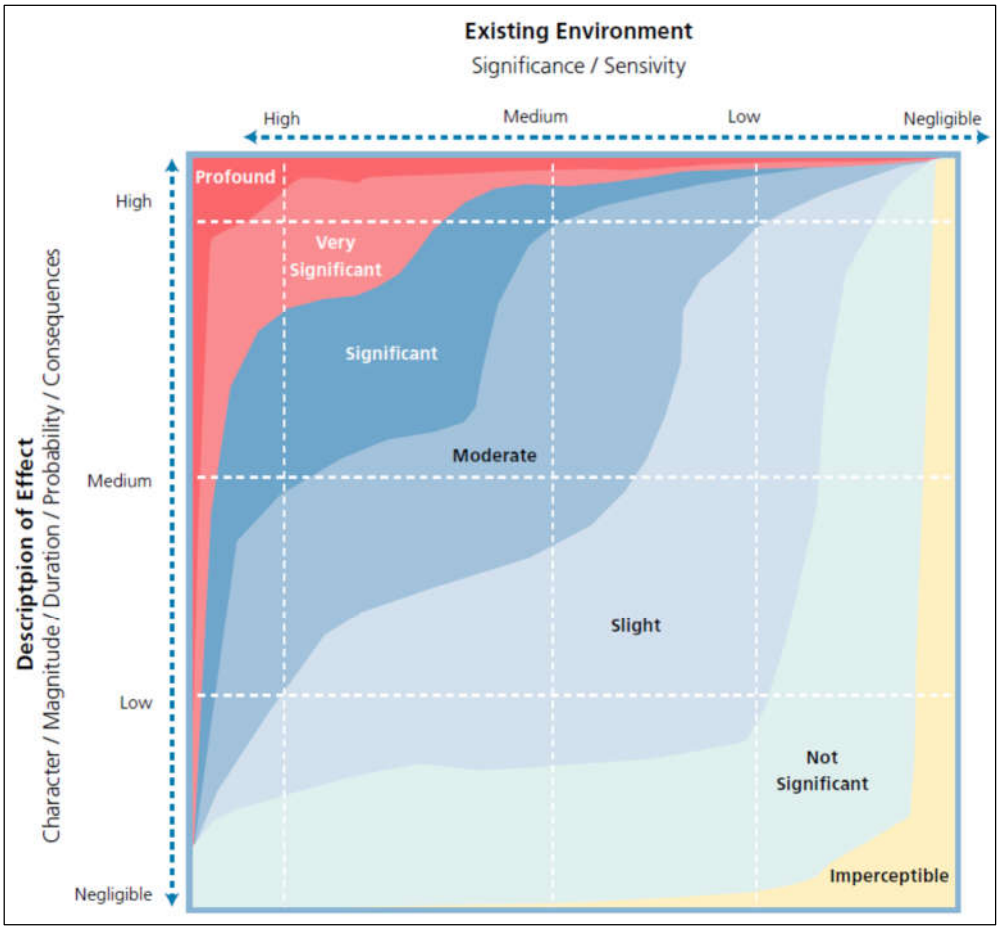


Figure 11-1 - 'Chart showing typical classifications of the significance of impacts' (Source: Figure 3.4 of the EPA Guidelines 2022)

11.2.3 Methodology for Assessment of Visual Effects

Assessment of visual effects involves identifying a number of key/representative viewpoints in the site's receiving environment, and for each one of these: (a) classifying the viewpoint sensitivity, (b) classifying the magnitude of change which would result in the view (informed by photomontages of the proposed development), and (c) combining these factors to arrive at a classification of significance of the effects on the view.

11.2.3.1 Sensitivity of the Viewpoint/Visual Receptor

Viewpoint sensitivity is a function of two main considerations:

- Susceptibility of the visual receptor to change. This depends on the occupation or activity of the people experiencing the view, and the extent to which their attention is focused on the views or visual amenity they experience at that location. Visual receptors most susceptible to change include residents at home, people engaged in outdoor recreation focused on the landscape (e.g. trail users), and visitors to heritage attractions and places of congregation where the setting contributes to the experience. Visual receptors less sensitive to change include travellers on road, rail and other transport routes (unless on recognised scenic routes), people engaged in outdoor recreation where the surrounding landscape does not influence the experience, and people in their place of work or shopping.
- Value attached to the view. This depends to a large extent on the subjective opinion of the visual receptor but also on factors such as policy and designations (e.g. scenic routes, protected views), or the view or setting being associated with a heritage asset, visitor attraction or having some other cultural status (e.g. by appearing in arts).

Five categories are used to classify a viewpoint's sensitivity (Table 11-4):

Table 11-4 - Categories of Viewpoint Sensitivity

Sensitivity	Description
Very High	Iconic viewpoints (views towards or from a townscape feature or area) that are recognised in policy or otherwise designated as being of national value. The composition, character and quality of the view are such that its capacity for change is very low. The principal management objective for the view is its protection from change.
High	Viewpoints that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (e.g. views from houses or outdoor recreation amenities focused on the townscape). The composition, character and quality of the view may be such that its capacity to accommodate change may or may not be low. The principal management objective for the view is its protection from change that reduces visual amenity.
Medium	Views that may not have features or characteristics that are of particular value, but have no major detracting elements, and which thus provide some visual amenity. These views may have capacity for appropriate change and the principal management objective is to facilitate change to the composition that does not detract from visual amenity, or which enhances it.
Low	Views that have no valued feature or characteristic, and where the composition and character are such that there is capacity for change. This category also includes views experienced by people involved in activities with no particular focus on the landscape. For such views the principal management objective is to facilitate change that does not detract from visual amenity or enhances it.
Negligible	Views that have no valued feature or characteristic, or in which the composition may be unsightly (e.g. in derelict landscapes). For such views the principal management objective is to facilitate change that repairs, restores or enhances visual amenity.

11.2.3.2 Magnitude of Change to the View

Classification of the magnitude of change takes into account the size or scale of the intrusion of development into the view (relative to the other elements and features in the composition, i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral view, or in glimpses). It also takes into account the geographical extent of the change, as well as the duration and reversibility of the visual effects. Five categories are used to classify magnitude of visual change to a view (Table 11-5):

Table 11-5 - Categories of Magnitude of Visual Change

Sensitivity	Description
Very High	Full or extensive intrusion of the development in the view, or partial intrusion that obstructs valued features or characteristics, or introduction of elements that are completely out of character in the context, to the extent that the development becomes dominant in the composition and defines the character of the view and the visual amenity.
High	Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity.
Medium	Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity.
Low	Minor intrusion of the development into the view, or introduction of elements that are not uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change to visual amenity.
Negligible	Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.

11.2.3.3 Significance of Visual Effects

As for townscape effects, to classify the significance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint, using the guidance in Table 11-3 and Figure 11-1 above.

11.2.4 Quality of Effects

In addition to predicting the *significance* of the effects, EIA methodology requires that the *quality* of the effects be classified as positive/beneficial, neutral, or negative/adverse. For townscape to a degree, but particularly for visual effects, this is an inherently subjective exercise. This is because townscape and visual amenity are *perceived* by people and are therefore subject to variations in the attitude and values - including aesthetic preferences - of the receptor. One person's attitude to a development may differ from another person's and thus their response to the effects of a development on a townscape or view may vary.

Additionally, in certain situations there might be policy encouraging a particular development in an area, in which case the policy is effectively prescribing townscape and visual change. If a development achieves the objective of the policy the resulting effect might be considered positive, even if the townscape character or views are profoundly changed. The classification of quality of townscape and visual effects should seek to take these variables into account and provide a reasonable and robust assessment.

11.3 Receiving Environment

11.3.1 Bray in the Metropolitan Context

In 2023, Bray had a population of 33,500. It is the largest town in Co. Wicklow and the 9th largest town 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. The Key Towns (the others being Swords and Maynooth) 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"*. [emphasis added]

Figure 11-2 - RSES graphic of the Dublin Metropolitan Area showing the status of Bray in the city-region

The Key Towns are described as 'important in a regional context' due to their capacity to accommodate 'above average growth'. The RSES strategy for Key Towns is to *"Provide for the sustainable, compact, sequential growth and urban regeneration in the town core of identified Key Towns by consolidating the built footprint through a focus on regeneration and development of identified Key Town centre infill / brownfield sites"*. [emphasis added]

Regarding Bray specifically, the RSES notes that population growth in in the town has been modest compared to other parts of the metropolitan area. This is due to several constraints to the urban area's growth, including the coast to the east, Bray Head/Sugarloaf Mountains to the south and the M11 to the west. The RSES states that for the town to fulfil its growth potential, the lands at Fassaroe west of the M11 will need to be developed, along with the former Bray Golf course and Harbour Lands (of which the subject site is a part), which are designated for *"high density new mixed-use development with improved town centre functions"*. [emphasis added]

The RSES Regional Policy Objectives include:

> RPO 4.37: *"Support the continued development of Bray including the enhancement of town centre functions, development of major schemes at the former Bray golf course and Bray harbour, along with increased employment opportunities..."* [emphasis added]
>
> 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."* [emphasis added]

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.

11.3.2 Bray Urban Morphology and Townscape Character

As well as understanding current and future status of Bray in the settlement hierarchy, it is important to understand its history of development as this has determined its townscape character and its capacity to accommodate change.

The 1st edition Ordnance Survey 6 inch map (Figure 11-3), surveyed between 1829 and 1834, shows that at that time Bray was already a sizeable town. It was centred on the bridge over the River Dargle, well back from the seafront to the east. The main urban area was comprised of Main Street extending up the hillside to the south of the river, and 'Little Bray' (Castle Street and the Dublin Road) on the north side. The urban area was equally spread to the north and south of the Dargle, and there were clear differences in character between the northern and southern sides of the town. In addition to the north-south spine, there were a number of premises along the south side of the River Dargle, forming an east-west spine - giving the town a cruciform layout. These riverside buildings included a brewery, mill, church, hotel, school, and at the beach a Martello tower – mostly large buildings. Although the main urban area was set well back from the coastline, there was a row of buildings, including a Coast Guard station, a school, the Martello tower and a number of houses dispersed along the seafront.

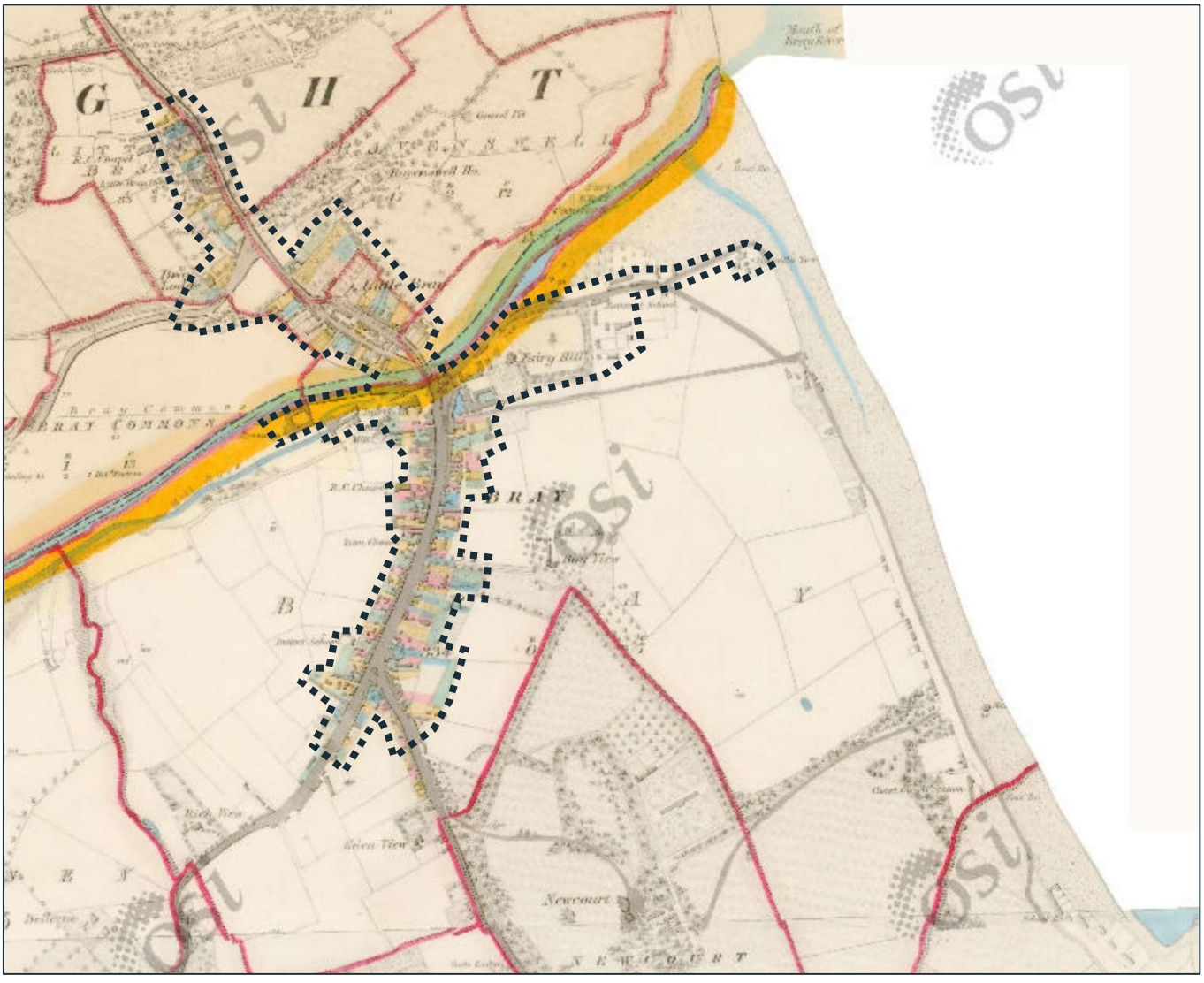


Figure 11-3 - Ordnance Survey 6 inch map (surveyed 1829-34) showing pre-Victorian Bray

From the above description of pre-Victorian Bray, the following points are important to note:

- The bridge over the River Dargle was the pivotal point in the town's layout.

- The town had a cruciform shape, with a north-south spine comprised of Main Street and Castle Street/Dublin Road (either side of the Dargle) and an east-west spine along the river. The River Dargle was a central feature and an important arranging element in the urban structure/townscape.
- The town was (roughly) equally spread to the north and south of the river, and had several distinct character areas - one south of the river (Main Street), one north of the river (Little Bray), one along the river, and another along the coast. (Additionally, outside of the town there were several big houses in large demesnes.)

In 1854, the railway line to Bray was built as part of the Dublin and Kingstown Railway (D&KR) expansion. The railway connection to Dublin initiated the Victorian transformation of the town - in terms of function (seaside resort), character and scale - and established Bray as part of the metropolitan city-region. Over the remainder of the 19th century, a number of important changes occurred in the urban structure, which can be seen in the Ordnance Survey 25 inch map from the early 20th century (Figure 11-4).

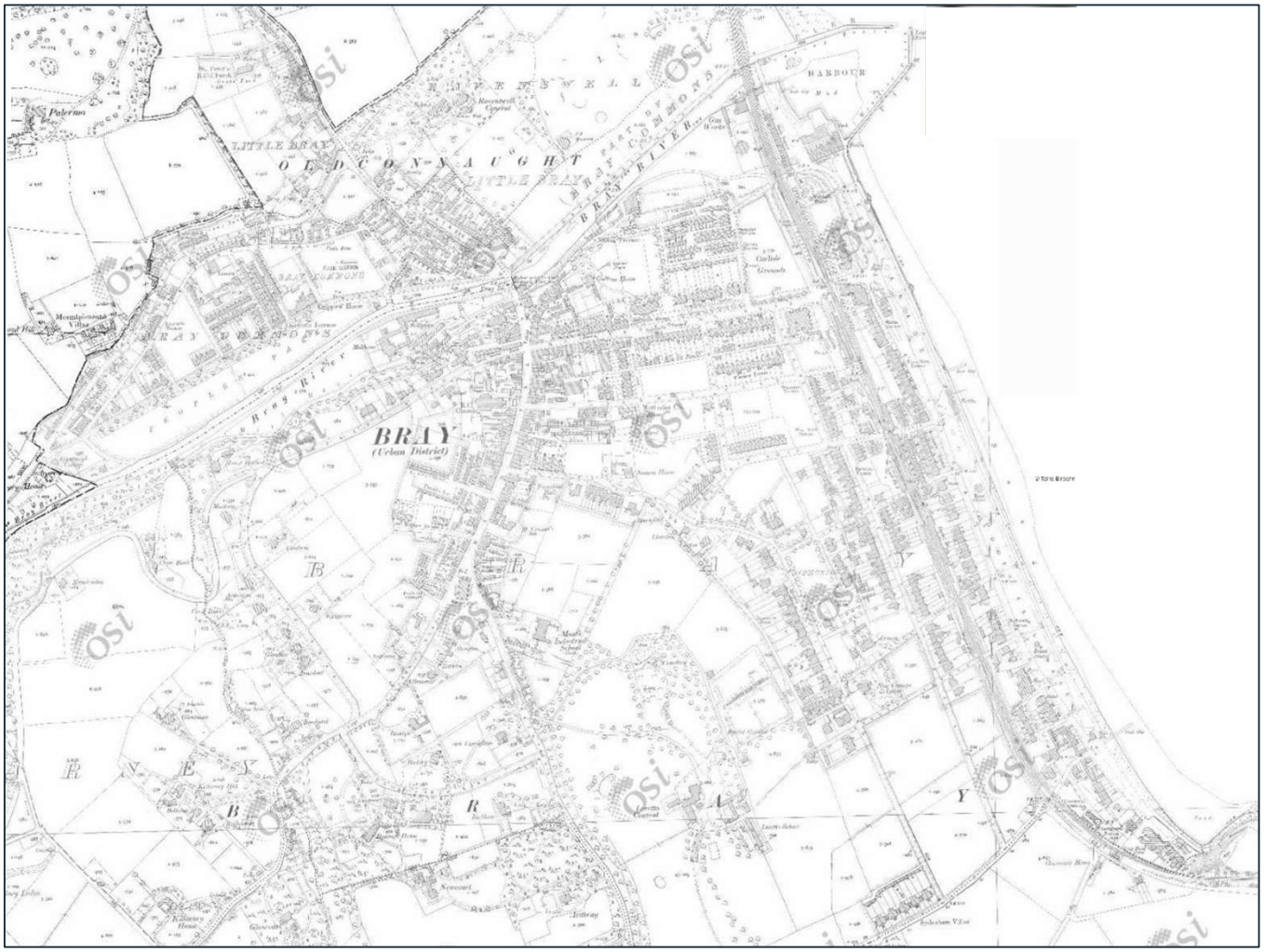


Figure 11-4 - Ordnance Survey 25 inch map showing Bray after the Victorian transformation

The most widely recognised addition to the town was the seafront Promenade, fronted by grand Victorian villas and hotels. At the northern end of the Promenade, Bray Harbour had been built. These coastal elements were separated from the inland urban area by the railway line (which ran parallel to the coastline). An important addition to the urban structure was Quinsborough Road. This is an east-west aligned road connecting the historic town centre (Main Street) to the train station and the Promenade. Quinsborough Road was lined by large Victorian houses and hotels, with an avenue of trees. The alignment of Quinsborough Road and the railway line dictated the grid layout of the Victorian neighbourhood that developed in the area between the railway and Main Street. A further notable addition to the town

was the new residential neighbourhood built in the former Bray Commons area on the north side of the River Dargle (to the west of Little Bray). From the Victorian phase of Bray's development, the following points are important to note:

- The new railway and harbour infrastructure initiated a rapid urban expansion, particularly to the south along the seafront as far as Bray Head, and to the west along the Dargle Valley.
- There was a shift in the town's orientation from the River Dargle towards the seafront - although Main Street remained the commercial core and the bridge over the Dargle remained a pivotal point in the urban structure.
- Several new character areas had been added to the townscape, including the Promenade, the harbour, Quinsborough Road (and its western extension Herbert Road), the eastern Victorian streets and squares parallel to the seafront, and the Bray Commons neighbourhood (see Figure 11-4).

Over the course of the 20th century, Bray underwent a suburban expansion for residential, retail and employment use. The 2005 aerial photograph (Figure 11-5) shows that this occurred mostly to the south up to the lower slopes of Bray Head and the Little Sugarloaf, and west as far as the River Dargle valley and the M11. Other notable elements on the 2005 aerial photo include (a) Bray Golf Club on the north side of the River Dargle (now enclosed within the urban footprint but close to the historic centre, the train station, the harbour and the coastline), and (b) the access road to Fassaroe under construction to the west of the M11.

Figure 11-5 - 2005 aerial photograph showing Bray after the 20th century suburban expansion

At that stage in the town's development (late 20th, early 21st century) Bray had encountered obstacles to its further growth - to the east (the coastline), south (Bray Head, Little Sugarloaf), and west (the M11). This had been recognised as a constraint to the town's required growth in line with its role in the county and the metropolitan region.

The Fassaroe area to the west of the M11 was first identified as a strategic growth area. Then, in the early 21st century, the potential of Bray Golf Club for the expansion of the town centre and substantial residential use was recognised. The Bray Town Development Plan 2005-2011 stated: *"The impending development of the Golf Club Lands… will contribute enormously to the success of the town... the development of the Golf Club Lands will yield significant benefits for the town in terms of alleviating the enormous housing pressure within the town and in facilitating the provision of expanded employment, retail, leisure, social and cultural opportunities for the town's residents."*

The Bray Municipal District Local Area Plan 2018 (land use zoning map below, Figure 11-6) cemented the two significant future changes to the townscape of Bray, i.e. the western suburban expansion into Fassaroe, and the expansion of the town centre across the River Dargle into the area of the former Bray Golf Club.

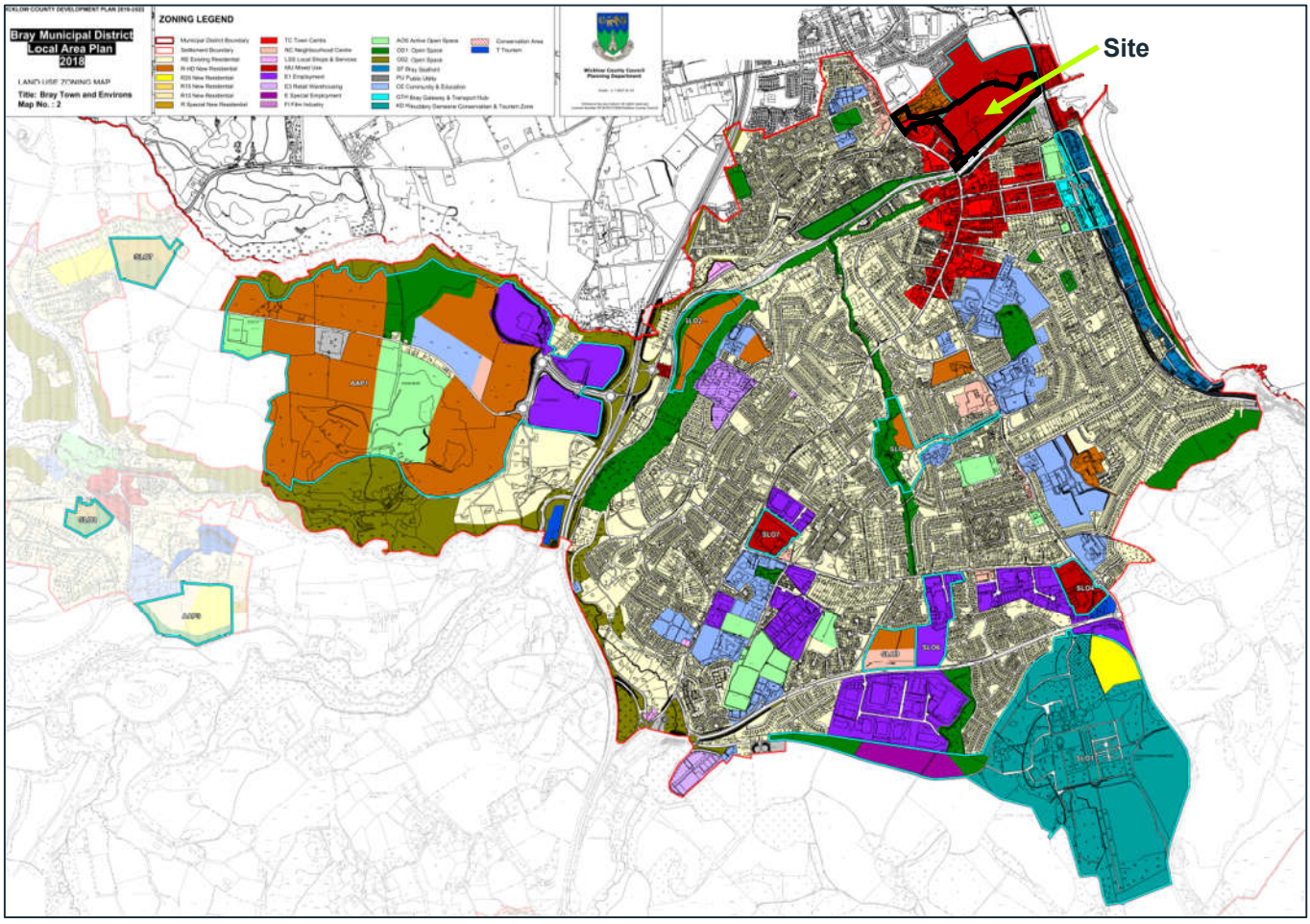


Figure 11-6 - Bray Municipal District Local Area Plan 2018 land use zoning map

This coincided with a shift in planning/development policy towards compact growth, urban consolidation and densification. The position of the Bray Golf Club adjacent to the existing/historic town centre but relatively unconstrained by cultural/historic sensitivities (having been a golf course), close to the train station, and with frontage to both the River Dargle and the coastal area, translated into particular potential for density and height.

Two planning permissions has thus far been granted for developments on the former golf club lands (ABP-311181-21, ABP-314686-22, both show on Figure 11-7 below):

- The permitted elements of ABP-311181-21 included 76 no. houses, 52 no. duplexes and 106 no. apartments in two buildings, Block C (3-6 no. storeys) and Block D (4 no. storeys). Two apartment buildings, Blocks A and B, which formed part of the planning application, were refused permission.
- ABP-314686-22 was a new application incorporating all the permitted elements of the previous application and a new proposal for Blocks A and B. The development was permitted with a conditioned reduction in height of Block B, from 5-12 no. to 5-9 no. storeys. Block A was permitted at 4-7 no. storeys. The number of permitted apartments in Blocks A and B is 337 no.

These permissions are part of the Sea Gardens Masterplan and are known as the 'Coastal Quarter' (Phases 1a and 1b). They are considered part of the baseline receiving environment for the purpose of this assessment.

Construction is well advanced on the houses and duplex elements of the permissions.

Figure 11-7 - The permitted developments comprising the 'Coastal Quarter' adjacent to the subject site

These permitted developments herald a significant change in the townscape of Bray, in that they establish a contemporary, high density residential and mixed use quarter in the town.

11.3.2.1 Summary of Bray Townscape Character

In summary, although of compact form (due to the natural topographical constraints to its expansion), Bray is a large town (in population - the 9th largest settlement in Ireland) 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. The town includes the following character areas:

- Main Street south of the River Dargle, a traditional commercial 'high street' given additional character by its gradient;
- The Castle Street/Little Bray area north of the river;
- The River Dargle corridor, which itself can be divided into sections of different character:
  - The eastern/Ravenswell Road section east of the Fran O'Toole Bridge;
  - The Lower Dargle/Bray Commons section west of the Fran O'Toole Bridge alongside the People's Park;
  - The Upper Dargle/winding, wooded valley section
- The harbour area (which includes the harbour, a small industrial zone and a street of cafes/restaurants beside the yacht club);
- The Promenade;
- Quinsborough Road;
- The Victorian streets/neighbourhoods parallel to the seafront (Meath Road, Sidmonton Road);
- The Seapoint Road area south of the River Dargle;

- The elevated central 20th century suburbs (between Vevay Road, Killarney Road and Boghall Road);
- The western suburbs overlooking the Upper River Dargle (Herbert Road, Ardmore, Kilbride, Springfield);
- The southern suburbs and retail and employment estates (Boghall Road, Irishtown, Southern Cross area);
- Bray Head;
- The elevated northern suburbs (Old Connaught, Old Connawood);
- The new northern suburbs and retail and employment estates (Woodbrook Glen, Cork Great);
- The emerging/future Fassaroe district west of the M11;
- The Harbour Point area (the former Bray Golf Club lands), which includes two permitted phases of the Coastal Quarter, including the subject site).

This diversity and strength of character (illustrated by Figures 11-8 to 11-15) creates capacity to accommodate change (the ability to absorb/withstand change without dilution or loss of value of existing character). Areas such as Main Street, the Promenade, Quinsborough Road and the extensive eastern, southern and western suburbs can retain their own distinct character and value despite the addition of new urban areas/elements (such as the emerging Harbour Point area).

Figure 11-8 - A view over the eastern half of the town from Bray Head

Figure 11-9 - A view of the northern stretch of Main Street

Figure 11-10 - The middle stretch of Main Street

Figure 11-11 - The Promenade

Figure 11-12 - A new apartment development across the street from Bray Train Station

Figure 11-13 - Quinsborough Road

Figure 11-14 - Artist's impression of part of the permitted Coastal Quarter development

Figure 11-15 - Artist's impression of the permitted Coastal Quarter in the wider urban context (Note, the tallest building nearest to the harbour was reduced by condition from 12 no. to 9 no. storeys)

11.3.3 The Site

The proposed development (the subject of this assessment – blue on Figure 11-16) is located between the permitted Coastal Quarter and the River Dargle, extending south west towards the Fran O'Toole Bridge and connecting to the Dublin Road to the west. The site excludes a strip of land alongside the river (the 'River Quarter' – green on Figure 11-16), which will be the subject of a subsequent planning application.

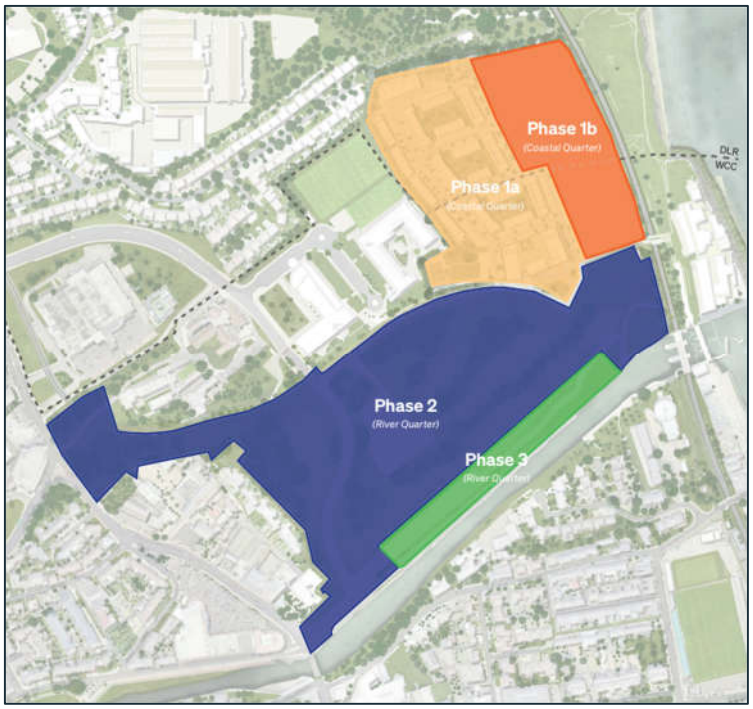


Figure 11-16 - The site of the proposed development (blue)

The majority of the subject site was previously part of the 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 (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 neighbouring properties. It provides the potential for a road connection to the site from the Dublin Road.

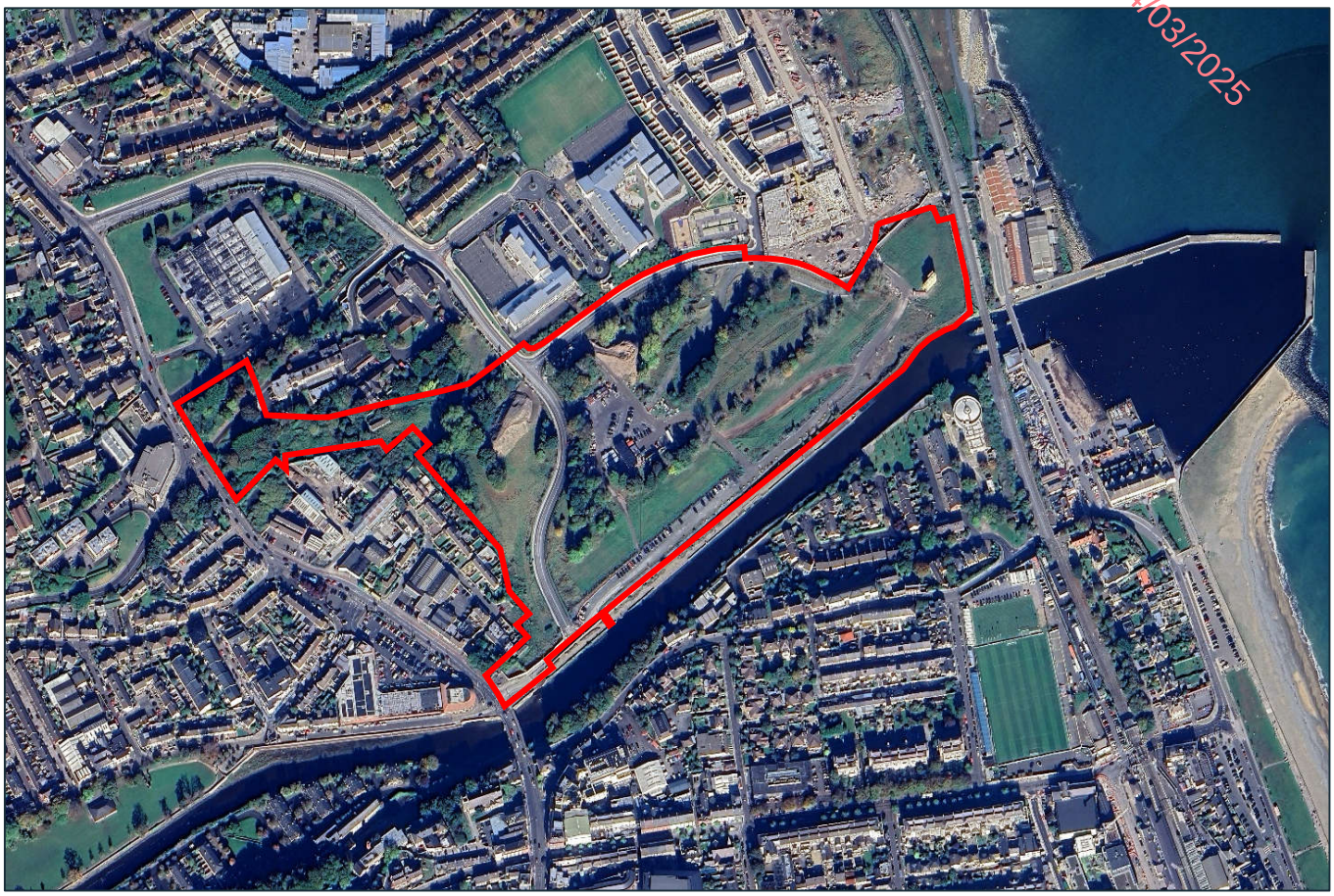


Figure 11-17 - The site and immediate environs

11.3.4 Immediate Receiving Environment

To the south, the site has frontage to Ravenswell Road, a broad pedestrian path on the north bank of the River Dargle. The site is separated from the path by a high stone wall. Although falling outside of the site, Ravenswell Road will be integral to the new urban quarter. There is also a pedestrian path on the south side of the river, but this is much narrower. The lands to the south of the site across the river are occupied by a variety of uses:

- Furthest to the east, beside the railway line and the harbour area, is Bray Pumping Station.
- West of the pumping station is a residential estate, Seapoint Court. This neighbourhood is one of the key receptors of townscape and visual change. It should be noted that the houses at the riverside are positioned perpendicular to the river, so that their main views (from their front and rear windows and gardens) are to the east or west, as opposed to north across the river (towards the site). The estate roads however frame views across the river towards the site (see Figure 11-20).
- West of Seapoint Court is Milton Court, a cluster of disused riverside industrial premises off Seapoint Road. Planning permission has been granted (Wicklow Co. Co. Reg. Ref. 22188) for the redevelopment of this area for residential use. The permitted development comprises two apartment buildings fronting the river opposite the site

(Figure 11-21). The buildings are up to six storeys tall. This is an important change in the context of the subject site and the proposed development.

- To the west of Milton Court is a row of three houses, which front Seapoint Road to the south and back onto the river opposite the site. These houses are also a key receptor of change.

Figure 11-18 - The view east from the Fran O'Toole Bridge, with the site to the left

Figure 11-19 - 'Ravenswell Road' on the north bank of the Dargle. The site is to the left behind the wall. To the right across the river are the Seapoint Court houses and the pumping station in the distance

Figure 11-20 - A view from the Seapoint Court estate north across the River Dargle towards the site

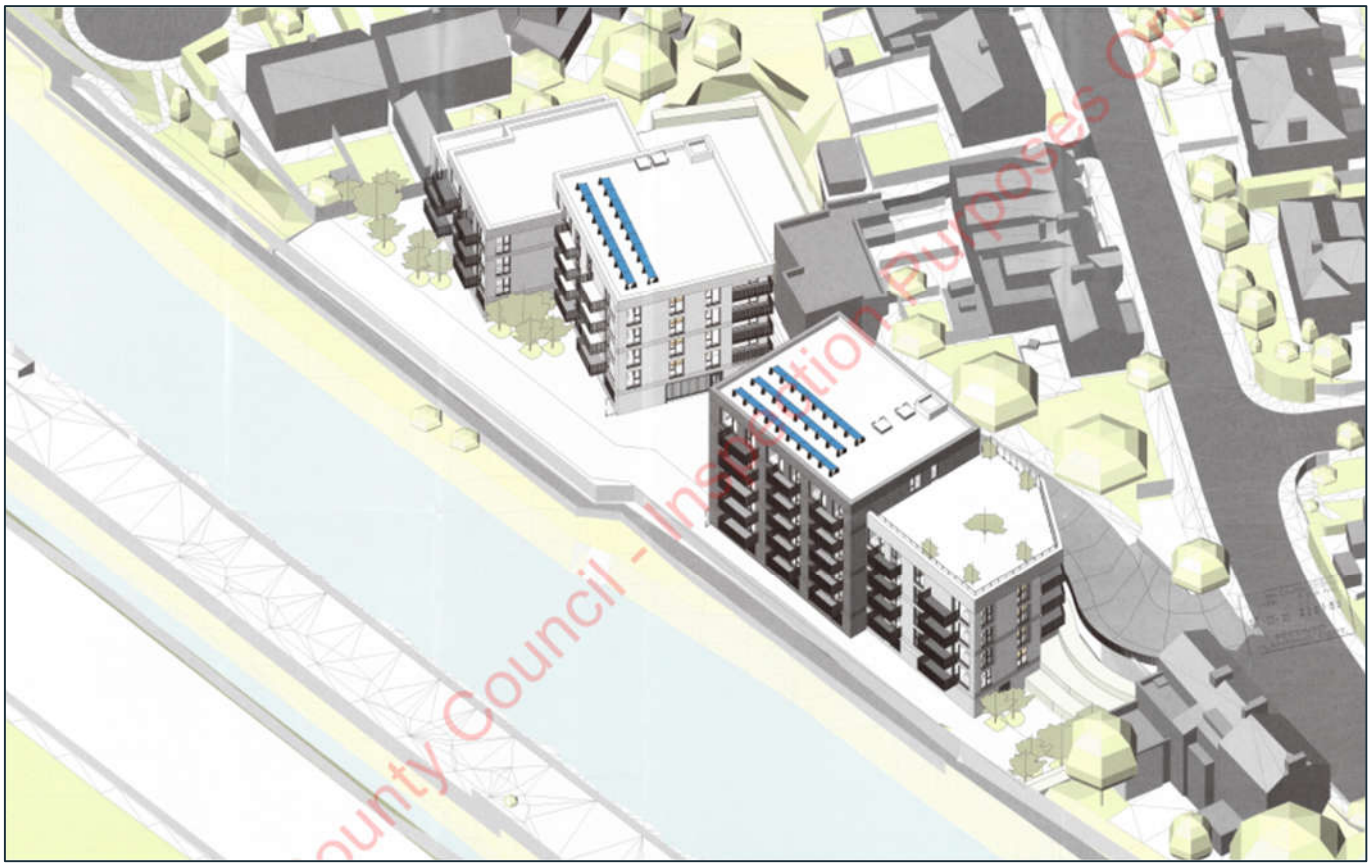


Figure 11-21 - The permitted residential development (Wicklow Co. Co. Reg. Ref. 22188) to the south of the site across the river

The railway passes to the east of the site, rising on an embankment to bridge the River Dargle. On the far side of the railway is Harbour Road, which terminates in a cul-de-sac beside a cluster of seafront industrial premises beside the harbour. A tunnel beneath the railway provides a pedestrian link from the site to Harbour Road, the harbour and the Promenade a short distance to the south. On the southern side of the harbour, also fronting Harbour Road, is a row of cafes and restaurants beside Bray Sailing Club, forming a distinct harbour character area (Figure 11-23).

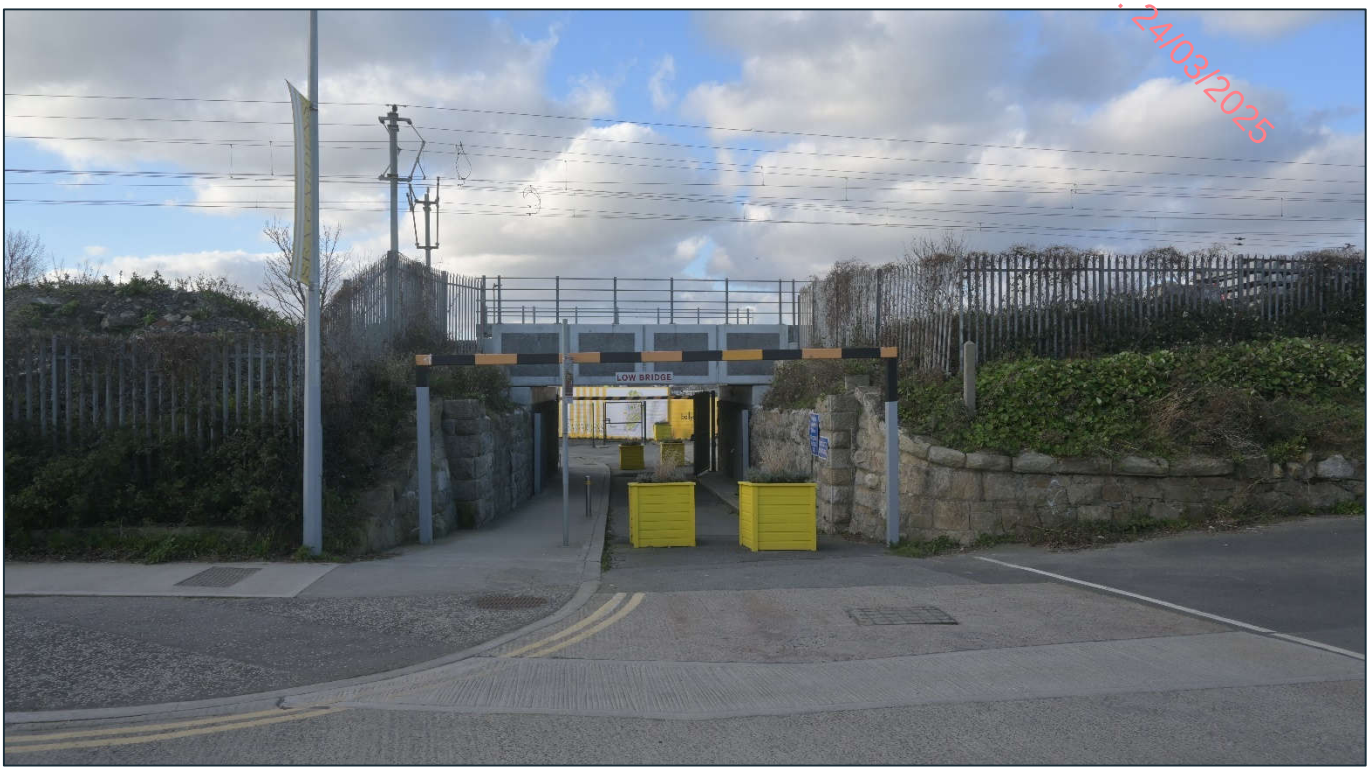


Figure 11-22 - The tunnel beneath the railway line giving access to the site from Harbour Road

Figure 11-23 - The distinct local character area on Harbour Road to the south east of the site

To the north, a road runs inside the site boundary, giving access to the Coastal Quarter development site. North of the road are the following developments:

- The Coastal Quarter (see Figure 11-7 above). This permitted development comprises 76 no. houses, 52 no. duplexes and four apartment buildings, Blocks A-D, ranging in height from three to nine storeys. This represents a significant change in the townscape of Bray, establishing a contemporary, mixed density (including high density) residential neighbourhood on the north side of the River Dargle.
- A campus of two schools, Ravenswell Primary School and Coláiste Ráithín (Figure 11-24). The schools are built at a level several meters above the road to the Coastal Quarter (and the site), and there are views over the site from the schools. There is also a pedestrian link between the site and the schools.
- To the west of these schools, north of the site panhandle extending to the Dublin Road, are the Saint John of God Community Services, Ravenswell, and the North Wicklow Educate Together Secondary School.

The three schools and Saint John of God form an institutional character area to the north of the site. As receptors of townscape and visual change, these are typically of lower sensitivity than, for example, residential receptors.

Figure 11-24 - A view between Ravenswell Primary School and Coláiste Ráithín towards the site, with Bray Head in the distance

To the west is where the site (and the proposed development) interfaces directly with the pre-existing townscape (and specifically Bray town centre):

- The site extends alongside Ravenswell Road, fronting the River Dargle, as far as Castle Street and the Fran O'Toole Bridge (see Figure 11-18).
- The western site boundary runs along the rear boundaries of the houses of Dwyer Park. This is a town-centre neighbourhood off Castle Street – part of the original 'Little Bray', one of the oldest, central quarters of the town (refer to Figure 11-3 above). The neighbourhood is comprised of terraced, two storey houses previously backed onto the golf club. It should be noted that across the road from the houses, between Dwyer Park and Castle Street, is a block of commercial development including a car dealership, Little Bray Post Office, etc.. Dwyer Park is thus a town centre, mixed use neighbourhood, which moderates its sensitivity somewhat.

- The western panhandle gives the site frontage to – and potential access from – the Dublin Road, opposite the junction of Upper Dargle Road. Like Dwyer Park, this area is part of the original Little Bray quarter that predated the Victorian expansion of the town. There is a distinctive umbrella shaped stone pine tree beside the school entrance (see Figure 11-27).

Figure 11-25 - A view from Castle Street along Dwyer Park towards the site

Figure 11-26 - Some of the Dwyer Park houses that back onto the site's west boundary

Figure 11-27 - The site frontage to the Dublin Road, at the junction with Upper Dargle Road

11.3.5 Policy Context

11.3.5.1 National Planning Framework

Compact growth is one of the main principles and intended outcomes of the NPF. This encourages higher density - and therefore taller - development in urban areas where supporting infrastructure and services are available.

National Policy Objective 11 states: *"In meeting urban development requirements, there will be a presumption in favour of development that can encourage more people and generate more jobs and activity within existing cities, towns and villages, subject to development meeting appropriate planning standards and achieving targeted growth."*

Regarding infill development the NPF states: *"The National Planning Framework targets a significant proportion of future urban development on infill/brownfield development sites within the built footprint of existing urban areas… This means encouraging more people, jobs and activity generally within our existing urban areas… and requires a change in outlook... It also requires active management of land and sites in urban areas."* [emphasis added]

11.3.5.2 Urban Development & Building Height Guidelines

The Guidelines state: *"Reflecting the National Planning Framework strategic outcomes in relation to compact urban growth, the Government considers that there is significant scope to accommodate anticipated population growth and development needs, whether for housing, employment or other purposes, by building up and consolidating the development of our existing urban areas…*

"A key objective of the NPF is therefore to see that greatly increased levels of residential development in our urban centres and significant increases in the building heights and overall density of development is not only facilitated but actively sought out and brought forward by our planning processes and particularly so at local authority and An Bord Pleanála levels." [emphasis added]

In Section 3.2 of the Guidelines 'development management criteria' are set out to guide the evaluation of development proposals for buildings taller than the prevailing heights in the area: *"In the event of making a planning application, the applicant shall demonstrate to the satisfaction of the Planning Authority/ An Bord Pleanála, that the proposed development satisfies the following criteria:*

At the scale of the relevant city/town:

- *"The site is well served by public transport with high capacity, frequent service and good links to other modes of public transport.*
- *Development proposals incorporating increased building height, including proposals within architecturally sensitive areas, should successfully integrate into/ enhance the character and public realm of the area, having regard to topography, its cultural context, setting of key landmarks, protection of key views. Such development proposals shall undertake a landscape and visual assessment, by a suitably qualified practitioner such as a chartered landscape architect.*
- *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 in the streetscape."*

At the scale of district/neighbourhood/street:

- *The proposal responds to its overall natural and built environment and makes a positive contribution to the urban neighbourhood and streetscape.*
- *The proposal is not monolithic and avoids long, uninterrupted walls of building in the form of slab blocks with materials / building fabric well considered.*
- *The proposal enhances the urban design context for public spaces and key thoroughfares and inland waterway/ marine frontage, thereby enabling additional height in development form to be favourably considered in terms of enhancing a sense of scale and enclosure...*
- *The proposal makes a positive contribution to the improvement of legibility through the site or wider urban area within which the development is situated and integrates in a cohesive manner.*
- *The proposal positively contributes to the mix of uses and/ or building/ dwelling typologies available in the neighbourhood."*

Of most relevance among the criteria above is the recognition of site frontage to waterways and marine frontage as a factor enabling additional building height.

11.3.5.3 Wicklow County Development Plan 2022-2028

Landscape Character

The Wicklow County Development Plan 2022-2028 (Wicklow CDP) refers to the Landscape Assessment that was contained in the previous CDP (2016-2022). Section 17.3 of the current Wicklow CDP (2022-2028) states: *"The landscape assessment that was undertaken for the previous County Development Plan in 2016 has not been updated for the purposes on this plan, and is considered to remain a robust and up to date reflection of the landscape character zones of the County.*

"This detailed Landscape Character Assessment identified 15 distinctive landscape categories, which were placed within a landscape hierarchy detailed below and as shown on Map 17.09A-E of this plan and remain as described as set out in the Landscape Character Assessment appendix of the 2016 plan, which is herewith subsumed and carried forward into this plan."

In the CDP maps 17.09A-E, the subject site is classified as an Urban Area (refer to Figure 11-28 below).

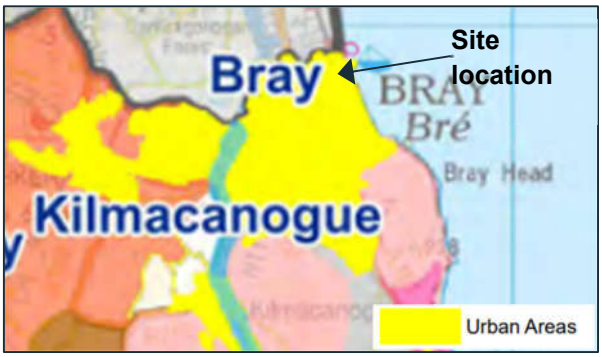


Figure 11-28 - Annotated Excerpt from Wicklow CDP Map No. 17.09A Natural Heritage & Biodiversity

The Wicklow CDP states: *"All locations designated as 'settlements' in the County settlement hierarchy (i.e. areas falling within Levels 1-6) are considered 'urban' areas for the purpose of landscape classification. In terms of landscape classification, these settlements have already been deemed suitable for development (of the type allowed by the settlement strategy and the development standards of this plan) and the impacts on the wider landscape of such development has already been deemed acceptable…"* [emphasis added]

Views and Prospects

The Wicklow CDP states: *"Views and prospects listed for the towns of Bray, Wicklow, Arklow and Greystones-Delgany are listed and mapped in each individual Town Development Plan / Local Area Plan. The policies and objectives set out in this Plan shall apply to all views/prospects listed for preservation in these local plans".*

There is no current Town Development Plan/Local Area Plan for Bray. The Bray Municipal District Local Area Plan 2018 (LAP 2018) expired in 2024. However, the LAP 2018 was in place when the Wicklow CDP was prepared. Therefore, the Views and Prospects identified in the LAP 2018 were reviewed for this assessment. Map No. H4 of the LAP 2018 (Figure 11-29 below) shows two Views and Prospects potentially affected by the proposed development (circled in black on Figure 11-29). These are a view west along the River Dargle from the harbour area, and the view north along the coastline from Bray Head.

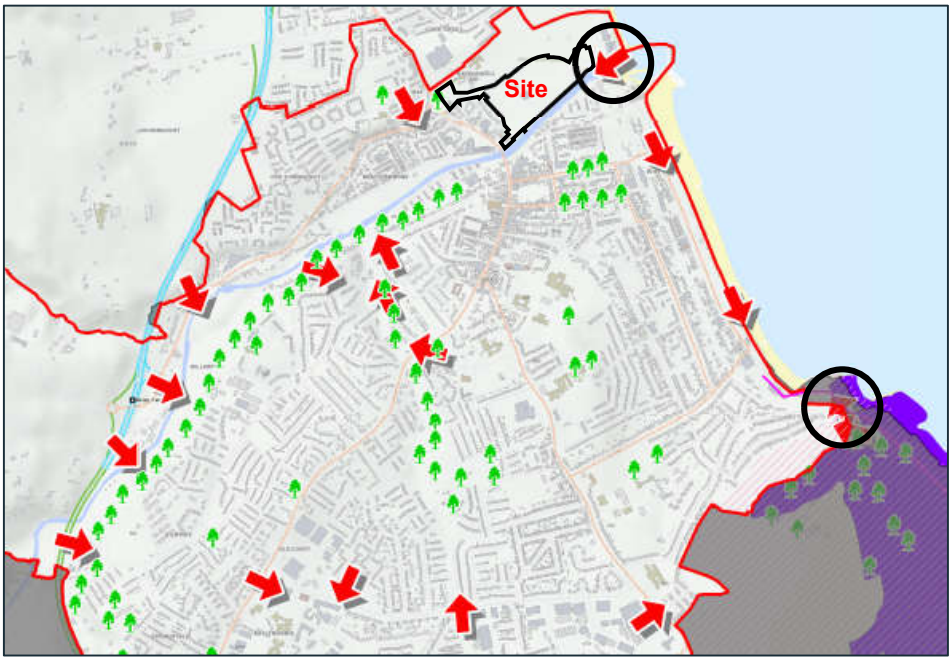


Figure 11-29 - Excerpt from Bray LAP 2018 Map No. H4: Heritage Objectives Map

The Wicklow CDP states further: *"Views and prospects listed in this plan for the County are set out in Schedules 17.11 & 17.12 and Maps 17.10 A, B, C, D & 17.11 of this plan."* The excerpt from Map No. 17.10A of the Wicklow CDP (Figure 11-30 below) shows that there are no views and prospects identified in the vicinity of the site.

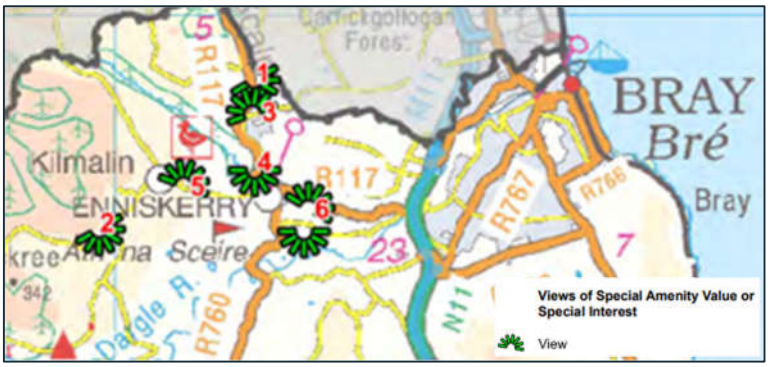


Figure 11-30 - Excerpt from Wicklow CDP Map No. 17.10A Natural Heritage & Biodiversity

The CDP states: *"Where listed views / prospect occur in settlements, it is not the intention that all lands in the view / prospect will be 'sterilised' from development. Any application for development in such locations will be required to provide an assessment of the view / prospect and an evaluation of how the development would change or interfere with that view / prospect."* Accordingly:

- The effects on views west along the River Dargle, including from the harbour area, as assessed by Viewpoints 19, 20, 21, 24 and 25 in Section 11.5 below.
- The effects on the view north from Bray Head are assessed by Viewpoints 36 and 37 in Section 11.5.

Development Design Standards

Appendix 1 of the Wicklow CDP is the statement of Development and Design Standards (DDS), which *'sets out the principal factors that should be considered in the design of any new development'*. Many of these factors relate to - and will to some extent determine - the landscape/townscape and visual effects of a development. The DDS identifies the following 'Key Principles of Good Design':

1. *Context: How does the development respond to its surroundings?*
2. *Connections: How well is the new development / site / neighbourhood connected?*
3. *Inclusivity: How easily can people use and access the development, and can it meet the needs of all in society?*
4. *Variety: How does the development promote a good mix of activities?*
5. *Efficiency: How does the development make appropriate use of resources, including land and energy?*
6. *Distinctiveness: How do the proposals create a sense of place?*
7. *Layout: How does the proposal create people friendly streets and spaces?*
8. *Public realm: How safe, secure and enjoyable are the public areas?*
9. *Adaptability: How will the buildings cope with change?*
10. *Privacy / amenity: How do the buildings provide a high-quality amenity?*
11. *Parking: How will the parking be secure and attractive?*
12. *Detailed design: How well thought through is the building design?*
13. *Climate Change: How does the design address climate change considerations?*

The DDS cites a number of 'key documents' which should be considered in the design and assessment of new developments. Most relevant among these is the *Best Practice Urban Design Manual*. (The DDS Key Principles of Good Design above are taken from the *Urban Design Manual*.)

The DDS states: *"New developments on greenfield sites may need to establish their own identity, as some may be of such a scale and distance from the core town centre area as to render analysis of existing 'context' meaningless"*. For large scale expansion areas (such as the former Bray Golf Club lands) the following guidance is provided:

- *"at the outset, a vision for the area shall be established and agreed with the Planning Authority. This shall set out the 'type' of place that is envisaged, the design ethos and the influences on form and design emerging;*
- *an evaluation of the existing surroundings of the site, as well as future proposals / zoning for lands in proximity, shall be carried out to determine how the new development will integrate with the area and allow for maximum connectivity and permeability;*
- *the development shall include distinctive and / or landmark type buildings and a series of new spaces that allow for the development of a sense of place and identity;*
- *new roads / streets shall be laid out in a legible hierarchy from distributor to local roads;*
- *the retail, employment and community needs of the new area shall be met at a scale appropriate to the development, having regard to the availability of such facilities in the settlement and their proximity to the site in question."*

The Masterplan submitted with the subject application sets out a vision for the area, and the design ethos and influences that determined the proposed design.

Other relevant policies from the DDS include the following:

- *Building design:*
  - *"Good modern architecture with a building language that is varied and forward-looking rather than repetitive and retrospective will be required; however, reference and 'clues' must be drawn from surroundings, particularly in traditional or protected town centre areas;*
  - *"Variation in external materials will be expected, again subject to 'fit' with surrounding buildings. Care shall be taken in excessive use of contrasting materials and generally no more than two contrasting materials shall be utilised on any façade…*
  - *"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."*

11.4 Potential Impacts on the Townscape during Construction and Operational Phases

11.4.1 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. Although of relatively compact form (due to the topographical constraints to its expansion), Bray has the feel of a larger town or even a small city. Its diversity and strength of character create capacity to accommodate change (refer to Section 11.3.2.1 above).

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. Construction is well advanced on Phase 1a. 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." [emphasis added]
- The site's frontage to the River Dargle 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 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 subjected 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** (refer to Table 11-1): *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*.)

11.4.2 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 River Dargle 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, at the point where the River Dargle passes beneath the railway bridge and Harbour Road into Bray Harbour. 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 is coloured white, 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 River Dargle, 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 (refer to the visual effects assessment in Section 11.5). **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**.

11.4.3 Significance of Townscape Impacts During Operation

Measuring the magnitude of change (high) against the sensitivity of the receiving environment (medium), the significance of the townscape effects 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 process requires the classification of effects as positive, negative or neutral. The GLVIA (Section 5.37) states: *"One of the more challenging issues is deciding whether the landscape effects should be categorised as positive or negative. It is also possible for effects to be neutral in their consequences for the landscape. An informed professional judgement should be made about this and the criteria used in reaching the judgement should be clearly stated"* [emphasis added].

The Wicklow CDP's statement of Development and Design Standards (Appendix 1 of the CDP) cites a number of 'key documents' which should be considered in the design and assessment of new developments. Most relevant among these is the *Urban Design Manual - A Best Practice Guide (2009) published by the Department of Housing, Local Government and Heritage*. (The DDS Key Principles of Good Design are taken from the *Urban Design Manual*.)

To inform the judgement on whether the proposed development's townscape effects (which have been classified 'significant') can be categorised as positive, neutral or negative, the proposal is considered (in Table 11-6 below) against the relevant 'Urban Design Criteria and Indicators' provided in the *Urban Design Manual - A Best Practice Guide*.

Table 11-6 - Assessment of Proposed Development Against Relevant Urban Design Manual – A Best Practice Guide criteria and indicators

Urban Design Criteria and Indicators		Yes/ No	Comment
01 Context - How does the development respond to its surroundings?			
01a	The development seems to have evolved naturally as part of its surroundings	Yes & No	Urban Grain The proposed layout/urban grain is derived from the main topographical features of the surroundings, specifically the alignment of the River Dargle to the south and the railway and coastline to the east. The proposal responds to the layout of the permitted Coastal Quarter development to the north, and the alignment of Dwyer Park/Castle Street to the west. A traditional orthogonal grid layout is adjusted to these elements, resulting in an urban grain that integrates comfortably/naturally with these elements of the surroundings. Land Use and Building Typologies The arrangement of uses responds to the context. Where the site interfaces with the existing town centre, beside Fran O'Toole Bridge, the Block G retail centre is proposed. This is intended to draw people into the quarter along the riverfront, from the bridge, which was the centre-point of the town's original north-south spine.  Where the site borders on the existing residential neighbourhood of Dwyer Park to the west and the schools to the north, lower density housing is proposed in the form of terraced houses and duplexes. This is an appropriate adjacent use for these neighbours. A new core of high density residential use and a hotel (Blocks E and I) are located at the eastern extent of the site, where the site has frontage to the river to the south and the harbour/coastline to the east. The increased density/height responds to the opportunity provided by (a) these topographical elements, (b) the relative separation of this area from most sensitive receptors, and (c) the density/height of the permitted Coastal Quarter development to the north. This high density core would create a new 'pole' of activity-generating use at the eastern point of the site, complementing the retail pole of Block

Urban Design Criteria and Indicators		Yes/ No	Comment
			G at the western end. Together these would encourage east-west movement through the site, along the river and through the Central Park.
01b	Appropriate increases in density respect the form of buildings and landscape around the site's edges and the amenity enjoyed by neighbouring users	Yes	One of the development management criteria in the Building Height Guidelines (refer to Section 11.3.5.2 above) is as follows: "The proposal enhances the urban design context for public spaces and key thoroughfares and inland waterway/ marine frontage, thereby enabling additional height in development form to be favourably considered in terms of enhancing a sense of scale and enclosure." The Sea Gardens Masterplan responds to the site's location alongside the river and the coastline. Density and height are greatest along the eastern and southern edges, with the landmark Block E positioned at their intersection. The taller buildings are thus buffered from the smaller scale townscape to the west and north by the houses and duplexes, and from the neighbourhood south of the River Dargle (Seapoint Court and Seapoint Road) by the river corridor itself. Where the site interfaces directly with existing houses (Dwyer Park to the west), terraces of 2-3 storey houses and duplexes are arranged back-to-back with the existing houses. 
01c & d	Form, architecture and landscaping have been informed by the development's place and time	Yes	The residential buildings are predominantly contemporary typologies, i.e. apartments and duplexes - to achieve the density required by compact growth/sustainable density policy. The development is thus 'of its time', representing the current planning/development paradigm, and would establish a contemporary, high density quarter in the town. While the typologies are modern, the architectural language across the proposed development is intended to reflect the particular character of Bray: The houses and duplexes adopt characteristics of the town's Victorian architecture, including the buildings' overall form/proportions, the fenestration pattern, roof design and the use of pastel coloured render.

Urban Design Criteria and Indicators	Yes/ No	Comment
The development positively contributes to the character and identity of the neighbourhood		The Art Deco design of Block E is inspired by seaside resort architecture. This is evident in the strongly expressed floor plates and horizontal bands of windows, generous, set-back balconies (integral to the form as opposed to expressed/ projecting), rounded corners, and the building's light colouring. Block H incorporates Victorian cues (e.g. in the fenestration) and has a 'bullnosed corner' and a strongly articulated ground floor shopfront at the western gateway to the quarter. The hotel has a distinctive curved form, responding to its place in the urban grain. The Block G retail buildings have a unique architectural language incorporating expressed vertical frames, angled roofs and the use of colour and extensive glazing in the facades.

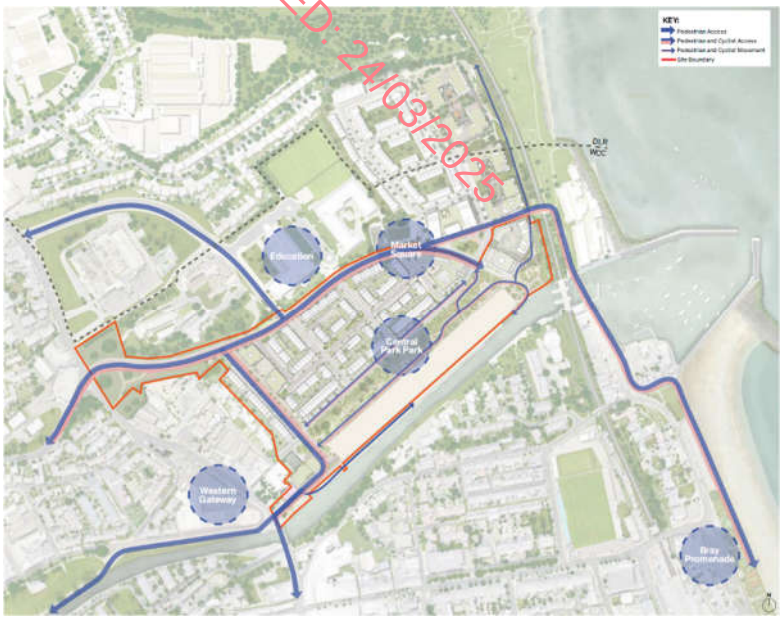
Urban Design Criteria and Indicators	Yes/ No	Comment

Urban Design Criteria and Indicators	Yes/ No	Comment

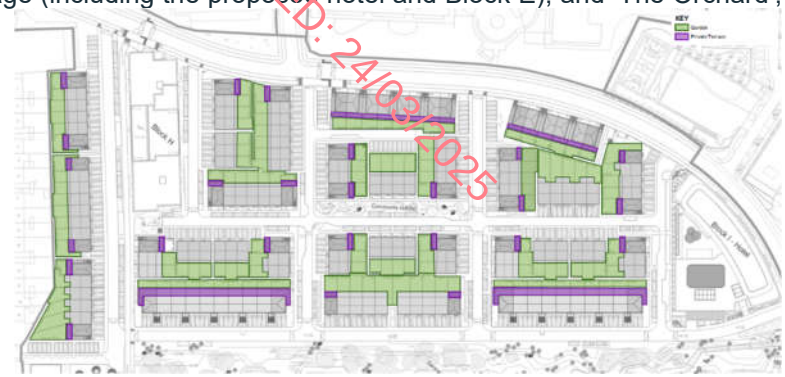
There is sufficient diversity in built form and architecture across the site (illustrated by the images on the preceding page) to create sub-areas of character, within an overall theme that would generate identity for the quarter while also reflecting the seaside location and Bray's historic architecture.

The proposed development is thus compliant with the following policy contained in the Wicklow CDP's Development and Design Standards regarding building design:

Urban Design Criteria and Indicators		Yes/ No	Comment
			"Good modern architecture with a building language that is varied and forward-looking rather than repetitive and retrospective will be required; however, reference and 'clues' must be drawn from surroundings, particularly in traditional or protected town centre areas; "Variation in external materials will be expected, again subject to 'fit' with surrounding buildings. Care shall be taken in excessive use of contrasting materials and generally no more than two contrasting materials shall be utilised on any façade… "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."
01e	Appropriate responses are made to the nature of specific boundary conditions	Yes	Where the site interfaces with Dwyer Park to the west, terraces of 2-3 storey houses and duplexes are arranged back-to-back with the neighbouring properties/houses in a typical urban/suburban arrangement. This avoids an excessively abrupt transition in typology, density and scale along this sensitive boundary. Similarly, across the existing road from the Ravenswell school, terraces of houses and duplexes are proposed. This provides a benign frontage to the school, and preserves views across the site from the elevated vantage point of the school. The four storey mixed use Block H takes advantage of its separation from neighbouring sensitivities to create a gateway feature to the new quarter on the road entrance from the west. The Block G retail buildings are relatively small in stature (two storeys) and arranged in a linear form along the River Dargle. This also responds to the neighbouring Dwyer Park houses, and maintains visibility across the site from Fran O'Toole bridge. As described in Row 01b above, Block E responds in its positioning, height and orientation to its location inside the east boundary, fronting the railway line and overlooking the harbour area (where the River Dargle meets the sea) and the harbour industrial zone. The future River Quarter will similarly respond (conceptually and in typology and scale) to its riverside position.

Urban Design Criteria and Indicators		Yes/ No	Comment
02 Connections - How well connected is the new neighbourhood?			
02a	There are attractive routes in and out for pedestrians and cyclists	Yes	Pedestrian and cycle access is provided to the new quarter from (a) the south west, from Fran O'Toole Bridge along the riverside walk, (b) Ravenswell Road to the north (leading from the Dublin Road), and (c) via the tunnel beneath the railway line from Harbour Road to the east. These existing access points would be supplemented by the proposed new road entering the site from the Dublin Road (and Upper Dargle Road) to the west. The proposed layout extends the urban grain of the Coastal Quarter (to the north) onto the site, facilitating flow of pedestrian and cycle traffic across the site. The adapted grid layout as a whole is inherently navigable and would facilitate pedestrian and cycle movement along all possible desire lines, with an emphasis on east-west movement (note the parallel routes along the riverfront, through the Central Park and along the new road extending to the Dublin Road to the west). 
02b	The development is located in or close to a mixed-use centre	Yes	The proposed development is adjacent to the existing town centre. Its strategic development potential, for mixed use and high density residential use, has been recognised through its zoning and designation as a 'Strategic Site' in the relevant local, county and regional development plans.
02c	The development's layout makes it easy for a bus to serve the scheme	Yes	Bus stops serving local and national routes are located on Castle Street/Dublin Road immediately to the west of the site. The proposed layout facilitates easy access to these bus stops. There are also bus stops at Bray Train Station and on Quinsborough Road and Main Street, all comfortably within 10 minutes' walk from the site (via Harbour Road to the east or Castle Street/Fran O'Toole Bridge to the west).
02d	The layout links to existing	Yes	The site's central location and the existing access points (see 02a above) make large parts of the central urban area of Bray accessible from the new quarter.

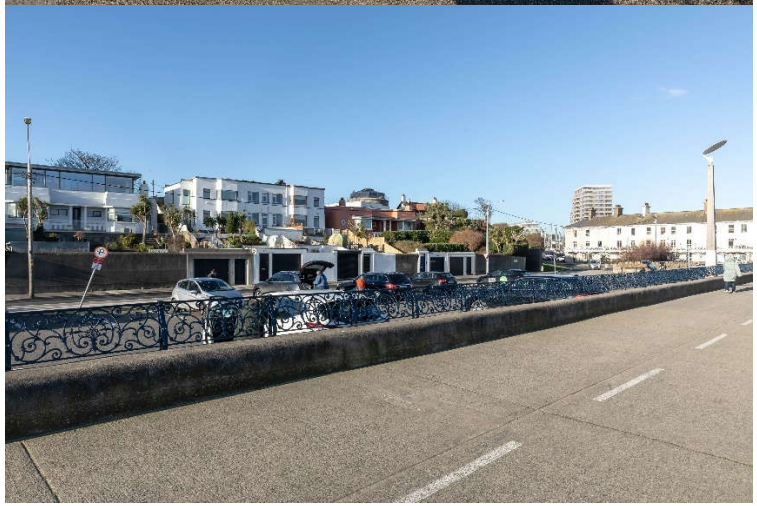
Urban Design Criteria and Indicators		Yes/ No	Comment
	movement routes and the places people will want to get to		These places/destinations include Bray Train Station, Main Street, the harbour area, Promenade and beach, Quinsborough Road, Castle Street shopping centre and the Lidl on Ravenswell Road, the three schools and health centre adjacent to the north of the site, the riverside walk and People's Park to the west (along Lower Dargle Road), etc.
02e	Appropriate density, dependent on location, helps support efficient public transport	Yes	The proposed development is of high density and is within walking distance of existing bus and train services. It would support the maintenance and improvement of public transport services in Bray.
03 Inclusivity – How easily can people use and access the development?			
03a	There is a range of public, communal and/or private amenity spaces and facilities for children of different ages, parents and the elderly.	Yes	The proposed public open spaces include: 'Central Park', a 4 acre park with several play areas catering for different age groups, as well as passive recreation space. 'Coastal Gardens', a riverside park in the eastern corner of the site between Block E and the Dargle and the harbour. 'Western Gateway', a riverside space at the Fran O'Toole Bridge/Castle Street interface. This space has an 'urban plaza' character designed to encourage pedestrian flow into the quarter from the existing town centre.

Urban Design Criteria and Indicators		Yes/ No	Comment
			In addition to these spaces, the development/residents would have direct access to open spaces in the adjacent Coastal Quarter, including (a) 'Market Square, a plaza enclosed by active frontage (including the proposed hotel and Block E), and 'The Orchard', an open space containing a multi-use games area (MUGA) for active recreation.  Proposed private amenity space: aAll houses hve a rear garden sized in accordance with the requirements of the Wicklow CDP and the Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities. All duplex units have either a ground floor garden or first floor terraced space accessed from their rear elevations (facing away from the street), meeting or exceeding the space requirements of the Sustainable Urban Housing Design Standards for New Apartment Guidelines for Planning Authorities. All apartments have a private balcony or terrace meeting or exceeding the requirements of the Guidelines.
03b	New buildings present a positive aspect to passers-by, avoiding unnecessary physical and visual barriers.	Yes	The site has frontage to existing public realm/streets along a stretch of the riverside walk off Castle Street/Fran O'Toole Bridge, and along a section of Ravenswell Road to the north (opposite the schools). Block G is positioned fronting the River Dargle adjacent to Castle Street and Fran O'Toole Bridge. This commercial/retail centre has a distinctive design with an active frontage to the river, visible from the bridge, to attract people into the new quarter. 

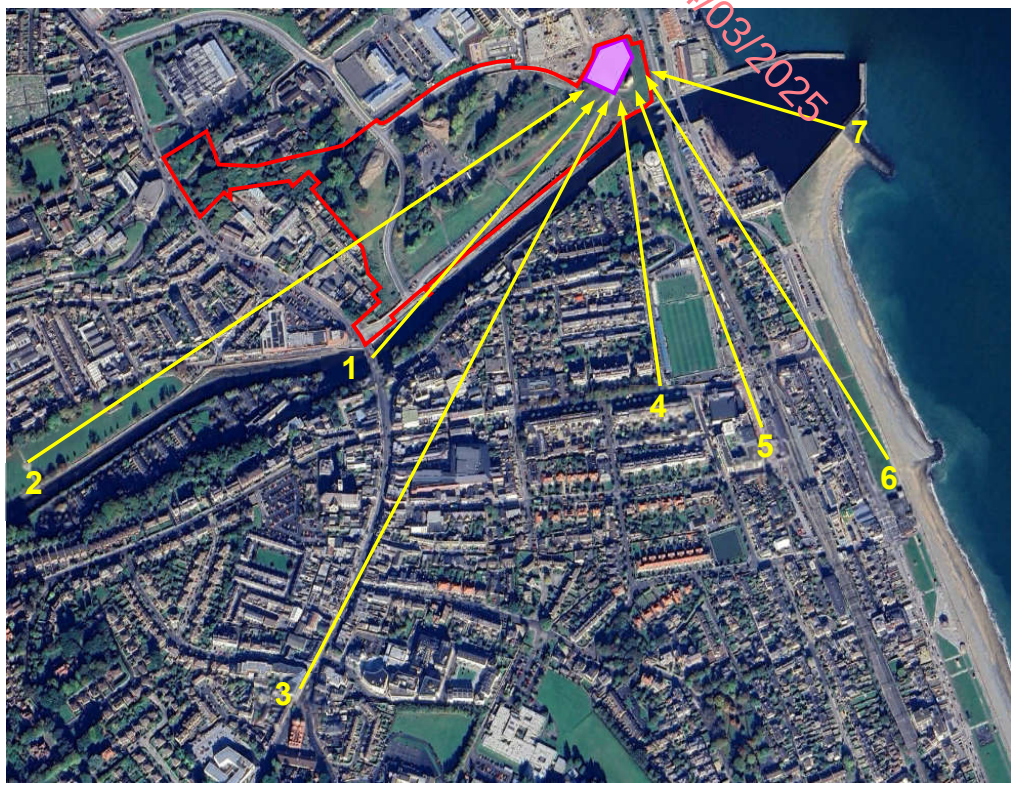
Urban Design Criteria and Indicators		Yes/ No	Comment
			Along Ravenswell Road, the proposed Block H mixed use building is scaled (four storeys) and designed to function as a gateway to the quarter on the new road access from the Dublin Road. The houses and duplexes further east along the road, opposite the schools, are designed to provide urban-type enclosure to the street, but scaled (2-3 no. storeys) to allow visibility over the new residential neighbourhood from the schools to the north, which are on a level several meters above the street and the new houses. These frontages would present a 'positive aspect' to passers-by, avoiding physical or visual barriers. 
05 Efficiency - How does the development make appropriate use of resources, including land?			
05a	The proposal looks at the potential of higher density, taking into account appropriate accessibility by public transport and the objectives of good design	Yes	The proposed development includes medium and high density residential typologies/neighbourhoods, a retail core (Block G), mixed use building (Block H) containing a creche, medical centre and shop, and a hotel (Block I) with conference/wedding venue and leisure facility including a swimming pool. This mix and intensity of uses would make efficient use of the town centre site with access to existing and future public transport services. The highest density elements (Blocks E and I) are positioned to take maximum advantage of the site's coastal and riverside location, while protecting the amenities of lower density areas to the west and north (refer to 01a-e above).
05b	Landscaped areas are designed to provide amenity	Yes	The Central Park and Coastal Gardens areas are large, green, public open spaces. Due to their combined linear footprint, extending east-west across the length of the site, they would be physically and visually accessible to much of the new quarter. It is proposed to retain a large number of the existing golf course trees in the Central Park and supplement these with dense tree and shrub planting for habitat provision and visual amenity.

Urban Design Criteria and Indicators	Yes/ No	Comment
and biodiversity, protect buildings and spaces from the elements and incorporate SUDs		Both Central Park and Coastal Gardens include a formal playground and informal/natural play opportunities, space for ball play, and seating/gathering places. The Central Park includes extensive rain garden areas for water attenuation (SUDs). 

06 Distinctiveness - How do the proposals create a sense of place?			
06a, 06b	The place has recognisable features so that people can describe where they live and form an emotional attachment to the place. The scheme is a positive addition to the identity of the locality	Yes	Due to its location beside Fran O'Toole Bridge (the historic centre of Bray), alongside the River Dargle and the harbour/coastline, the site is inherently recognisable, memorable and easy to describe. The proposed development seeks to leverage these characteristics and complement them by the addition of distinctive built features such as the landmark Block E and the Block G retail/commercial centre, which would have visual/townscape presence of townwide significance. Both these elements have been positioned and designed for this particular purpose – visibility and recognisability. The photomontages (contained in Appendix 11.1 of the EIAR and assessed in Section 11.5 below) show that the proposal would succeed in creating a distinctive new quarter in the townscape of Bray.



06c	The layout makes most of opportunities presented by existing buildings,	Yes	See 01a-e and 06a above.

	landform and ecological features to create a memorable layout		
06d, 06e	The proposal successfully exploits views into and out of the site There is a discernible focal point to the scheme… the proposals reinforce the role of an existing centre	Yes	Views Into the Site The eastern point of the site, at the intersection of the River Dargle and the coastline, is positioned on the axis of several key views, including: The view east along the River Dargle from Fran O'Toole Bridge; The view east from People's Park; The view from the top of Main Street (outside the former Bray Town Hall and Market House; Certain views from Quinsborough Road; The view from Bray train station; Views from the Promenade and Bray Head; The view west/inland from the harbour walls; Views from the coastline to the north (as far as Killiney Hill and Dalkey).  The proposed Block E seeks to exploit the visibility of this part of the site to create a focal point in these views - to (a) give the development a strong identity as a contemporary, high density urban quarter, and (b) give that new quarter a strong presence in the townscape of Bray.

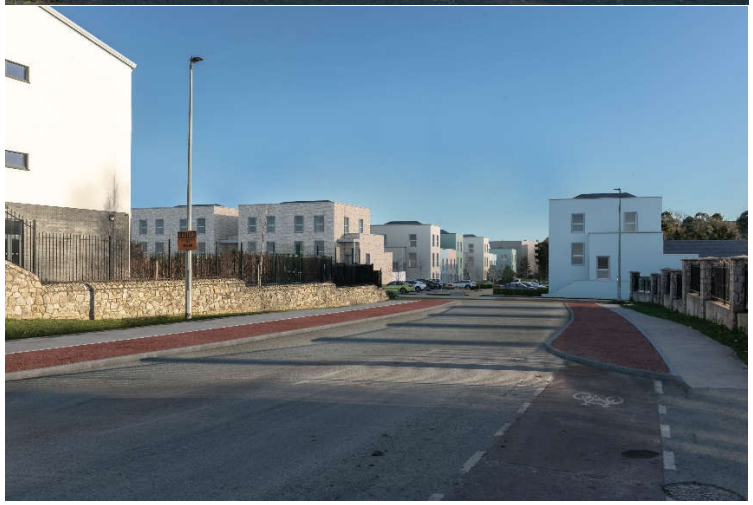
Block E is conceived as a building of metropolitan status - to realise Bray's role as a Key Town in the metropolitan city-region. This ambition informed the scale of the proposed building. The photomontages (contained in Appendix 11.1 of the EIAR) show that it would achieve this level of prominence in the townscape of Bray, shifting the town's character towards that of a metropolitan town.

Importantly, while close to (and visible from) the centre, the proposed development (particularly Block E) is nonetheless physically separated from the original town centre and historic quarters (e.g. the Promenade, Quinsborough Road), so that these areas would retain their intrinsic character. The development – along with the permitted Coastal Quarter – would add a new character area to the townscape without diluting the qualities of the historic areas.

The proposal also successfully exploits other views into the site, with buildings positioned to achieve urban design objectives. For example:

Block H would function as a gateway feature on the new approach from the Dublin Road to the west (left below).

The duplexes at the junction of Ravenswell Road would form a gateway on the approach from the north (right below).



Views Out of the Site

As well as seeking to exploit views into the site, Block E seeks to take maximum advantage of the views from the site.

	Its location affords views of unique character and quality, including sea views to the east, views along the coastline to north (towards Dublin) and south (to Bray Head), views over the townscape of Bray, and views west along the River Dargle towards the Wicklow Mountains inland. The proposed scale/height of the building has been informed by this objective in addition to the landmark objective.

Urban Design Criteria and Indicators		Yes/ No	Comment
07 Layout - How does the proposal create people friendly streets and spaces?			
07a, 07b, 07c	Layout aligns routes with desire lines to create a permeable interconnected series of routes that are easy and logical to navigate around. The layout focuses activity on the streets by creating active frontages with front doors directly serving the street. The streets are designed as places instead of roads for cars, helping to create a hierarchy of space with less busy routes having surfaces shared by pedestrians, cyclists and drivers.	Yes	See 02a and 02c above. The proposed layout connects the development to the existing roads and pedestrian routes in the surrounding townscape, and adopts a traditional grid layout internally – to create a logical, permeable, navigable urban quarter. The houses and duplexes are arranged as perimeter blocks, providing built frontage, activity (from front doors on the street) and passive surveillance to the streets – and to the northern side of the Central Park. The proposed hotel and Block E intensify the enclosure, active frontage and surveillance at the eastern end of the park. The four types of street (pedestrianised street, homezone, local street and link street) each has a distinct streetscape design, reflected in the surfacing, separation (or not) of pedestrian and vehicular traffic, planting and furniture – to reinforce the hierarchy of streets and thus strengthen the townscape legibility. 
07d **08d**	Block layout places some public spaces in front of building lines as squares or greens, and some semi private space	Yes	All public open space is positioned to the front of building lines and alongside public streets (left below). All communal and private amenity space is positioned to the rear of buildings (right). This ensures that ownership/accessibility is unambiguous.

	to the back as communal courts. There is a clear definition between public, semi private, and private space.	 	

08 Public Realm - How safe, secure and enjoyable are the public areas?

08a	All public open space is over-looked by surrounding homes so that this amenity is owned by the residents and safe to use. Play areas are sited where they will be overlooked, safe and contribute to the amenities.	Yes	The Central Park is overlooked by terraces of houses and duplexes and the hotel along its northern edge, and by Block E at its eastern end. The play spaces are located in the park to take advantage of this passive surveillance.
08b	The public realm is considered as a usable integrated element in the design of the development.	Yes	See 03a, 05b and 07d.

In summary:

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.

Based on the assessment (in Table 11-6 and the above summary) of the proposed development against the relevant 'Urban Design Criteria and Indicators' in the *Urban Design Manual - A Best Practice Guide*, **the potential townscape effects of the proposal can be classified 'significant positive'**.

11.4.4 Significance of Townscape Impacts During Construction

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. The only meaningful/effective mitigation for the landscape/visual impacts 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. However, (a) the construction phase of a development is temporary, and (b) construction is a normal, necessary activity in the urban environment. These factors are taken into account in the classification of significance of the townscape effects during construction below.

Measuring the magnitude of change (high, but temporary) against the sensitivity of the receiving environment (medium), the significance of the townscape effects 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*.)

11.5 Potential Visual Impacts During Construction and Operation Phases

Based on the analysis of the receiving environment in Section 11.3, consideration of the proposed development (particularly the height of Block E) and relevant policy, and informed by the LVIAs for previous planning applications for development on the former Golf Club lands, 42 no. viewpoints were selected for visual effects assessment informed by verified photomontages. The viewpoints are shown on Figures 11-31 to 11-33 below.

The effects on each view are individually assessed below, with the viewpoints grouped to represent townscape character areas where appropriate.

The assessment of each view below considers the construction phase of development (temporary) as well and the operational phase (permanent), and the potential 'future cumulative' effects of the 'River Quarter' (Phase 3 of the Sea Gardens Masterplan, as currently envisaged).

The assessments should be read in conjunction with the book of verified photomontages provided in Appendix 11.1, Volume 3 of the EIAR. For each viewpoint, the following views are provided in Appendix 11.1:

- **Existing View** (photograph)
- **Baseline/Permitted View** (Existing View + nearby permitted developments: (1) ABP-314636-22, (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)

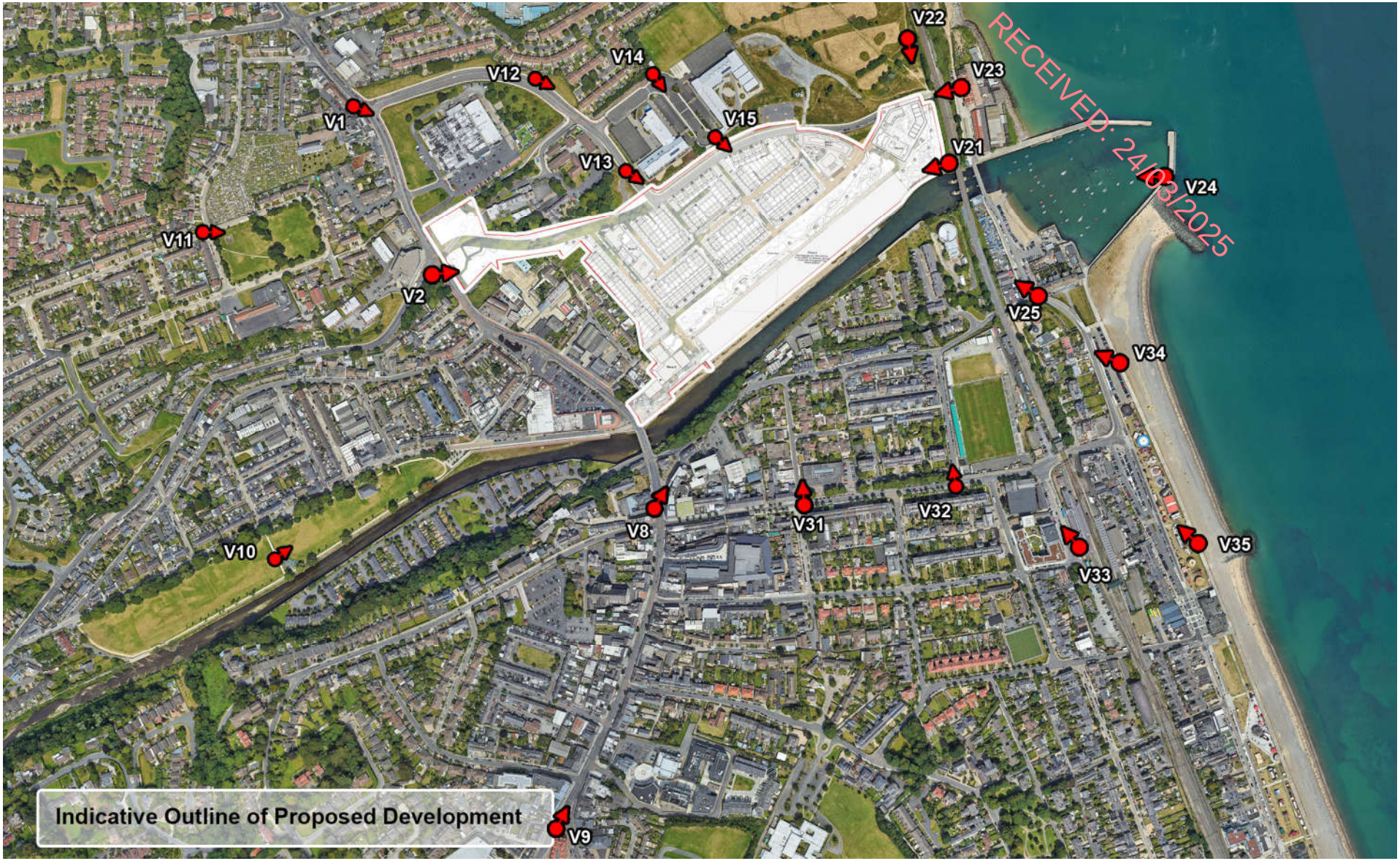


Figure 11-31 - Viewpoints for visual effects assessment – Map 1

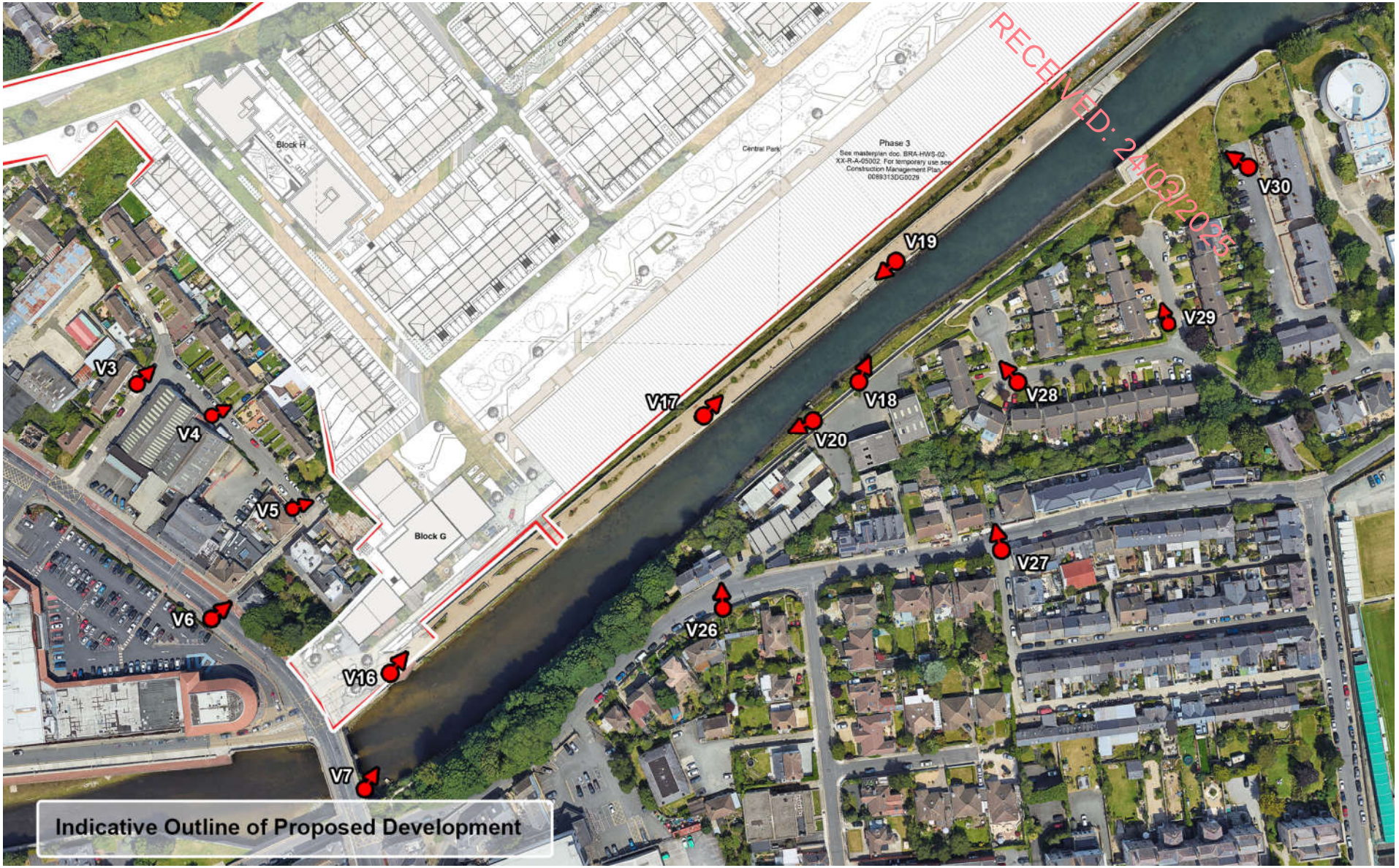


Figure 11-32 - Viewpoints for visual effects assessment – Map 2

Figure 11-33 - Viewpoints for visual effects assessment – Map 3

11.5.1 The Dublin Road

Viewpoint 1 Dublin Road at the Coach Inn

Existing/Baseline View

- The Dublin Road is an important route into Bray from the north. At this location, the road crests a hill and provides a view across the townscape towards Bray Head in the distance. To the left is the new road to Ravenswell/Sea Gardens. There is no built frontage on the east side of the road and the topography falls from the roadside towards the coastline to the east and the River Dargle to the south. Only the rooftops of the roadside buildings are visible, creating a somewhat untidy composition.
- In the baseline/permitted view, the tops of the permitted Blocks A and B are just discernible in the distance to the east. These give some indication of the presence of a high density quarter, and illustrate how building height could be used to achieve legibility. (Block B was reduced from 12 no. to 9 no. storeys by condition.)
- Viewpoint sensitivity: Medium.

Proposed View

- The proposed 15 storey Block E would be a notable addition to the distant skyline, rising well above the neighbouring Blocks A and B. The building would protrude sufficiently above the surrounding townscape to catch the eye, and for its distinctive Art Deco architecture to be recognised. It would thus function as a landmark, as intended, identifying a new place of importance in the townscape.
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Not significant negative. The visibility (temporary) of the building under construction in the distance would have a minor negative effect on visual amenity.
- Operation phase: Slight positive. The development would introduce an element of interest to the townscape, improving legibility (by marking the new quarter), with no negative effect on any valued feature or characteristic of the view.

Future/Masterplan View

- The row of Riverside Quarter buildings would be all but screened from view. Only the block nearest to Block E might be discernible at certain points along the Dublin Road. Where visible, this would contribute positively to the realisation of a legible high density quarter.

Viewpoint 2 Dublin Road at Junction of Upper Dargle Road

Existing/Baseline View

- At this the point when travelling along the Dublin Road there is a sense of approaching/entering the town centre. A modern, multi-storey retail and office building at this junction (behind the viewer) contributes to this impression. Across the road, to the left, is the entrance to a secondary school, beside which is a distinctive Stone pine tree (this tree is on the site). The low wall across the road marks the site boundary. To the right is the roofscape of the Little Bray area, a mixed use, low rise town centre quarter, which includes the Castle Street shopping centre beside the Fran O'Toole Bridge.
- The baseline/permitted view shows that the permitted Coastal Quarter development would not be visible.
- Viewpoint sensitivity: Medium.

Proposed View

- The new road giving access to the site would enter through the existing school entrance (just out of view to the left), winding through a currently unused area of land towards the main body of the site. The pine tree beside the entrance is retained. A new pedestrian entrance is visible in the boundary wall to the right. The clearance of vegetation from the new road corridor reveals the road entering the new urban quarter in the middle distance. The four storey Block H marks the entrance, with 2-3 storey houses and duplex terraces extending to either side. In the distance, a part of the hotel can be seen, stepping up in height towards the landmark Block E at the far end of the quarter. There is an appreciable gradation in height towards Block E, which clearly marks a place of importance in the townscape.
- Magnitude of change: Medium-High. Although some distance from the viewer, a large part of the new quarter would be visible, including buildings of deliberately landmark scale and character.

Significance of Effects

- Construction phase: Slight-moderate negative.
- Operation phase: Moderate-significant positive. While the foreground would remain largely unchanged (to the benefit of the view), and character of the view (and the townscape) would be significantly changed by the extensive, contemporary urban quarter. This is a particularly attractive composition, adding visual interest to the view and improving legibility, with no negative effect on any valued feature or characteristic of the view. The gateway location of the viewpoint amplifies the positive effects of the development on the view.

Future/Masterplan View

- The row of Riverside Quarter buildings would be visible behind the lower rise houses and duplex neighbourhood. Their linear arrangement alongside the River Dargle would strengthen the legibility of the river as an arranging element of the urban structure.

Table 11-7 - Dublin Road Corridor

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.5.2 Dwyer Park

As an existing residential neighbourhood adjacent to the site, Dwyer Park can be considered one of the most sensitive receptors of change in the receiving environment. It should be recognised however Dwyer Park is located in the core of the historic (pre-Victorian) town of Bray, adjacent to Castle Street and the bridge over the Dargle. This central urban location, and the associated mix of uses in the area (the houses are arranged around a block of commercial premises fronting Castle Street), moderates the neighbourhood's sensitivity somewhat.

Viewpoint 3 Dwyer Park View A

Existing/Baseline View

- This is a view east towards the site, which is located directly behind the houses in the centre of the view. The row of trees protruding above the houses' roofline is on the site (tree group G2 in the Independent Tree Surveys Ltd

Tree Survey Report, 2025. In the foreground to the right is a car showroom that has frontage to Castle Street, illustrating the viewpoint's central urban location.

- The baseline/permitted view shows that the permitted Coastal Quarter development would not be visible.
- Viewpoint sensitivity: Medium-. The viewpoint represents a residential neighbourhood receptor, but the central urban location and mix of uses contribute to some tolerance for change.

Proposed View

- The terraces of houses and duplex units inside the western site boundary are positioned back-to-back with the Dwyer Park houses, in a typical urban arrangement. The buildings are 2-3 no. storeys (the end units of each terrace being 3 no storeys to punctuate the built form). The view shows that the proposed buildings would not protrude above the roofline of the Dwyer Park houses. They would only be visible through the gaps between the Dwyer Park houses.
- The more noticeable change to the view would be the removal of the tree line behind the Dwyer Park houses.
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Slight negative. The visibility of the buildings under construction to the rear of the Dwyer Park houses would have a slight negative effect on visual amenity.
- Operation phase: Slight negative. The visibility of terraced houses in a normal urban arrangement (back-to-back with the existing houses) and avoiding protrusion above the existing houses' roofline, would cause no loss of visual amenity nor any negative change in townscape character. However, the loss of the trees from the view would constitute a negative impact.

Future/Masterplan View

- The Riverside Quarter buildings would not be visible.

Viewpoint 4 Dwyer Park View B

Existing/Baseline View

- This view focuses on a gap between two of the Dwyer Park terraces. The view is intended to show the 'worst case scenario for Dwyer Park.
- The baseline/permitted view shows that the permitted Coastal Quarter development would not be visible.
- Viewpoint sensitivity: Medium.

Proposed View

- A three storey end unit of one of the new terraces would be visible through the gap between the Dwyer Park terraces. Additionally, a part of the two storey Block G commercial/retail complex would be visible to the south (fronting Ravenswell Road and the River Dargle beside the Fran O'Toole Bridge).
- Magnitude of change: Low-Medium.

Significance of Effects

- Construction phase: Moderate negative. The visibility (temporary) of development under construction in close proximity to the houses, on two sides, would have a moderate negative effect.
- Operation phase: Slight neutral. The visibility of terraced houses in a normal urban arrangement (back-to-back with the existing houses), avoiding protrusion above the existing houses' roofline, and the visibility of a new modestly scaled retail building, would cause no loss of visual amenity nor any negative change in townscape character. (The photograph is taken from the rear elevation of a commercial premises opposite the Dwyer Park houses. This is an established mixed use urban neighbourhood.)

Future/Masterplan View

- The Riverside Quarter buildings would not be visible.

Viewpoint 5 Dwyer Park View C

Existing/Baseline View

- This view is taken from the south eastern end of Dwyer Park where a glimpse of the site is afforded through a gate in the boundary wall. A partially demolished commercial premises (outside of the site) is to the right of the view. This reduces visual amenity and creates capacity for change.
- Baseline/permitted view: The permitted Coastal Quarter development would not be visible.
- Viewpoint sensitivity: Low-Medium.

Proposed View

- In this view the dense garden vegetation of the end-of-terrace house in Dwyer Park would largely screen the new terrace of houses and duplexes from view. A part of a two storey commercial/retail building (part of Block G) would be visible to the right, beside the disused commercial premises.
- Magnitude of change: Low-Medium.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Slight neutral. Although the proposed buildings are of high design and material quality, their presence/effect in the view would not be sufficient to reverse the detracting effect of the derelict premises and the streetscape in the fireground.

Future/Masterplan View

- Small parts of the Riverside Quarter buildings would be visible either side of the Block G building. They would contribute to the establishment of a new high density urban quarter character adjacent to Dwyer Park.

Viewpoint 6 Castle Street View Along Dwyer Park

Existing/Baseline View

- This view is taken from Castle Street across the road from an entrance to Dwyer Park. This location is central to the original (pre-Victorian) urban area of Bray, only 50m from the bridge over the Dargle. The Castle Street shopping centre is behind the viewer. Across the street, framing the entrance to Dwyer Park are a pub and a csmall commercial/retail premises, both of modest scale and architectural quality.
- Baseline/permitted view: The permitted Block B might be discernible in the distance, framed in the view along Dwyer Park. It this distance visual presence and effect would be limited.
- Viewpoint sensitivity: Low-Medium. There are no particular features or qualities the lend visual amenity to the view, and in the central urban location (outside a modern town centre shopping centre) there is tolerance for change.

Proposed View

- A part of the hotel and Block E would be visible in the distance, framed by the buildings in the foreground. Although far from prominent, their presence would be sufficient to catch the eye, and their contemporary urban typology and scale would be apparent.
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Not significant negative.
- Operation phase: Slight positive. The development would introduce an element of interest to the view (and the townscape), fortuitously framed creating a pleasing composition, improving legibility by marking the new quarter, with no negative effect on any valued feature or characteristic of the view.

Future/Masterplan View

- The Riverside Quarter buildings would not be visible.

Table 11-8 - Dwyer Park

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.5.3 Fran O'Toole Bridge and Main Street

Viewpoint 7 Fran O'Toole Bridge

Existing/Baseline View

- The bridge was historically the centre of Bray, and the River Dargle one of the town's main arranging elements (refer to Figure 11-3). This view shows that the river provides some visual amenity and interest, but the view is underwhelming for a river corridor in the centre of a large town. The river corridor is neither of urban character, not naturalistic; it is in an unsatisfying transitional condition. Castle Street and the small houses of Dwyer Park are visible to the left. These make no positive contribution to the view. Ravenswell Primary School is visible in the middle distance beyond the site. To the east along the river the railway bridge can be seen, along with the low, flat roofs of the industrial buildings in the distance bedside the harbour. The former golf course trees on the site - along with the river - provide some visual amenity.
- Baseline/permitted view: Block B is a notable addition to the view but it appears isolated and would benefit from complementary context and a stronger connection to the bridge and the existing town centre/urban area.
- Viewpoint sensitivity: Medium. The sensitivity classification must take account of the fact that the lands in view on the north side of the river have been designated for expansion of the town centre through high density, mixed use development for decades. There are valued elements in the view, but there is considerable capacity for change.

Proposed View

- In the foreground beside the bridge, the tree planting in a new plaza at the western end of Ravenswell Road would be prominent. This vegetation partially screens Block G, but a linear two storey building extends beyond the planting alongside the river. The building's linear form and rhythm of fenestration complement the river (emphasising its own linear quality). To the rear of Block G is the complex roofscape of the houses and duplex neighbourhood. The hotel and Block E are visible in the distance, beyond the long, densely vegetated Central Park (in which a large number of the existing golf course trees are retained, and supplemented with new planting).

There is a gradation in height towards the east (towards the railway, harbour and coastline), where Block E is positioned for maximum visual effect, marking a place of importance in the expanded and evolved town centre. The four main elements (Block G, the houses and duplexes, the hotel, Block E) each has a distinct architectural language and materials palette, together achieving an attractive urban complexity.

- Magnitude of change: High.

Significance of Effects

- Construction phase: Moderate-significant negative. The development under construction along the full length of the river corridor, fully exposed in the view from the bridge, would have a moderate to significant effect on visual amenity. Construction is inherently unsightly and this is an important view.
- Operation phase: Very significant positive. The development would positively transform the River Dargle corridor, establishing an attractive, diverse mixed use quarter on the former Golf Club lands. Importantly, the collective built form, the architecture and open space (including the river and Ravenswell Road) draw the eye to the east – inviting movement along the river or through the quarter towards a new 'place' identified by the landmark Block E strategically positioned at the harbour point. The dramatic change would be realised with no negative effect on any valued feature or characteristic of the view.

Future/Masterplan View

- The row of Riverside Quarter buildings would be a prominent addition to the view, enclosing the river corridor, again reinforcing its linear quality. It is notable that the 15 storey height of Block E would ensure its visibility above the Riverside Quarter roofline, thus retaining its landmark effect (albeit significantly reduced by the screening of the riverside buildings).

Viewpoint 8 Lower Main Street

Existing/Baseline View

- The street curves and falls steeply on its approach to the bridge over the River Dargle. The focal point of the view is the former Bray Courthouse, a protected structure positioned overlooking the bridge. The distinctive Royal Hotel building, the shopfronts, bus stops and public realm combine with the courthouse to generate a strong town centre character. A view across the river is framed and the Ravenswell school building is prominent on the far side of the valley beyond a remaining area of the golf course (the subject site).
- Baseline/permitted view: The permitted Coastal Quarter development would be largely screened from view. (Even in winter with the riverside trees out of leaf, the potentially visible buildings will be heavily filtered.)
- Viewpoint sensitivity: Medium. This is a complex town centre view with buildings of varying character, quality and value. There is some capacity for change as long as the valued foreground elements are not compromised.

Proposed View

- The western part of the new quarter on the far side of the river - occupying the former golf course space - would be framed in the view. The visible elements include (a) the 'Western Gateway' plaza space, where the existing riverside walk would be supplemented by a space of similar width in front of Block G, densely planted; (b) parts of the Block G retail buildings fronting the river; (c) the houses and duplex neighbourhood up the slope (behind Block G), and (d) the four storey Block H, slightly taller than the houses and of distinct architectural style.
- Magnitude of change: Medium. The foreground, which to a large extent determines the character of the view, would be unchanged. However, the addition of a contemporary quarter to the townscape, framed in the view, would be a notable change.

Significance of Effects

- Construction phase: Slight-moderate negative.

- Operation phase: Moderate positive. While the foreground would remain largely unchanged (to the benefit of the view), the character of the townscape would be altered by the framed view of a contemporary (albeit low rise) urban quarter across the river. The development's visibility from Main Street, and its clearly different character to Main Street's, ensure that (a) the town centre is successfully expanded, and (b) no harm is done to the historic/traditional character of Main Street.

Future/Masterplan View

- The row of Riverside Quarter buildings might be discernible through the trees on the near side of the river in winter only.

Viewpoint 9 Upper Main Street

Existing/Baseline View

- This view is taken from the upper end of Main Street outside the former Bray Town Hall and Market House, a protected structure. The Brabazon fountain is in the foreground. Like the town hall, the fountain dates from the 1880s. The view shows the steep gradient of Main Street, which drops towards the River Dargle at its far end. The street is lined by buildings ranging from two to five storeys, dating from various eras. Most notable is the five storey mixed use building to the left, which adds a contemporary element to the otherwise traditional high street. At the centre of the view is the horizontal dark grey roof of the Bray Central shopping centre off Main Street towards the lower end of the street.
- Baseline/permitted view: The top of Block B just protrudes over the Bray Central shopping centre roofline, but the protrusion is not sufficient for the building to be recognisable. It therefore will not function as a landmark.
- Viewpoint sensitivity: Low-Medium. This is a view of a town centre high street featuring development from different eras and of various typologies and architecture. There is capacity for change.

Proposed View

- Block E is a prominent addition to the view, framed by the foreground buildings. Due to the falling topography, it protrudes well above the roofline of lower Main Street, so that its distinctive form and architecture are fully revealed.
- Magnitude of change: Medium. Despite the distance, due to the building's framed, focal-point position and its variance from the existing building types, scale and architecture in the view, it would be prominent and would change the character of the townscape.

Significance of Effects

- Construction phase: moderate negative.
- Operation phase: Moderate positive. Main Street would be unchanged, retaining its own character. The addition of a building consciously positioned on the axis of this key view, scaled to have a significant visual presence, and with distinctive, recognisable architecture, would have the intended landmark effect. It would catch the viewer's attention and - by its typology, scale and architecture - communicate the presence and the character of the new quarter. While causing a shift in the character of Bray as a town, there would be no harm done to the traditional high street character of Main Street.

Future/Masterplan View

- Two of the Riverside Quarter buildings would be visible in front of Block E, the buildings providing favourable context for each other and combining to suggest a contemporary high density character area of substance/scale (as opposed to a single 'feature building'). Importantly, due to its height, Block E would remain the focal point of the view, its landmark effect undiminished by the other buildings.

Table 11-9 - Fran O'Toole Bridge and Main Street

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.5.4 Residential Neighbourhoods West of Site

Viewpoint 10 People's Park, The Commons

Existing/Baseline View

- People's Park was opened in 1889 as part of a new residential neighbourhood west of the original Little Bray area on former Commons land (refer to Figures 11-3, 11-4). The long, linear space is positioned beside the River Dargle and features a riverside walk and views across and along the river. This view is taken from the centrally positioned bandstand in the park. To the left are the houses fronting the park behind a belt of trees. To the right is the river, with the Maltings (a modern residential development) across the river. The church spire and Royal Hotel can just be discerned in the distance to the right. A dogleg in the river's alignment hides the Fran O'Toole Bridge from view, and the vista is closed by the red brick elevation of the Castle Street shopping centre. There is a notable linearity to the view resulting from the river and the parallel alignment of the open space, tree lines and houses.
- Baseline/permitted view: The permitted Blocks A and B are effectively hidden from view. Had three storeys not been removed by conditional decision on Block B, it would have been visible in winter, assisting the new quarter's legibility.
- Viewpoint sensitivity: Medium-High. This is an attractive view along the river, providing a high level of visual amenity. It should be noted, however, that this is an inner urban park built close to the original centre of the town (the bridge) – with the space and the view orientated towards the town centre, the harbour and the sea.

Proposed View

- The proposed 15 storey Block E would be a prominent addition to the distant skyline, rising well above the low rise development in the intervening landscape. With (a) its positioning on the axis of the river, the park and the view, (b) its contemporary urban typology and scale (a new addition to the townscape) and (c) its distinctive architecture, it would function as a landmark, as intended. It should be noted that there is balance in the composition, with the church spire and Royal Hotel to the right across the river marking the historic town centre, and Block E marking the new town centre expansion.
- Magnitude of change: Medium.

Significance of Effects

- Construction phase: moderate negative.
- Operation phase: Significant positive. The attractive, historic foreground landscape would be unchanged, retaining its own character. The addition of a building consciously positioned on the axis of this view, scaled to have a significant visual presence, and with distinctive, recognisable architecture, would have the intended landmark effect. It would catch the viewer's attention and - by its typology, scale and architecture - communicate the presence and the character of the new quarter. While causing a shift in the character of Bray as a town, adding

visual interest and improving legibility, there would be no negative effect on any valued feature or characteristic of the view. It should be noted that the River Dargle corridor was always, historically the part of the town that accommodated larger buildings (brewery, mill, church, hotel, etc.).

Future/Masterplan View

- The Riverside Quarter buildings would be visible above the low roofline of the Little Bray area. The row of buildings would mark the alignment of the river in the townscape, strengthen the presence/legibility of the new high density quarter.

Viewpoint 11 Beech Road, Old Connawood

Existing/Baseline View

- This viewpoint represents the elevated north western suburbs of Bray, which were developed in the 20th century to the west of Little Bray and the Dublin Road. In the foreground to the left is St Peter's Church cemetery, and to the right is Ledwidge Crescent, a local park featuring a stand of Beech trees. These filter the view towards the town centre and the coast to the east, although the roofscape of the Little Bray area is visible across the park.
- Baseline/permitted view: The tops of the permitted Blocks A and B protrude marginally above the roofline of the Little Bray houses. The extent of the protrusion is not sufficient for the buildings to be recognisable.
- Viewpoint sensitivity: Medium. This is an attractive view from an inner suburban location. The visual amenity is generated by the foreground elements.

Proposed View

- Although heavily filtered by the foreground trees in this view, in some views from this area Block E would be a notable addition to the distant skyline, rising well above the roofline of the surrounding townscape.
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Slight negative.
- Operation phase: Slight positive. The foreground, which generates the character and visual amenity in this view, would remain unchanged. At a distance of c. 1km, Block E would catch the eye (where not screened/filtered by foreground elements), announcing/marking the presence of a high density quarter. This would change the character of Bray as a whole, and improve legibility, without affecting the character or visual amenity of the viewpoint locale.

Future/Masterplan View

- The row of Riverside Quarter buildings would protrude marginally above the Little Bray roofline. This would have very limited effect on the view.

Table 11-10 - Residential Neighbourhoods West of Site

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.5.5 Ravenswell Area North of the Site

Viewpoint 12 Ravenswell Road

Existing/Baseline View

- This is a new road constructed to give access to the former Bray Golf Club lands from the Dublin Road. The wide road curves between the Corke Abbey estate to the left and a supermarket to the right. The area appears incomplete and is of limited visual amenity. Ahead, as the road dips into the Dargle Valley, the Ravenswell school building can be seen. The tall tree beside the school is on the subject site. Bray Head rises in the distance to the right.
- Baseline/permitted view: The permitted Coastal Quarter development (which is accessed by this road) is out of view (to the left).
- Viewpoint sensitivity: Low. This is view of and from a developing urban area. The townscape could benefit from further change to consolidate the emerging character and counteract the prominence of the road and certain unsightly elements (e.g. boundaries and a warehouse behind the supermarket).

Proposed View

- Ahead along the road, just beyond the school, the prominent tree on the site would removed and replaced by a house. To the left, filtered by foreground vegetation, the top corner Block E would be visible above the roofline of the Corke Abbey houses.
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Not significant negative.
- Operation phase: Slight neutral. The removal of the tree would constitute a loss in visual amenity – although loss of some trees was an unavoidable outcome of zoning the former golf course for a high density urban quarter. Elsewhere on the site (in the Central Park), trees would be retained. Where glimpsed along the road entering Ravenswell, Block E would add to the legibility of the townscape, functioning as a beacon marking the new centre.

Future/Masterplan View

- A part of one of the Riverside Quarter buildings would be visible in the distance. It would have a similar effect to Block E, drawing the eye and drawing the viewer towards the new quarter.

Viewpoint 13 Ravenswell Road Beside School

Existing/Baseline View

- At this point the road descends the valley side towards the flat ground beside the river (the subject site). The school is to the left and another community building to the right of the road. The trees of the former golf course are prominent and generate some visual amenity, although the landscape is disturbed by the presence of portacabins, security fencing and parking associated with the ongoing construction in the area. Beyond the site, on the far side of the river, are the houses of Seapoint Road, and Bray Head rises in the distance.
- Baseline/permitted view: The permitted Coastal Quarter is not visible, although the road to the left from the junction ahead gives access to the development.
- Viewpoint sensitivity: Medium. Although a landscape/townscape in process of transformation (which generates a high capacity for change), there are elements in the view that provide a relatively high level of visual amenity.

Proposed View

- The middle ground is transformed from a former golf course (albeit disturbed) into a new residential neighbourhood. The curve of Ravenswell Road is replaced by an orthogonal urban grain. The streets to the left and right of the junction, and crossing the site towards the river, are fronted by 2-3 no. storey houses and duplex terraces. The two buildings either side of the junction form a legible gateway. Although clearly contemporary, the buildings are inspired by Bray's Victorian architecture – in their overall proportions, their fenestration, render cladding, and roof design. The new, straight road across the site frames a view towards the river and the houses on the hillside across the river (on Seapoint Road). If this view were taken from the left side of the street, Bray Head would be framed in the view.
- Magnitude of change: Medium-High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Moderate-Significant positive. The loss of the trees from the part of the site in view would constitute a loss in visual amenity. However, the disturbed former golf course landscape would be replaced by an attractive new residential neighbourhood with (a) a legible and navigable urban grain, and (b) a distinctive architectural language reflecting the town's Victorian history. The straight road through the neighbourhood, leading to the Central Park (and on towards the river) makes an attractive entrance to the new quarter.

Future/Masterplan View

- The Riverside Quarter buildings would protrude in places above the roofline of the lower density neighbourhood. Their linear arrangement is intended to identify the position/alignment of the river in the evolved townscape.

Viewpoint 14 Ravenswell School Campus

Existing/Baseline View

- This is a view experienced by a large number of people on a daily basis on arrival and departure from the schools. The two school buildings, either side of a wide road and parallel parking areas, frame the view south. The schools are built on a level above the new Ravenswell Road (and the site and the River Dargle) and this difference in level hides them from view. Only the remaining golf course trees on the site are visible. In the distance through the tree canopies the townscape of Bray is discernible, and Bray Head forms a distinctive horizon.
- Baseline/permitted view: The permitted Coastal Quarter development is out of view to the left.
- Viewpoint sensitivity: Medium. The view has a pleasing composition, with the distant upland, part of the Bray townscape, and the trees on the site framed by the school buildings. However, the view is taken from a developing new urban neighbourhood, and this transitional condition creates capacity for change. The majority of viewers are also not typically focussed on the wider environment.

Proposed View

- The row of tall trees on the site would be removed, exposing more of the landscape beyond the site and the River Dargle to view. The terraced houses and duplexes along the northern site boundary are set at lower level than the schools. Therefore, from this vantage point only their rooftops would be visible, with a gap aligned with the schools road.
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Not significant negative.
- Operation phase: Slight neutral. Ordinarily, the removal of the trees would constitute a loss in visual amenity, but in this case their removal would open the view of the distant townscape and Bray Head, to the advantage the

view. The buildings would have limited presence in the view, but would have the slight effect of consolidating the emerging Ravenswell urban area.

Future/Masterplan View

- Three of the Riverside Quarter buildings would be visible above the lower density neighbourhood between the schools and the River Dargle. Their linear arrangement is intended to identify the position/alignment of the river in the evolved townscape.

Viewpoint 15 School Campus Above Ravenswell Road

Existing/Baseline View

- This view is taken from the end of the road that leads between the schools and ends in a cul-de-sac above Ravenswell Road. A stairway leads down the embankment to the road. Once the Sea Gardens quarter is developed, the fence along the road will be removed, allowing access between the new residential neighbourhood and the schools. The site is across the road. The landscape is disturbed in places (materials stockpiles and construction site compound), but parts of the former golf course remain. The townscape of Bray, on the far side of the Dargle Valley, is visible through the foreground trees. Bray Head and the Little Sugarloaf form the distant horizon but are also heavily filtered by the trees on the site.
- Baseline/permitted view: The permitted Coastal Quarter development is not visible.
- Viewpoint sensitivity: Medium. The former golf course and the distant elements lend visual amenity to this composition. However, this is a view of and from an area in transition. There is construction activity visible and the townscape appears disturbed/incomplete. There is capacity for change in the view.

Proposed View

- The former golf course would be replaced by a neighbourhood of 2-3 no. storey houses and duplex terraces arranged in perimeter blocks with an orthogonal layout. A new road across the site aligns with the school road, successfully tying the neighbouring areas together and facilitating pedestrian through-flow, as well as framing a view of the Central Park within the new quarter. Green spaces at the corners across the street soften the built frontage. There are notable cues taken form Bray's Victorian architecture in the buildings. These include their overall proportions, the fenestration pattern and proportions, the roof design, and the use of coloured render. A part of the townscape beyond the River Dargle and Bray Head on the horizon are framed in the view.
- Magnitude of change: High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Significant positive. The replacement of the disturbed golf course landscape with the new residential neighbourhood would have positive effects for the following reasons: (a) the development is appreciably responsive to the view/viewer (in terms of urban grain alignment, use of built form to frame the view and provide built frontage/enclosure to the streets, etc.); (b) the development is comprised of buildings, streetscapes and open space of high design and material quality, forming a coherent and attractive whole; (c) the valued distant elements of the view would be retained.

Future/Masterplan View

- Three of the Riverside Quarter buildings would protrude above the roofline of the new neighbourhood on the site. Their linear arrangement is intended to identify the position/alignment of the Dargel River in the evolved townscape.

Table 11-11 - Ravenswell Area North of the Site

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.5.6 River Dargle East of Fran O'Toole Bridge

Viewpoint 16 Ravenswell Road Near Fran O'Toole Bridge

Existing/Baseline View

- The view is taken from beside the River Dargle viewing platform just off Fran O'Toole Bridge. The river is separated from the 10m wide riverside pedestrian space ('Ravenswell Road') by a low stone wall. To the left is the flood defence wall on the boundary of the site, and behind the wall a road and footpath leading to a temporary parking area on the site. Hoarding screens the near corner of the site, but the former golf course trees can be seen above this. In the distance, the railway bridge crosses the river before it enters the harbour. Bray Pumping Station and some of the houses of Seapoint Court can be seen across the river.
- Baseline/permitted view: Block B in the permitted Coastal Quarter will be visible in the distance, suggesting a new 'place' in the townscape, but appearing somewhat isolated. It would benefit from further development around it to integrate it into the townscape.
- Viewpoint sensitivity: Medium. The River Dargle is a highly valued element of the townscape. However, the lands the north side of the river have been designated a 'Strategic Site', for expansion of the town centre, and the landscape/townscape is now in a disturbed/transitional condition. The river corridor is neither urban in character nor naturalistic. There is considerable capacity for change in the view.

Proposed View

- In the foreground, the Western Gateway plaza extends alongside Ravenswell Road, forming a wider (c. 20m) riverside pedestrian space, fronted by the Block G retail buildings. The 1-2 storey buildings are 'human scale'. They have a distinctive aesthetic, combining a corrugated walls reminiscent of shipping containers with retail glazing and awnings, and pastel colours associated with coastal resorts. The linear arrangement of the buildings along the riverside space is intended to draw people into the new quarter from Fran O'Toole Bridge/Castle Street. In the distance (c. 500m) at the far end of the site, the 15 no. storey Block E apartment building is positioned overlooking the River Dargle's entry to Bray Harbour. Block E also has a distinctly 'seaside' architectural treatment, recalling Art Deco, with strong horizontal banding, rounded corners, and light colouring.
- Magnitude of change: High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Significant positive. The development would transform the landscape on the north side of the River Dargle, establishing an attractive mixed use quarter of varying density, scale and architecture on the former

Golf Club lands. Block G would encourage movement/exploration from Fran O'Toole Bridge/Castle Street into the new quarter, while Block E would catch the eye, its scale and design and material quality suggesting a place of importance in the townscape at the far end of the site. The dramatic change would be realised with no negative effect on any valued feature or characteristic of the view.

- The River Dargle would benefit from the new buildings and public realm, which would elevate the river's status in the townscape, returning it to its original status as the east-west spine of the town.
- The view shows the substantial width of the river corridor. The horizontal space creates capacity for building height on the site. The houses of Seapoint Court across the river are of much smaller scale than Block E, but would not be dominated or crowded by it.

Future/Masterplan View

- The row of Riverside Quarter buildings beyond Block G would be a prominent addition to the view, enclosing the river corridor, reinforcing its linear quality. These buildings would screen Block E from view (unlike the view from Fran O'Toole Bridge, View 6, in which Block E would protrude above them).

Viewpoints 17 and 18 Views East Along the River Dargle from North and South Footpaths

Existing/Baseline View

- Views 17 and 18 are from approximately half way between Fran O'Toole Bridge and the railway bridge, on either side of the river, looking east. The site is largely hidden behind the c. 2m high flood defence wall to the left, although the golf course trees protrude above the wall. The views show the width of the river corridor (c. 38m), which includes Ravenswell Road, the river channel and the vegetated bank and a narrow footpath on the south side. The separation distance between the site and the nearest Seapoint Court houses is evident in View 17.
- Baseline/permitted view: Blocks A and B in the Coastal Quarter are visible beyond the site, positioned along the railway line, overlooking the harbour and coastline. The cluster of contemporary urban development suggests a new 'place' in the townscape, but it appears somewhat isolated.
- Viewpoint sensitivity: Medium. The River Dargle is a highly valued element of the townscape. However, the adjacent development – both sides of the river – does not realise its potential. The views can be considered underwhelming considering the assets in view (the river in particular) and the central urban location. The attractive landscaping of Ravenswell Road is of urban character, but this appears incongruous with the development across the river (in View 17). There is capacity for change in the views.

Proposed View

- The hotel and Block E would be prominent additions to the view, their different forms (one horizontal, the other vertical) combining to form a composition that responds appreciably to the Dargle as the main arranging element of the landscape – the built form rising towards the river's entry into the harbour (marked by the railway bridge). The composition of form and architecture, with the densely vegetated Central Park, is visually pleasing.
- Magnitude of change: Medium-High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Significant positive. The development would complement the permitted Blocks A and B in establishing a new high density, mixed use quarter – of substantial scale – overlooking the river and the harbour/coastline. The diversity of building forms and architecture (visible in View 18 in particular) generates a desirable urban complexity and suggests a place of importance in the townscape, encouraging movement towards the new urban core marked by Block E.
- The broadest elevation of Block E is exposed to view, and the building has an elegant form. The 15 no. storey height is critical to this.

- Both views show the substantial width of the river corridor. The horizontal space creates capacity for the height of Block E, which does not appear over-scaled for the location. The river corridor functions as a buffer for the houses of Seapoint Court across the river.

Future/Masterplan View

- The row of Riverside Quarter buildings would be prominent along the river, screening large parts of the proposed development from view.

Viewpoints 19 and 20 Views West along the River Dargle from North and South Footpaths

Existing/Baseline View

- Views 19 and 20 are from approximately half way between Fran O'Toole Bridge and the railway bridge, on either side of the river, looking west. The river dominates and defines the views. The distant Wicklow Mountains are another valued feature of the view. Fran O'Toole Bridge, a protected structure, is a focal point in the river corridor. In View 20 the spire of St Paul's church adds another historic feature to the composition. The Castle Street shopping centre is across the river, and in View 20 more of the low rise townscape of Little Bray, including the Dwyer Park houses along the site boundary, can be seen. The site is largely hidden behind the flood defence wall to the right, although the golf course trees protrude above the wall. The views show the width of the river corridor, c. 40m from the flood defence wall on the north side and the three Seapoint Road houses (visible in View 19) on the south side.
- Baseline/permitted view: The permitted Coastal Quarter development is not visible.
- Viewpoint sensitivity: Medium-High. The River Dargle and riverside vegetation, the bridge, the church and the distant mountains contribute to views of high amenity value (View 19 especially), and these views are less affected by the ongoing construction on the former Golf Club lands. The central urban location and the former Golf Club lands' 'strategic site' designation and zoning for town centre expansion (which has begun) must be acknowledged, however. This translates into some tolerance for change.

Proposed View

- The Block G buildings are a modest but notable addition of built form to the view, near to - but set well back from - the bridge, and having no effect on the perception of the bridge. The Block G buildings are not substantially more prominent than the Starbucks at the corner of the Castle Street shopping centre (beyond the site, across Castle Street). In View 20, and to a lesser extent View 19, other elements of the proposal are exposed to view. These include the houses and duplexes backing onto Dwyer Park and fronting the Central Park, as well as the dense tree planting in Central Park.
- Magnitude of change: Low-Medium.

Significance of Effects

- Construction phase: Slight negative.
- Operation phase: Slight neutral-Moderate positive. In View 19 the proposed development would have limited effect on the character or quality of the view, and no negative effect on the valued natural and built heritage features. In View 20, Block G beside the river and the residential buildings set back behind the Central Park, form a pleasing composition that complements the River Dargle - by clearly addressing the river with their positioning and alignment. The proposed buildings and landscaping are themselves attractive townscape elements. Given the location, the effect on this view can be classified moderate positive.
- Both views show the substantial width of the river corridor. The green/blue corridor forms a buffer between the site and the three houses on the south side of the river.

Future/Masterplan View

- The row of Riverside Quarter buildings would be prominent along the river, dramatically changing the character of this stretch of the river corridor. The bridge, church and distant mountains would remain the focal point of the view, framed by the tall buildings to the right.

Viewpoint 21 View West from the Eastern Riverside Point of the Site

Existing/Baseline View

- This view is taken from the eastern corner of the site, beside the railway bridge over the River Dargle, across the river from Bray Pumping Station. To the left the river can be seen widening as it approaches Bray Harbour. Across the river, the houses of Seapoint Court are partly screened by trees in a riverside open space. The houses of Seapoint Road are prominent on a ridge overlooking the river valley. In the townscape on the south side of Fran O'Toole Bridge, St Paul's Church is a prominent feature on the skyline. The wooded valley side of the Dargle stretches into the distance and the Wicklow Mountains, including the Sugarloaf, form the horizon. To the right is the former golf course, disturbed in places by preparatory works for its redevelopment. disturbed former golf course. The Ravenswell schools and a part of the Coastal Quarter development under construction can be seen beyond the site.
- Baseline/permitted view: Parts of the permitted Blocks C and D are visible beyond the site. A permitted apartment development across the river (Wicklow Co. Co. Reg. Ref. 22188) will screen part of the historic town centre and change the townscape character on the south side of the river by introducing buildings of contemporary urban typology and scale.
- Viewpoint sensitivity: Medium. There are valuable elements in the view, forming an attractive composition, but the disturbed condition of the former golf course creates considerable capacity for change. The townscape could benefit from change on the site.

Proposed View

- Block E frames the view to the right, set back from the river behind the Coastal Gardens open space. At 15 no. storeys, the building is tall, but it presents its narrow elevation to the viewer, giving the building a slender form. The hotel can be seen protruding to the side of Block E and the roofline of the terraced houses and duplexes fronting the Central Park can be seen above the dense vegetation in the park. The low Block G buildings can be discerned in the distance beside the river.
- Magnitude of change: High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Significant positive. The development would transform the townscape on the north side of the River Dargle, while retaining all the valued elements and the existing townscape character to the left of the view. The riverside park, which includes a playground, contributes to the wide blue/green space that creates the capacity to accommodate Block E. The scale of the building is commensurate with the breadth of the space, avoiding excessive enclosure. From this proximity, the design and material quality of the buildings and landscape would be appreciable, raising the quality of the townscape overall. The view (and the townscape) would be significantly altered by the addition of the contemporary, high density urban quarter, but (a) this is in keeping with the land use objectives for the site, and (b) there would be no dilution or compromise of the townscape character across the river or in the distance along the river.

Future/Masterplan View

- The row of Riverside Quarter buildings would be prominent along the river, dramatically changing the character of the river corridor and strengthening the character of the new high density quarter.

Table 11-12 - River Dargle East of Fran O'Toole Bridge

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.5.7 Harbour Area East of Site

Viewpoint 22 Pedestrian Path East of Coastal Quarter

Existing/Baseline View

- The former golf course lands to the right of the path alongside the railway are in a disturbed condition from works in preparation for the area's redevelopment (and construction of the permitted Coastal Quarter). There is no view of the sea despite the proximity to the coast. Nor is the River Dargle visible beyond the site. Bray Head is prominent on the horizon.
- Baseline/permitted view: Blocks A and B in the Coastal Quarter frame the view to the right. The multi-storey apartments will provide views over the railway line - of the harbour, the sea, the Promenade, etc. Where currently there is no view, the development will generate visual and residential amenity for hundreds of new residents.
- Viewpoint sensitivity: Low. The area in view is in a highly disturbed condition.

Proposed View

- The only change to the view is the development of the Coastal Gardens open space in the far corner of the site beside the river.
- Magnitude of change: Negligible.

Significance of Effects

- Construction phase: Not significant neutral.
- Operation phase: Not significant positive.

Future/Masterplan View

- No change.

Viewpoint 23 Harbour Road at Pedestrian Entrance to Site Beneath the Railway

Existing/Baseline View

- The view is taken from Harbour Road opposite the tunnel beneath the railway line, which gives access to the site from the east. The view is taken from outside an industrial premises on the east side of the road beside the harbour. The railway embankment, security fencing, overhead wires and materials stockpiles in the railway corridor are unsightly. This is an important view however, as it will be experienced by people entering the new quarter from the harbour area, the Promenade and the train station.
- Baseline/permitted view: Block B, and to lesser extent Blocks A, C and D, are prominent additions to the view, creating half of a gateway in built form , as well as an edge to the railway. From this proximity the seaside resort-inspired Art Deco architecture is appreciable and the buildings are attractive. However, the townscape remains visibly incomplete with no development on the subject site.
- Viewpoint sensitivity: Low. Visual amenity currently is very limited despite the seaside/harbour location. The townscape could benefit from development on the site to consolidate and strengthen the character of the emerging high density, mixed use quarter.

Proposed View

- The view is transformed by Block E, which combines with the Coastal Quarter to form a gateway to and a corridor through the new high density quarter, with Block E – by its height - clearly marking the centre. The angle/alignment of the building is notable, suggesting that it is deliberately orientated towards the south east (i.e. the point of intersection of the coastline and the River Dargle, and the direction of the Promenade and Bray Head). The buildings share a common architectural language inspired by Art Deco seaside resort architecture, expressed in the horizontal banding of floors, fenestration and balconies, the rounded corners and the balconies. The architecture combined with the building typologies and scale give the quarter a strong identity.
- Magnitude of change: Very High.

Significance of Effects

- Construction phase: Slight negative.
- Operation phase: Significant positive. The development would transform the townscape at this eastern entrance to the former Golf Club lands, completing (in this area) the establishment of the new high density quarter. The design of the built form creates a legible gateway and a through-route across the site, while also referring to the surrounding landscape (by the orientation of the buildings – towards the coastline/sea and Bray Head).

Future/Masterplan View

- The easternmost Riverside Quarter building would be visible to the left of Block E, adding to the scale and diversity of the quarter.

Viewpoint 24 Bray Harbour South Wall

Existing/Baseline View

- The view is taken from the Bray Harbour south wall where it meets the strand at the northern end of the Promenade. To the right of the harbour is a small seaside industrial zone (located directly east of the site). The railway line and Harbour Road can be seen crossing the inlet of the River Dargle to the harbour. To the left of the bridges is a beach in front of Bray Sailing Club's storage yard. The large concrete tanks of Bray Pumping Station are to the rear on the far side of the railway line. The Wicklow Mountains form an undulating horizon, with the peak of Carrickgollogan prominent. The mountains and water lend visual amenity to the view, and the built elements are interesting but unsightly. This is in contrast to the view 90 degrees to the left, which is the view along the Promenade to Bray Head on the far side of the town's Victorian seafront.
- Baseline/permitted view: Blocks A-D in the permitted Coastal Quarter will be a prominent addition to the view, forming a built frontage to the coastline and screening part of the mountains from view. This initiates a significant

shift in townscape character – towards a contemporary urban condition. There is clearly a gap, however, between the new cluster north of the harbour and the main urban area to the south (to left).

- Viewpoint sensitivity: Medium. Any view from or of the harbour in a coastal town is an important view, but this view has a high capacity for change due to (a) the unsightly quality of the built elements in view, (b) the change in character initiated (but not completed) by the Coastal Quarter, and (c) the much higher visual amenity of the views south (along the seafront) and east (to sea) from this same position.

Proposed View

- Block E would be a dramatic addition to the view, the tall building combining with Block B to form a gateway to the new quarter – fortuitously framing Carrickgollogan between them. Block E is turned at an angle to face the harbour, the Promenade and Bray Head. Therefore the building presents its slender elevation to the viewer, and the step down in height to the rear can be seen. Although clearly contemporary, the design draws from Art Deco seaside resort architecture. This is expressed in the horizontal banding of floors and fenestration, the balconies and rounded corners. Block B has a similar style and this gives the quarter a distinct character. A part of the hotel protrudes to the side of Block E, and part of the terrace fronting the Central Park can be seen further inland.
- Magnitude of change: High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Significant positive. The development would substantially progress the realisation of a high density urban quarter in Bray, including the delivery of its landmark building and the eastern gateway from the harbour area. This would change the character of Bray, adding an area of deliberately 'metropolitan character' to the townscape, without any direct effect on the valued historic character areas (such as the Promenade).

Future/Masterplan View

- The Riverside Quarter buildings would be visible to the left of Block E, their arrangement along the River Dargle intended to strengthen the river's legibility in the townscape. This view shows how the collective built form of the quarter addresses the coastline to the east and the river to the south, with the landmark Block E positioned at their intersection, turned to face the Promenade and Bray Head. This is a particularly successful composition of built form and topography.

Viewpoint 25 Harbour Road

Existing/Baseline View

- This is another view that is (a) particular to Bray, and (b) illustrates its diversity of character. (The view in the opposite direction from this location is along the broad, 1.4km long Victorian Promenade towards Bray Head.) To the left in View 25, Seapoint Road passes beneath the railway line to arrive in the harbour area and the Promenade. To the right, Harbour Road gives access to the harbour, the Sailing Club, and the seaside industrial zone on the far side of the harbour. Harbour Road ends at a cul-de-sac for vehicles, but the tunnel beneath the railway (see Viewpoint 23) gives pedestrian and cycle access to the site (and to Ravenswell Road along the River Dargle, Castle Street, the Dublin Road, the Ravenswell area, etc.). In the foreground is a small cluster of harbour buildings housing a bar-restaurant, a café and Bray Sea Scout group. This is an attractive view of Bray's harbour character area.
- Blocks A-D in the permitted Coastal Quarter will be a prominent addition to the view, in the middle distance beyond the harbour and the River Dargle corridor, forming a linear frontage to the coastline. This initiates a significant shift in townscape character - towards a contemporary urban condition in which historic and modern areas and buildings are juxtaposed, generating an attractive complexity.
- Viewpoint sensitivity: Medium. The harbour area in the foreground at distinctive and attractive, but the permitted Coastal Quarter has initiated a significant change (characterised by contrasts in use, building typology and architecture), which creates capacity for further change in the view.

Proposed View

- Block E would be a prominent addition to the view, the tall building combining with Block B to form a gateway to the new quarter. Block E is turned at an angle to face the harbour, the Promenade and Bray Head. Therefore the building presents its slender elevation to the viewer. Although clearly contemporary, the building's design draws from Art Deco seaside resort architecture and complements Block B in giving the new quarter a distinct character. The building is tall, but there is sufficient separation distance (over 200m) from the harbour buildings in the foreground to avoid the sensitive foreground area/buildings being dominated.
- Magnitude of change: Medium-High.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Significant positive. The development would substantially progress the realisation of a high density quarter in Bray, including the delivery of its landmark building, which is intended to function as a marker/beacon and an indicator of the area's character (contemporary, high density). The building is tall, but there is sufficient separation distance (over 200m) to avoid the sensitive foreground area/buildings being dominated. These valued historic elements would remain, lending character and visual amenity to the townscape, and their character would be amplified by the contrast with the new quarter. This view illustrates the significant opportunity that the site presents for a bold but positive evolution of the townscape Bray (as has happened in the past).

Future/Masterplan View

- Parts of the Riverside Quarter buildings would be visible over the roofline of the harbour buildings, to the left of Block E, fronting the River Dargle. They would have considerably less visual presence than Blocks A, B and E, but would give additional substance and diversity to the new quarter.

Table 11-13 - East of Site, the Harbour Area

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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	High	Very 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-High	Moderate negative	Significant positive

11.5.8 Seapoint Road and Seapoint Court South of the River Dargle

Viewpoint 26 Seapoint Road Near Milton Court

Existing/Baseline View

- Seapoint Road runs along a ridge parallel to the River Dargle. The road affords occasional glimpses – between the roadside houses - over the river corridor and the former Golf Club lands to the north. Along this stretch (in View 26) there is a wide gap between the houses on the north side of the road, where a spur leads down off Seapoint Road to give access to a number of light industrial premises beside the river. This gap affords a view over the roofs of the industrial premises (which are at lower elevation) across the river towards the former Golf Club lands. The industrial premises are a reminder of the River Dargle's function in Bray prior to the town's

Victorian expansion. The river formed the town's east-west spine (refer to Figures 11-3, 11-4) and was lined on its south side by buildings including a brewery, mill, church, hotel, etc.).

- Baseline/permitted view: A permitted development (Wicklow Co. Co. Reg. Ref. 22188) replacing the industrial premises will occupy the gap in the built form beside the road, blocking the view over the river towards the site. In the absence of the permitted development, the cluster of Blocks A-D in the Coastal Quarter would be visible in the distance beyond the river. They would establish a quarter of contemporary urban character on the north side of the river, but this would appear somewhat isolated from the existing town centre.
- Viewpoint sensitivity: Medium. The viewpoint represents road users and residential receptors close to the centre of Bray. This location is adjacent to a permitted high density residential development on a former industrial premises, so the townscape context is changing as a result of the central urban location. These factors contribute to a capacity to accommodate change.

Proposed View

- The proposed development would be entirely screened by the permitted apartment development in the foreground. (If the foreground development were not built, Block E and the hotel would be prominent additions to the new quarter across the river.)
- Magnitude of change: None.

Significance of Effects

- Construction phase: No effect.
- Operation phase: No effect.

Future/Masterplan View

- The River Quarter buildings would be screened by the development in the foreground.

Viewpoint 27 Seapoint Road at Duncairn Avenue

Existing/Baseline View

- Seapoint Road runs along a ridge parallel to the River Dargle. The road affords occasional glimpses – between the roadside houses - over the river corridor and the former Golf Club lands to the north. This viewpoint represents road users and the houses on the south side of the road. For an impression of the visual impacts on the houses on the north side of the road, refer to Viewpoints 28-30.

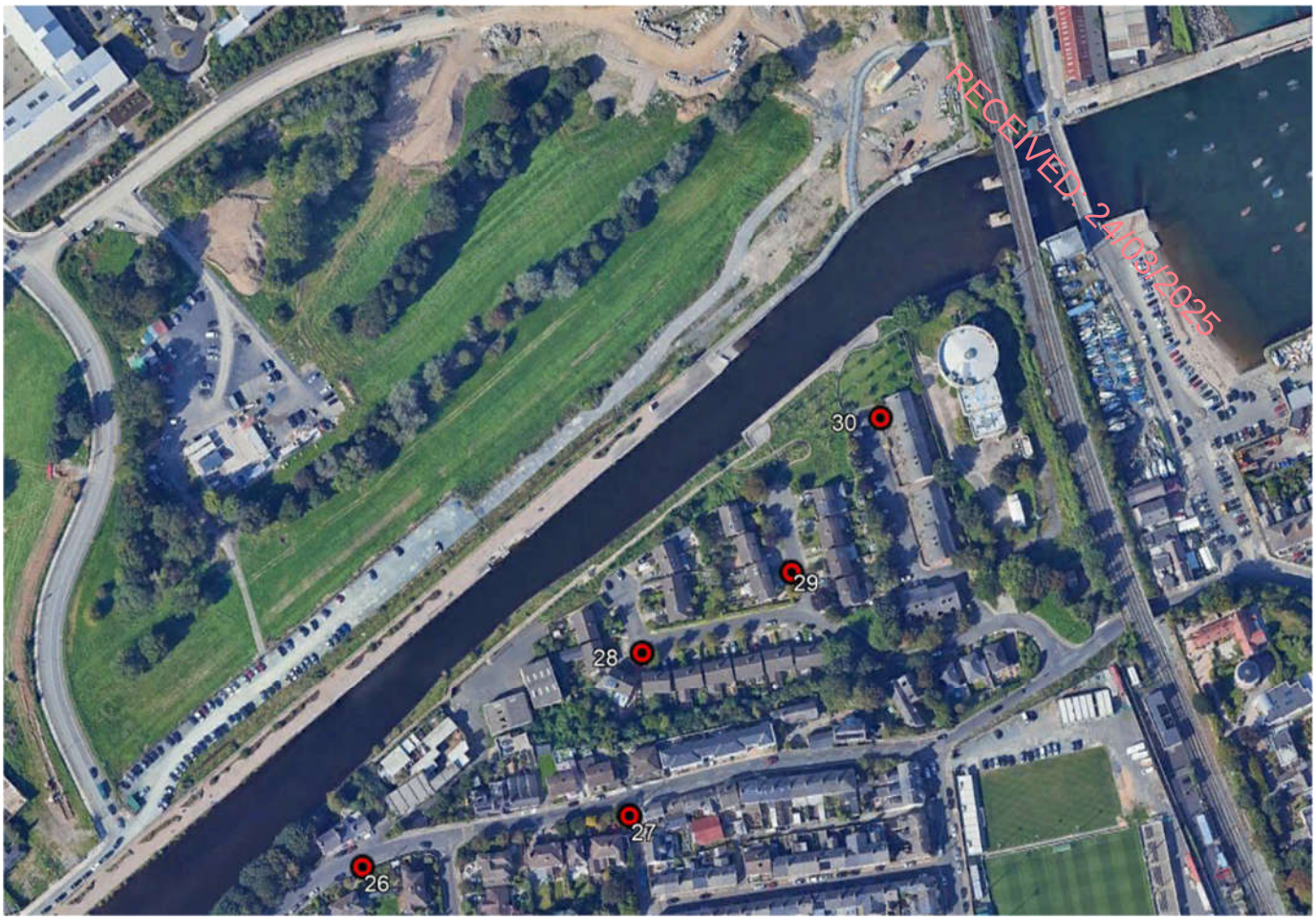


Figure 11-34 - Viewpoints representing the Seapoint Road and Seapoint Court

- Baseline/permitted view: The Coastal Quarter will not be visible from this location (although it will be from the rear windows of the houses in the view).
- Viewpoint sensitivity: Medium. The viewpoint represents road users and residential receptors close to the centre of Bray (minutes' walk from Main Street, the train station, the Promenade, the harbour, etc.). This location is adjacent to a permitted high density residential development (Wicklow Co. Co. Reg. Ref. 22188 - see Figure 11-21 above) on a former light industrial premises, so the townscape context is changing as a result of the central location. These factors contribute to a capacity to accommodate change.

Proposed View

- A part of the horizontal, curved form of the hotel would be visible between the houses. The remainder of the development would be hidden from view. (For an impression of the visual impact on views from the rear windows and gardens of the houses in view, refer to Viewpoints 28-30.)
- Magnitude of change: Low.

Significance of Effects

- Construction phase: Slight negative.
- Operation phase: Slight neutral. The limited visibility of a hotel building c.300m from the viewpoint, within the urban footprint, on a designated town-centre Strategic Site, would constitute a slight neutral effect. At this location, the development is not sufficiently exposed to view to have either positive or negative effect.
- It is recognised that the views from the rear windows and gardens of the houses that feature in View 27 would be more significantly affected. Those views would change in similar way to View 28. It is important in LVIA to seek to achieve a balanced assessment. Views such as this (View 27) are also valid, necessary viewpoints. In this

case, View 27 provides evidence that users of Seapoint Road and the houses on the south side of the road would experience only limited effect.

Future/Masterplan View

- Parts of three of the Riverside Quarter buildings would be visible through the gap between the houses. Due to the substantial level difference between the site and Seapoint Road (which runs along a ridge above the Dargle Valley), the degree of protrusion of the buildings would be limited, however.

Viewpoints 28, 29, 30 Seapoint Court, Views A, B, C

Existing/Baseline View

- Views 28, 29 and 30 all represent Seapoint Court across the River Dargle from the site. This is an inner urban residential estate adjacent to (minutes' walk from) the town centre including Main Street, the train station, the harbour and the Promenade. The estate is flanked to the east by Bray Pumping Station and to the west by a small light industrial cluster, the site of a permitted six storey apartment development (Wicklow Co. Co. Reg. Ref. 22188 - see Figure 11-21 above). The estate streets all end in cul-de-sacs on the south side of the River Dargle - although set back from the river behind a green strip that widens to the east. Importantly, the houses along these streets orientate east-west, and not north-south. The principal views form the front and rear windows and the gardens of the houses are therefore to the east or west, and not north towards the site. Currently, the views north from the estate streets (Views 28, 29, 30) are framed by the houses and garden vegetation. A combination of stone walls and earth embankments alongside the river screens the river (and the site across the river) from view.
- Baseline/permitted view: The permitted Coastal Quarter development, in the middle distance on the far side of the river, will be visible in all three views, to varying extents. The development will appear somewhat isolated without surrounding development to integrate it into the townscape.
- Viewpoint sensitivity: Medium. The viewpoints represent residential receptors, but the location is central urban and there is extensive change/development permitted in the immediate environs (high density residential development on both sides of the river, no north and west of Seapoint Court). The estate location across the river from the Strategic Site-designated former Golf Club lands must also be acknowledged. These factors contribute to a capacity to accommodate change.

Proposed View

- The proposed development, directly across the river from Seapoint Court, is increasingly prominent towards the east:
  - In View 28, the curved form of the hotel rises in the middle distance above the dense belt of trees (retained and supplemented) in the Central Park. The tall Block E is to the right, rising above the roofline of the houses, but heavily filtered by a foreground tree (which would screen the building in summer).
  - In View 29, Block E is exposed to view, while the hotel is largely screened by foreground trees. From this angle and proximity, the stepped profile of Block E and the distinctive Art Deco-inspired architecture (horizontal banding of floor plates and fenestration, balconies incorporated in the form, rounded corners) are appreciable. The Coastal Quarter buildings are visible to the side of the landmark building, giving substance to the quarter.
  - In View 30, both the hotel and Block E are fully exposed to view (the houses at the end of this particular street are the most visually exposed to the centre of the new high density quarter). Their complementary positioning and forms are appreciable, with the buildings sharing common stylistic elements (curved corners, pavilion style top floors).
- Magnitude of change: Medium to High.

Significance of Effects

- Construction phase: Significant negative.

- Operation phase: Significant positive. One of the main effects of developing a new town centre quarter on the former Golf Club lands will be to reincorporate the River Dargle into the urban structure (as it originally was before becoming peripheral as the town re-orientated towards the sea in the Victorian period), and redefine its role and character in the townscape of Bray. The knock-on effect on Seapoint Court would be significant. It too would be incorporated into the evolved and expanded town centre, directly across the river from the core of the new high density quarter. Significant visual effects on the estate, and a pronounced juxtaposition in development typologies and scale across the river, are unavoidable. Such juxtapositions are not inappropriate nor undesirable in the 21st century metropolitan city-region (of which Bray is an important part).
- While the views from Seapoint Court would be transformed, there would be no loss of visual amenity. Rather, in this place and policy context, and with recognition of the proposal's design and material quality, the change can be classified positive. Individually the buildings are attractive, and collectively they would form an interesting, exciting new urban core appropriate to Bray's metropolitan status and this particular location (adjacent to the river, seafront, the town centre, the harbour). As a townscape character area, Seapoint Court's value would likely rise as a result of its proximity and visual exposure to the development.

Future/Masterplan View

- The row of Riverside Quarter buildings would be very prominent directly across the river from Seapoint Court. Their linear arrangement is intended to reinforce the river's place in the urban structure. All three views show the wide spaces between the buildings, which avoids excessive enclosure.

Table 11-14 - Seapoint Road and Seapoint Court South of the River Dargle

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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 neutral
28	Seapoint Court, View A	Medium	Medium	Medium	Moderate negative	Significant positive
29	Seapoint Court, View B	Medium	Medium	High	Significant negative	Significant positive
30	Seapoint Court, View C	Medium	Medium	High	Significant negative	Significant positive

11.5.9 Quinsborough Road and Bray Train Station

Viewpoint 31 Quinsborough Road at Galtrim Park and Eglinton Road Junction

Existing/Baseline View

- This view is taken from a junction on Quinsborough Road surrounded by Victorian houses converted for commercial use, St Andrew's church, and 'the Boulevard', a modern retail centre that detracts somewhat from the otherwise strong historic character of the street – and the visual amenity in this view. It does however contribute to the diversity of building typologies and urban character generally in Bray.
- Baseline/permitted view: The Coastal Quarter will not be visible in this view.
- Viewpoint sensitivity: Low-Medium. This is a view from the town centre, featuring buildings of mixed character and quality. There is capacity for change in the view.

Proposed View

- The development would not be visible.
- Magnitude of change: None.

Significance of Effects

- Construction phase: No effect.
- Operation phase: No effect.

Future/Masterplan View

- Two of the River Quarter buildings would be visible rising above the trees and houses towards the far end of Galtrim Park.

Viewpoint 32 Quinsborough Road at Seymour Road Junction

Existing/Baseline View

- The view is taken from a position in front of Prince of Wales Terrace, one of the grand Victorian terraces that gives Quinsborough Road its particularly strong character, which would not be out of place in any city in the British Isles. Two semi-detached houses of Drumcairn Terrace are to the left across the wide, tree-lined street, while to the right is the boundary wall of the Carlisle Grounds, the town centre stadium of Bray Wanderers football club, with a capacity of over 3,000. One block to the right along the street is Bray train station, where there is a mixed use, high density local urban core (see View 33). These various uses and buildings give this part of the town a distinctly urban character, and Bray a metropolitan feel.
- Baseline/permitted view: Blocks A and B in the permitted Coastal Quarter will be framed in the view along the street, rising above the stadium boundary wall and the roofline of the houses at the end of the street (on Seapoint Road).
- Viewpoint sensitivity: Medium. The Victorian buildings are valued architectural features, but the stadium reduces the visual amenity and contributes to an urban character that can tolerate change.

Proposed View

- Block E would be framed in the view, rising beside Block B, the two buildings' contemporary typology and seaside resort-inspired architecture providing complementary context for each other. The tall Block E would be turned at an angle, facing the Promenade and the sea. A small part of the hotel would be visible to the left.
- Magnitude of change: Medium.

Significance of Effects

- Construction phase: Slight negative.
- Operation phase: Moderate positive. The development would introduce a landmark building to the townscape, strategically positioned on the axis of this view from one of Bray's main streets, alongside one of the main places of public gathering (the Carlisle Grounds). The building's position, scale and architecture are intended to catch the eye – so that the building would function as a marker of the new quarter and an indicator of its character (contemporary, high density), encouraging people to visit. Visual interest and townscape legibility would be enhanced, with no harm to any valued element or characteristic of the view.

Future/Masterplan View

- A corner of the easternmost Riverside Quarter building would be visible to the left of Block E, the two buildings providing complementary context for each other.

Viewpoint 33 Station Road

Existing/Baseline View

- The view is illustrative of Bray's changing character. To the right is the train station that initiated the town's 19th century transformation. To the left is a 21st century mixed use, multi-storey development again prompted and supported by the railway. At the end of the street, to the left, is the Carlisle Grounds, a 3,000+ seater town centre stadium. These various uses and buildings give Station Road a distinctly urban character, and Bray a metropolitan feel (consider the differences in character between Station Road, the Promenade, Quinsborough Road, Main Street, the harbour area, the River Dargle corridor, the various suburban neighbourhoods, etc.).
- Baseline/permitted view: Block C in the permitted Coastal Quarter will protrude very marginally above the boundary wall of the Carlisle Grounds, with no significant effect on the view.
- Viewpoint sensitivity: Low-Medium. The diversity of development on the street, along with the function of the place – a public transport hub – generates capacity for change in the view.

Proposed View

- Block E would be framed in the view, the tall building turned at an angle (facing the Promenade and Bray Head), presenting a stepped profile. Its distinctive architecture (specifically the strong horizontal banding and balconies incorporated into the form) would be appreciable even from this distance.
- Magnitude of change: Medium.

Significance of Effects

- Construction phase: Slight negative.
- Operation phase: Moderate positive. The development would introduce a landmark building to the townscape, strategically positioned on the axis of this view from Bray's public transport hub. The building's position, scale and architecture are intended to catch the eye – so that the building would function as a marker of the new quarter and an indicator of its character (contemporary, high density), encouraging people to visit. Visual interest and townscape legibility would be enhanced, with no harm to any valued element or characteristic of the view.

Future/Masterplan View

- The easternmost Riverside Quarter building would be visible to the left of Block E, the two buildings providing complementary context for each other.

Table 11-15 - Quinsborough Road and Bray Train Station

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
31	Quinsborough Road at Galtrim Park Junction	Low-Medium	None	None	No effect	No effect
32	Quinsborough Road at Seymour Road	Medium	Low-Medium	Medium	Slight negative	Moderate positive
33	Station Road	Low-Medium	Medium	Medium	Slight negative	Moderate positive

11.5.10 The Promenade and Bray Head

Viewpoints 34, 35 The Promenade, Northern End and Middle Stretch

Existing/Baseline View

- These views show some of Bray's signature seaside residential architecture. The Victorian 'Martello Terrace' encloses the Promenade at its northern end. To the left, behind the wide promenade, are houses of diverse styles, from tall 3-4 no. storey Victorian villas to single storey Art Deco and modernist houses. The top of the Martello tower (converted for residential use) is visible in View 34. Also in View 34, the masts of Bray Sailing Club can be seen through the entrance to Harbour Road.
- Baseline/permitted view: In View 34 the permitted Coastal Quarter is hidden behind Martello Terrace. In View 35, Blocks A and B protrude above Martello Terrace, adding a new element to the view and functioning as a marker of the new quarter in this important view.
- Viewpoint sensitivity: Medium-High. Views of and from the Promenade are highly valued, but they are not unchanging (for example the five storey Strand View apartments/mixed use scheme recently constructed fronting the Promenade). Additionally, while the historic houses are of architectural interest and form attractive compositions with the green area of the Promenade (e.g. View 35), most people's attention when walking along the Promenade is on the sea to the east, or Bray Head to the south. These are the most valued elements of the views. This is confirmed by the Views and Prospects map from the LAP 2018 (now expired), which shows the views south along the Promenade (i.e. away from the site) as being protected (see Figure 11-30 above).

Proposed View

- In View 34, Block E would protrude above the roofline of Martello Terrace, near the end of the terrace beside the entrance to Harbour Road. The building presents its slender south east elevation to the viewer. The enclosed balconies contribute to an elegant profile, and the distinctive banded Art Deco architecture is appreciable from this distance. The corner of the hotel would also be visible, but far less prominent.
- In View 35, Block E would protrude above the roofline of the taller houses fronting the Promenade, just to the side of Block B, which is also visible from this position. The two buildings would frame the entrance to Harbour Road. Although the extent of Block E's protrusion would be less in this view than in View 34, it would be sufficient for the building to be identifiable, allowing it to function as a landmark.
- Magnitude of change: Medium. The medium classification results not from the proportion of the view/composition occupied by the development, but from the divergence of the proposed buildings (in terms of typology, scale, architecture) from those in the existing view.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Moderate positive. In both views, the development would introduce a landmark building to the townscape, positioned *beyond* the northern end of the Promenade (clearly outside of the historic character area). The building's prominent position just off the axis of the promenade, its scale and architecture are all intended to catch the eye – so that the building would function as a marker of the new quarter and an indicator of its character (contemporary, high density), encouraging people to visit. The existing, valued elements of the views - the sea, the strand, the Promenade open space and historic architecture – would all remain, lending character and visual amenity to the views. The new development would add another element of visual interest, peripheral to the principal elements, but nonetheless causing a notable shift in Bray's character (towards that of a metropolitan urban area).

Future/Masterplan View

- In View 34, the easternmost Riverside Quarter building would be visible to the left of Block E. The two buildings would provide complementary context for each other. The Riverside Quarter buildings would not be visible from further back along the Promenade.

Viewpoints 36, 37 Bray Head Cliff Walk and Summit

Existing/Baseline Views

- The walk up Bray Head affords views out to sea, views along the coastline to the north towards Dublin, and views west over Bray towards the Wicklow Mountains. These are highly valued views. However, they are also complex compositions, and the complexity creates capacity to accommodate some change. In View 36 from lower down the hill, the eye is drawn to the detail/texture of townscape along the seafront, in which there are a wide diversity of building types, architectural styles and materials, including buildings of contemporary urban character and scale (Strand View and Dargan Hall apartments, Bray Central shopping centre). In View 37 from higher up the hill, the full scale and diversity of the town are appreciable, as is Bray's relationship with Dublin, which is visible in the distance.
- Baseline/permitted view: In both views, the Coastal Quarter development will be visible towards the far end of the urban area. The buildings are more prominent in View 36, although they integrate comfortably into the strip of development along the coastline.

  Viewpoint sensitivity: High. These views were designated for protection in the LAP 2018 (see Figure 11-30 above). It should be noted that the visual amenity experienced on Bray Head derives mainly from the sea, the coastline, Bray Head itself, and the inland mountains. The urban area adds character and an attractive complexity, but this is the one element of the views that can accommodate change. This is confirmed by the following statement in the Wicklow CDP:

  "Where listed views / prospect occur in settlements, it is not the intention that all lands in the view / prospect will be 'sterilised' from development. Any application for development in such locations will be required to provide an assessment of the view / prospect and an evaluation of how the development would change or interfere with that view / prospect."

Proposed Views

- In View 36, Block E and the hotel would both be prominent additions to the urban complex, with Block E piercing the horizon line that falls towards the coastline. The combination of the permitted Block B, the hotel and Block E form a cluster of development of contemporary urban character and scale, with a gradation of height towards Block E in the centre. Although the typologies are clearly of the 21st century, even from this distance the seaside resort-inspired architecture is appreciable, giving the cluster a distinct character within the wider coastal development strip.
- In View 37, more of the development is visible (including the houses and duplexes and Block G), but it is less prominent as it is seen from above, which downplays the height of the buildings. Nonetheless, this view shows the distinct character of the new quarter positioned on the far side of the large town, back from the harbour.
- Magnitude of change: Medium.

Significance of Effects

- Construction phase: Moderate negative.
- Operation phase: Moderate positive. The most valued and sensitive elements of the views (the sea, the coastline, the dramatic landform) would be unchanged and unaffected by the development – and they would continue to define the character and determine the quality and value of the views. The other main element of each view, i.e. the urban area, *would* be changed - by the addition of a new cluster of buildings of contemporary urban scale and distinct character. Importantly, while adjoining the existing urban area and falling within the wider urban footprint, the new cluster would clearly stand apart from the other character areas, e.g. the Promenade. The character of the other/existing areas would therefore not be diluted by the new cluster. The town would simply grow, with no negative effects/implications. View 37 shows this most clearly; there would be no reduction in visual amenity and no harm to the character of Bray, which can withstand - and would benefit from - the change.

Future/Masterplan View

- The row of Riverside Quarter buildings would be visible extending inland from the cluster behind the harbour. The intention of the linear arrangement is to emphasise the linear quality of the river corridor. The buildings would expand the cluster of Blocks A, B, E and the hotel into a larger urban quarter.

Table 11-16 - The Promenade and Bray Head

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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	Moderate positive
36	Bray Head, cliff walk	High	Low	Medium	Moderate negative	Moderate positive
37	Bray Head, summit	High	Low	Low	Slight negative	Moderate positive

11.5.11 Dun Laoghaire Rathdown Area North of Bray

Viewpoint 38 Woodbrook Glen

Existing/Baseline View

- This view is taken from The Green, a street in Woodbrook Glen that is aligned with the site to the south. The estate houses frame the view and at the end of the street is a wooded park that lies between Woodbrook Glen and the Coastal Quarter development.
- Baseline/permitted view: The permitted Coastal Quarter might just be discernible through the parkland trees (in winter only), but it would have limited visual presence and no significant effect on the character of the view.
- Viewpoint sensitivity: Medium-High. This viewpoint represents residential receptors in a neighbourhood that currently enjoys a high level of visual amenity.

Proposed View

- Block E might be discernible (in winter only) through the tree canopy in the intervening landscape. At c. 500m distance it would have very limited visual presence and no significant effect on the character or quality of the view.
- Magnitude of change: Negligible.

Significance of Effects

- Construction phase: Not significant neutral.
- Operation phase: Not significant neutral.

Future/Masterplan View

- No change.

Viewpoint 39 Shanganagh Cemetery

Existing/Baseline View

- The view is taken from the cemetery c. 1.5 km to the north of the site, beside the railway line in the evolving area of Shanganagh (there are two large, mixed density residential schemes under construction adjacent to the cemetery, Shanganagh Castle Estate and Woodbrook). The cemetery is enclosed on its south side by a belt of tall evergreen trees. These block the view towards Bray, although Bray Head can be seen in the distance.
- Baseline/permitted view: The Coastal Quarter (which lies between this viewpoint and the subject site) will be screened by the trees.
- Viewpoint sensitivity: Medium-High. The cemetery provides a high level of visual amenity, although its context is changing/urbanising, which creates tolerance for further change.

Proposed View

- The development would be screened from view by the trees on the cemetery boundary.
- Magnitude of change: None.

Significance of Effects

- Construction phase: No effect.
- Operation phase: No effect.

Future/Masterplan View

- No change.

Table 11-17 - Dun Laoghaire Rathdown Area North of Bray

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
38	Woodbrook Glen	Medium	Negligible	Negligible	Not significant neutral	Not significant neutral
39	Shanganagh Cemetery	Medium-High	None	None	No effect	No effect

11.5.12 Killiney and Dalkey

Viewpoints 40, 41, 42 Strathmore Road, Killiney Hill and Coliemore Road

Existing/Baseline Views

- All three views are taken from positions some distance to the north, where the coastline curves out to Dalkey/Sorrento Point. This curve in the coastline orientates views south along the coastline towards Bray, where the town of Bray can be seen in the distance against the backdrop of Bray Head and Little Sugarloaf. In all these views the sea dominates the view and draws the eye.
  - View 40 from Strathmore Road is from relatively low elevation, the road above Killiney Beach. The composition is relatively simple (compared to View 41 from Killiney Hill), although the DART line in the foreground adds some urban complexity, which raises the capacity for change somewhat.

- View 41 from the summit of Killiney Hill is a spectacular, panoramic view. While the visual amenity is exceptionally high, it is also the case that the composition includes extensive urban areas and elements. This contributes to a capacity for change, particularly infill/consolidation development.
- Coliemore Road/Sorrento Terrace (View 42) orientates views directly towards Bray (and the site), although the site is almost 7km distant. The Irish Sea and the Wicklow Mountains combine to generate a very high level of visual amenity, and the strip of development along the coastline – including Bray – is secondary.

- Baseline/permitted views: In all three views, parts of the permitted Blocks A and B in the Coastal Quarter will be discernible in the distance, although seen in the context of the wider urban area of Bray and against a backdrop of Bray Head.
- Viewpoint sensitivity: Medium-High. View 40 is of medium sensitivity due to the railway infrastructure in the foreground. Views 41 and 42 are highly valued for their scenic amenity, but can accommodate some change in the existing development strip around the coastline.

Proposed Views

- Block E and the hotel would be discernible in the distance, protruding above the roofline of Blocks A and B. Although (a) forming part of a new cluster of development, (b) being seen as an extension to the wider townscape of Bray, and (c) being seen against the backdrop of Bray Head and Little Sugarloaf, Block E would likely catch the eye due to its scale. Therefore, despite causing only a negligible to low magnitude of change in the panoramic views, it would function as a landmark, as intended.
- Magnitude of change: Negligible-Low.

Significance of Effects

- Construction phase: Not significant negative.
- Operation phase: Not significant neutral to slight positive. At this distance, and seen in the context of the development strip all around the coastline between Dalkey and Bray, the development could have no negative effect on views that are dominated/defined by the sea, the coastline and the Wicklow Mountains. Block E would nonetheless catch the eye as a feature within the development strip, and thus function as a landmark. This is not inappropriate since it would mark/identify Bray as the southern satellite town of the metropolitan city-region, the southern end of the DART line, etc. The development would add slightly to the visual interest and legibility of the land/sea/townscape in view.

Future/Masterplan View

- The tops of some of the Riverside Quarter buildings might just be discernible behind Block E and the hotel.

Table 11-18 - Killiney and Dalkey

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.6 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 River Dargle, 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.

11.7 Mitigation Measures

11.7.1 Townscape Impacts

11.7.1.1 Operation Phase

Based on the assessment (in Table 11-6) of the proposal against the relevant 'Urban Design Criteria and Indicators' in the *Urban Design Manual - A Best Practice Guide*, **the potential townscape effects were classified 'positive'** – for the following broad 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.

Since the proposed development represents a considered and appropriate response to the townscape context, and its townscape effects would be positive, **no mitigation measures are recommended**.

11.7.1.2 Construction Phase

Measuring the magnitude of change ('high', but temporary) against the sensitivity of the receiving environment ('medium'), **the significance of the townscape effects during construction was predicted to be 'moderate negative'**.

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 proposed**.

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.

Visual Impacts

The visual effects of the proposed development have been assessed for 42 no. representative viewpoints/visual receptors in the receiving environment.

11.7.1.3 Construction Phase

The majority of the viewpoints would experience negative visual effects during the construction phase. This is an unavoidable impact of construction and there are limited effective mitigation measures available. **No mitigation measures other than (a) the erection and proper maintenance of site hoarding and (b) best practice in site management are proposed**.

11.7.1.4 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 River Dargle and the coastline, and adjacent to the town centre), the magnitude of change in a large proportion of the views would be medium to high, and the significance of the visual effects have been classified as 'moderate' or 'significant' for 23 no. of the 42 no. viewpoints.

These significant visual effects are intended. Block E is deliberately positioned on the axis of views along the River Dargle (from Fran O'Toole Bridge and People's Park to the west and the harbour to the east), 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 visual 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 visual effects have been identified; all the predicted effects are either neutral or positive. **Therefore, no mitigation measures are recommended for visual impacts**.

11.8 Residual Impacts

Since no mitigation measures have been recommended for townscape or visual impacts, the residual impacts are the same as the potential impacts described in Sections 11.4 and 11.5, and summarised below.

11.8.1 Townscape Impacts

11.8.1.1 Operation Phase

Measuring the magnitude of change ('high' - refer to Section 11.4.2) against the sensitivity of the receiving environment ('medium' - refer to Section 11.4.1), the significance of the townscape effects during operation was predicted to be 'significant'. Based on the assessment (in Table 11-6) of the proposal against the relevant 'Urban Design Criteria and Indicators' in the *Urban Design Manual - A Best Practice Guide*, the effects were classified 'positive'. The townscape effects during operation are thus predicted to be 'significant positive'.

11.8.1.2 Construction Phase

The townscape effects during construction are predicted to be 'moderate negative'.

11.8.2 Visual Impacts

The visual effects on the 42 no. representative viewpoints, during construction and operation, are predicted to be as follows:

Table 11-19 - Summary of predicted visual effects

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	Moderate positive

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
					negative	
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
River Dargle 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 River Dargle						
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

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

11.9 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.

11.10 Difficulties encountered during the preparation of this chapter

No difficulties were encountered in the preparation of this chapter.

12. Traffic

This chapter should be read in conjunction with the TTA Report (AtkinsRéalis ref: 0088726DG0010) . It describes the traffic related impact of the Sea Gardens Phase 2 proposed mixed-use development on the existing surrounding road network.

The key objectives of the assessment are to:

- Determine the potential impacts on the relevant junctions of the surrounding road network.
- Provide any mitigation measures, if required.

12.1 Introduction

This chapter of the EIAR reviews the current receiving environment in terms of existing road traffic characteristics and quantifies the associated baseline scenario whilst undertaking an assessment of the proposed development to identify its likely effects on the traffic environment.

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 of the Coastal Quarter SHD 2 (Reference ABP-314686-22) 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 characteristics of the Sea Gardens Phase 2 are addressed in this section.

The Sea Gardens development site is bounded to the west by the Dublin Road, to the east by the main line rail DART line, to the south by the River Dargle and to the north by Corke Abbey residential development and Woodbrook Glen.

The overall Sea Gardens Development presents as a development wherein residents will be facilitated with a lifestyle that is based predominantly on active travel and travel by public transport whilst minimising dependency on car travel. This opportunity is based on multi-faceted characteristics of the site location and opportunities created for travel choice and preclusion of the need to travel by car in terms of direct and adjacent proximity to existing and future services.

The site is proposed to be developed in alignment with several future public transport initiatives/projects. The major projects include:

- Luas Green Line Extension to Bray with associated Transport bridge; and
- BusConnects – Core Bus Corridor: Corridor 13 Bray to UCD.

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 masterplan for the development lands takes cognisance of the provision of the Luas extension and its interface with the development.

On the 28th of January 2025 the National Transport Authority received notification of planning approval by An Bord Pleanála (Reg Ref HA27.317742)[39] for the Bray to City Centre BusConnects Scheme.. As the Dublin Road lies on BusConnects Route 13 Bray to the City Centre, a full upgrade of the carriageway and associated junctions will be provided along the Dublin Road. According the NTA BusConnects web page[40] it is expected that all twelve BusConnects Core Bus Corridors, of which Bray to City Centre is one, "*will be completed in 2030 with the first construction contracts to be awarded in mid-2025 with on-site construction to commence in the second half of the year. The construction of the corridors will be delivered on a phased basis in order to reduce the traffic impacts that could arise should all twelve be constructed concurrently. In relation to the Bray to City Centre Core Bus Corridor, it is likely that the Scheme will be implemented in the second half of the overall Core Bus Corridor construction programme."* The development plan takes cognisance of these upgrades for all future design scenarios.

The NTA are currently in planning phase of the BusConnects Scheme, Corridor 13 Bray to UCD and City Centre. As the Dublin Road lies on BusConnects Route 13 Bray to the City Centre, a full upgrade of the carriageway and associated junctions will be provided along the Dublin Road. The development plan takes cognisance of these upgrades for all future design scenarios.

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. Furthermore, the strategy notes that more than 25% of the private sector workers in Ireland have the ability to work remotely.

Therefore, in addition to the significant opportunities to travel to work by active travel and public transport modes, residents of the Sea Gardens development will 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 minimise 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 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.

12.2 Study Assessment and Methodology

12.2.1 Assessment Methodology

The methodology for this Chapter was developed using recognised national assessment guidelines[41] and is outlined in the following sections. The assessment was undertaken using desktop research, policy review, geographical information systems (GIS) mapping, site visits, traffic surveys, traffic modelling, as well as consultation with relevant stakeholders including WCC.

[39] 317742 | An Bord Pleanála

[40] Planning approval received for Bray to City Centre Core Bus Corridor Scheme | Busconnects

[41] See reference Section 13.11

12.2.2 Defining the Study Area

The study area for the traffic and transportation assessment has been established based on the likely areas of influences of the development on various travel modes—such as walking, cycling, public transport and vehicular traffic—and on key travel destinations:

- Walking – the focus is on the provision of walking facilities both within the development and on the pedestrian network adjacent to the site including connections onto and along the Dublin Road via Southern Access Road and the Fran O'Toole Bridge via the Pedestrian and Cycle route to the south of the site.
- Cycling – the focus is on the provision of cycle facilities both within the development and on the road network surrounding the site including connections onto and along the (street/road names).
- Public transport – the focus is on the provision of access to public transport facilities—including services and associated bus infrastructure such as local bus stops and bus priority measures—and any potential impact that traffic could have on public transport service reliability; and
- Vehicular traffic – the focus is on the impact of traffic flows both within the development and at several key junctions and road links surrounding the site and the impact that traffic could have on network performance.

12.2.3 Defining Significance

The 2022 Environmental Protection Agency (EPA) guidelines included in the Guidelines on the Information to be contained in Environmental Impact Assessment Reports, identify that significance of effects.

> *"Is usually understood to mean the importance of the outcome of effects (consequences of the change). Significance is determined by a combination of (objective) scientific and subjective (social) concerns". (Section 3 page 49)*

In general, impact significance is defined using a combination of sensitivity (e.g., high, medium and low) of the environmental feature and the magnitude of impact (e.g., major, moderate, slight and negligible).

The criteria for assessing sensitivity and magnitude level have been defined in Table 12-1 and Table 12-2. The overall significance of an impact, taking the relationship between sensitivity and the magnitude level into consideration, is set out in Table 12-3.

The significance level attributed to each effect has been assessed based on the magnitude of change due to the Proposed Development and the sensitivity of the affected receiving environment to change.

12.2.3.1 Receptor Sensitivity (or significance)

The criteria for assessing the traffic and transport sensitivity are defined according to the matrix as set out in Table 12-1.

Table 12-1 - Sensitivity and Description of Impact

Sensitivity Description of Impacts	Criteria
High	Receptors of greatest sensitivity to change such as highly congested links or junctions, which have a low capacity to accommodate change without significant effect arising.
Medium	Links and junctions which have a moderate capacity to accommodate change without significant effects arising.

Low	Links and junctions which have a high capacity to accommodate change without significant effects arising
Negligible	Receptors with low sensitivity to traffic flows, those sufficiently distant from affected links and junctions and those that are very lightly used (relative to other modes within the study area) which have a very high capacity to accommodate change without significant effects arising.

12.2.3.2 Magnitude of Impact

The criteria used to assess the magnitude of change are set out in Table 12-2. These criteria were used to identify the magnitude of change for quantitative assessment and were supported by professional judgement to take full account of the specific context in the study area.

Table 12-2 - Magnitude of Impacts Assessment Criteria

Magnitude of Impacts	Criteria
High / Major	Changes which are perceptible and would result in significant alterations to conditions.
Medium	Changes which are perceptible and would alter conditions which otherwise prevail.
Low / Small	Changes which are perceptible but would not alter conditions which otherwise prevail.
Negligible	Changes that is unlikely to be perceptible.

12.2.3.3 Significance of Impact and Typical Description

The 2022 EPA guidance on information to be contained in EIAR has been used to categorise the significance of impact as shown in Table 12-3.

Table 12-3 - Significance of Effect Description

Significance of Effect	Description
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration and intensity significantly alters most of a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of sensitive aspects of the environment.

Profound Effects	An effect which obliterates sensitive characteristics.
Neutral	No effect or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.

12.2.3.4 Traffic and Transport Impact Matrix

The significance of effects for the traffic and transport assessment of the Proposed Development was based on the receptor sensitivity and the magnitude of impact. This is defined in Table 12-4.

Table 12-4 - Traffic and Transport Significance of Effect Matrix

Heading	**Existing Environmental Significance / Sensitivity**			
Magnitude of Impact	High	Medium	Low	Negligible
High	Profound	Very Significant	Moderate / Slight	Not Significant
Medium	Very Significant	Moderate	Moderate / Slight	Slight / Not Significant
Low	Significant / Moderate	Moderate / Slight	Slight / Not Significant	Not Significant
Negligible	Not Significant	Not Significant	Not Significant	Imperceptible

Effects are generally considered significant (and in need of mitigation) if they are profound, very significant, significant or moderate. Slight and imperceptible effects are not considered to be significant.

Effects have been described as:

- Beneficial, neutral or adverse.
- Permanent or temporary.
- Short (< 5years), medium (5-10 years) or long term (10+ years).

Temporary effects are those associated with the demolition and construction activity, while permanent effects are those associated with the operation of the development.

12.2.4 Baseline Transport Review

Baseline transport review was completed via a desktop review of current planning policies and objectives, existing public transport services, the walking and cycling network and existing road infrastructure. This also included a review of relevant committed developments in the vicinity of the Proposed Development site.

12.2.5 Traffic Surveys

As the part of the preliminary analysis, fully classified Junction Turning Counts (JCT) traffic survey was commissioned and undertaken by National data Company (NDC) on 30th of May 2023. The key junctions included are listed below and shown in Figure 12-1.

- Ravenswell North / Ravenswell South / Harbour Road
- North / Lower Dargle Road / Dublin Road South / Ravenswell Road Car Park
- Dublin Road North / Upper Dargle Road / Dublin Road West / Dublin Road South / North Wicklow Educate Together Access. (Southern Access Junction)
- Dublin Road North / Chapel Lane / Dublin Road South / Ravenswell
- Dublin Road West / Shopping Centre Access / Dublin Road East / Dwyer Park

Based on the survey data, the following peak hours were identified:

- AM Peak (8 to 9 am)
- PM Peak (5 to 6 pm)

These vehicle counts have been converted to Passenger Carrier Units (PCU) using following factor:

- Car = 1.0 PCU
- LGV = 1.0 PCU
- OGV1 = 1.5 PCU
- OGV2 = 2.3 PCU
- PSV = 2.0 PCU
- M/C = 0.4 PCU
- P/C = 0.2 PCU

The traffic flow data (in PCU) for the peak hours for all the three junctions are summarised in Appendix A of the Traffic and Transport Assessment (AtkinsRéalis ref: 0088726DG0010).

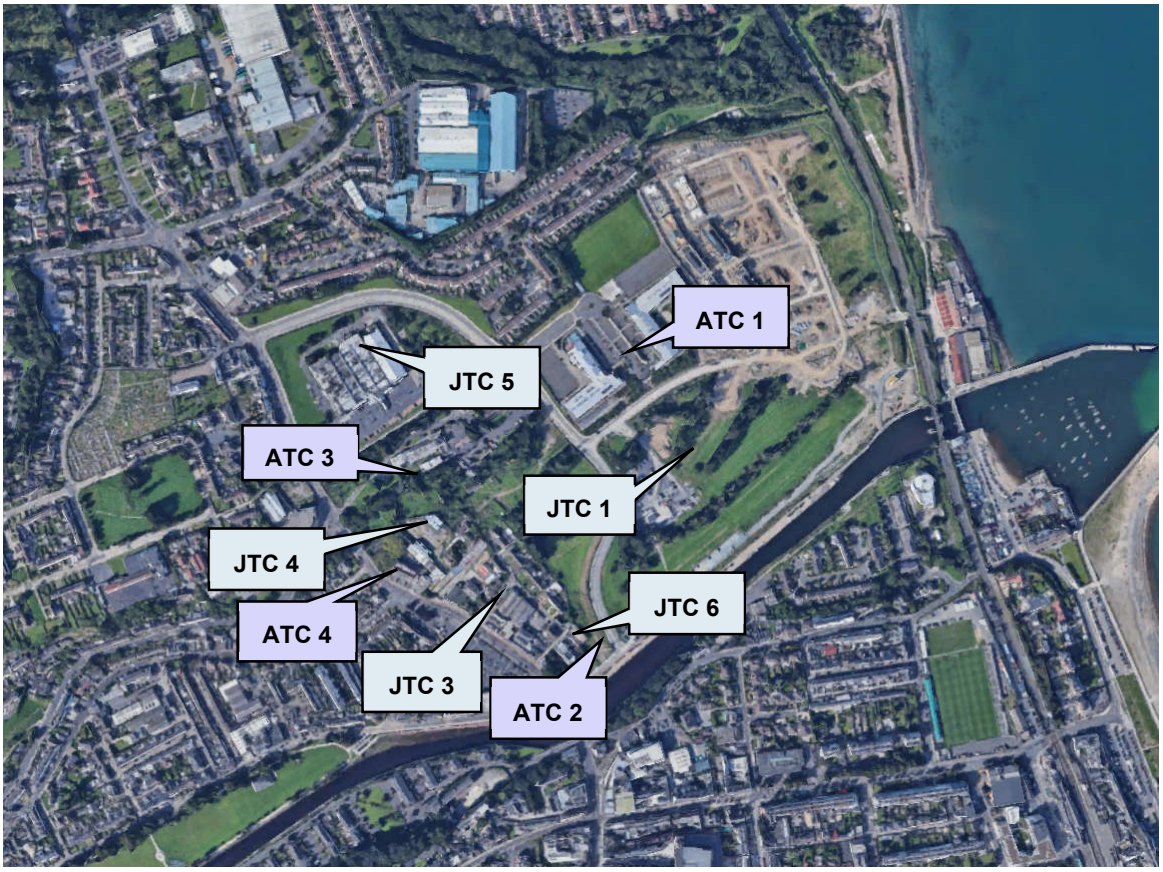


Figure 12-1 - Location of key junctions for JTC Survey

12.2.6 AADT

The AADT figures have been calculated utilising the methodology outlined within TII PAG Unit 16.1 – Expansion Factors for Short Period Traffic Counts (PE-PAG-02039). Future traffic growth and Proposed Development traffic generation has also been taken account for the future design years.

12.2.7 Trip Rates and Trip Generation

The TRICS database was utilised to determine the multi-modal trip generation for the proposed mixed use residential and neighbourhood centre development for both AM and PM Peak.

12.2.8 Mode Share

The likely modal split was determined from the 2022 census data for areas in the vicinity using CSO data cross referenced with TRICS data.

12.2.9 Assessment of Road Impact

Construction Phase

Undertake an assessment of the potential traffic generation during the construction phase and assess the percentage traffic impact likely to occur and to identify any appropriate mitigation.

Operational Phase

An assessment of the impact of the development on key links and junctions was undertaken for base, opening year, opening year +5 and opening year +15 for with and without development scenarios in order to determine the future operation and any necessary mitigation measures required.

12.2.10 Traffic Modelling Impacts

An initial assessment was undertaken to quantify the additional traffic from the development that will be distributed onto the local road network and the potentially impacted junctions. In order to determine what level of increase is considered above threshold, reference is made to the TII Traffic and Transport Assessment Guidelines (May 2014). This document outlines the following thresholds:

- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road; and,
- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive.

In the context of the sensitivity of the urban road environment in the vicinity of the development any changes above 5% are assessed.

12.2.11 Accident Data

Due to on-going issues with data on the Road Safety Authority's web page[42] and historic nature of data available accident data was not considered.

12.2.12 Future Transport Infrastructure Review

This consisted of a review of current proposed future transport plans, strategies and infrastructure in the vicinity of the site in order to identify future short, medium and long terms transport proposals which may have a material impact on the travel behaviour associated with the Proposed Development.

12.2.13 Development Proposal Review

This review took account of the proposed development in terms of provision for access by walking, cycling, public transport and by vehicles including private car and service and emergency access.

12.3 Receiving Environment

A summary of the receiving environment is provided below.

12.3.1 Site Location and Site Access

The site is located in Bray, County Wicklow bounded by the Dublin Road to the west and by the Harbour Road to the east. The site can be accessed by two separate access points on the Dublin Road which will also serve the nearby Phase 1 development that is currently being constructed. The proposed development is a circa. 600m walk from the Bray Rail Station.

12.3.2 Existing Pedestrian and Cycling Facility

The following section outlines the existing Pedestrian and Cycling Facility in the vicinity of the site.

An analysis of the walking and cycling catchments in terms of journey distance and time has been undertaken and the results of this are presented below. These are represented in the form of isochrones radiating outwards from the proposed development site in 5-minute, 10-minute and 15-minute journey time intervals. Please see Section 6.3. and 6.4 in the Traffic and Transport Assessment (AtkinsRéalis ref: 0088726DG0010).

In terms of walking, Bray town centre is accessible within 10 minutes, whereas Bray Rail 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 Rail Station is within a 5-minute cycle.

[42] Road traffic collision data from the Road Safety Authority (rsa.ie)

12.3.3 Existing Public Transport Facility

The following section outlines the existing public transport facilities in the vicinity of the site. Figure 12-2 shows the location of existing bus and Luas services in relation to the Proposed Development site.

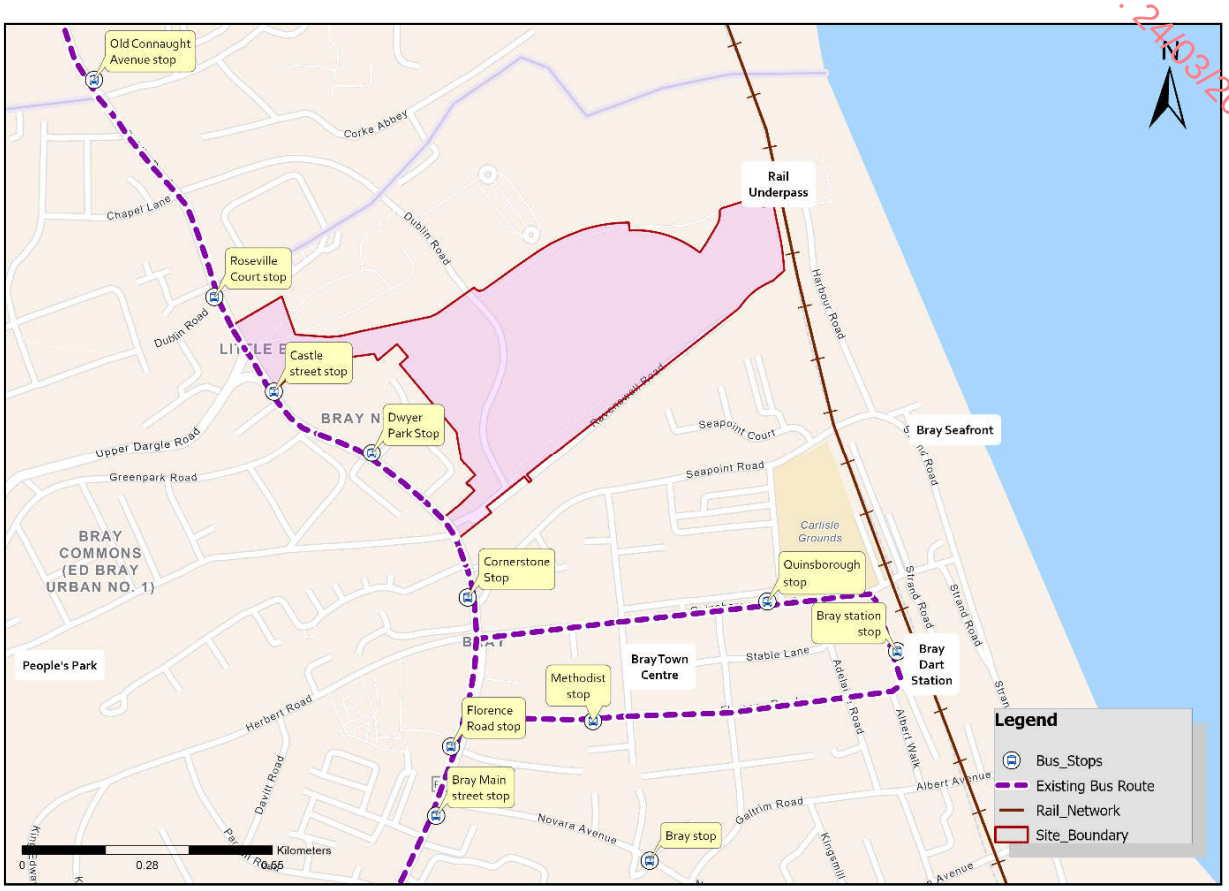


Figure 12-2 - Existing Public Transport Facilities Nearby the Proposed Development

12.3.3.1 Bus Routes and Services

It is considered that the proposed development is well located, granting opportunity to access both the bus services and the rail services, including DART, and employment opportunities in the local and wider environs via public transport. The available bus services are shown in Table 12-5.

Table 12-5 - Traffic and Transport Significance of Effect Matrix

Bus Service	Route	Frequency (Mon-Friday)
45a	Dún Laoghaire Rail Station to Kilmacanogue	15-20min
45b	Kilmacanogue - Dun Laoghaire Rail Station	15-20min
84	Blackrock to Newcastle	Once an hour
84a	Blackrock to Bray	6 services
84x	Hawkins Street to Newcastle/Kilcoole	8 services
143	Southern Cross Road to Sandyford Luas	6 services
145	Heuston Rail Station to Ballywaltrim	10mins

155	IKEA (Ballymun) Towards Bray Rail Station	20mins
184	Newcastle Hospital to Bray Rail Station	30mins

12.3.3.2 Rail Services

In terms of heavy rail, the closest Dart station is located in Bray, which is circa. 600m to the south, and Shankill Station which is circa. 2.7km to the north of the proposed development site. Both stations serve both DART and Commuter Rail services. These stations facilitate services that allow for good connection to other onward destination both north and south. The available rail services are shown in Table 12-6.

Table 12-6 - Existing Rail Services

Rail Service	Route	Frequency (Mon-Friday)
Dart	Malahide to Greystones / Howth to Greystones	5-10mins
Commuter / Intercity Services	Dublin to Rosslare	6 services

12.3.4 Baseline Traffic Volume

To assess the existing traffic conditions in the area, AtkinsRéalis completed a review of the local road network in the vicinity of the proposed development.

Arising from this review, the main junctions likely to be impacted by the proposed development were identified in Table 12-7.

Table 12-7 - Key Junctions for JTC Survey

Junction	Road Names	Junction Type
JTC 1	Ravenswell North / Ravenswell South / Harbour Road	Priority Junction
JTC 2	North / Lower Dargle Road / Dublin Road South / Ravenswell Road Car Park	Priority Junction
JTC 3	Dublin Road North-West / St. Cronan's Road / Dublin Road East	Priority Junction
JTC 4	Dublin Road North / Upper Dargle Road / Dublin Road West / Dublin Road South / North Wicklow Educate Together Access. (Southern Access Junction)	Signalised Junction
JTC 5	Dublin Road North / Chapel Lane / Dublin Road South / Ravenswell	Priority Junction
JTC 6	Dublin Road West / Shopping Centre Access / Dublin Road East / Dwyer Park	Priority Junction

The locations of the key junctions are shown in Figure 12-3.

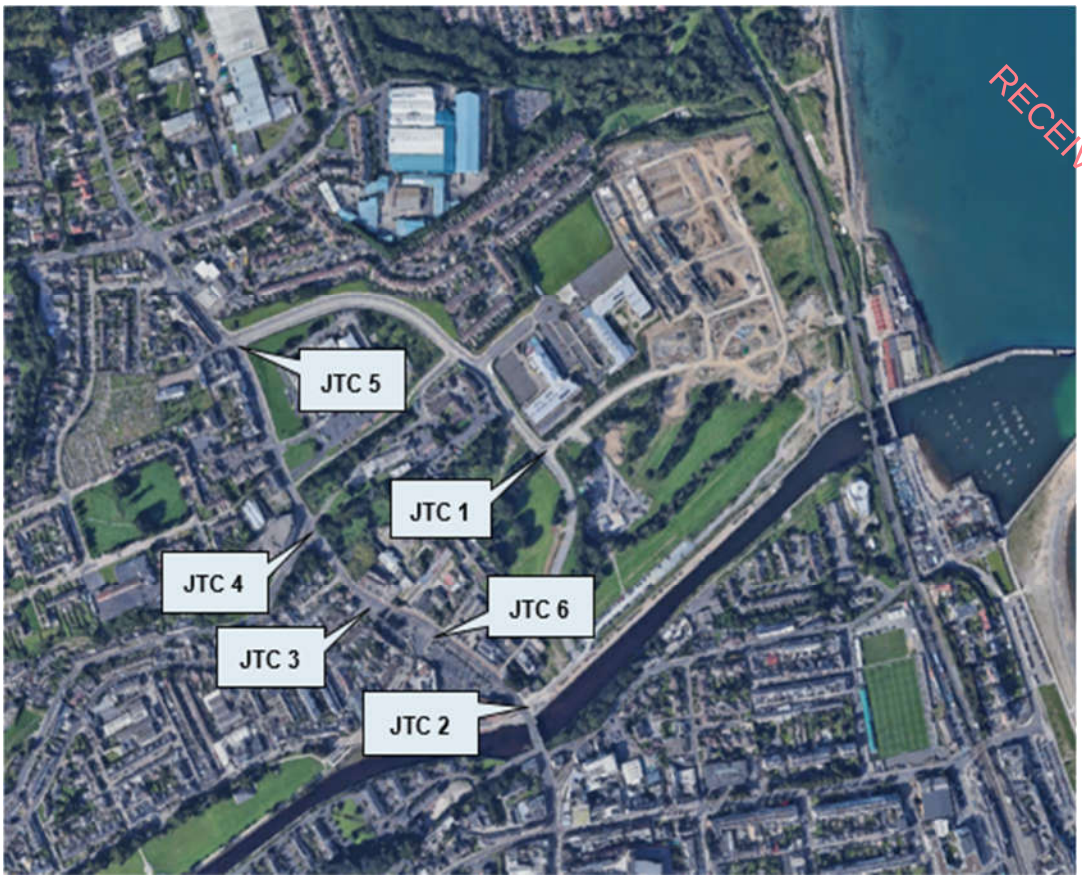


Figure 12-3 - Locations of Key Junctions for JTC Survey

The existing traffic volumes were found from the survey, this can be seen in Table 12-8 below.

Table 12-8 - Existing Traffic Volume

Junction	Existing Volume in PCU (AM Peak)	Existing Volume in PCU (PM Peak)
JTC 1	318	155
JTC 2	1652	1743
JTC 3	1232	1467
JTC 4	1460	1683
JTC 5	1489	1483
JTC 6	1224	1515

12.4 Proposed Development (FROM TTA)

This section provides detail of the proposed Sea Gardens Phase 2 development, regarding the proposed land use, internal road network and parking facilities.

12.4.1 Overview of the scheme

The overall Sea Gardens Masterplan is split in three phases as illustrated in Figure 12-4:

- Phase 1, including phase 1a (App Ref: ABP-311181-21) was permitted and is in construction. Planning permission for Phase 1b (App Ref: ABP-314686-22) has been permitted.
- Phase 2 forms part of the next phase, which is part of the current application for the proposed development which is called Sea Gardens Phase 2 as illustrated in Figure 12-4.
- Phase 3 forms part of the future application which is south of the new park and will form the final part of the Sea Gardens Masterplan.

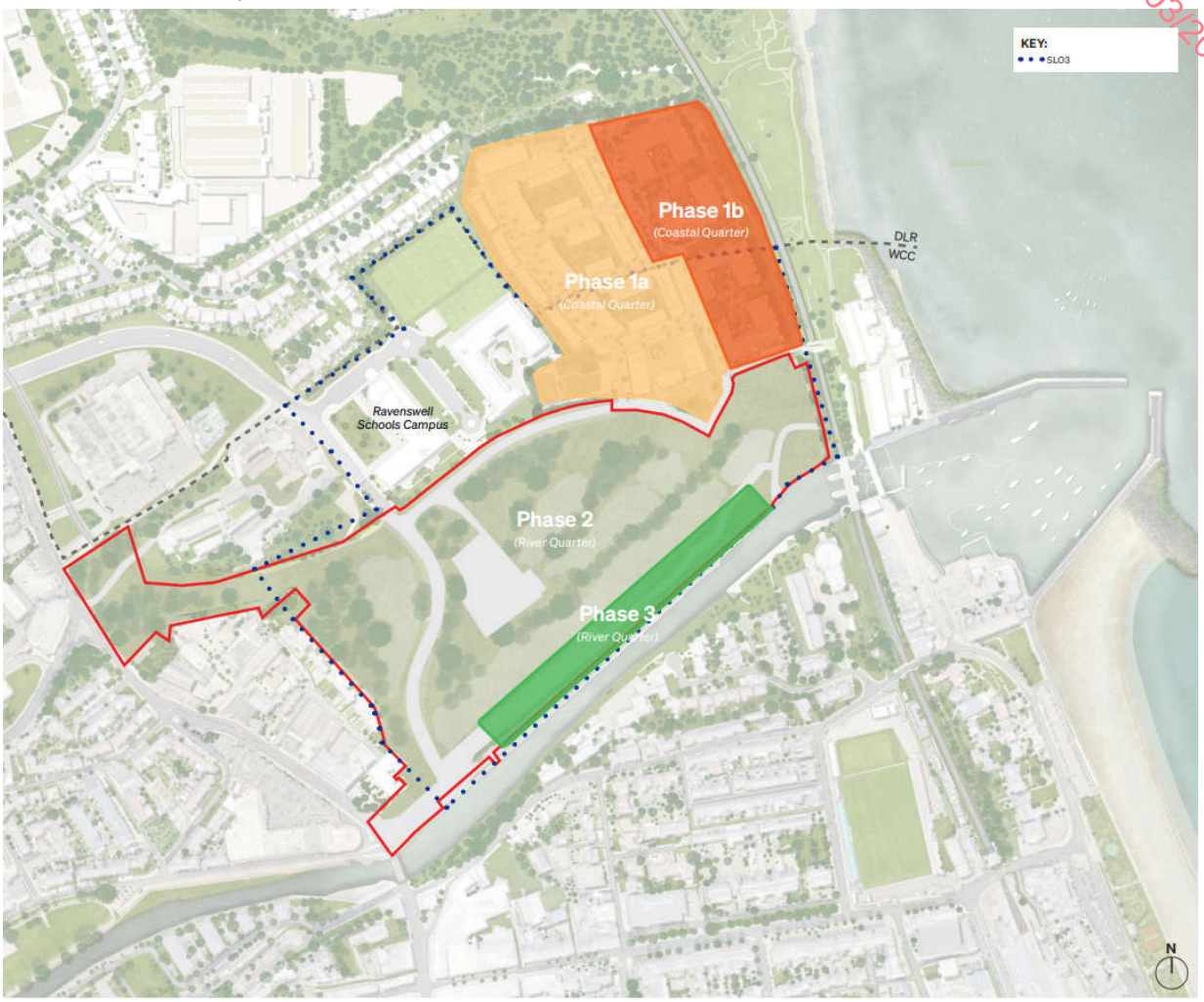


Figure 12-4 - Map of the wider Sea Gardens Masterplan lands

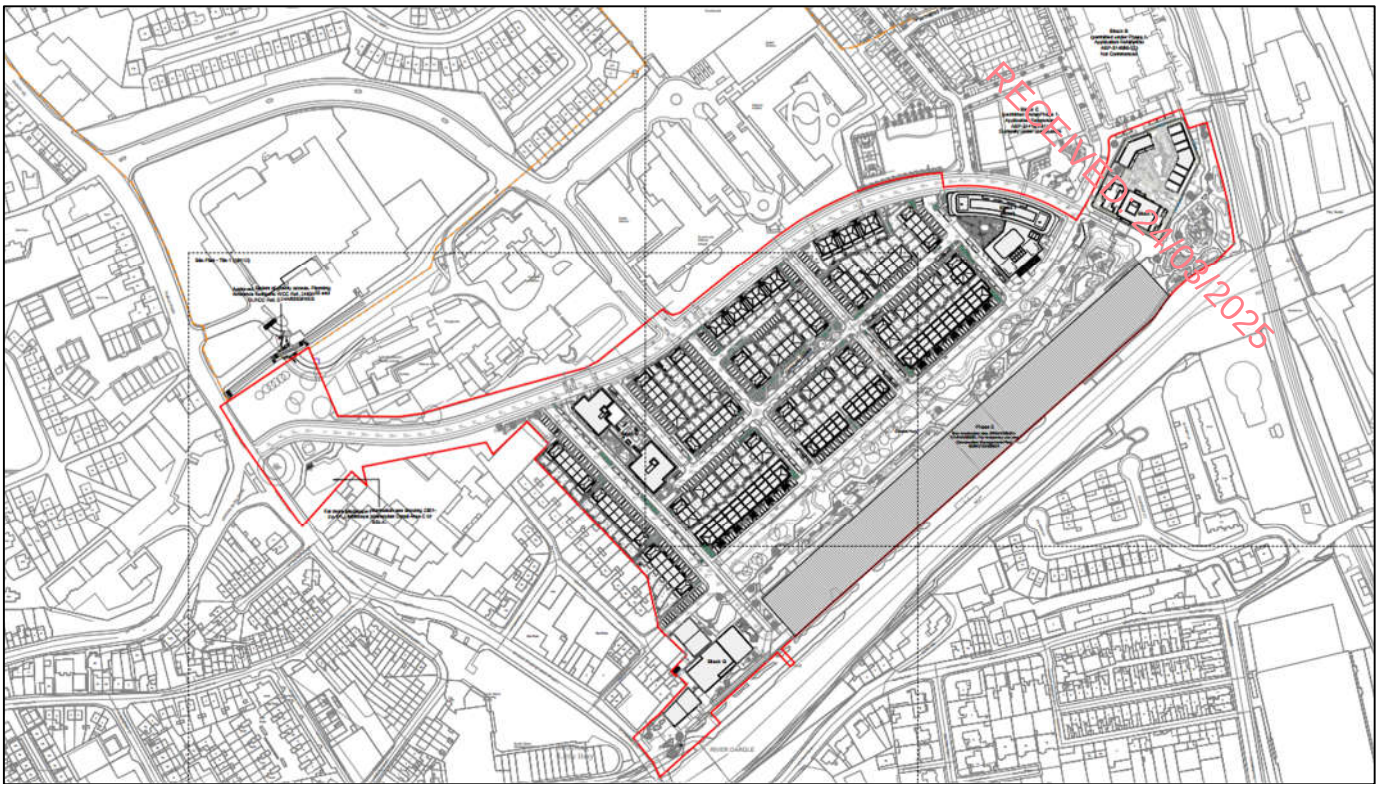


Figure 12-5 - Sea Gardens Phase 2: Proposed Development Layout

The proposed Sea Gardens Phase 2 development will principally consist of the provision of development consisting of 341 No. residential units, a hotel with 150 bedrooms and several smaller amenities such as a pub, creche, pharmacy and public open spaces will also be provided. Table 12-9 contains a full breakdown of the schedule of accommodation and residential mix.

Table 12-9 - Sea Gardens Phase 2 Land Uses

Residential Accommodation	No. of Units	Unit Mix	No. of Units (Total)
Houses	62	3 bed	94
	32	4 bed	
Apartments	27	1 bed	141
	95	2 bed	
	11	3 bed	
	8	4 bed	
Duplex	53	2 bed	106
	53	3 bed	
Residential Total	**341 Units**		
Houses	12,916.2 sqm		
Duplexes	11,456 sqm		
Block H	5272 sqm		
Block I (Hotel)	13,292 sqm (150 bedrooms)		
Block G	2550.4 sqm		
Block E	19,792.80 sqm		
Total Areas	**64,979.40 sqm**		

During a formal S247 meeting WCC on the 31st January Wicklow officers advised that the junction of Ravenswell Road with Dublin Road would be closed to vehicular traffic in line with both Wicklow County Council aspiration for the area and in line with NTA's BusConnects design for the Bray to City Centre Core Bus Corridor Scheme at this location. The development is proposing a new access to the site off the Dublin Road called the Southern Access Road. The location and design of the Southern Access Road has been modified from its initial design (2007) (Pizarro Developments Ltd. app ref no - 07630193).

The previous road was designed to cater for a large-scale shopping centre with high capacity, high volumes traffic movements with multiple lanes and complex junction layouts. Upon review of the design against the existing policy documents including DMURS and CDM, this design was inappropriate for the user hierarchy and urban location as the development had changed from a large-scale shopping centre to a housing development. A DMURS and CDM layout has been developed that will provide the appropriate vehicular access while also facilitating better active travel provision. The Southern Access Road will also align with BusConnects proposals (App Ref: 317742). The vehicular traffic impact arising from these changes are analysed in Section 11 in the Traffic and Transport Assessment (AtkinsRéalis Ref: 0088726DG0010).

The development provides car parking spaces in Table 12-10 and bicycle parking in Table 12-11, bin storage and boundary treatments are also provided.

Table 12-10 - Car Parking Proposal

Total Proposed Residential Car Parking							
	Houses/Duplexes		**Block E**		**Block H**		
Type	**Long Stay**	**Visitor**	**Long Stay**	**Visitor**	**Long Stay**	**Visitor**	**Total**
Standard Car Parking Spaces	261	4	95	2	18	-	380
Universal Access Car Parking Spaces	1	10	6	1	1	1	20
EV Car Parking Spaces	30	4	9	1	2	-	46
Universal Access Car Parking Spaces with EV Charging	2	-	-	-	-	-	2
Car Sharing	-	2	-	-	-	-	2
Total	294	20	110	4	21	1	450

Total Proposed Commercial Car Parking					
	Block E	**Block G**	**Block H**	**Block I**	
Type	**Commercial**	**Commercial**	**Commercial**	**Commercial**	**Total**
Standard Car Parking Spaces	9	11	16	27	63
Universal Access Car Parking Spaces	1	2	2	2	7
EV Car Parking Spaces	2	3	4	3	12
Total	12	16	22	32	82

Table 12-11 - Cycle Parking Proposal

Total Proposed Residential Bicycle Parking Provision					
	Residential		**Block E**	**Block H**	
Type	**Duplexes**	**Houses**	**Internal**	**Internal**	**Total**
Stacked Double Tier (Inside)	-	-	206	36	242
Secure Compound	133	-	-	-	133
Sheffield Stand Single Tier (Inside)	-	-	26	12	38
Universal Access Spaces	-	-	12	4	16
Sheffield Stand Single Tier (Landscape)	31	19	40	16	106
Individual Outdoor Cycle Parking Stand	15	-	7	-	22
In Curtilage	132	314	-	-	446
Total	311	333	291	68	1003

Total Proposed Commercial Bicycle Parking Provision					
	Block E	**Block G**	**Block H**	**Block I**	
Type	**Internal**	**Internal**	**Internal**	**Internal**	**Total**
Stacked Double Tier (Inside)	-	-	8	-	8
Secure Compound	-	8	-	-	8
Sheffield Stand Single Tier (Inside)	8	-	-	30	38
Universal Access Spaces	2	2	2	2	8
Total	10	10	10	32	62

12.5 Potential Traffic Impacts on the Local Road Network during the Construction Phase

12.5.1 Development

12.5.1.1 Construction Phase

The traffic that would be generated during construction of the development is predicted on the basis of an outline construction programme and activity schedule for the Proposed Development as set out below.

Further details of construction activity are set out in the Construction Environmental Management Plan (CEMP) and Construction Resource Waste Management Plan that are submitted in support of this EIAR.

The transport effects of the Proposed Development during the demolition and construction phases are considered through the following key transportation issues:

- Vehicle routing.
- Demolition and construction traffic impacts.
- Pedestrian and cycle impacts; and
- Public transport impacts.

It is assumed that all demolition and construction vehicles will remain on the strategic road network for as long as possible and that the "last mile" will be undertaken on local roads (i.e.: that all construction traffic will approach the site from the N11 corridor). During the demolition and construction of the Proposed Development there is the potential for temporary local disruption to pedestrian, cycle and vehicular traffic users because of demolition and construction traffic. The likely traffic impact of the construction works will be short-term in nature.

Once a contractor has been appointed the details set out below will be reviewed and updated to reflect contractor advise and requirements in line with best practice safety and environmental practices.

Construction Phasing and Programme

The construction of the proposed development will consist of two phases and is anticipated to run for four years between Q3 2025 and March 2029 as seen below:

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

12.5.1.2 Site Compound

A construction site compound will be established at the site and the working area fenced off to provide a secure site. Due to the scale of development and the phased approach to development this compound, we will move positions throughout the construction period. An indicative construction site compound strategy is shown in Figure 12-6 and Figure 12-7.

The construction compound will accommodate a site office and staff welfare facilities (including a canteen, drying room, toilets and first aid) as well as storage areas for materials, waste areas and plant and machinery. All surplus plant and materials shall be stored in this location when not in use and will be secured here at night when the site is not operational. Outside of the main construction compound locations, there may be a number of smaller local work

compounds throughout the site which may be used by the Contractor for staff welfare facilities, to store materials for short term use and for plant to park overnight.

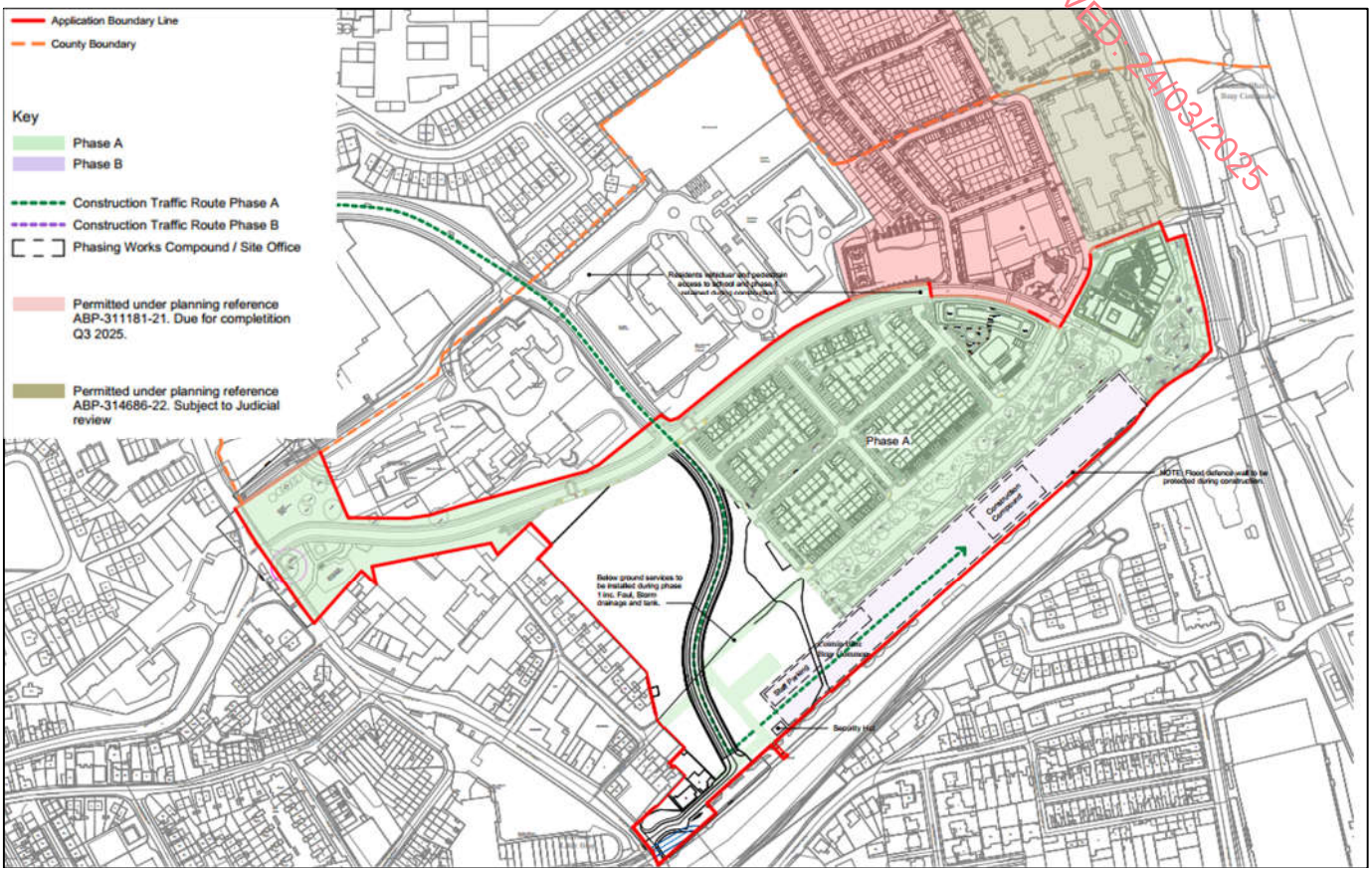


Figure 12-6 - Phase A Site and Compound

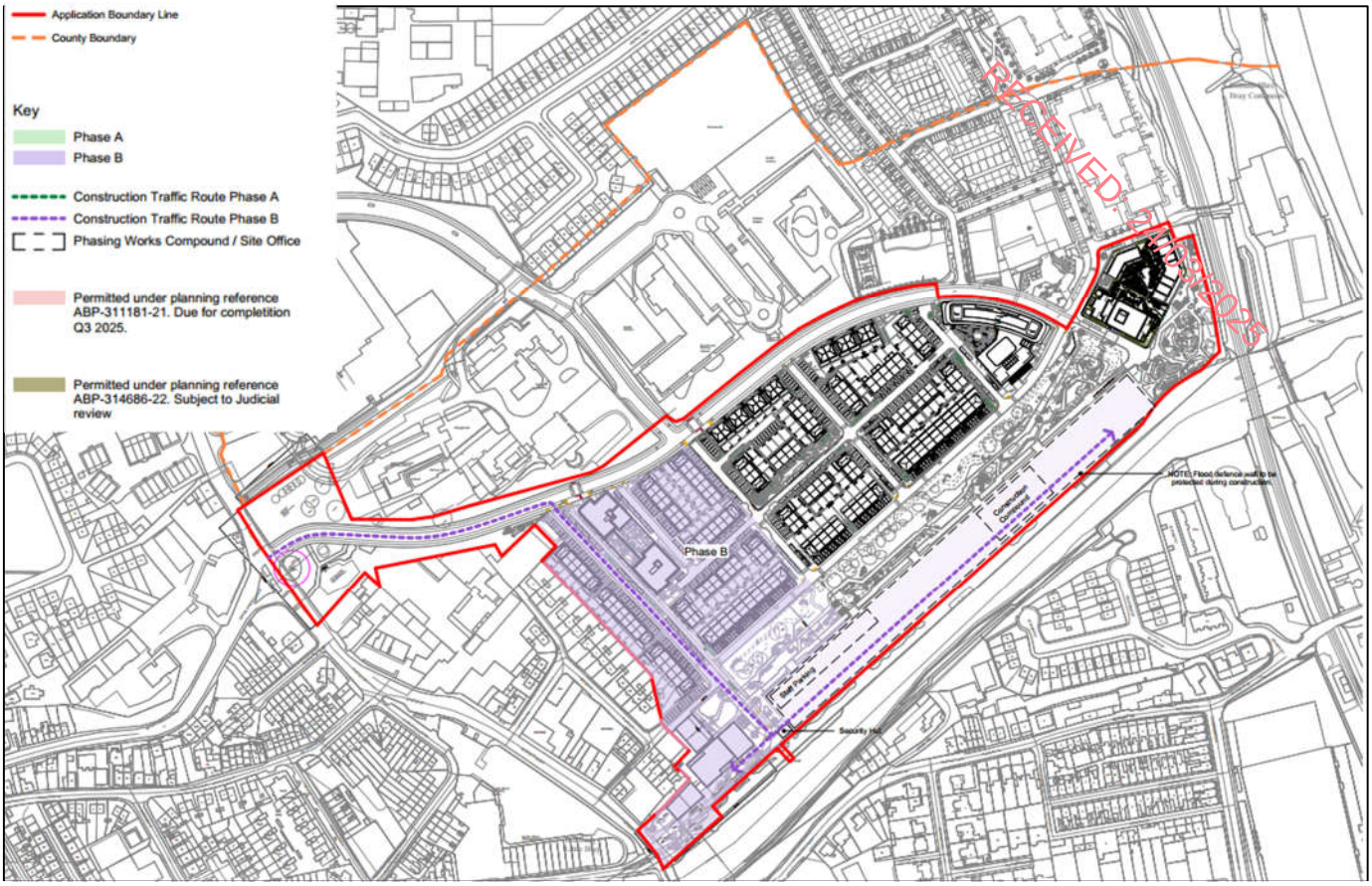


Figure 12-7 - Phase B Site and Compound

12.5.1.3 Construction Hours

Typically, construction working hours adjacent to residential areas or sensitive noise receptors will be limited to:

- 7am - 7pm, Monday to Friday; and
- 7am - 2 pm, Saturday
- Sunday – no working
- Bank and Public Holidays – no working

There may be times when it is necessary to make certain deliveries outside these times, for example where large loads are limited to road usage outside these times. Should this occur the construction manager will contact the local authority and other relevant bodies

12.5.1.4 Construction Haul Routes

All demolition and construction vehicles will remain on the strategic road network for as long as possible and with the "last mile" being undertaken on local roads (i.e.: that all construction traffic will approach the site from the M11 corridor). During the demolition and construction of the proposed development there is the potential for temporary local disruption to pedestrian, cycle and vehicular traffic users because of demolition and construction traffic. The likely traffic impact of the construction works will be short-term in nature.

Figure 12-8 shows an outline of the construction traffic routing plan. For the proposed site, it has been assumed that construction traffic will follow the following routes.

- North Entrance - M11 – J5 – R761 Dublin Road – Northern Access Road - Site

- South Entrance – N11/M11 – J5 – Old Connaught Avenue – Dublin Road – Northern Access Road - Site

Figure 12-8 - Outline Construction Traffic Routing Plan

12.5.1.5 Anticipated Construction Traffic

Material delivered by HGV in significant quantities throughout a project would include stone fill, steel reinforcement, blocks and bricks, mortar, precast concrete floors and balconies, timber and roof trusses, windows and cladding, roof tiles/slates, paving and drainage materials. Materials for general internal finishes would tend to be in smaller vehicles but some of the bulkier items would include timber, plaster slabs, kitchens and wardrobes, bathrooms and plumbing supplies. However, these vehicle movements will be spread out over the entire duration of the programme, currently anticipated at 4 years.

The anticipated volume of material to be removed during enabling and excavation works is approximately 24392.04cubic metres, 75,484.06 cubic metres is the estimated imported net Fill material and 8,473 cubic metres of grey slab material. A breakdown of total volume by scheme and phase are shown in Table 12-12.

Table 12-12 - Construction Volumes

Scheme Totals	Phase A	Phase B	Total
Total material to be Exported off site:			
Demolition Waste		5026	5026
Soil to be taken off site (40%)	13,857.34	5,508.70	19366.04
Total	13,857.34	10,534.70	24392.04
Total material to be Imported to site:			
Total Imported Fill Material (NET)	54,080.68	21,403.38	75,484.06
Fill material (grey slab)	4,188	4,285	8473
Total	58,268.68	25,688.38	83957.06
Total movements volume (Total Imported + Total Exported)	72,126.03	36,223.07	108,349.10
Total Material to be used from the site			
Total Soil to be retained (60%)	20,786.02	8,263.04	29049.06
Total Cut Volume Engineering Works	1,287.70	212.46	1500.16
Stockpile on Site	19,400		19400
Total	41,473.72	8,475.50	49,949.22

Anticipated HGV movements associated with this volume have been estimated based following steps:

1. The greatest number of HGV movements will occur during the enabling and excavation works stage;
2. A bulking factor of 10% has been applied to the above excavation volume
3. Total volumes divided by
   - Average number of construction days per month – 24 days
   - Total Construction time period is 29 months for phase A and 39 months for phase B
4. This provides average volume moved per day.
5. Assumed all trips will be two-way there both an inward and outward trip will be required.
6. It is assumed that a Rigid HGV carries up to 20 tonnes in terms of payload and an articulated vehicle can carry up to 30 tonnes payload. A combination of both is envisaged to be utilised by the contactor. Therefore, an average payload of 25 tonnes is assumed. Taking into account a typical soil bulk density of 1.8 this would equate to approximately 13.89 m3.

Based on this the HGV movements per phase are set out in Table 12-13 &

Table 12-14.

Table 12-13 - HGV Movement per day per phase

Phase A	TOTAL
Monthly Movement Volume (29 Months)	2487.104 m3
Daily Movement Volume (6 Working Days Per Week)	103.629 m3

No. of One-Way Traffic Trips per Day	8
No. of Two-Way Traffic Trips per Day	16

Table 12-14 - HGV Movement per day per phase B

Phase B	**TOTAL**
Monthly Movement Volume (39 Months)	928.80 m3
Daily Movement Volume (6 Working Days Per Week)	38.70 m3
No. of One-Way Traffic Trips per Day	3
No. of Two-Way Traffic Trips per Day	6

Construction phases A and B have an overlap in construction period and the table below, Table 12-5 reflects the maximum HGV movements per day for this period.

Table 12-15 - Total worst case HGV Movement per day at overlap in construction period

Phase A and Phase B Overlap	**TOTAL**
Maximum Monthly Movement Volume	3415.90 m3
Maximum Daily Movement Volume	142.33 m3
No. of One-Way Traffic Trips per Day	11
No. of Two-Way Traffic Trips per Day	22

Other materials delivered by HGV in significant quantities throughout a project would include stone fill, steel reinforcement, blocks and bricks, mortar, precast concrete floors and balconies, timber and roof trusses, windows and cladding, roof tiles/slates, paving and drainage materials. Materials for general internal finishes would tend to be in smaller vehicles but some of the bulkier items would include timber, plaster slabs, kitchens and wardrobes, bathrooms and plumbing supplies. However, these vehicle movements will be spread out over the entire duration of the programme (four years) with vehicle numbers not anticipated to be as numerous or as prolonged as the scenarios outlined above. As an estimate, it is assumed that there would be circa 10 two-way vehicle movements over a typical construction day. It is anticipated that these vehicle movements would occur outside peak times of avoid delays on the road network and minimise lost time and costs.

In terms of construction personnel, it is anticipated that 100 people would be employed on site during peak periods. Table 12-16 outlines these movements.

Table 12-16 - Table Construction Personnel Movements

Number of Construction Staff	**100**
Average Car Occupancy	3
Percentage Arriving by Public Transport	80%
Daily Number of Public Transport Trips (for construction)	80
Percentage Arriving by Public Car	20%

Daily Number of Car Trips (for construction)	20
Arrival Profile	
0700-0800	80%
0800-0900	20%
Departure Profile	
1600-1700	10%
1700-1800	10%
1800-1900	80%

Looking at the combined construction period[43], the daily total construction traffic movement is shown in Table 12-17.

Table 12-17 - Construction Traffic Movements

Vehicle Type	HGV – two ways	Car – two ways	PCU
HGV	22		50.6
Other construction vehicles	10		23
Construction workers		40	40
Total	32	40	113.6

12.5.1.6 Construction Traffic Impacts

For Sea Gardens Phase 2, based on the routing plan shown in Figure 12-8, key links impacts will be M11 , Dublin Road, N11 and Old Connaught Avenue. Based on the construction traffic flows shown above for phases A and B, the overall construction traffic in Table 12-18 shows the combined construction traffic impacts as the construction phases overlap.

Table 12-18 - Impact of Sea Gardens Phase 2 Phases A and B Construction Traffic

Road Name	Existing AADT (2024)	With Construction Traffic PCU	% Impact
M11 (travelling South)	39319	39399	0.20%
N11(travelling North)	37216	37250	0.09%
Dublin Rd (travelling South)	63377	63419	0.18%

For the PCU for the construction period, we have assumed a 70-30 split for construction traffic coming from the M11 to the South and the N11 to the North as there are quarry's in the vicinity of the site and well as the assumption of the use of local contractors within the area for construction and the rest of the material and construction worked to come from the greater Dublin area. As shown in Table 12-18 the construction traffic impact on the Dublin Rd towards Northern Access Road is negligible with an increase of 0.18% of AADT experienced on Dublin Road, an increase of

[43] representing the largest construction traffic movements

0.09% of AADT on the N11 travelling north and an increase of 0.20% of AADT on the M11 travelling south. The potential traffic impact from the development is below the thresholds set out in TII's Transport Assessment Guidelines Table 2.1 Traffic Management Guidelines Thresholds for Transport Assessments that states that assessment is required if:

- Traffic to and from the development exceeds 10 percent of the traffic flow on the adjoining road; and
- Traffic to and from the development exceeds 5 percent of the traffic flow on the adjoining road where congestion exists of the location is sensitive.

Based on this threshold the construction impacts on the local road network are considered to be negligible.

12.6 Potential Traffic Impacts - Operational Phase

12.6.1 Introduction and Background

Please refer to Sections 8-13 of the Sea Gardens Phase 2 TTA (Ref:0099726DG0010) for a detailed analysis of the traffic impacts.

Below are some assumptions that provide context to outputs:

12.6.2 Operational Phase

The following were considered during the operational Phase:

- The following assessment years are identified to inform the Traffic and Transport Assessment in line with the TII guidelines:
  - 2029 (Opening Year)
  - 2034 (Opening Year + 5)
  - 2044 (Opening Year + 15)
- The nearby committed developments relevant to the area and thus were included in the traffic modelling are as follows:
  - The previous Phases 1a & 1b of the Sea Gardens Masterplan (App Ref : ABP-31486-22 & App Ref : ABP-311181-21)
  - The Sea Gardens Phase 3 Development (Not yet in planning).
- The person trip rate for the residential developments was estimated using the TRICS (Trip Rate Information Computer System) database. Based on CSO data, the trip rate for the AM Peak (8 to 9 am) and PM Peak (5 to 6 pm) was determined.
- For determining the commuting pattern, the data was obtained from CSO 2022 census data. The data was selected from the 'Small Areas' (SA's) adjacent to the site. These SA's were chosen based on the characteristics which is similar to the proposed development site as outlined below:
  - Proximity To the site;
  - Proximity to Public Transport; and
  - Parking Characteristics.

The 'Small Areas' utilised are illustrated in Figure 12-9.

Figure 12-9 - CSO Small Area selected for analysis

The existing mode share from the CSO small areas are summarised in Table 12-19.

Table 12-19 - Mode Share % based on CSO 2022 data

Means of Travel	Total	Mode Share %
Active Travel	856	22%
Public Transport	770	20%
Car driver	1398	36%
Car passenger	558	14%
Work From Home	312	8%
Total	3894	100%

The proposed mode share for residential development was based on the Greater Dublin Area (GDA) Transport strategy 2022-2042[45] published by NTA in November 2021.

It is proposed that in this area, as a result of BusConnects, Dart+, the Luas extension and proposed improvements to the active travel network, that the car mode share is expected to drop and mode share for Public Transport and Active Travel (Walk+Cycle) is expected to increase.

In accordance with this, the mode share for all modes are revised and summarised in Table 12-20 .

[45] https://www.nationaltransport.ie/wp-content/uploads/2023/01/Greater-Dublin-Area-Transport-Strategy-2022-42-1.pdf

Table 12-20 - Mode Share % Proposed

Means of Travel	Existing Mode Share	Proposed Mode Share
Active Travel	22%	28% (+6%)
Public Transport	20%	24% (+6%)
Car driver	36%	24% (-12%)
Car passenger	14%	14%
Work From Home	8%	8%
Total	100%	100%

12.6.3 Trip Distribution

The distribution of trips to the local network is based on the data obtained from Census 2016 Place of Work, School or College - Census of Anonymised Records (POWSCAR) for the Bray Area.

The percentage of people traveling to each zone within model cordon was determined. and summarised in Table 12-21.

Trips are based upon the distribution/redistribution of the following:

- The combination of existing flows and adjustments based on site characteristics
- The closure of Ravenswell Road

Ravenswell Road will be closed therefore no traffic will enter or exit via this road, resulting from this the existing traffic on the Ravenswell Road was redistributed in line with Table 12-21.

Table 12-21 - Percentage of commuters to different zones

Zones	AM		PM	
	Arrival	Departure	Arrival	Departure
Bray North	53%	53%	53%	53%
Upper Dargle Road	13%	13%	13%	13%
Bray South	34%	34%	34%	34%

For more details on trip distribution and trip generation please see the Sea Gardens Phase 2 TTA (Ref:0088726DG0010).

Based on this, the percentage of trips to/from these zones are summarised in Figure 12-10.

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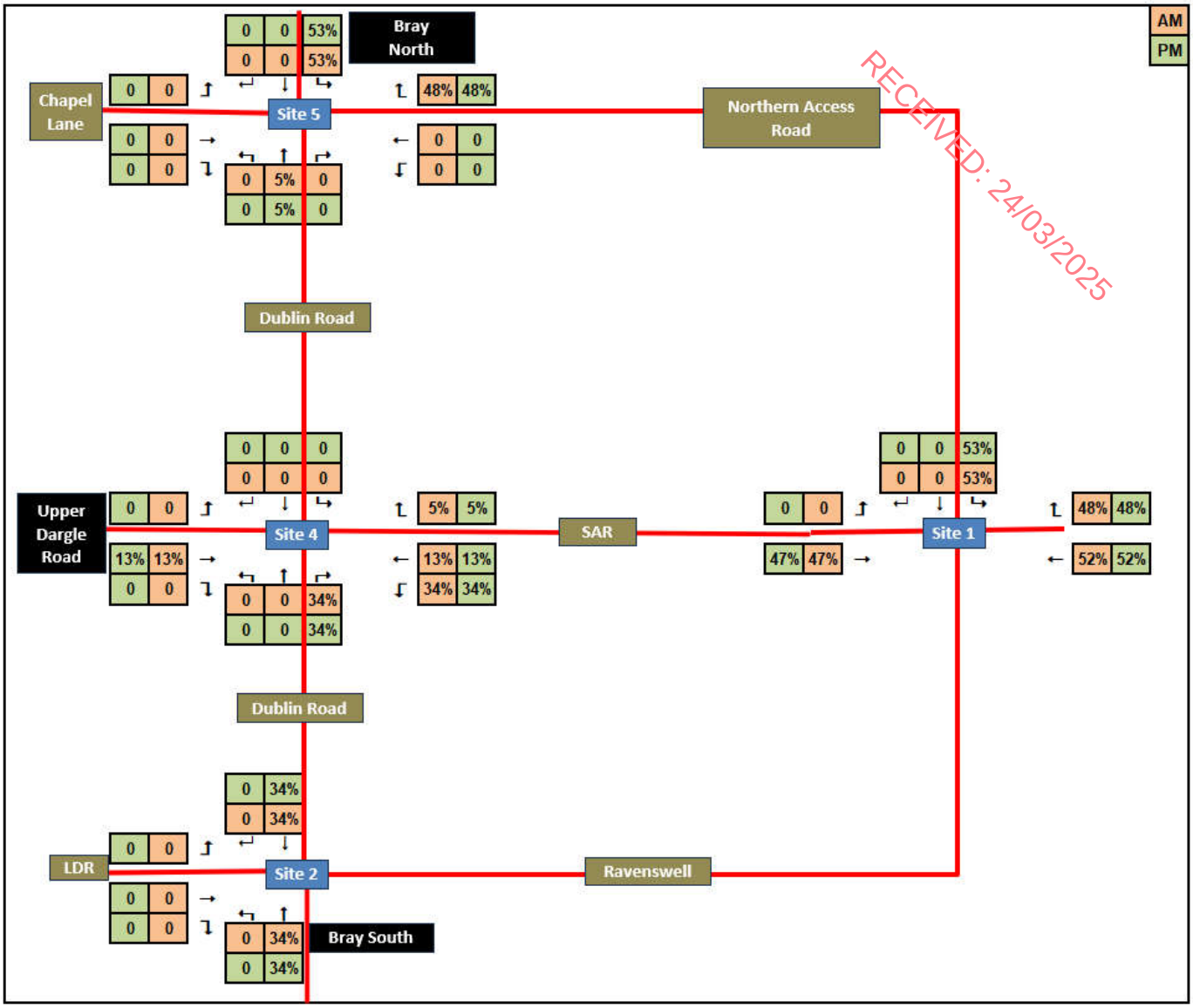

Figure 12-10 - Forecasted Trip Distribution Network Diagram for The Proposed and Committed Developments (With Southern Access Road Right Turn)

12.6.4 Traffic Impact Analysis

12.6.4.1 Initial Screening Assessment Approach

An initial assessment was undertaken (which can be found in Table 12-22) on the existing network to quantify the additional traffic from the development that will be distributed onto the local road network and the potentially impacted junctions. These include

- Upper Dargle Road / Southern Access Road / Dublin Road Junction (will be referred as Southern Access Road or SAR Junction)
- Ravenswell / Dublin Road (will be refereed as Northern Access Road or NAR junction)
- Lower Dargle Road (will be referred as the LDR Junction)

Table 12-22 - Traffic Screening Table

Site	AM Peak					PM Peak				
	Base	Red Trips	Dev Trips	Red + Dev	%	Base	Red Trips	Dev Trips		
With Right Turn Retained										
LDR Jn	1652	-24	95	71	4%	1743	-56	98	42	2%
SAR Jn	1460	320	138	458	31%	1683	101	140	241	14%
NAR Jn	1489	-24	147	123	8%	1483	-36	150	114	8%
LDR Jn	1652	-166	95	-71	-4%	1743	-56	98	42	2%
SAR Jn	1460	314	138	452	31%	1683	101	140	241	14%
NAR Jn	1489	118	184	302	20%	1483	-36	207	171	12%

It can be observed that due to redistribution of trips due to closure of Ravenswell Road Junction and development trips, the net increase for the SAR Junction and NAR junction will exceed the threshold of 5%. Hence, both the junctions were brought forward for the detailed impact assessment.

12.6.5 Detailed Assessment Approach

12.6.5.1 Modelled Scenarios

- Scenario 1: Do Nothing – Existing Layout
- Scenario 2: Do Minimum – Due to the closure of the Ravenswell Road, Scenario 1 trips are redistributed and the Southern Access Road is now in use.
- Scenario 3: Do Something 1 – Takes into account Scenario 2 with the inclusion of the proposed and committed developments.
- Scenario 4: Do Something 2 – Takes into account Scenario 3, omitting the right turning signal from the Dublin Road South towards the Southern Access Road, therefore redistributing the green time throughout the junction.

For the detailed analysis, Table 12-23 summarises the modelled scenarios for both AM and PM peak.

The full breakdown of the detailed analysis can be found in the Sea Gardens Phase 2 TTA (Ref:0088726DG0010).

- Horizontal and vertical alignment to achieve a 20km/h - 30km/h design speed;
- Carriageway widths in line with DMURS requirement for street type;
- Constrained junction radii in line with DMURS requirement;
- Raised table entry treatments at access junctions; and
- Provision of raised tables at internal Junctions.

Table 12-23 - Scenarios Modelled

S. No	Name	Layout of UDR Junction	Trips
Opening Year (2029)			
1	Do Nothing (DN)	Existing Layout	Existing trips increased in accordance with background growth
2	Do Minimum (DM)	Existing Layout + Southern Access Road included	Sc 1 + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction
3	Do Something 1 (DS1)	Same as Sc 2	Sc 2 + Committed + Proposed Development trips
4	Do Something 2 (DS2)	Same as Sc 2 but no right turn allowed from Dublin Road South arm towards SAR	Same as Sc 3 with no right turn from Dublin Road South into Southern Access Road
Opening Year + 5 (2034)			
5	Do Nothing (DN)	Same as Sc1	Existing trips increased in accordance with background growth
6	Do Minimum (DM)	Same as Sc2	Sc 5 + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction
7	Do Something 1 (DS1)	Same as Sc2	Sc 6 + Committed + Proposed Development trips
8	Do Something 2 (DS2)	Same as Sc3	Same as Sc 7 with no right turn from Dublin Road South into Southern Access Road
Opening Year + 15 (2044)			
9	Do Nothing (DN)	Same as Sc1	Existing trips increased in accordance with background growth
10	Do Minimum (DM)	Same as Sc2	Sc 9 + Trips redistribution due to closure of Ravenswell Rd at Lower Dargle Road Junction
11	Do Something 1 (DS1)	Same as Sc2	Sc 10 + Committed + Proposed Development trips
12	Do Something 2 (DS2)	Same as Sc3	Same as Sc 11 with no right turn from Dublin Road South into Southern Access Road

12.6.6 Traffic Impact Results

The results of the traffic impacts based on the modelled scenarios are summarised below. The detailed results can be found in Sea Gardens Phase 2 TTA (Ref:0088726DG0010).

12.6.6.1 Southern Access Road Junction

- In the DM, DS1 and DS2 scenario, the redistribution of school trips from the closure of the Ravenswell Road at the LDR (Lower Dargle Road) junction to the Southern Access Road junction increased the demand on the junction significantly, consequently, key performance indicators for the junction deteriorated, and the junction was found to be operating over capacity.

- The proposed development trips were shown to further deteriorate the performance of the junction to a lesser degree.
- In the DS2 scenario, by restricting right-turn movements from the Dublin Road southern arm traffic wishing to travel to the Local Access Road arm, the performance of the junction improved relative to the DS1 scenario during the AM Peak. However, in the PM Peak, it further deteriorated.

12.6.6.2 Northern Access Road Junction

- The capacity of the junctions further deteriorated due to an increase in background traffic for both the AM and PM peaks.
- The preferred option is Do Something 2. This scenario deals with the proposed developments, committed developments, background traffic growth and traffic redistribution more efficiently than both the Do Minimum and Do Something scenarios.

12.6.7 Sensitivity Scenarios

As part of a sensitivity analysis, this junction was modelled according to the configuration provided in the BusConnects scheme. The proposed layout of the junction is summarised in Figure 12-11. The implications of the BusConnects scheme configuration are as follows:

- The new BusConnects Scheme has tighter junction radius which are compliant with DMURS.
- The new BusConnects scheme omits the slip lane from Upper Dargle Road to Dublin Road reducing the filter lanes
- By omitting these lanes, this reduces the capacity within the junction.

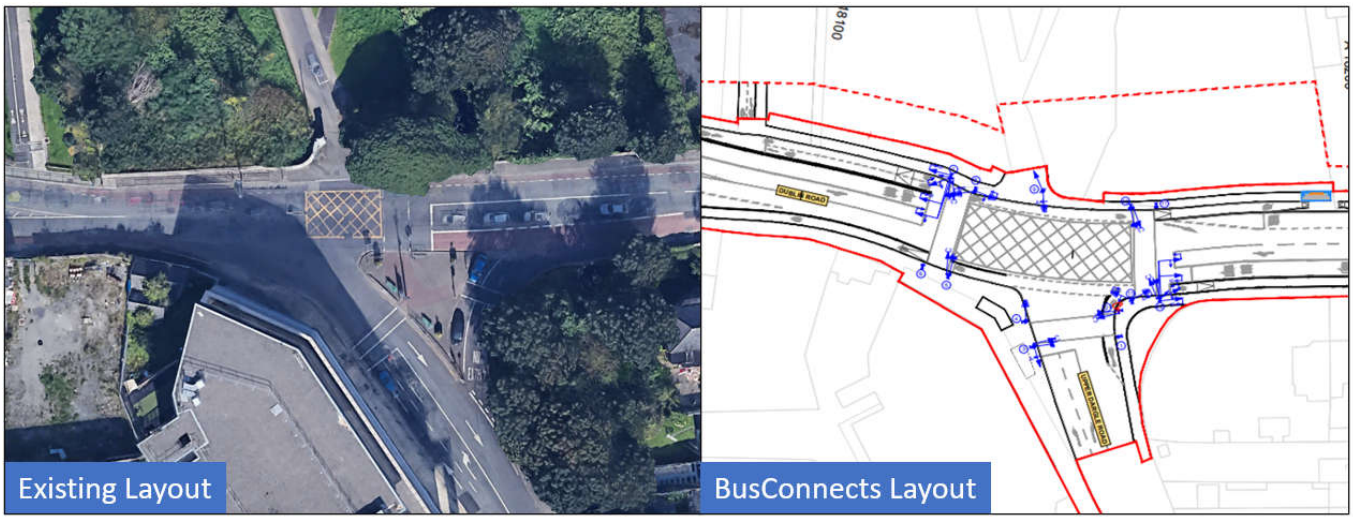

Figure 12-11 - Existing and Proposed BusConnects Southern Access Junction Layout

12.6.8 Summary of Modelling results

A brief description of the modelling results can be found below in Table 12-24. Each scenario received a rating using the Traffic and Transport Significance of Effect Matrix which can be found in Table 12-4.

Table 12-24 - Modelling Results

Opening Year (2029)			
Sc. No	Name	Results	Effect Rating
1	Do Nothing (DN)	The maximum queue is 25 PCU on Dublin Road South. The maximum delay is 1 minutes and 10 seconds on the Southern Access Road. The DOS is 89%.	Not Significant
2	Do Minimum (DM)	Based on the closure of Ravenswell Rd our queue increased from 12 to 79 PCUs and the delay increased from 34 seconds to 8 minutes and 2 seconds. The DOS deteriorated from 84% to 124%	Very Significant
3	Do Something 1 (DS1)	Compared to the Do Minimum scenario, the queue increased from 79 PCU to 96 PCU and the delay increased from 8 minutes 2 seconds to 10 minutes. The DOS deteriorated from 127% to 138%	Very Significant
4	Do Something 2 (DS2)	Compared to the Do Something 1, the queue improved from 96 PCU to 81 PCU and the delay improved from 10 minutes to 8 minutes and 12 seconds. The DOS improved from 138% to 128%	Moderate

A brief description of the modelled scenario results for the Southern Access Road Junction and the Northern Access Road Junction are given below:

12.6.8.1 Southern Access Road Junction

With existing layout scenarios

- Based on the traffic analysis, Do Something 2 was found to be the most effective option. Do Something 2 includes the increase of demand on the junction from the redistribution of trips from the closure of the Ravenswell Road as agreed with Wicklow County Council, and the proposed development trips.
- In the Do Minimum, Do Something 1 and Do Something 2 the performance of the junction deteriorated significantly compared to Do Nothing, however, Do Something 2 operated the most effectively with the increased demand.

Sensitivity Scenarios (with BusConnects layout)

- From the traffic impact analysis Do Something 2 was shown to operate the most efficiently with the expected increase in demand and reduction of capacity of the Southern Access Road junction compared to Do Minimum and Do Something 1 scenario.
- Do Something 2 restricted right turning traffic wishing to travel from the Dublin Road Southern arm to the Local Access Road arm, this allowed for a more effective staging sequence. As a result, Do Something 2 emerged as the preferred option for the Bus Connects Layout.

Since Do Something 2 was the preferred option with both layouts, Do Something 2 is the overall recommended scenario.

12.6.8.2 Northern Access Road Junction

- The Northern Access Road Junction was generally found to operate within capacity, the maximum queue across all scenarios was approximately 4 PCU whilst the typical queue was approximately 0-2 PCU.
- The preferred option is Do Something 2. This scenario deals with the proposed developments, committed developments, background traffic growth and traffic redistribution more efficiently than both the Do Minimum and Do Something scenarios.

12.7 Mitigation Measures

12.7.1 Construction Phase

The following mitigation measure shall apply during the construction stage:

- All construction activities will be managed and directed by a Construction Environmental Management Plan (CEMP) Report (AtkinsRéalis ref: 0089313DG0029). The details of the CTMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-site.

12.7.2 Operational Phase

The proposed development is consistent with all national, regional and local policies. In particular, those policies and objectives aligned with active and sustainable travel and transportation. Specific mitigation measures proposed include the following: -

- Dart+ - The proposed development is located circa. 600m from the Bray Train Station. Dart+ will increase the frequency, capacity and reliability of the existing DART service which are expected to decrease dependence on private vehicles;
- The proposed BusConnects – Core Bus Corridor Route 13 has been included in the development plans which will further decrease dependence on private vehicle usage in the future;
- The development takes cognisance of the NTA's plans to redesign the bus network and provide a more efficient network with high frequency spines, new orbital routes and increased bus services.
- Greater Dubin Area Cycle Network Plan- Primary Route 12 is located on Dublin Road. This route will be upgraded as part of Bus Connect Corridor 13. Route 14 /N5, The East Coast Trail, is located adjacent the eastern site boundary which is from the Dublin City to Bray
- Demand Management is also underpinned by the co-location of residential, education, local retail and leisure and amenity facilities.
- The propensity for car ownership and car use is managed through measures that include reduced residential parking provision and increased cycle parking provision in line the 'Design Standards for New Apartments'. The provision of car club parking spaces will facilitate a lower level of car ownership.
- Long term, the Luas extension to Bray is still yet to be confirmed- this would comprise of the Green line luas being extended to Bray, with a proposed stop nearby the proposed development offering a reliable rail connection from the development through Central South Dublin.

12.8 Residual Effects

No residual effects are anticipated for the proposed development.

12.9 Monitoring Requirements

No monitoring requirements are necessary for the proposed development.

12.10 Difficulties encountered during preparation of this chapter

No difficulties were encountered during preparation of this chapter.

13. Material Assets

13.1 Introduction

This section of the EIAR report has been prepared by AtkinsRéalis. According to relevant EPA guidance (EPA, 2022) the following topics warrant consideration under material assets:

- Built Services;
- Roads and Traffic; and,
- Waste Management.

Roads and traffic have been assessed separately as part of this EIAR. Refer to Chapter 12 – Traffic. Therefore, this assessment examines material assets serving the proposed development specifically 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; both of which are assessed separately within this section.

13.2 Built Services

13.2.1 Assessment Methodology

The methodology used to prepare this section of the EIAR is in accordance with the EPA '*Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)'* (2022), and *'Advice Notes for Preparing Environmental Impact Statements Draft September 2015'*. The following sources have been used to collate information on built services within the general area of the Site;

- ESB Network Utility Plans;
- eir Telecommunications Plans; and
- Available utility information and maps received from Uisce Éireann and Wicklow County Council (WCC)

This information has been supplemented by observations recorded during various Site walkover surveys, and pre-application consultation with UÉ and WCC. Surface water runoff, foul drainage discharge and water supply requirements have also been designed with due regard to the following guidelines:

- Bray Municipal District Local Area Plan (LAP);
- CIRIA report C753 'The SuDS Manual – v6;
- Greater Dublin Strategic Drainage Study (GDSDS);
- Wicklow County Development Plan, 2022- 2028;
- Uisce Éireann Code of Practises and Technical Standards (IW-CDS-5030-01 to 04 & IW-TEC-800);
- Uisce Éireann Pre-Connection Enquiry Application (water demand and foul water loading);
- Uisce Éireann Statement of Design Acceptance; and,
- Uisce Éireann Confirmation of Feasibility (Diversion).

13.2.2 Receiving Environment

The Site of the proposed development is a former Golf Course located within Wicklow County Council (WCC) jurisdiction. 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. 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. A complete set of all utility / service plans received showing the general vicinity of the Site is presented in the Utilities Report by Metac (2025) included in the planning application.

13.2.2.1 Storm Water Drainage

The existing site area is predominantly green field and therefore has no 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. It is proposed that the road and associated surface water drainage network will be removed to allow for construction of the proposed development. The existing drainage located to the north of the proposed site along the Northern Development road will be diverted into the proposed storm drainage network. The proposed network has been designed to cater for the diverted surface water flows from the Northern Development road. Refer to the proposed Stormwater Layout Plans Drawing References: BRA-ATK-02-ZZ-DR-C-52201, BRA-ATK-02-ZZ-DR-C-52202 and BRA-ATK-02-ZZ-DR-C-52203 included in the planning application.

13.2.2.2 Foul Water Drainage

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 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 above-mentioned trunk sewers. Refer to the Foul Water Layout Plans Drawing References: BRA-ATK-02-ZZ-DR-C-52205, BRA-ATK-02-ZZ-DR-C-52206 and BRA-ATK-02-ZZ-DR-C-52207 included in the planning application.

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.

13.2.2.3 Water Supply & Distribution

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. Refer to the Proposed Watermains Layout Plans Drawing References: BRA-ATK-02-ZZ-DR-C-52205, BRA-ATK-02-ZZ-DR-C-52206 and BRA-ATK-02-ZZ-DR-C-52207 included in the planning application.

13.2.2.4 ESB Supply

As presented in the Utilities Report (Metec Consulting Engineers, 2025) submitted as part of this planning application, 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.

13.2.2.5 Gas Supply

There are existing gas utilities in the south-western area / centre of the Site. Refer to the Utilities Report (Metec Consulting Engineers, 2025) submitted as part of this planning application.

13.2.2.6 Eir Network

Existing Eir ducting is located within the Site along the northern, eastern, southern boundaries as well as along the access road through the Site. Refer to the Utilities Report (Metec Consulting Engineers, 2025) submitted as part of this planning application.

13.2.2.7 Street Lighting

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.

13.2.3 Impact Assessment

13.2.3.1 Characteristics of the proposed development

A detailed description of the proposed development is presented in Chapter 2 - Project Description. The following summary relates to the characteristics of the proposed development specifically in relation to proposed built services / utilities.

13.2.3.1.1 Surface Water / Storm Water Drainage

Stormwater run-off will be collected from the roofs, pavements and other impermeable surfaces i.e. open space via. a standard manhole and underground pipework system which will be primarily laid along the internal road network. SuDS have been incorporated into the drainage design to reduce run-off rates and to improve run-off quality. The SuDS features to be used in the drainage network include filter drains, swales, permeable paving, tree pits, extensive green roofs, intensive green courtyards with a permeable base (where appropriate) and underground modular attenuation systems with discharge to the River Dargle.

There are green roofs on Block H, G, and Block E and much of the rainfall in these areas will be absorbed by these sedum and wildflower areas. For areas of soft landscaping, e.g. woodland mix planting, wildflower meadows, grassland areas and residential gardens the rainfall will drain to ground mimicking nature and managing rainfall close to where it falls. The permeable paving similarly allows for localised management of rainfall where during low rainfall events surface water will infiltrate to ground. For larger rainfall events the permeable paving will have an outlet to allow storm water to discharge into the proposed surface water network. The soft landscaping and drainage designs also includes for swales which will also minimise surface water runoff to the local network by allowing rainfall to be slowed and soaked to ground. The SuDs drainage design allows for opportunities for using runoff rainfall where it falls which will ultimately allow for greatly reduced storm water volumes out-falling to the River Dargle whilst also providing for watering of extensive areas of soft landscaping. The drainage design also includes for underground attenuation systems and flow controls to slow and manage storm water drainage before final outfall to the River Dargle which will ensure there is protection to the natural flow regimes of the watercourse.

The various SuDS measures to be adopted as part of the proposed development are detailed further within Chapter 7 – Water. The proposed drainage system (225mm, 300mm and 37mm diameter pipelines) have been designed based on the overall catchment area, as presented in Drawing Ref: BRA-ATK-02-ZZ-DR-C-52201-03 (refer to the planning application) and summarised as follows.

It is proposed to connect a northeast portion of the Site, approximately 2.94 ha in area, adjacent to the phase 1 of the development (permitted and under construction under ABP-314686-21), to the phase 1 surface water drainage network. The remaining 6.88ha is to be attenuated on site using an underground modular attenuation system. Based on a maximum discharge rate of 15l/s, a tank volume of 936.3m^3 is required for 1 in 100-year 6-hour storm event including 20% for climate change and 10% for Urban creep (total 30%) as outlined in the Stormwater Impact Assessment Report (AtkinsRéalis, 2025) (document ref.: 0088726DG0007) submitted as part of this planning application.

A full set of all proposed Stormwater Drainage design drawings are presented in the planning application.

13.2.3.1.2 Foul Drainage/ Foul Water Network

It is proposed that the foul main from the Sea Garden Phase 2 flows from north to south catered by 225mm & 300mm pipes and discharges into the existing 900mm diameter foul main along the River Dargle which finally discharges towards the Bray pumping station. Apart from the rest of Sea Gardens Phase 2, Block E, located at the eastern end of the Site, will have a single point connection to the existing foul main south of the block.

An existing foul line running along the eastern end of the Site is being diverted through a proposed 225mm diameter pipe which will connect to the existing 525mm pipe at the south. At the southeast end of the Site, two of the existing foul mains, 525mm & 900mm diameter, are being diverted through the new path proposed around Block G which will then both connect and discharge to a single outfall at the existing 900mm diameter pipe. Uisce Éireann has confirmed that the existing foul network has sufficient capacity to meet the combined wastewater discharge volumes of ca. 275,100l/d from the proposed development, once operational (refer to Engineering Planning Report). A full set of all proposed drainage design drawings are presented in the planning application. Refer also to the Engineering Planning Report prepared by AtkinsRéalis (2025) (document ref.: 0088726DG0006), submitted as part of this planning application. All foul drainage related works will be carried out in consultation with Uisce Éireann and in accordance with all relevant UÉ guidelines and any Site-specific additional requirements.

A full set of all proposed Foul Drainage design drawings are presented in the planning application.

13.2.3.1.3 Water Supply and Distribution

The proposed water supply for the Sea Gardens Phase 2 will be supplied off the recently constructed watermain within the permitted Sea Gardens Coastal Quarter Phase 1 development (CDS20000988). The entire existing Coastal Quarter Phase 1 water supply network has been designed and constructed to include a capacity allowance for the proposed Sea Gardens development. Each property will have its own separate supply off the proposed watermain along with a boundary box in accordance with UÉ 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.

Proposed watermain services (100-225mm diameter pipeline), including firewater requirements for the development will be provided. The peak daily domestic water demand (including potable use) for the proposed development is calculated to be 3.71 l/s. Uisce Éireann has confirmed that the existing water network has sufficient capacity to meet these peak operational water requirements. A full set of all proposed watermain service drawings are presented in Appendix 13.4 of this EIAR. Refer also to the Engineering Planning Report prepared by AtkinsRéalis (2025), submitted as part of this planning application.

A full set of all proposed Water Supply design drawings are presented in the planning application,

13.2.3.1.4 ESB

Power supply, and the requirement for any alterations to the existing power supply network for the development of the subject Site, will be agreed with ESB Networks in advance of construction. All power supply related works will be carried out in accordance with ESB Networks relevant guidelines. The developer will need to liaise with ESB on the removal/diversion of ESB MV cables relating the old Bray Golf course clubhouse.

13.2.3.1.5 Eir Network

Connection to the existing Eir network in the vicinity of the proposed development will be agreed in advance of construction with Eir. All telecommunication supply related works will be carried out in accordance with relevant Eir guidelines. All construction works within the vicinity of these areas will be carried out in accordance with the Health and Safety Authorities (2016) '*Code of Practice for Avoiding Danger from underground services'*

13.2.3.1.6 Street Lighting

A Lighting Report was prepared by Metec Consulting Engineers (2025), as presented in full in the Planning submission. This Report includes an Outdoor Lighting Report in Appendix A which was prepared in accordance with

relevant standards and guidelines and which will be implemented as part of the proposed development. The Outdoor Lighting Report has also been developed in consultation with bat and biodiversity specialists and is in line with the guidelines and legislation for the protection of bats with an aim of minimising disruption and disturbance to local bat populations. As included within the Lighting Report, the 'Guidance Note 08/23; Bats and Artificial Lighting at Night - Institute of Lighting Professionals' has been considered with regards to reducing impact on bat population (Refer to the Lighting Report (Metec, 2025).

13.2.3.2 Potential Impacts during the Construction phase

The following potential impacts could occur during the Construction phase:-

- Damage to existing major foul water network, within the associated services, along the northern, eastern and southern boundary of the Site;
- Damage to existing underground power supply which runs along the boundaries of the Site;
- Damage to existing eir telecommunication assets along the northern, southern and eastern Site boundaries;
- Potential power outages to existing services in the surrounding area during the connection of the proposed new supply networks within the residential development to the existing networks;
- Contamination to the existing public water supply network during connection to the proposed new water supply network within the residential development; and,
- Damage to the gas network located within the south-western / centre portion of the site.

These potential impacts are considered to be unlikely and should they occur, would be temporary and moderate adverse.

13.2.3.3 Potential Impacts during the Operational Phase

Uisce Éireann has confirmed that the foul network will have sufficient capacity for the proposed development, and that the water supply network has sufficient capacity to meet the foul and water supply requirements of the proposed residential development, once operational. All foul water, storm water and water main services will be installed and commissioned within the proposed development in accordance with all Uisce Éireann requirements and standard best practice guidelines.

As previously stated, all power, telecommunications networks and street lighting will be installed and commissioned within the proposed development in accordance with the relevant service providers guidelines and requirements and standard best practice guidelines. A Telecommunications Impact Assessment report has been prepared by ISM (2024), as presented in Appendix 13.1. Key conclusions are summarised below:

- *The proposed development will not impact any Microwave Transmission links. A visual survey was carried out and a request for information from telecommunication providers where the visual survey was inconclusive.*
- *The proposed development will not impact Radio Frequency links. Assessment identified via drive test that the development is adequately covered by the cell sites identified.*
- *The Solus Water Tower was identified as being home to a moderate to high concentration of Telecommunications Channels, with low to moderate concentration of microwave links and a moderate to high concentration of Radio Links. It has been concluded that the development will not impact these Telecommunication Channels as the height and site elevations of the development are not blocking the Telecommunication Channels from this antenna site.*

13.2.4 Do Nothing Impact

The Material Assets Assessment assumes that under the 'Do-Nothing' scenario the proposed development would not be developed. Thus, there would be a neutral impact on built assets within the vicinity of the proposed development.

13.2.5 Cumulative Impacts

No cumulative impacts are anticipated during the construction or operational phases of the proposed development associated with built services.

13.2.6 Proposed mitigation measures

13.2.6.1 Construction Phase

The following mitigation measures will be implemented during the construction phase;

- A project-specific Detailed Construction Environmental Management Plan (CEMP) will be prepared by the appointed Contractor prior to the commencement of construction works. This document will take account of all of the environmental considerations (including water, dust and noise nuisance control; soil / stockpile management; temporary groundwater management; appropriate Site management of compound area; fuel, oil and chemical storage and use; and waste management) set out in the Outline CEMP submitted as part of this planning application;
- The construction compounds will include adequate temporary welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the compound will be removed off site to an appropriately licensed facility for disposal until a connection to the public foul drainage network has been established;
- All newly installed utilities/ services will be assessed, tested and certified as required prior to being fully commissioned;
- Connections to the existing and proposed foul networks will be coordinated with the relevant utility provider. All works associated with the existing and proposed utilities for the proposed development will be carried out in strict accordance with the guidelines of the relevant stakeholders (specifically ESB, eir and Uisce Éireann), Health and Safety Authority and any additional site specific requirements;
- A copy of all available existing, and as built utility plans will be maintained on Site during the construction of the proposed development. The underground power lines and foul water mains within the existing Uisce Éireann services, located onsite will be clearly marked and all Site personnel will be made aware of the known location of any onsite underground or over ground services during the construction phase; and,
- Street Lighting will be implemented in accordance with the Lighting Report prepared by Metec Consulting Engineers (2025).

The proposed demolition works includes the old cottage on site. An Asbestos Survey Report was prepared by Phoenix Environmental Safety Ltd (Report No: PE24-1187) to assess the current condition of the existing cottage. The following asbestos containing materials were identified:

- Asbestos cement sheeting on the main roof (150 m2 approx.);
- Asbestos containing felt on the rear flat roof (50 m2 approx.); and,
- Asbestos containing felt pads on the underside of the sink units.

A summary of the conclusions and recommendations are provided below:

Main roof

- The cement sheeting identified on the main roof contains Chrysotile (white) & Amosite (brown) asbestos fibres. Asbestos cement products usually contain between 10-15% asbestos fibres, bound in Portland cement.
- The asbestos cement sheeting should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence.
- All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.

Flat roof

- The felt identified on the rear flat roof contains Chrysotile (white) asbestos fibres. Felt products generally contain a small quantity of asbestos fibres mixed into the product matrix.
- The asbestos felt should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence. The roof has fallen in and debris can be found throughout the areas underneath.
- All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.

Sink unit

- The felt pads identified on the underside of the sink unit contains Chrysotile (white) asbestos fibres. Felt products generally contain a small quantity of asbestos fibres mixed into the product matrix
- The asbestos felt pads should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence.
- All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.

13.2.6.2 Operational Phase

As no significant adverse impacts are predicted to occur during the operational phase, no mitigation measures apply to the operational phase of the proposed development.

13.3 Waste Management

13.3.1 Assessment Methodology

This section of the EIAR has been prepared in accordance with the EPA '*Guidelines on the information to be contained in Environmental Impact Assessment Reports'* (2022), *'Advice Notes for Preparing Environmental Impact Statements Draft September 2015'*, *and 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects' (EPA 2021).*

The findings of the Construction Resource and Waste Management Plan (CRWMP) (AtkinsRéalis, 2025) (document ref.: 0089313DG0004) prepared as part of this planning application have been incorporated into this assessment where relevant. A copy of the CRWMP is submitted as part of this planning application. This document has been prepared with due regard to the following relevant documents:

- 'Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects' (EPA, 2021);
- 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018);
- 'A review of Design and Construction Waste Management Practices on Selected Case Studies – Lessons Learned' (EPA, 2015);
- Bray Municipal District Local Area Plan 2018-2024 (WCC 2017);
- 'Design out Waste: Preparation of Waste Reduction Factsheets for Design Teams' (EPA, 2015);
- 'Development of an Audit Methodology to Generate Construction Waste Projection Indicators for the Irish Construction Industry' (EPA, 2009).
- Wicklow County Development Plan 2016-2022 (WCC, 2016);
- Wicklow County Development Plan 2022-2028 and proposed amendments (WCC, 2022); and,
- Wicklow County Development Plan 2016 -2020 Development and Design Standards (WCC, 2016).

This assessment has also been informed by findings of the Chapter 6 – Land, Soils and Geology section of this EIAR.

The findings of the Operational Waste Management Plan (OWMP) (AtkinsRéalis, 2025) (document ref.: 0089313DG0011) prepared as part of this planning application have been incorporated into this assessment where relevant. This document has been prepared with due regard to the following relevant documents:

- Environmental Protection Agency (EPA) National Waste Statistics: Guidance for estimating quantity of waste generated on-site (EPA, 2020);
- Waste Storage Guide for Northern Ireland (Building Control Northern Ireland, 2010);
- Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (Department of Housing Planning and Local Government, 2018);
- Organic Waste Management in Apartments prepared for the EPA (Carey. C., Phelan., W. and Boland., B. 2008); and,
- BS 5906:2005 Waste Management in Buildings – Code of Practice.

Additionally, the following relevant best practice guidance documents and Development Plans were also consulted:

- Design out Waste: Preparation of Waste Reduction Factsheets for Design Teams' (EPA, 2015);
- EPA National Waste Statistics Summary Report 2020 (EPA 2020);
- Wicklow County Development 2022-2028 and proposed amendments (WCC, 2022); and,
- Wicklow County Development Plan 2016 -2020 Development and Design Standards (WCC, 2016).

13.3.2 Receiving Environment

Historic land-use at the Site was greenfield, based on a review of available historic mapping and aerial photography before being developed as a former Golf course. The GSI bedrock geology 100k map identifies the underlying bedrock in the centre, north and west of the study area as the Maulin Formation, which is comprised of slate, phyllite and schist and described as blue grey slates and phyllites. To the south lies the Bray Head Formation comprised of greywacke and quartzite. Based on all available evidence, including soil analytical data and findings from the geotechnical investigation (as detailed in Chapter 6 – Land, Soils and Geology), 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.

13.3.3 Impact Assessment

13.3.3.1 Characteristics of the proposed development

A detailed description of the proposed development is presented in Chapter 2 – Project Description. The following summary relates to the characteristics of the proposed development specifically in relation to waste management. The proposed residential 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 Construction RWMP submitted as part of this planning application. The following waste streams will be generated during the construction phase: minor volumes of asbestos waste (which will be generated during pre-commencement asbestos removal at the 1no. cottage and associated outbuilding scheduled for demolition), 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).

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.

13.3.3.2 Potential Impacts during Construction phase

During the construction phase, it has been estimated that the various waste streams will be generated and managed as follows (refer to the CRWMP presented in the planning submission).

13.3.3.2.1 Asbestos

An old cottage on site and associated outbuildings will require demolition. An Asbestos Survey Report was prepared by Phoenix Environmental Safety Ltd (Report No: PE24-1187) in order to assess the current condition of the existing cottage on site. Asbestos containing materials were identified as follows:

- Asbestos cement sheeting on the main roof (150 m2 approx);
- Asbestos containing felt on the rear flat roof (50 m2 approx.); and,
- Asbestos containing felt pads on the underside of the sink units.

All identified asbestos will be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence. All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. All waste removed offsite will be appropriately characterised (under the correct LoW / EWC code), 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). All waste management and disposal / recovery 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.

13.3.3.2.2 Native Non-Contaminated Soils

The estimated volume of soil generated during the construction phase (ca.: 48, 415m^3) will be minimised by reducing / eliminating the need for excavation and importing of capping layers. Lime stabilisation may also be used to reduce the amount of soils generated onsite. The balance of soil materials excavated from the Site will be reused where possible for landscaping purposes, and infill where appropriate, ensuring that any residual soil waste is kept to a minimum. Any surplus soil will be characterised and removed offsite in accordance with all relevant waste management legislation. Based on preliminary engineering calculations it is anticipated that ca. 19,366 m3 of waste soils will require offsite disposal.

13.3.3.2.3 Mixed C&D Waste

Following segregation onsite, any residual mixed C&D waste (ca.: 822 tonnes or ca. 460 m^3), plus ca. 5,026 m^3 of C&D waste arising from the onsite demolition works, will be collected in areas specifically for mixed C&D waste; these will be removed offsite for subsequent offsite separation and disposal at a waste disposal / recovery facility.

13.3.3.2.4 Wood / Timber

Timber waste (ca.: 1198 tonnes) will be segregated in order to prevent contamination by other wastes and will be stored so as to limit the potential for this material to rot. Wooden pallets will be returned to relevant suppliers where possible. Timber offcuts will be reused onsite where feasible. A covered receptible for waste wood will be placed in the waste storage area, prior to removal from Site for recycling. All such timber will be free from chemical treatment.

13.3.3.2.5 Metals

Metal waste (ca.: 636 tonnes) will be generated during the project, particularly arising from the use of rebar. All waste metal will be segregated offsite at the waste disposal / recovery facility for reuse and recycling. Given the significant scrap value associated with metal waste, this waste will be stored in a dedicated container within a secure part of the Site, and regular collections from Site to the waste recycling facility will limit the potential for unauthorised entry and theft.

13.3.3.2.6 Paper, plastics and Packaging

Packaging wastes (ca.: 671 tonnes) will be removed (paper / cardboard / plastic / general waste) offsite for subsequent offsite separation and disposal at a waste disposal / recovery facility. Waste packaging will be stored in dedicated containers in the waste storage area for collection and subsequent segregation and recycling.

13.3.3.2.7 Canteen / Office Waste

Onsite staff canteens will generate food and packaging waste (ca.: 100 tonnes). Dedicated containers will be provided at each canteen to permit easy segregation of these wastes; brown bins will be provided for compostable food waste, green bins will be provided for dry recyclables (packaging, hard plastic, paper, cardboard, tetrapak etc.), and black bins will be provided for any residual waste.

13.3.3.2.8 Other wastes

In addition to the above waste streams, other waste materials (ca.: 2409 tonnes) will be generated during the construction phase. These residual wastes will typically comprise non- recycling waste such as soiled paper / cardboard / plastics / cloth, fibreglass, polystyrene insulations and plasterboard. These materials will be stored separately to all other waste streams in order to prevent any cross contamination.

All waste materials will be segregated onsite into the various waste streams, via. dedicated skips and storage areas. All waste will be removed from Site by one or more waste haulage contractor(s) who hold a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). All waste materials generated during the construction phase will be removed offsite to an appropriately permitted or licenced waste disposal / recovery facility. All waste removed offsite will be appropriately characterised (under the correct LoW / EWC code), 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). All waste management and disposal / recovery 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.

The waste management strategy during the construction phase of the proposed development has been developed in accordance with the relevant Regional Waste Management Plans for Wicklow County Council and the '*Eastern-Midlands Region Waste Management Plan 2015-2021'*. The overarching objectives of the Eastern-Midlands Region Waste Management Plan 2015-2021 have been incorporated into the latest development plans pertinent to this Site i.e. Wicklow County Development Plan 2022-2028.

The Wicklow County Development Plan 2022-2028 and proposed amendments sets out the following objectives with regards to construction and demolition waste management:

'CPO 15.1 – To require all developments likely to give rise to significant quantities of waste, either by virtue of the scale of the development or the nature of the development (e.g. one that involves demolition) to submit a construction management plan, which will outline, amongst other things, the plan to minimise waste generation and the plan to protect the environment with the safe and efficient disposal of waste from the site.

CPO 15.2 – To require all new developments, whether residential, community, agricultural or commercial to make provision for storage and recycling facilities (in accordance with the standards set out in Development & Design Standards of this plan).'

Therefore, while waste will be generated during the construction of the proposed development, 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 CRWMP. 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. The potential impacts of waste generated during the construction phase (via. transport and disposal / recovery to appropriately permitted / licenced facilities;

and potential nuisance issues) will be temporary and slight adverse. Mitigation measures will be implemented as required to further manage these potential impacts.

13.3.3.3 Potential Impacts during Operational Phase

During the operational phase, communal waste collection areas for apartments, houses and duplexes, hotel, retail, creche and commercial units will be clearly identified, secure, have adequate lighting and drainage, and will be easily accessible for bin collection crews.

Bin storage capacity at these communal waste collection areas will be as follows;

- 1100L wheeled bins for residual waste;
- 1100L wheeled bins for dry recyclable waste; and,
- 240L wheeled bins for organic waste.

Individual houses / duplex units will have their own storage areas for waste bins and therefore there is no necessity to calculate the area required for waste storage at individual houses / duplex units. It is expected that ground floor duplex units will have bin storage areas within rear gardens, and upper floor duplex units will have bin stores to the front. It is expected that all houses will have external access to the rear of the property and will store the wheeled bins to the rear of the houses Each house will have storage capacity for 2no. 240L wheeled bins for residual waste and dry recyclable waste and 1no. 140L wheeled bin for 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). Further details are included in the Operational Waste Management Plan prepared by AtkinsRéalis (2025) as part of this planning application.

Therefore, while waste will be generated during the operational phase of the proposed development, all such waste will be managed in accordance with statutory waste management and environmental requirements, regional waste related policy, and best practice waste management guidance. As with all residential developments, there will be potential for litter pollution within the proposed housing estate and surrounding areas. The potential impacts of waste generated during the operational phase (via. transport and disposal / recovery to appropriately permitted / licenced facilities; and potential litter issues) will be long-term and imperceptible. Regardless, mitigation measures will be implemented to manage potential litter impacts.

13.3.4 Proposed mitigation measures

13.3.4.1 Construction Phase

The following mitigation measures will be implemented during the construction phase:

- All waste management procedures implemented onsite during the construction phase will be in accordance with the CRWMP (AtkinsRéalis, 2025) submitted as part of this planning application. In advance of commencement onsite, the Contractor will prepare a project specific Detailed CRWMP which will further develop this plan, and will provide specific details in terms of proposed permitted haulage contractors, and permitted / licenced waste disposal / recovery facilities;
- Scheduling and planning the delivery of materials will be carried out on an '*as needed*' basis to limit any surplus materials;

- Materials will be ordered in sufficient dimensions so as to optimise the use of these materials onsite, and will be carefully handled and stored so as to limit the potential for any damage;
- Where feasible, sub-contractors will be responsible for the provision of any materials they require onsite in order to help reduce any surplus waste;
- All loaded trucks entering and exiting the Site will be appropriately secured and covered; and,
- Dust will be controlled at entry and exits to the Site using wheel washes (as required) and/or road sweepers, and tools and plant will be washed out and cleaned in designated areas. Wheel / road sweeper washings will be contained and treated prior to discharge.

13.3.4.2 Operational Phase

Waste management during the operational phase of the development will be undertaken by private waste contractors (in accordance with statutory waste management and environmental requirements, regional waste related policy, and best practice waste management guidance), and regulated by Wicklow County Council. All waste management procedures implemented onsite during the operational phase will be in accordance with the Operational WMP (AtkinsRéalis, 2025) submitted as part of this planning application. Therefore, no further mitigation measures are required with regard to the transport and disposal or recovery of all waste streams which will be generated during the operational phase.

The following mitigation measures will be implemented during the operational phase in order to minimise the potential impact of litter pollution;

- Suitably sized waste receptacles will be provided in communal areas within the residential development and commercial units by private waste contractors;
- During the operational phase waste shall be collected on a fortnightly basis from all houses and duplexes, and on a weekly basis from all apartment blocks and commercial units; and,
- It will be the responsibility of residents, crèche users, commercial unit occupants and maintenance workers to ensure that all waste generated is disposed of appropriately and responsibly, with penalties and legal sanctions being issued to anyone who is found to litter in accordance with the Litter Management Plan 2019-2024 by Wicklow County Council.

13.4 Residual Impacts

Taking account of the proposed mitigation measures for Material Assets, specifically built services the residual impacts of the proposed development will be short-term and slight adverse during the construction phase, and long-term and not-significant during the operational phase.

Taking account of the proposed mitigation measures for Material Assets, specifically waste management, the residual impacts of the proposed development will be short-term and imperceptible during the construction phase, and long-term and imperceptible during the operational phase.

13.5 Do Nothing Scenario

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. The site is partially serviced by storm water and foul water infrastructure, ESB services, gas utilities, eir ducting and street lighting. The do-nothing scenario will have a neutral and imperceptible effect on the Site with regards to Material Assets.

13.6 Monitoring Requirements

As detailed within the CRWMP (AtkinsRéalis, 2025) prepared as part of this planning application, the Contractor will be responsible for maintaining waste records and documentation for the full duration of the construction phase. The Contractor will track and monitor all waste volumes 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.

No monitoring is required during the operational phase of the proposed development.

14. Cultural Heritage

14.1 Introduction

This chapter assesses the potential impacts of the proposed development, as described in Chapter 2 – Project Description, on the known and potential cultural heritage resource concerning the integrity, continuity, and context of same for future generations. UNESCO define the term 'Cultural Heritage' as encompassing several aspects of tangible assets (immovable: archaeological sites and monuments, architectural heritage structures; movable: artefacts; and underwater: shipwrecks, submerged features) and intangible assets (such as historical associations, folklore, oral tradition and language).

14.1.1 Reference to Guidelines Relevant to Discipline

The guidelines relevant to the assessment include the *Architectural Heritage Protection: Guidelines for Planning Authorities* (Department of Arts, Heritage and Gaeltacht 2011) and the *Framework and Principles for the Protection of Archaeological Heritage* (Department of Arts, Heritage, Gaeltacht and the Islands 1999). The assessment was also informed by the Environmental Protection Agency (EPA 2022) *Guidelines for Information to be Contained in EIAR* and the International Council on Monuments and Sites (ICOMOS 2011) *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*.

14.2 Methodology

The assessment was based on a programme of desktop research combined with a field survey, geophysical survey and targeted archaeological testing of the proposed development lands which were carried out in order to identify any features of archaeological, architectural or cultural heritage significance likely to be impacted by the proposed development. The recorded and potential cultural heritage resource within a study area encompassing the lands within the proposed development site and the surrounding lands extending for 250m in all directions. This study area was reviewed in order to compile a comprehensive cultural heritage context for the location of the proposed development and surrounding lands.

The following sections present an overview of the methodology applied to determine the baseline cultural heritage environment within the study area and the assessment of potential effects on the cultural heritage resource.

14.2.1.1 Desktop Research

Documentary research on the recorded and potential cultural heritage resource within the study area was carried out in order to identify any recorded archaeological, architectural and other cultural heritage sites and features. This information has provided an insight into the development of the study area over time and also assisted in an evaluation of the potential presence of hitherto unrecorded cultural heritage sites or features within the proposed development site.

The principal sources reviewed for the assessment of the recorded archaeological resource were the Sites and Monuments Record (SMR) and the Record of Monuments and Places (RMP) maintained by the National Monuments Service of the Department of Housing, Local Government and Heritage. The current Record of Protected Structures (RPS) for County Wicklow and structures and lands listed in the National Inventory of Architectural Heritage (NIAH) were reviewed in order to assess the designated architectural heritage resource within the study area.

Other sources consulted as part of the assessment included the following:

- Wicklow County Development Plan 2022-2028, Bray Municipal District Local Area Plan 2018-2024 – This publication outline the Council's policies for the protection of the archaeological and architectural heritage resource within the county and includes the Record of Protected Structures (RPS) and Architectural Conservation Areas (ACAs).
- UNESCO designated World Heritage Sites and Tentative List: A review was undertaken of the locations of the two world heritage sites in Ireland and other significant sites included in a Tentative List (2022) nominated by Ireland for inclusion.
- The Database of Irish Excavation Reports: This database contains summary accounts of licensed archaeological excavations carried out in Ireland (North and South) from 1970 to present. Current data was accessed via www.excavations.ie in December 2024.
- Archaeological Inventory of County Wicklow – This publication dates to 1987 and presents summary descriptions of the known archaeological sites within the county at that time. A review of current SMR datasets published on the Historic Environment Viewer was carried out in February 2025 to ascertain if any archaeological sites have been identified within the study area identified since the publication of the inventory.
- Heritage Council's Heritage Map Viewer: This online mapping source (www.heritagemaps.ie) collates various cultural heritage datasets sourced from, among others, the National Monuments Service, National Museum of Ireland, local authorities and the Office of Public Works.
- Literary Sources: Published literary sources consulted to assess the archaeological, historical, architectural heritage and folklore record of the study area are listed in Chapter 20 of this chapter.
- Cartographic sources: Available cartographic depictions of the study area dating from the 17th century onward were reviewed and relevant extracts are presented in Section 14.3.3.3 of this chapter.
- Aerial/Satellite/LiDAR imagery: A review of publicly accessible imagery from the Ordnance Survey Ireland (OSI), Google Earth, and Bing Maps was carried out to appraise whether they revealed evidence for any unrecorded archaeological sites within the proposed development site or its environs. LiDAR datasets published on the Geological Survey Ireland's Open Topographic Viewer website were also consulted and relevant image extracts are presented in Section 14.3.3.4 of this chapter.
- Placenames Database of Ireland: This online database (www.logainm.ie) provides a comprehensive management system for data, archival records and place names research conducted by the State.
- Irish National Folklore Collection: Transcribed material from the National Folklore Collection archive which has been digitised and published online at *www.duchas.ie*.

14.2.1.2 Field Inspection

All greenfield areas within the site were subject to a programme of systematic field-walking in December 2023 and January 2024. No access constraints were encountered. The lands were assessed in terms of existing land use, any remnants of historic structures or landscaped features, vegetation cover and the potential for the presence of previously unrecorded archaeological and architectural heritage sites/features. The inspection results are described within the chapter (Section 14.3.4) and extracts from the photographic record compiled during the field survey are presented in Appendix 14.1.

14.2.1.3 Geophysical Surveys

A geophysical survey of available green field areas within the proposed development site was carried out by Ms Joanna Leigh of J.M. Leigh Surveys Ltd in February 2024 (Licence 24R0160). The geophysical survey focused on areas of proposed ground disturbance and did not include areas containing stockpiled soil or dense vegetation as these were unsuitable for survey. A full copy of the report on this non-intrusive survey is presented

in Appendix 14.2 and the results are summarised in Section 14.3.5, which includes mapping sourced from the geophysical survey report.

14.2.1.4 Archaeological Test Excavation

A programme of targeted archaeological test trenching of the geophysical anomalies identified within the proposed development lands was carried out by Camilla Brännström of John Cronin and Associates in April 2024 (Licence no. 24E0428). A number of additional standard trenches were also excavated within the site. The aim of this targeted site investigation was to evaluate geophysical anomalies identified as being of archaeological origin in order to inform this assessment and the results are detailed in Section 14.3.6 of this chapter. A final report on the test trenching site investigations has been submitted to the National Monuments Service.

14.2.1.5 Consultation

Pre-planning consultation with the Development Applications Unit in relation to the proposed development returned a recommendation for a detailed and field-based archaeological impact assessment, comprising a programme of licensed geophysical survey and archaeological testing, to be carried out and included as part of the EIAR (see Section 14.3.5 and 14.3.6 and Appendix 14.2 and 14.5.

14.2.1.6 Impact Assessment

The methodology used for the assessment of potential impacts has been informed by the Environmental Protection Agency (EPA) *Guidelines for Information to be Contained in EIAR* (2022), in accordance EIA requirements of codified EU Directive 2011/92/EU as amended by EU Directive 2014/52/EU, per current Planning Legislation, concerning EIA assessment: Planning and Development Act, 2000 (as amended) (Part X) and in Part 10 of the Planning and Development Regulations, 2001 (as amended). The following summation of the criteria used to assess impacts is provided to concisely outline the methodology specifically applied to the cultural heritage resource. Assessment is achieved by a consideration of the duration, quality, type, value and magnitude of effect(s) on the cultural heritage resource:

Duration of Effect is assessed based on the following criteria:

- Momentary (seconds to minutes)
- Brief < 1 day
- Temporary <1 year
- Short-term 1-7 years
- Medium Term 7-15 years
- Long Term 15-60 years
- Permanent > 60 years
- Reversible: Effects that can be undone, for example through remediation or restoration

Quality of Effect on the cultural heritage resource can be positive, neutral or negative.

- Positive: a change which improves the quality of the cultural heritage environment (e.g. increasing amenity value of a site in terms of managed access, signage, presentation etc. or high-quality conservation and re-use of an otherwise vulnerable derelict structure).
- Neutral: no change or effects that are imperceptible, within the normal bounds of variation for the cultural heritage environment.

- Negative: a change which reduces the quality of the cultural heritage resource (e.g. visual intrusion on the setting of an asset, physical intrusion on features/setting of a site)

Type of Effect on the cultural heritage resource can be direct, indirect or no predicted impact.

- Direct impact: where a cultural heritage site is physically located within the footprint of the proposed development, which will result in its complete or partial removal.
- Indirect impact: where a cultural heritage site or its setting is located in close proximity to the footprint of the proposed development.
- No predicted impact: where the proposed development will not adversely or positively affect a cultural heritage site.

Other Types of Effect include:

- Cumulative Effects - The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.
- 'Do-nothing Effects' - The cultural heritage environment as it would be in the future should the Project not be carried out.
- 'Worst-case' Effects - The effects arising from a Project in the case where mitigation measures substantially fail.
- Indeterminable Effects - When the full consequences of a change in the environment cannot be described.
- Irreversible Effects - When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost.
- Residual Effects - The degree of environmental change that will occur after the proposed mitigation measures have taken effect.

The *Magnitude of Effect* is based on the degree of change, incorporating any mitigation measures, and is based on a consideration of the character, duration, probability and consequences (Table 14-1). The magnitude can be negative or positive and is ranked without regard to the value of the asset according to the following scale: High; Medium; Low and Negligible. The descriptions of magnitudes presented in Table 14-1 are based on guidance published in *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (ICOMOS 2011, 16-7).

Table 14-1 - Magnitudes of Effect on Cultural Heritage Assets

Magnitude	Description
High	Most or all key archaeological or architectural materials affected such that the resource is totally altered Comprehensive changes to setting Changes to most or all key historic landscape elements, parcels or components; extreme visual effects; fundamental changes to use or access; resulting in total change to historic landscape character Major changes to area that affect Intangible Cultural Heritage activities or associations or visual links and cultural appreciation
Medium	Changes to many key archaeological or historic building materials/elements such that the resource is clearly/significantly modified. Considerable changes to setting that affect the character of the archaeological asset. Changes to the setting of a historic building, such that it is significantly modified.

Magnitude	Description
	Change to many key historic landscape elements, parcels or components, visual change to many key aspects of the historic landscape, considerable changes to use or access, resulting in moderate changes to historic landscape character. Considerable changes to area that affect the Intangible Cultural Heritage activities or associations or visual links and cultural appreciation.
Low	Changes to key archaeological materials/historic building elements, such that the resource is slightly altered/slightly different. Slight changes to setting of an archaeological monument. Change to setting of a historic building, such that it is noticeably changed. Change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; slight changes to use or access; resulting in limited change to historic landscape character Changes to area that affect the Intangible Cultural Heritage activities or associations or visual links and cultural appreciation.
Negligible	Very minor changes to key archaeological materials or setting. Slight changes to historic building elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes to use or access; Very minor changes to area that affect the Intangible Cultural Heritage activities or associations or visual links and cultural appreciation.

The *Values* assigned to cultural heritage assets for the purposes of this assessment are intended as indicators which contribute to a wider judgment based on the individual circumstances of each asset. Other than the level of legal designations, e.g., National Monuments and recognition as World Heritage sites, there is no formal grading or rating system for Irish archaeological monuments or architectural heritage structures. The non-statutory National Inventory of Architectural Heritage (NIAH) does apply a ranking system (Local, Regional, National and International) to structures included in that inventory and, while these rankings do not confer a graduated level of statutory protection they have been utilised as a value indicator for NIAH-listed structures for the purpose of this assessment. The criteria for assessing the value of archaeological and other cultural heritage assets as part of this assessment has been informed by the *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (ICOMOS 2011, 14-16). The Value of known or potential cultural heritage assets are ranked according to the following scale: Very High, High; Medium; Low and Negligible (Table 14-2). Generally, the more criteria that are evident for a given asset, the higher in scale its respective Value is deemed to be. Criteria considered in addition to legal designations include condition / preservation; documentary / historical significance; group value; rarity; visibility in the landscape; fragility / vulnerability and amenity value. The values assigned to identified assets within the study area were determined following the completion of the desktop study combined with site inspections and are identified in Section 14.2 of this chapter.

Table 14-2 - Guidance Criteria Used For Assessing Values of Cultural Heritage Assets

Indicative Value	Examples of Asset Types
Very High (International Significance)	World Heritage Sites (including Tentative List properties) Sites, buildings or landscapes of acknowledged international importance Intangible associations with individuals or innovations of global significance

Indicative Value	Examples of Asset Types
High (National Significance)	Nationally designated sites, buildings and landscapes of significant quality, rarity, preservation and importance Undesignated assets of the quality and importance to be designated Assets that can contribute significantly to acknowledged national research objectives Archaeological Landscapes with significant group value Intangible associations with individuals or innovations of national significance
Medium (Regional Significance)	Designated or undesignated assets that can contribute significantly to regional research objectives, including buildings that can be shown to have exceptional qualities in their fabric or historical associations Conservation Areas and historic townscapes containing buildings that contribute significantly to its historic character Intangible associations with individuals or innovations of regional significance
Low (Local Significance)	Assets compromised by poor preservation and/or poor survival of contextual associations Assets of limited value, but with potential to contribute to local research objectives Historic Townscape or built-up areas of limited historic integrity in their buildings and settings Intangible associations with individuals or innovations of local significance
Negligible	Assets with very little or no surviving archaeological interest Landscapes little or no significant historical interest Buildings or urban areas of no architectural or historical note; buildings of an intrusive character
Unknown Potential	Assets whose importance has not been ascertained Buildings with some hidden (i.e., inaccessible) potential for historic significance

The *Significance of Effects* is assessed based on a consideration of the Magnitude of the Impact (graded from High to Negligible, based on a consideration of character, duration, probability and consequences) combined with the Value (graded from High to Negligible, based on a consideration of significance/sensitivity) of the cultural heritage asset. The significance can be described as Profound, Very Significant, Significant, Moderate, Slight, Not Significant or Imperceptible (Table 14-3 and Table 14-4).

Table 14-3 - Description of Significance of Effects (per EPA EIAR Guidelines 2022)

Significance	Description
Imperceptible	An effect capable of measurement but without significant consequences
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
Slight	An effect which causes noticeable changes in the character of the environment but without affecting its sensitivities
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends

Significance	Description
Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
Profound	An effect which obliterates sensitive characteristics

Table 14-4 - Significance of Effects Matrix (based on EPA EIAR Guidelines 2022)

Magnitude of Impact					
	High	Not Significant/ Slight	Moderate/ Significant	Significant/ Very Significant	Very Significant/ Profound
	Medium	Not Significant	Slight	Moderate/ Significant	Significant/ Very significant
	Low	Not Significant/ Imperceptible	Slight/ Not Significant	Slight	Moderate
	Negligible	Imperceptible	Not Significant/ Imperceptible	Not Significant/ Slight	Slight
		Negligible	Low	Medium	High
		Value of Asset			

14.2.2 Difficulties Encountered in Compiling Information

There were no difficulties encountered during the compilation of this assessment.

14.3 Receiving Environment

14.3.1 Introduction

The proposed development site is located in a mixed green field and brown field area within the townlands of Ravenswell and Bray Commons on the northern side of Bray town. Details on the existing environment within the proposed development site are provided in Section 14.3.4. The following sections present a summary of the legal and planning frameworks relevant to the cultural heritage resource followed by a chronological overview of known settlement patterns and other human activity within the study area from prehistory to the present day which incorporates published information on recorded cultural heritage assets.

14.3.2 Legal and Planning Context

The management and protection of cultural heritage in Ireland is achieved through a framework of national laws and policies which are in accordance with the provisions of the Valetta Treaty (1995) (formally the European Convention on the Protection of the Archaeological Heritage, 1992) ratified by Ireland in 1997; the European Convention on the Protection of Architectural Heritage (Granada Convention, 1985), ratified by Ireland in 1997; and the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, 2003, ratified by Ireland in 2015.

The EIA Directives (from 1985 to 2014) set out the requirement for an EIA in European law. This assessment has been prepared in accordance with EIA requirements of codified Council Directive 2011/92/EU as amended by EIA Council Directive 2014/52/EU, per current Planning Legislation, concerning EIA assessment: Planning and Development Act, 2000 (as amended) (Part X) and in Part 10 of the Planning and Development Regulations, 2001 (as amended).

Ireland has transposed EU Directive 2014/52/EU by way of the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 which came into operation on 1 September 2018. The Regulations provide for the transposition of the 2014 EIA Directive and give further effect to the 2011 EIA Directive by way of extensive amendments to existing planning law.

The national legal statutes and guidelines relevant to this assessment include:

- Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023
- National Monuments Act 1930 (as amended);
- Heritage Act 1995 (as amended);
- National Cultural Institutions Act (1997);
- Planning and Development Act 2000 (as amended);
- Department of Arts, Heritage and Gaeltacht (2011) Architectural Heritage Protection: Guidelines for Planning Authorities;
- Department of Arts, Heritage, Gaeltacht and the Islands (1999) Framework and Principles for the Protection of Archaeological Heritage;
- Office of the Public Regulator (2022) A Guide to Architectural Heritage; and
- Office of the Public Regulator (2021) Archaeology in the Planning Process.

14.3.2.1 Summary of Legal and Planning Context

The following section presents a summary of the legal and policy frameworks designed to protect the Irish cultural heritage resource and further information is available in the *Framework and Principles for the Protection of the Archaeological Heritage* (Department of Arts, Heritage, Gaeltacht and the Islands (1999) and the *Architectural Heritage Protection Guidelines for Local Authorities* (Department Arts, Heritage and the Gaeltacht 2011).

The administration of national policy in relation to archaeological heritage management is the responsibility of the National Monuments Service (NMS) which is currently based in the Department of Housing, Local Government and Heritage.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 was signed into law in October 2023. The DHLGH published an online guidance document in relation to this Act in November 2023[46] which provides an overview of its current status, and this is summarised hereafter. While the Act is now law most of its provisions will not enter into force until the Minister has made one or more “Commencement Orders”. This means that section 7 of the Act (which provides for the repeal of the National Monuments Acts 1930 (as amended) and related legislation) has not entered into force. Accordingly, the National Monuments Acts 1930 (as amended) remain fully in force and will continue to do so for the time being. The Act contains transitional provisions which will, if necessary, enable certain aspects of the existing National Monuments Acts 1930 to 2014 to continue in operation notwithstanding their repeal post-commencement of the Act while successor provisions are being brought fully into operation. This includes provisions enabling the Record of Monuments

[46] https://www.archaeology.ie/news/enactment-of-historic-and-archaeological-heritage-and-miscellaneous-provisions-act-2023-and

and Places to continue to have effect pending the establishment of a new Register of Monuments. A commencement order made on 31st May 2024, insofar as it relates to the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 (other than section 5), has come into operation. On 12 December 2024, further provisions of the Act came into operation and these relate to historic wrecks and underwater archaeological objects, and also for Irish citizens (and a range of specified other persons), and vessels operating in international waters if they intend to engage in activities directed at underwater cultural heritage.

The National Monuments Act of 1930 (as amended), therefore, remains the primary means of ensuring the protection of the archaeological resource and includes a number of provisions that are applied to secure the protection of archaeological monuments. These include the designations of nationally significant sites as National Monuments as well listing sites in the Register of Historic Monuments, the Record of Monuments and Places, the Sites and Monuments Record as well as the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

Section 2 of the National Monuments Act, 1930 defines a National Monument as 'a monument or the remains of a monument, the preservation of which is a matter of national importance'. The State may acquire or assume guardianship of National Monuments through agreement with landowners or under compulsory orders. The prior written consent of the Minister is required for any works at, or in proximity to, a National Monument in the ownership or guardianship of the State, the Minister or a local authority, or those which are subject to a Preservation Order. There are no National Monuments or archaeological sites subject to Preservation Orders located within the study area.

The locations of World Heritage Sites (Ireland) and the Tentative List of World Heritage Sites submitted by the Irish State to UNESCO in 2023 were also reviewed and none are located within the vicinity of the study area.

The National Monuments (Amendment) Act, 1994 made provision for the establishment of the Record of Monuments and Places (RMP) which comprises the known archaeological sites within the State. The RMP, which is based on the earlier Register of Historic Monuments (RHM) and Sites and Monuments Record (SMR), provides county-based lists of all recorded archaeological sites with accompanying maps. All RMP sites receive statutory protection under the National Monuments Act 1994 and the NMS must be given two months' notice in advance of any works proposed at their locations.

The Archaeological Survey of Ireland (ASI) lists 10 recorded archaeological sites within the 250m study area (see Figure 14-1 and Table 14-5 below). Details on these recorded archaeological sites are presented in Section 14.3.3.1 and their published ASI inventory descriptions are provided in Appendix 14.3

The administration of national policy in relation to architectural heritage management is the responsibility of the National Built Heritage Service (NBHS) which is currently based in the Department of Housing, Local Government and Heritage.

The protection of the architectural heritage resource is provided for through a range of legal instruments that include the Heritage Act 1995 (as amended) and the Planning and Development Act 2000 (as amended). The Planning and Development Act 2000 (as amended) requires all Planning Authorities to keep a 'Record of Protected Structures' (RPS) of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. As of the 1st January 2000, all structures listed for protection in current Development Plans, have become 'protected structures'. Since the introduction of this legislation, planning permission is required for any works to a protected structure that would affect its character. A protected structure also includes the land and other structures within its curtilage. While the term 'curtilage' is not defined by legislation, the *Architectural Heritage Protection Guidelines for Local Authorities* (Department Arts, Heritage and the Gaeltacht 2011), describes it as the parcel of land immediately associated with a structure and which is (or was) in use for the purposes of the structure.

In addition, local authorities must provide for the preservation of places, groups of structures and townscapes of architectural heritage significance through designation of Architectural Conservation Areas (ACAs).

The National Inventory of Architectural Heritage (NIAH) was established to record architectural heritage structures within the State. While inclusion in the NIAH does not provide statutory protection to a structure it is intended to advise local authorities on compilation of their Record of Protected Structures. The NIAH also includes a Designed Landscapes and Historic Gardens Survey which comprises a non-statutory, desk-based survey of such features. There are no NIAH-listed structures located within the proposed development site, however the former garden of Ravenswell House (Garden no. 4299) is recorded within the north western portion of the site. Ravenswell House is no longer extant and its former location is not listed in the NIAH building survey.

Details on architectural heritage resource within the surrounding 250m study area are provided in Section 14.3.3.2 of this chapter.

The Wicklow County Development Plan 2022-2028 (as altered) is the relevant development plan for the study area and includes the following objectives in relation to the protection of the archaeological and architectural heritage resources:

> CPO 8.1 *To secure the preservation of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, and of sites, features and objects of archaeological interest generally. In the development management process, there will be a presumption of favour of preservation in-situ or, as a minimum, preservation by record. In securing such preservation the planning authority will have regard to the advice and recommendations of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.*
>
> CPO 8.2 *No development in the vicinity of a feature included in the Record of Monuments & Places (RMP) or any other site of archaeological interest will be permitted which seriously detracts from the setting of the feature or which is seriously injurious to its cultural or educational value.*
>
> CPO 8.8 *To protect and promote the characteristics of historic towns in County Wicklow identified as zones of archaeological potential in the Record of Monuments and Places (RMP), ensuring that cognisance is given in relevant development proposals to retaining existing street layout, historic building lines and traditional plot widths where these derive from medieval or earlier origins.*
>
> CPO 8.10 *To protect, conserve and manage the built heritage of Wicklow and to encourage sensitive and sustainable development to ensure its preservation for future generations.*
>
> CPO 8.11 *To support the work of the National Inventory of Architectural Heritage (NIAH) in collecting data relating to the architectural heritage, including the historic gardens and designed landscapes of the County, and in the making of this information widely accessible to the public and property owners*.
>
> CPO 8.12 *To have regard to 'Architectural Heritage Protection: Guidelines for Planning Authorities' (Department of Arts, Heritage and the Gaeltacht, 2011) in the assessment of proposals affecting architectural heritage. Record of Protected Structures Objectives*.
>
> CPO 8.13 *To ensure the protection of all structures, items and features contained in the Record of Protected Structures*.
>
> CPO 8.14 *To positively consider proposals to alter or change the use of protected structures so as to render them viable for modern use, subject to architectural heritage assessment and to demonstration by a suitably qualified Conservation Architect / or other relevant expertise that the structure, character,*

appearance and setting will not be adversely affected and suitable design, materials and construction methods will be utilised.

CPO 8.15 *All development works on or at the sites of protected structures, including any site works necessary, shall be carried out using best heritage practice for the protection and preservation of those aspects or features of the structures / site that render it worthy of protection.*

14.3.3 Desktop Study

14.3.3.1 Archaeological and Historical Context

The following section presents a description of the archaeological and historical context of the study area and identifies the recorded archaeological sites and designated architectural structures located within the area. Datasets have been interrogated and retrieved largely from State organisations and are considered accurate and current per publicly available information. The dating framework used for archaeological periods is based on the *Guidelines for Authors of Reports on Archaeological Excavations* published by the National Monuments Service (2006).

The RMP/SMR does not list any recorded archaeological sites within the proposed development boundary, however, the southern portion of the development site extends slightly within the zone of archaeological potential associated with the historic town of Bray (WI004-001----).

The RMP/SMR list an additional 9 recorded archaeological sites, one of which is a redundant record, within the surrounding 250m study area. A linear earthwork (WI005-005--- / DU026-124----) recorded c. 100m to the north of the development boundary was formerly believed to represent a section of the Pale ditch, however recent archaeological investigations have shown that it is, in fact, a 19th or early 20th century landscape feature. Many of the recorded archaeological sites lack surface expression, however the examples that likely retain sub-surface remains are of potential high value (Table 14-5 and Figure 14-1). The Archaeological Survey of Ireland inventory descriptions for each of the archaeological sites within the study area are presented in Appendix 14.4.

Table 14-5 - Recorded Archaeological Sites in Study Area

Monument no.	Class	Townland	Period* (if known)	Condition (if known)	Approx. distance from development boundary
WI004-001----	Historic town	BRAY, RAVENSWELL, LITTLE BRAY	Medieval	Unknown	Within
WI004-001001-	Cross-slab	BRAY	Unknown	Removed	33m southwest
WI004-001002-	Redundant record	BRAY	n/a	n/a	n/a
WI004-001003-	Castle - unclassified	BRAY	17th century	Levelled	170m southwest
WI004-001004-	Church	BRAY	Poss. medieval	Levelled	95m south

Monument no.	Class	Townland	Period* (if known)	Condition (if known)	Approx. distance from development boundary
WI004-001006-	Castle - tower house	LITTLE BRAY	Unknown	Levelled	125m south
WI004-002----	Martello tower	BRAY	19th century	Extant	250m southeast
WI004-002001-	Battery	BRAY	19th century	Extant	250m southeast
WI004-005----	Linear earthwork	RAVENSWELL	18th/19th century	Extant	100m north
DU026-124----	Linear earthwork	CORK GREAT	18th/19th century	Extant	100m north

**Potential periods are based on Historical Environment Viewer descriptions*

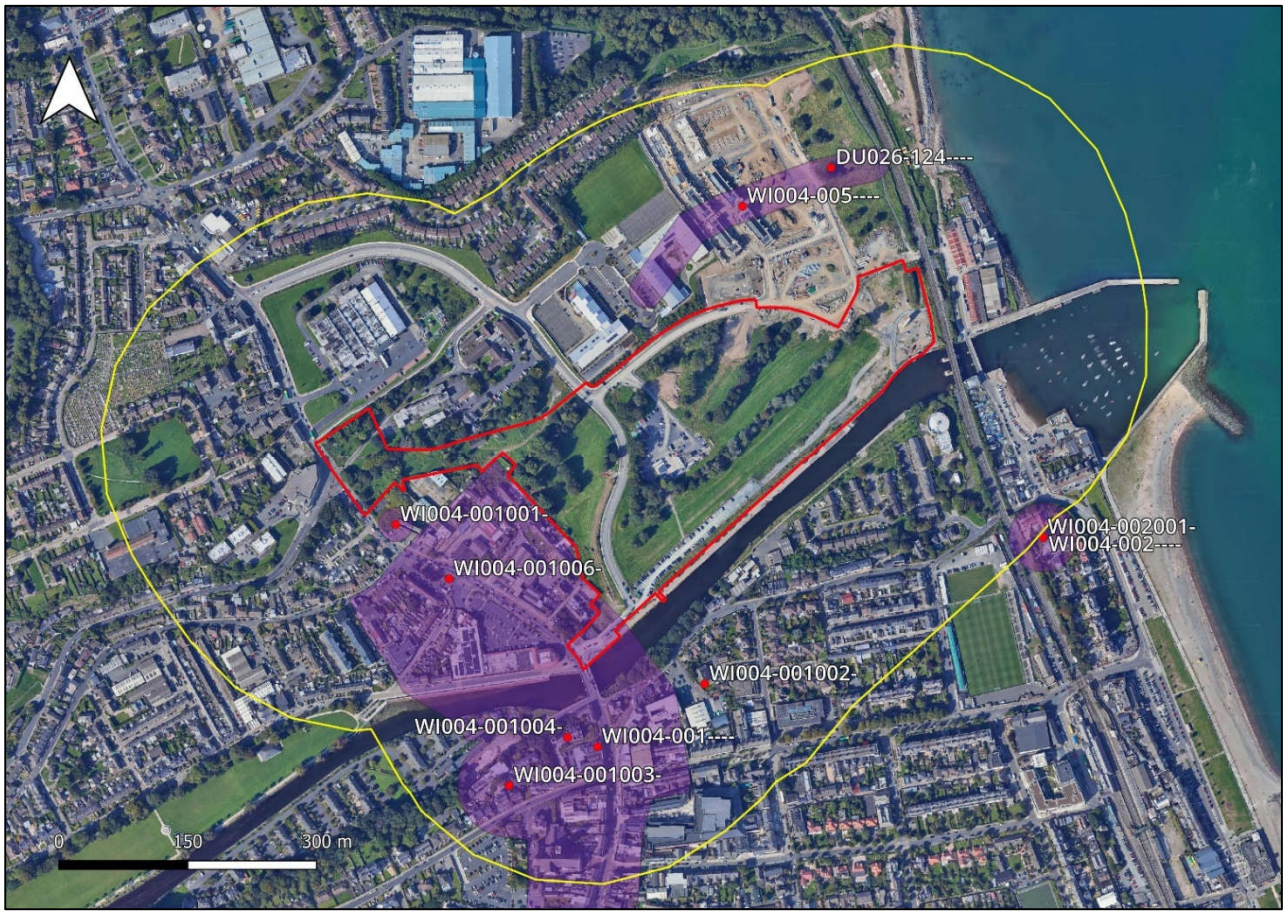

Figure 14-1 - Locations of Recorded Archaeological Sites (Red), Zones of Notification (purple) Within 250m Study Area (Yellow) Around Proposed Development Site

Early Prehistoric Periods

Until the recent identification of Palaeolithic human butchery marks on animal bones recovered from cave sites in Munster, the earliest recorded evidence for human activity in Ireland dated to the Mesolithic period (7000–4000 BC) when groups of hunter-gatherers lived on the heavily wooded island. The archaeological record indicates that these mobile groups tended to favour coastal, lake and river shores which provided a transport resource and also provided elements of their varied diet. These groups did not construct any settlements or monuments that have left above ground traces although their presence in an area can often be identified by scatters of worked flints in ploughed fields or during earth-moving works undertaken as part of development projects. The Neolithic period (4000-2400 BC) began with the arrival and establishment of agriculture as the principal form of economic subsistence, which resulted in more permanent settlement patterns in farmlands within areas of cleared forestry. As a consequence of the more settled nature of agrarian life, new site-types, such as more substantial rectangular timber houses and various types of megalithic tombs, begin to appear in the archaeological record during this period. The study area contains no recorded sites from this period.

Late Prehistoric Periods

Metalworking arrived in Ireland with the advent of the Bronze Age period (c. 2400–500 BC) and saw the introduction of a new artefactual assemblage and was also associated with the construction of new monument types such as standing stones, stone rows, stone circles and burnt mounds known as *fulachta fiadh*. The development of new burial practices during this period also saw the construction of funerary monuments such as wedge tombs, cairns, barrows, ring-ditches, boulder burials and cists. The arrival of iron-working technology in Ireland saw the advent of the Iron Age (600 BC – 400 AD). This period has traditionally been associated with a Celtic 'invasion', although recent archaeological evidence points instead to a gradual development following centuries of contacts with Celtic-type cultures in Europe. Relatively little was known about Iron Age settlement and ritual practices in Ireland until recent decades when the corpus of evidence has been greatly increased by the discovery of sub-surface sites dating to this period during archaeological investigations carried out as part of development projects.

As detailed in Sections 14.3.5 and 14.3.6, the programmes of geophysical survey and targeted archaeological test trenching carried out as part of this assessment revealed the presence of one previously unrecorded potential archaeological feature, a burnt spread, within the boundary of the proposed development. Burnt spreads or mounds are typically associated with Bronze Age (c.2400 BC – 500BC) pyrolithic activity.

Early Medieval Period

The early medieval (c. 400–1169 AD) period in Ireland broadly commences with the arrival of Christianity to Ireland. While this period saw the emergence of the first phases of urbanisation around the large monasteries and the Hiberno-Norse ports, including Waterford, the dominant settlement pattern of the period continued to be rural-based and centred on enclosed farmsteads known as ringforts. The ubiquity of these enclosures within the Irish landscape is attested to by the fact that their original Gaelic names (rath, lios and dun) still form some of the most common placename elements in the country. Archaeological excavations have demonstrated that the majority comprised enclosed farmsteads containing evidence for occupational, agricultural and craft/industrial activities. During the 8th century the Uí Briúin Chualann were recorded to the ruling sept in this region and in the period prior to the Anglo-Norman invasion, the area was shared between Diarmuid Mac Murchacia's son-in-law, Domnall MacCilla Mo-Cholmoc, and the offspring of the Dublin Ostmen Chief Thorkill (Davies 1998). There are no extant early medieval archaeological sites recorded within the study area.

High and Late Medieval Periods

The arrival and conquest of large parts of Ireland by the Anglo-Normans in the late 12th century broadly marks the advent of the high medieval period which continued to c.1400 AD, which was followed by the late medieval period which extended to c.1550 AD. These periods saw the continuing expansion of Irish urbanisation as many of the port cities developed into international trading centres and numerous villages and towns began to develop as local or regional market centres. While earlier masonry castles were already in existence, the descendants of the Anglo-Norman gentry began the widespread construction of tower-houses as fortified residences within

their landholdings at the start of the 15th century and this trend was subsequently adopted by wealthy Irish families within areas under Gaelic control. Following the arrival of the Anglo-Normans the manor of Bre was granted by the Earl of Pembroke, then Lord Deputy, to Walter de Ridlesford in 1173 who shortly afterwards built a motte earthwork castle in the area (Davies 1998), possibly at the location of the site of an unclassified castle (WI004-001003-) located 170m southwest of the proposed development. The grant of a market to the settlement in 1213 indicates that Bray has achieved borough status by this time and the first reference to a burgage dates to c.1225 when de Ridelesford granted a burgage 'opposite my castle beyond the river'. During the 13th century, Bray was frequently attacked by the mountain clans of the O' Byrnes and O' Tooles who, in 1316, destroyed the Castle, but were then defeated by an English force led by Edmund Le Boteler. In 1402 the O' Byrnes were heavily defeated at 'Bloody Bank', which in an area now known as Sunnybank. In 1459, a new 'ten-pound' castle was constructed in Little Bray to defend the ford from the south. A second fortification, Great Bray Castle was constructed on the south side of the river and was demolished in the late 18th or early 19th century. The former 19th century parish church (WI004-001004-) of St Paul's, located c.95m to the south of the proposed development, is believed to have been constructed on the foundations of an earlier church, described in Anglo-Norman documents as built from oak. A cross inscribed slab (WI004-001001-) was discovered during the 1960s at a location on the east side of Castle Road, at a distance of c.33m to the southwest of the proposed development and was relocated to the National Museum of Ireland. The study area surrounding the proposed development site also contains the recorded location of a levelled tower-house (WI004-001006-) located c.125m to the south. In addition, the zone of archaeological potential associated the historic town of Bray (WI004-001---) extends within the southernmost portion of the proposed development (see Figure 14-1 and Appendix 14.3).

Post-Medieval and Early Modern Periods

The centuries following AD1550 are referred to as the post-medieval period, which is generally considered to continue into the mid-19th century and the period thereafter is described as early modern. These periods saw the continuing expansion of Irish urbanisation as many of the port cities developed into international trading centres and numerous villages and market towns began to develop throughout the country. The early part of the post-medieval period was a turbulent time in Irish history and in the later decades of the 16th century the Tudors sought to re-assert English control over the country. The resultant wars between the 1560s and 1603 brought this unsettled period to a temporary end although further widespread strife ensued during the Cromwellian Wars (1649–53) which ended with extensive dispossession of forfeited Gaelic lands. An agricultural boom in the late 18th and early 19th centuries saw a rise in prices for both tillage and dairy produce which resulted in landlords investing in extensive land improvement works within their holdings to increase land productivity. This included the extensive enclosure of open lands into field systems that survive to the present-day. The post-medieval period also saw the development of high and low status stone houses throughout the Irish countryside and rural settlement clusters at this time typically consisted of single-storey thatched cottages with associated farm buildings while two-storey farmhouses became more common in the 19th century. The settlement pattern throughout much of the rural landscape was greatly affected by the famine period in the middle of the 19th century and subsequent decades saw an intensification of agricultural practices which was further increased by the advent of mechanised farming practices in the 20th century.

The 17th century Down Survey does not provide any details for the townlands of Ravenswell, Bray Commons or Little Bray. In 1666 the manor of Bray was formally partitioned between the Second Earl of Meath and the Earl of Tyrconnell. In c.1660 a stone bridge was built over the river as a replacement for a ford that had been in use since at least the late medieval period. By 1700, the village extended from Sunnybank in the north to the area now occupied by the west end of Quinsborough Road. The 17th century bridge was replaced by a four-arch bridge in 1736 which shortly thereafter collapsed in a storm and was replaced by another four-arch bridge in 1741. The current bridge was constructed at the same location, immediately south of the proposed development, in the mid-19th century and is listed in the NIAH (ref. 1301267). A number of 18th century maps of the area show the settlement clustered to the south of the river bridge with some buildings extending southwards along the main street. While Bray could be considered a coastal town at this stage, the main street was located c.600m from the coastline at its closest point and the lands in between were occupied by farmland until the 19th century. The Napoleonic War led to the construction of a Martello Tower (WI004-002----) and Battery (WI004-

002001-) on the coastline within the study area. By the middle of the 18th century the settlement comprised a small market town which was served by a regular coach service from 1770 and a mail coach service from 1790. The town began to develop as a seafront resort centre for Dublin visitors by the end of the 18th century and this aspect of the settlement expanded rapidly in 19th century. The growth of the town is illustrated by the statistic that in 1788 Bray had eight shopkeepers and tradesmen and this had risen to twenty by 1824 and to over fifty by 1846, all of which were concentrated along the main street. The overall town population also increased from 250 inhabitants in the 17th century up to 3,500 by the mid-19th century.

The development of Bray as a seaside resort in the 19th century was facilitated by the extension of the Dublin-Kingstown railway line to the town in 1854 which greatly increased the amounts of visitors from Dublin. Much of the land containing the railway line within the Bray area was in the ownership of a prominent local businessman named John Quin who was heavily involved in its development, including the siting of the railway station within the town centre which was financed by the Dublin & Wicklow Railway Company. The railway line hugged the coastline and involved the construction of a large embankment where it crossed the River Dargle. The section of the railway line adjoining the east end of the proposed development was moved to its current location in 1907 due to coastal erosion of the original line which was closer to the seafront.

The proposed development site is within lands on the north side of the River Dargle that remained outside the urban area until the early modern period and details on the layout of the site during the 19th century are presented in the review of cartographic sources provided below. The proposed development site formed part of Co. Dublin until the area was transferred to Co. Wicklow under the Local Government (Ireland) Act of 1898. The county boundary follows the line of a post-medieval linear earthwork (DU026-124---- / WI004-005----) located c.100m north of the Phase 2 lands. During the first half of the 19th century, Ravenswell House, which was located immediately north of the proposed development, was rented by Isaac Weld, Esq from Captain de Butt. The development of a golf course and club house/pavilion within the proposed development lands began in 1897 and the course remained in operation until 2003. An early 18th century visitor to Ravenswell House, Anne Plumptre, describes the area as follows:

> *"On the renewal of my acquaintance with Mr. Weld, (as mentioned at the beginning of the fourth chapter,) he very obligingly invited me to visit him at Ravenswell, a house he had lately purchased near Bray, when he would introduce me to his wife and one of his sisters. Thither I accordingly went on the 6th of August, the latter lady, Mrs. Cuthbert, a most delightful woman, the wife of a barrister then absent on the circuit, carrying me over; and here I passed four days most agreeably. I found Mrs. Weld a very sweet and pleasing woman, every way worthy of her husband and his sister. Ravenswell is but just out of the town of Bray. It stands very pleasantly, not more than a furlong from the sea, the space between being occupied by a little paddock. The house is a very good one, the gardens and grounds very pretty, and the country about abounding with beauty. Here I first learned to understand how much milder the climate of Ireland must be in winter than that of England. In Mr. Weld's gardens the Hydrangea and the Fuchsia coccinea were growing in the open ground, in a much more thriving and luxuriant manner than in the conservatories, where they are always kept in England."*
>
> (Source: *Narrative of a residence in Ireland during the Summer of 1814, and that of 1815, p.82 A. Plumptre*)

Samuel Lewis's *A Topographical Dictionary of Ireland* (1837) provides descriptions of Irish parishes during the 1830s and often provides information on contemporary land use patterns, historical events as well as the presence of archaeological sites and structures of architectural heritage interest such as large country houses. The description of Bray, an extract of which is included below, does not contain any references to Ravenswell or Bray Cojmmons townlands, but does provide an overview of the 19th century settlement and agricultural practices within the general area.

> "*BRAY, a market and post-town, and a parish, in the half-barony of RATHDOWN, county of WICKLOW, and province of LEINSTER, 14 miles (N.) from Wicklow (by the sea road), and 10 (S.E. by S.) from*

Dublin; containing 3509 inhabitants of which number, 2590 are in the town … The town is situated on the Dargle or Bray River, which here forms a boundary between the counties of Dublin and Wicklow, and after passing under an old bridge of five arches, connecting portions of the town which lie on different sides of it, falls into the sea a little below this place."

The mid-19th century Griffith Valuation Survey records that the landowners of the area of Ravenswell and Bray Commons townlands containing the proposed development were Captain de Butt and the trustees of the Viscount Powerscourt respectively. Ravenswell House and lands were leased by Isaac Weld while the lands of Bray Commons were leased by Francis Lee.

Further details on the character of the proposed development site during the post-medieval and early modern periods are presented in the review of cartographic sources provided below (Section 14.3.3.3).

Database of Irish Excavation Reports

This database contains summary accounts of licensed archaeological excavations carried out in Ireland from 1970 to present and collates entries typically submitted at the end of each year or early in the following year. This Database contains one entry for an archaeological investigation within the proposed development. The results of the archaeological test trenching excavations carried out to inform this assessment will be submitted for inclusion in the Database per licensing requirements. A report on these site investigations has also been submitted to the National Monuments Service and the results are detailed in Section 14.3.6 of this chapter.

The review of the Database revealed that several archaeological investigations were carried out within the study area in the vicinity of the proposed development lands. These include programmes of advance test trenching and construction phase monitoring undertaken along sections of the linear earthwork (WI004-005----/DU026-124---) to the north of this development. The Database of Irish Excavation entries for these site investigations are provided in Appendix 14.4 of this report and a summary of relevant examples follows hereafter.

A programme of archaeological monitoring of a work compound for the Shanganagh – Bray main drainage scheme (Contract 1) (05E0392 ext) was carried out within the north-eastern portion of the site in 2005. No archaeological features were uncovered. Monitoring of additional works as part of the Shanganagh-Bray main drainage scheme within the former golf-course under the same licence revealed nothing of archaeological significance. A programme of targeted archaeological test trenching and a metal detection survey (Excavation Licence Ref. 20E0482, Detection Licence Ref. 20R0179) was carried out within the Phase 1 lands to the north of the subject site in 2020. The archaeological test trenching comprised ten linear test trenches, totalling 650m in length. The testing programme sought to investigate a number of areas of limited archaeological potential which were identified during a geophysical survey (20R02014) as well as the alignment of a recorded linear earthwork (WI005-005--- / DU026-124----), believed to represent a portion of the 'Pale' ditch. No potential archaeological features were uncovered in any of the excavated test trenches. Hand excavated trenches across the recorded linear earthwork confirmed it to be a late 19th early or early 20th century landscape feature and not a section of the 'Pale' ditch as previously suggested. Subsequent monitoring of topsoil removal during the construction phase did not uncover any archaeological features (22E0552).

The excavation of a test trench across the earthwork within the former golf course in advance of a drainage scheme in 2002 (Excavation Licence Ref. 02E1717) revealed no trace of a ditch and only uncovered modern inclusions which the excavator interpreted as the result of recent disturbance. Subsequent monitoring of the drainage scheme revealed a 2.5m wide by 0.6m deep ditch associated with the earthwork which contained modern inclusions (Excavation Licence Ref. 02E1717ext.). The excavator suggested that it might represent a medieval feature that was cleaned out and reused as a field drain at a much later date. A 2004 programme of test trenching across the earthwork found no evidence for a ditch and the low bank was found to overlie 18th/19th century inclusions (Excavation Licence Ref. 04E0354). The excavator concluded that the earthwork was a late 18th or early 19th-century landscape feature associated with the former Ravenswell House.

A programme of advance test trenching and subsequent archaeological monitoring was also undertaken along the line of the earthwork at the location of St Philomena's School and Coláiste Ráithín to the north of the subject site. Testing across the linear earthwork revealed 19th century inclusions at the base of an associated ditch. The excavator concluded that the earthwork feature was 19th century in date (Excavation Licence Ref. 14E0225). Nothing of archaeological significance was subsequently identified during archaeological monitoring of the construction of the school development.

A programme of archaeological monitoring (12E0123) was also undertaken for a 4km long flood defence scheme on the River Dargle. The flood defence works include widening and deepening of the river and included the construction of a new culvert at Bray Bridge at the western boundary of the proposed development. Monitoring identified earlier elements of Bray Bridge, including the remains of a wooden bridge to the west of the stone bridge on the Lower Dargle Road which was dated to the late 12th or early 13th century.

National Museum of Ireland Topographical Files
An inspection of the topographical file archive held in the National Museum's premises in Kildare Street, Dublin was carried out as part of the assessment. The NMI topographical files record the discovery of a stone mortar (NMI reg. no. 1932:6580) recorded from the townland of Little Bray. One sherd of medieval pottery (NMI ref. IA/27/2005) was also recorded from the townland of Corke Great and this may have been retrieved during archaeological investigations undertaken within the area in 2005.

14.3.3.2 Architectural Heritage

There are no extant buildings of any date located inside the boundary of the proposed development site and the existing built environment within its immediate surroundings are modern in date. The Wicklow County Development Plan 2022-2028 does not list any Protected Structures or Architectural Conservation Areas within the proposed development site. The National Inventory of Architectural Heritage (NIAH) lists one former historic garden/landscape within the north western portion of the proposed development site and this comprises a former garden area associated with the demolished Ravenswell House (NIAH Garden no. 4299).

The *Wicklow County Development Plan 2022-2028* lists a total of 26 structures on the Record of Protected Structures (RPS) within the 250m study area. The majority of these are located within Bray town centre in the south end of the study area. Several of the RPS sites are also recorded in the National Inventory of Architectural Heritage (NIAH). There is a total of 38 NIAH structures listed within the 250m study area (Table 14-6, Figure 14-2). All NIAH structures within the study area have been assigned a regional rating by the NIAH, which is indicative of a medium value.

Table 14-6 - Architectural Heritage Structures within 250m radius

RPS no.	NIAH no.	Name/Type	Townland	Distance from site boundary
B44-B	n/a	Post box	BRAY	50m south
B43	n/a	Facade	BRAY	230m southwest
B56	n/a	Structure	BRAY	155m southeast
B70	n/a	Structure	BRAY	180m southeast
B74	n/a	Facade	BRAY	190m southeast
B76	n/a	Structure	BRAY	155m southeast
B101	n/a	The Battery	BRAY	230m southeast
B97	16301075	Building (misc)	BRAY	230m southeast
B84	16301076	House	BRAY	240m southeast

RPS no.	NIAH no.	Name/Type	Townland	Distance from site boundary
B84	16301077	House	BRAY	235m southeast
B84	16301078	House	BRAY	230m southeast
B84	16301079	House	BRAY	230m southeast
B84	16301080	House	BRAY	225m southeast
B84	16301081	House	BRAY	225m southeast
B84	16301082	House	BRAY	220m southeast
B84	16301083	House	BRAY	220m southeast
B85	16301084	Martello tower	BRAY	250m southeast
B11	16301215	House	BRAY	235m southeast
B69	16301216	Church/chapel	BRAY	215m southeast
B71	16301217	Manse	BRAY	205m southeast
B75	16301222	Post office	BRAY	170m southeast
B72	16301223	House	BRAY	240m southeast
B72	16301224	House	BRAY	240m southeast
B72	16301225	House	BRAY	240m southeast
B73	16301255	House	BRAY	250m southeast
B73	16301256	House	BRAY	245m southeast
B77	16301258	House	BRAY	160m southeast
B46	16301263	Court house	BRAY	50m south
n/a	16301265	House	BRAY	165m south
n/a	16301267	Bridge	BRAY, BRAY COMMONS, LITTLE BRAY	Adjacent
B50	16301270	Shop/retail outlet	BRAY	145m south
n/a	16301271	Shop/retail outlet	BRAY	175m south
n/a	16301272	House	BRAY	190m south
n/a	16301273	Shop/retail outlet	BRAY	215m south
B48	16301274	Church/chapel	BRAY	215m south
n/a	16301286	House	BRAY	180m southwest
B22	16301287	Surgery/clinic	BRAY	160m southwest
n/a	16301288	Barracks	BRAY	125m southwest
B09	16301289	House	BRAY	140m southwest
B49	16301290	Church/chapel	BRAY	70m south
n/a	16301291	Shop/retail outlet	BRAY	110m south
B81	16301293	House	LITTLE BRAY	160m west

RPS no.	NIAH no.	Name/Type	Townland	Distance from site boundary
B10	16301298	House	LITTLE BRAY	100m north
B42	16301299	Church/chapel	LITTLE BRAY	140m northwest
n/a	16301300	School	LITTLE BRAY	170m northwest

Figure 14-2 - Locations of Recorded Protected Structures (green), and NIAH sites (blue) Within 250m of Proposed Development Boundary

14.3.3.3 Review of Cartographic Sources

The cartographic sources examined for the study area comprised the 17th-century Down Survey mapping (Figure 14-3), John Rocque's map of South County Dublin (1760) (Figure 14-4), Taylor's map of the Environs of Dublin (1816) (Figure 14-5), the 1st edition 6-inch Ordnance Survey (OS) map series (published 1837) (Figure 14-6) and the 25-inch OS map (published 1911) (Figure 14-7). The location of Bray Commons townland is indicated on the Down Survey mapping which shows a square structure a short distance north of 'Bray Water' (River Dargle) in the vicinity of the proposed development site. It is likely that this structure comprises a tower house (WI004-001006-) recorded at this location by the ASI. No other features of potential cultural heritage interest are depicted within its boundary. The tower house is also recorded on Rocque's map from 1760 and Taylor's map from 1816. Both maps also depict a house at the location of Ravenswell House north of the subject site, and the development lands as planted with trees. The review of the 6-inch OS map revealed that the

proposed development site is depicted as primarily located within vacant fields associated with Ravenswell House to the north. One rectangular structure is noted on northern bank of the River Dargle. The river and its floodplain form the southeast portion of the development area. The 25-inch OS map depicts the proposed site as developed into a golf course with a club house occupying the central portion of the site. Significant land reclamation works have taken place along the river which has been re-routed immediately south of the proposed development boundary. A road, labelled Ravenswell Road, has been constructed on reclaimed land along this northern bank of the river.

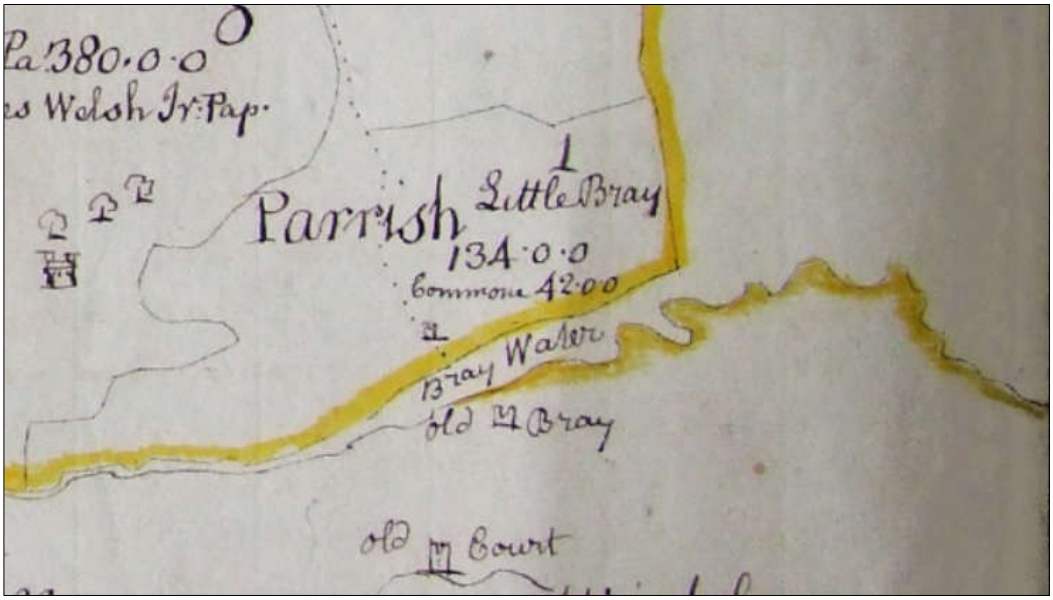

Figure 14-3 - Down Survey Map showing Little Bray and Bray Commons townlands

Figure 14-4 - John Rocque's Map showing the lands within the development site

Figure 14-5 - Taylor's Map showing the lands within the development site

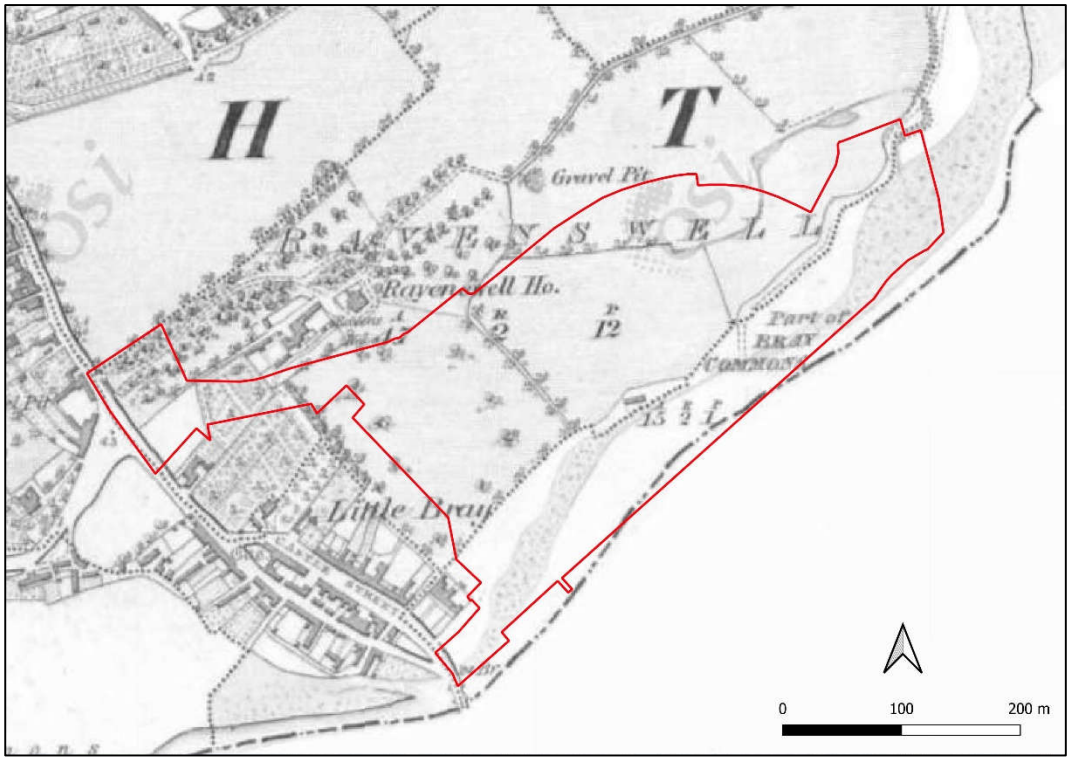

Figure 14-6 - 1st edition 6-inch OS Map (1837) Showing Proposed Development

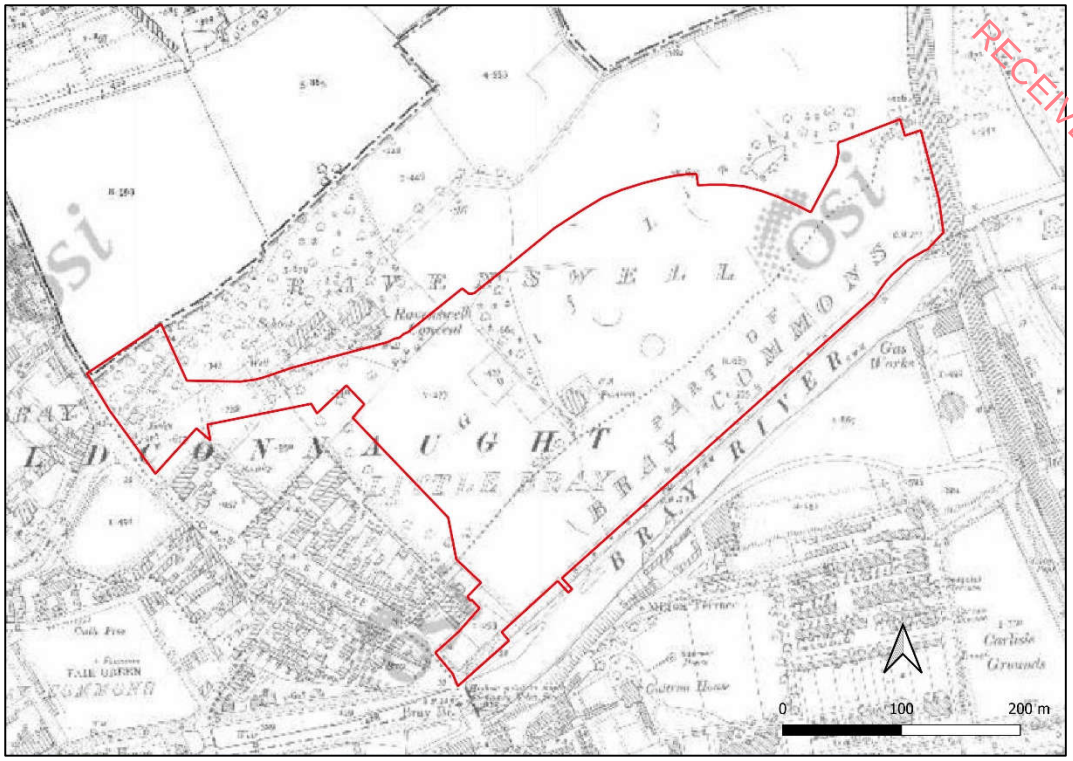

Figure 14-7 - 25-inch OS Map (1911) Showing Proposed Development

14.3.3.4 Aerial, Satellite and LiDAR Imagery

A review of modern aerial and satellite images published online by Tailte Éireann, Google and Bing revealed no potential unrecorded archaeological sites within the proposed development site and indicated that the land within its boundary has not been significantly altered since the publication of the 25-inch OS map in 1911 (Figure 14-8). A review of LiDAR datasets published online by the Geological Survey of Ireland[47] (GSI) was also carried out. No surface traces of potential unrecorded archaeological sites were noted during the review of the LiDAR imagery of the proposed development site (Figures 14-9).

[47] https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b7c4b0e763964070ad69bf8c1572c9f5

Figure 14-8 - Satellite Image of Proposed Development (source: Google)

Figure 14-9 - LiDAR Image of Proposed Development (source GSI)

14.3.3.5 Undesignated Cultural Heritage Assets

While encompassing the designated archaeological and architectural heritage resources, cultural heritage also includes various undesignated assets such as settlements, demesne landscapes, vernacular structures, folklore, cultural traditions and place names. There are no historic settlement centres, extant structures or associations with historical events located within, or in close proximity to, the proposed development site. The online archive of the National Folklore Collection (www.duchas.ie) was consulted and contains no records of

folklore or traditions associated with potential unrecorded cultural heritage sites within proposed development lands. A section of the former landscaped grounds of Ravenswell House, including its entrance avenue and gardens, is depicted on the historical OS maps within the northwest portion of the subject site. (Figures 14-6 and 14-7).

The proposed development site is located within the townlands of Ravenswell and Bray Commons to the north of the core of the historic core of Bray. Townlands are the smallest unit of land division in the Irish landscape, and many may preserve early Gaelic territorial boundaries that pre-date the Anglo-Norman conquest. The boundaries and names of Irish townlands were recorded and standardised by the Ordnance Survey in the 19th century. The Irish roots of townland names often refer to natural topographical features, but some name elements may also give an indication of the presence of past human activity within the townland, e.g., lios, rath or dun may indicate the presence of a ringfort while temple, saggart, termon or kill indicate associations with church sites. The townland name Ravenswell is English in origin and is first recorded as the name of a house and estate in 1813. Prior to this the house was known as 'Boultonhill'. The Placenames Database[48] cites *Coimín Bhré* as the Gaelic version of the townland name of Bray Commons with *Coimín* translating as 'commonage, common land; little hollow, glen' The placename of Bray Commons has been used at least the Down Survey in the 17th century. The townland boundary between Ravenswell and Bray Commons has no surface expression within the proposed development site.

14.3.4 Field Inspection

The proposed development site was inspected in December 2023 and January 2024 during clear weather conditions that afforded good landscape visibility and extracts from the photographic record of the site inspections are presented in Appendix 14.1. 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 contains large heaps of stockpiled soil. The western extent of the site is located within the former garden of Ravenswell House as depicted on the historic OS maps. The field inspection did not note any historic garden features at this location, however this portion of the site consisted of a vacant plot, severely overgrown with rough grass and scrub making it difficult to identify such features, if present. Frequent dumping of modern rubbish was also noted in this area. A recently constructed 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. No surface traces of any other potential archaeological or cultural heritage features were noted during the walkover survey.

14.3.5 Geophysical Survey

A geophysical survey (Licence No. 24R0160) of available green field areas (approximately 0.5 hectares) within the proposed development site was carried out by J.M. Leigh Surveys in February 2024. A full copy of the report on this non-intrusive survey is presented in Appendix 14.2 and the results are summarised in Section 14.3.5.1, which includes mapping sourced from the geophysical survey report.

[48] www.logainm.ie

14.3.5.1 Geophysical Survey Results

The geophysical survey of the development lands comprised high resolution magnetic gradiometry and was implemented at three locations (Area 1-3) within the former golf course and covered an area of approximately 0.5 hectares (Figure 14-10). The size of the surveyed areas was constrained due to the presence of stockpiled soil and a temporary compound within the development site.

The results of the geophysical survey are summarised hereafter, and a full copy of the geophysical report is presented in Appendix 14.2. The survey identified a number of anomalies (Anomalies 1 to 6) which are of potential archaeological origin within the proposed development site and the reference numbers for these used below are sourced from the geophysical report. The locations of the geophysical anomalies, including their associated survey reference numbers, are identified in Figure 14-11 and 14-12.

The geophysical report summarises the results of the survey as follows:

"In Area 2, there are parallel linear trends indicative of ploughing activity. It is possible that this may represent ridge and furrow cultivation activity, although this is speculative. Isolated responses in Areas 1 and 2 may represent pit-type features. However, there is no clear archaeological pattern and these may equally result from more recent ground disturbance. An archaeological interpretation is cautious. A linear negative response in Area 3 is indicative of a modern service pipe. To the south of this is a parallel linear response. Although it is possible that this represents a short linear ditched feature, interpretation is cautious. There are no further responses of interest, and this may equally represent more recent ground disturbance."

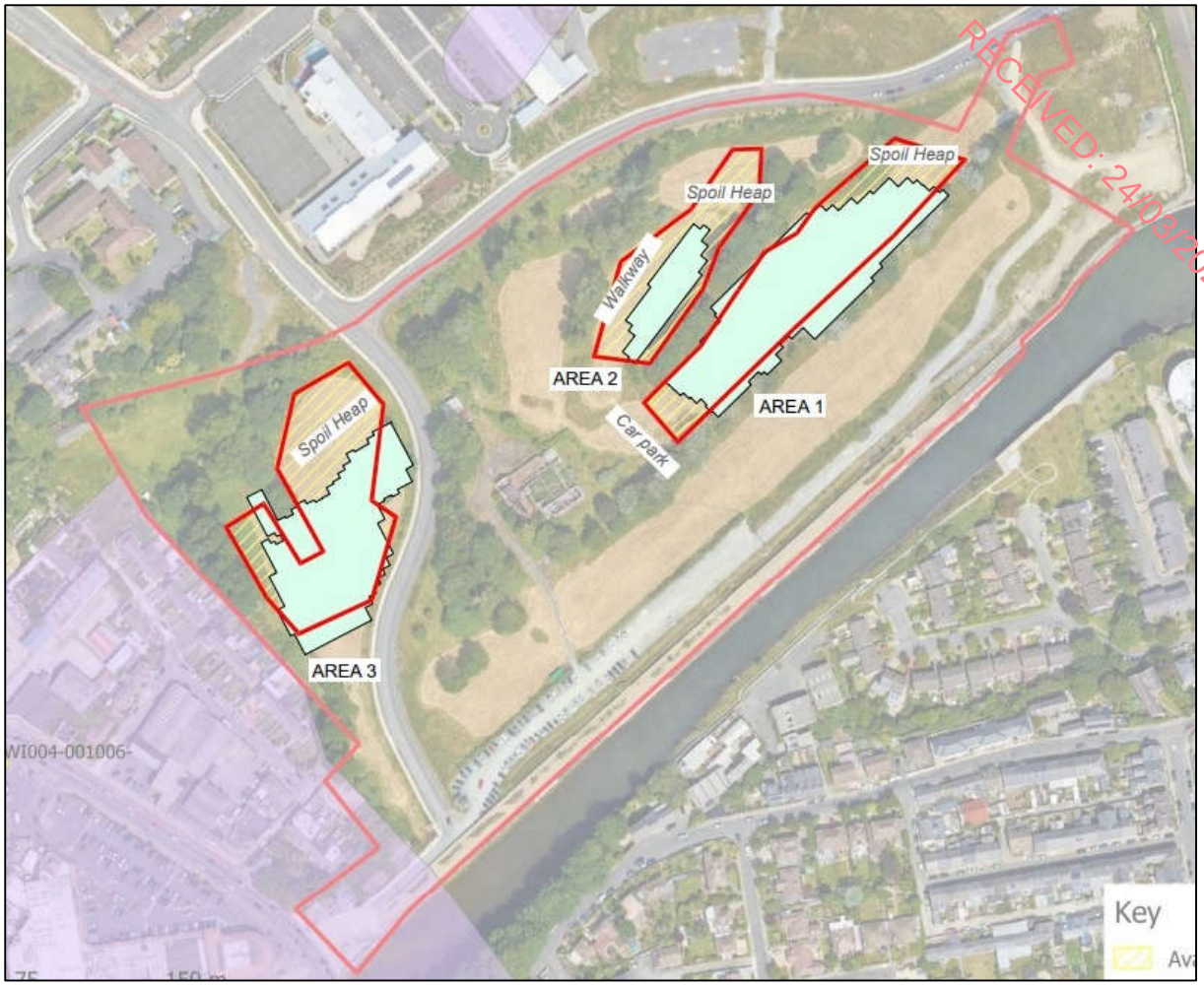

Figure 14-10 - Showing locations of geophysical survey (Source: J.M Leigh Surveys Ltd)

Figure 14-11 - Interpretative Plan of Geophysical Anomalies 1-4

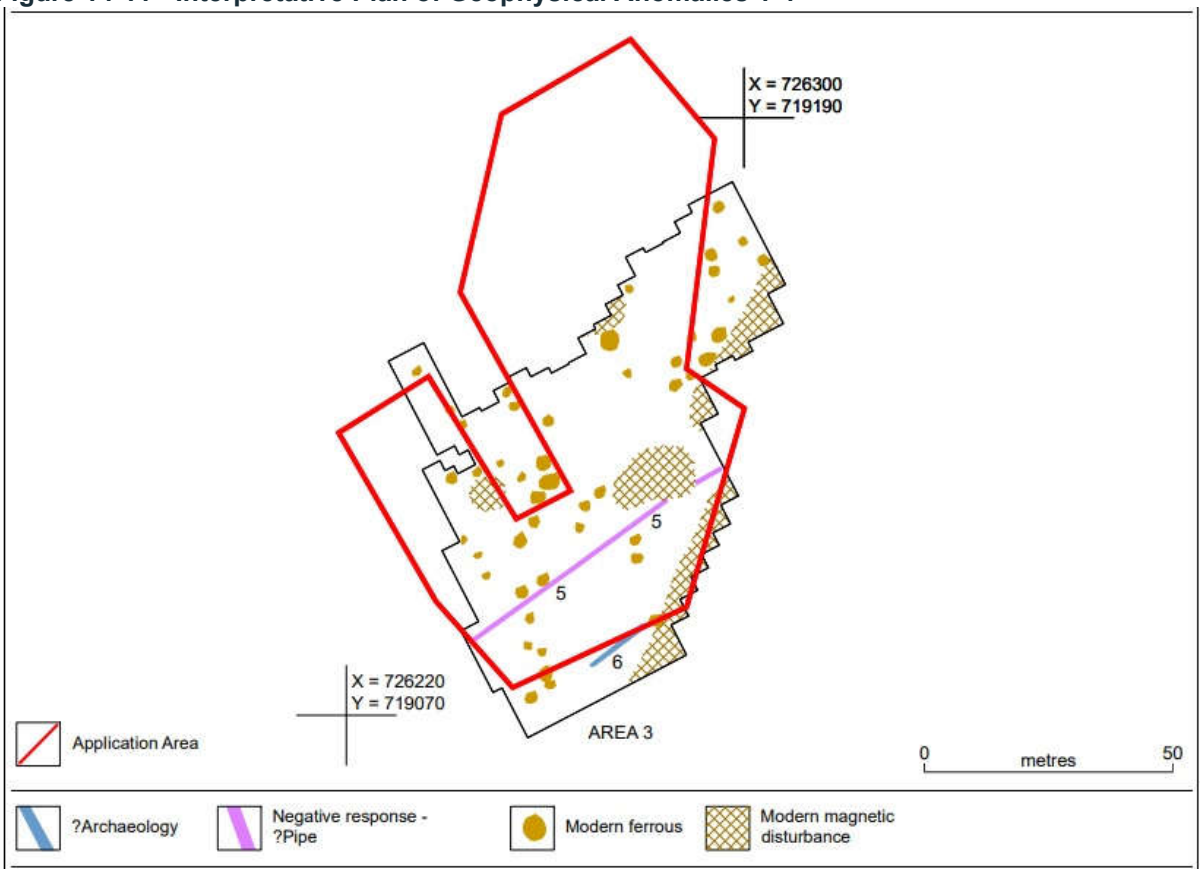

Figure 14-12 - Interpretative Plan of Geophysical Anomalies 5 and 6

14.3.6 Archaeological Test Trenching

A programme of archaeological test trenching was carried out within the development site in April 2024 under Excavation Licence no. 24E0428. The programme of testing was undertaken in order to inform this assessment and targeted the geophysical anomalies identified as being of archaeological potential during the geophysical survey of available areas within the proposed development lands (see Section 14.3.5.1 and Figure 14-10 to 14-12). The testing programme also included a number of general trenches within the proposed development footprint (see Figure 14-13). A full copy of the testing report is presented in Appendix 14.5, and the results are summarised in Section 14.3.6.1.

14.3.6.1 Results of Archaeological Test Trenching

Thirteen archaeological test trenches, measuring 450 linear metres, were excavated within the proposed development site in April 2024 (Licence no. 24E0428). One test trench (T3) was omitted from the original proposed testing layout due to several underground services being detected within it. Test trench 2 was also adjusted slightly to avoid an underground electric cable but this did not impact on the archaeological assessment. Test trench 5 was shortened slightly to avoid an existing footpath.

The testing programme identified one archaeological feature, a burnt spread (Anomaly 4) in Trench 5. The charcoal rich spread had a minimum length of 4.6m, and width of 1.8m. No other archaeological features were identified during the testing. See Appendix 14.5 for a copy of the test trenching report.

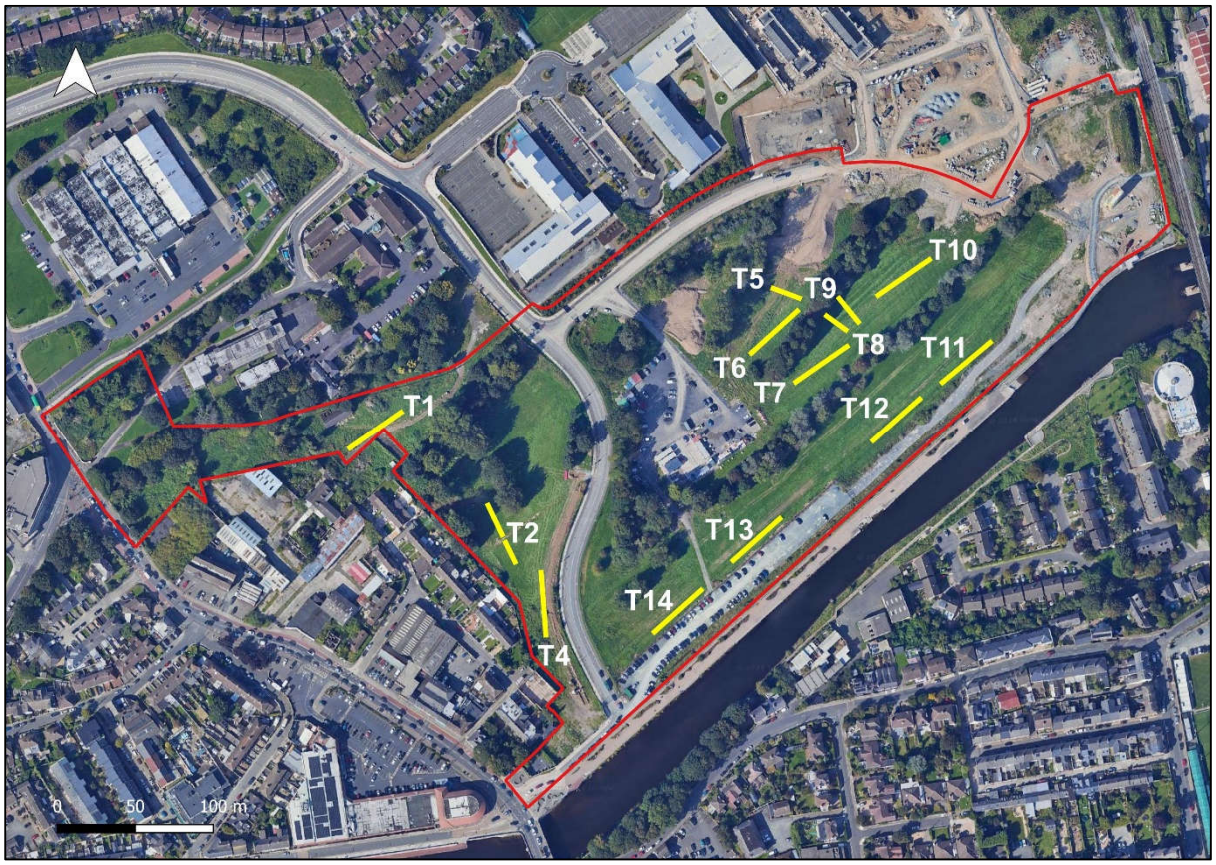

Figure 14-13 - Location of Test Trenches excavated under licence 24E0428

14.4 Potential Impacts on Cultural Heritage during Construction Phase

The southernmost portion of the proposed development encroaches slightly on the Zone of Archaeological Potential surrounding the historic town of Bray (WI004-001----). There are no recorded archaeological sites listed in the SMR/RMP located within the proposed development site and the construction phase will, therefore, have a neutral effect on the known archaeological resource listed in these records.

The geophysical survey of suitable green field areas within the proposed development site identified the sub-surface remains of a number of sites/features of archaeological potential (see Section 14.3.5.1 and Appendix 14.2). A programme of archaeological test trenching targeted at the locations of Anomalies 1-6 identified during the geophysical survey confirmed the archaeological nature of one of these features potential (see Section 14.3.6.1 and Appendix 14.5).

Anomaly 4 in Trench 5 comprises a burnt spread (minimum length of 4.6m, minimum width of 1.8m) which may form the remains of prehistoric pyrolithic activity. The ground works required for the construction phase within the proposed development site will result in permanent, direct, moderate to significant, negative effects on the entirety of Anomaly 4 and this will require mitigation.

The River Dargle is located outside the southern end of the proposed development site and has been subject to flood relief works and land reclamation in the past. No in-channel works which would have the potential to impact on any unrecorded underwater archaeological sites will be carried out.

There are no Protected Structures located within the proposed residential development site, and it is not located within or adjacent to an Architectural Conservation Area. There are no NIAH-listed buildings or extant gardens within the proposed development site. The nearest structure listed in the inventory is a bridge (NIAH16301267) located immediately outside the southern end of the proposed development boundary. Given the absence of any architectural heritage constraints within the proposed development site, the construction phase of the proposed development will have a neutral effect on the architectural heritage resource which does not require mitigation.

There are no undesignated vernacular structures or historic settlements located within the proposed development site and no intangible attributes, such as historical or folklore associations, were noted during the assessment. The location of the historic Ravenswell House, now demolished, is recorded immediately north of the development boundary and a portion of its former gardens (Garden no. 4299) extend within the development area. The gardens are no longer extant. A section of the townland boundary between Ravenswell and Bray Commons extends through the proposed development site but has no visible remains above ground. The construction phase of the proposed development will have potential direct, permanent, slight, adverse effect on the townland boundary between Bray Commons and Ravenswell which will require mitigation.

14.5 Potential Impacts on Cultural Heritage during Operational Phase

There is no intervisibility between the proposed development site and the archaeological sites listed in the RMP/SMR within the surrounding 250m study area. Only three of these sites, Martello tower and Battery WI004-002---- & WI004-002001-) and St John's Church (WI004-001004-), built on the site of a possible medieval church, retain any recorded above ground remains. All three sites are also protected structures (RPS ref. B85, B101 and B49). The proposed development will, therefore, have a neutral effect on the setting of the recorded archaeological resource within the study area during the operational phase. Following the successful

implementation of archaeological mitigation measures presented in Section 14.7, it is predicted that no impacts will arise in relation to the potential archaeological resource within the proposed development site during the operational phase.

There are 26 recorded protected structures and 38 NIAH sites within the 250m study area which includes the northernmost portion of Bray town. There are no examples located within the boundary of the proposed development site. The designated architectural heritage sites within the vicinity of the proposed development boundary comprise a bridge listed in the NIAH (ref. 16301267) immediately south of the development boundary, a former court house (RPS ref. B46, NIAH ref.16301263) and post box (RPS ref. B44-B) 50m to the south, a Church (RPS ref. B49, NIAH ref. 16301290) 70m to the south and a school (RPS ref. B10, NIAH ref. 16301298) 100m to the north. No potential undesignated structures of architectural heritage interest were identified within the boundary of the proposed development during the desktop studies and site inspections carried out as part of this assessment. The curtilage of setting of protected structures within the vicinity of the development site will not be directly or indirectly impacted by the proposed development. The operational phase of the proposed development will therefore have a neutral effect on the architectural heritage resource. No mitigation measures for this resource will be required.

14.6 Do Nothing Scenario

A ‘Do Nothing Scenario’ will see the continued preservation of recorded and potential cultural heritage features within the study area.

14.7 Mitigation Measures

14.7.1 Construction Phase Mitigation

There are no extant archaeological sites listed in the SMR/RMP located within the proposed development site, however the development boundary encroaches slightly on the Zone of Archaeological Potential associated with the historic town of Bray. There are no Protected Structures or structures listed in the NIAH located within the site and it is not within, or in the close environs of, an Architectural Conservation Area. The NIAH records the former location of a section of the garden of Ravenswell House within the development lands, however this is no longer extant. No mitigation measures for the architectural heritage resource are, therefore, required.

The programme of targeted archaeological test trenching at the locations of geophysical survey Anomalies 1-6 has confirmed the presence of one potential archaeological site/features (comprising one burnt mound) within the boundary of the proposed development (see Figure 14-13 and Appendix 14.5). Following a grant of planning, and in advance of the construction phase, a suitably qualified archaeologist will be appointed to prepare and submit a licence application to the National Monuments to preserve by record (through archaeological excavation) the full extent of the archaeological sites/features located within the boundary of the proposed development.

All archaeological excavation works to preserve by record identified archaeological remains will be carried out under licence by the National Monuments Service and in advance of construction works at their locations. All required archaeological excavation works, including post-excavation analyses and reporting, will be carried out in accordance with the archaeological method statement submitted to the National Monuments Service and the National Museum of Ireland as part of the licence application. An archive containing stratigraphic records (including all associated digital and hard copy records and reports) will be submitted to the National Monuments Service upon completion of archaeological works. Any archaeological objects and relevant environmental material retrieved during archaeological excavation works, as well as all relevant reports, including post-

excavation analysis reporting, will be provided to the National Museum of Ireland upon completion of all archaeological works. The results of all excavation works will also be published in the Database of Irish Excavation Reports and dependent on the nature of the results, the potential for additional publication in appropriate periodicals/journals will also be appraised.

While no additional anomalies indicating the probable locations of previously unrecorded archaeological sites within the boundary of the proposed development were identified during the geophysical surveys, the appointed archaeologist will also carry out further programmes of archaeological monitoring of topsoil stripping within previously unavailable areas within the proposed development site as a precautionary measure. This will be carried out under licence by the National Monuments Service. Any archaeological remains identified during the monitoring will be cordoned off, recorded in written, drawn and photographic formats and the National Monuments Service will be notified.

A report on the results of the archaeological monitoring, including written, illustrative and photographic records, will be submitted to the National Monuments Service, per licensing requirements, who will then be consulted to determine appropriate mitigation measures in the event that previously unrecorded archaeological remains are identified. This will entail either total/partial preservation *in situ* by avoidance or preservation by record by systematic archaeological excavation of any identified archaeological remains where direct impacts are predicted. The report will also detail proposals for short term (construction phase) and long term (operation phase) preservation measures for any previously unrecorded archaeological remains identified during testing that will be preserved *in situ*.

14.7.2 Operational Phase Mitigation

All of the mitigation measures identified in Section 14.7.1 will be enacted and completed prior to and during the construction phase and, therefore, no mitigation measures during the operational phase of the proposed development are predicted.

14.8 Residual Impacts

The proposed development site does not contain any recorded archaeological sites or designated architectural heritage structures and no direct effects on examples within the surrounding 250m study area are predicted. The geophysical surveys and programme of targeted archaeological test trenching carried out as part of this assessment have identified one previously unrecorded archaeological site/feature within the proposed development site, a burnt mound. The identified site, Anomaly 4 (potential burnt mound) will be preserved by record through full archaeological excavation (see Sections 14.3.5.1 and 14.4). Preservation by record shall allow for a high magnitude of impact, albeit ameliorated by the creation of a full and detailed archaeological record, the results of which shall be publicly disseminated. This shall result in a potential slight/moderate range of significance of effect in the context of residual impacts on the unrecorded archaeological resource. The predicted residual effects on the geophysical anomalies within and in the environs of the proposed development are identified in Table 14-7.

Table 14-7 - Construction Effects, Mitigation and Residual Effects on Geophysical Anomalies

Geophysical Anomaly	Description	Construction Phase Effect	Mitigation	Residual Effect Significance
Anomaly 4	Potential burnt mound	Permanent, high magnitude, direct, moderate to significant, negative effect on the	Archaeological excavation of extent of site within	Slight to Moderate adverse

	burnt mound within the development boundary.	development boundary.	

14.9 Monitoring Requirements

There are a number of obligatory processes to be undertaken as part of applications to the National Monuments Service for licences to carry out archaeological excavation works which will allow for monitoring of the successful implementation of the mitigation measures detailed in Section 14.7. A detailed method statement stating the proposed strategy for the archaeological excavation works will accompany the submitted licence application which will clearly detail the extent of the archaeological works and the onsite and post-excavation processes that will be enacted in order to preserve identified archaeological remains by record. Following the completion of all archaeological excavation works, preliminary and final reports will be submitted to the National Monuments Service, the National Museum of Ireland and the Planning Authority which will clearly describe the results of all onsite archaeological works and post-excavation analyses in written, illustrative and photographic formats.

14.10 Difficulties encountered during the preparation of this chapter

There were no difficulties encountered during the preparation of this chapter.

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 .

15.1 Methodology

The following Legislation, policy and guidance are relevant to this Section and were considered during the assessment process;

- Department of the Environment, Heritage and Local Government (DEHLG), Guide to Risk Assessment in Major Emergency Management[49], 2010;
- Environmental Protection Agency (EPA), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports[50], 2022;
- Institute of Environmental Management and Assessment (IEMA), Major Accidents and disasters in EIA: A Primer[51], 2020;
- Seveso III Directive (2012/18/EU)[52]; and,
- EIA Directive 2011/92/EU (as amended by Directive 2014/52/EU)[53].

This assessment process aligns with the DEHLG Guidelines[1] which outline the following approach;

- Stage 1: Establishing the context – 'describe the characteristics of the area for which the risk assessment is being completed, as this will influence both the likelihood and impact of a major emergency';
- Stage 2: Hazard Identification – 'review and note the generic hazards';
- Stage 3: Risk Assessment – 'consider the overall risks presented by these hazards'; and,
- Stage 4: Recovering Potential Hazards on a Risk Matrix.

The risk assessment is set out in Table 15-3 and notes the risks that exist for each category of hazard. The likelihood of each risk occurring is assessed and the likely impact is documented. Where mitigation measures are available to lessen the severity of impact, these are noted, and a residual impact is determined. This residual impact is then combined with the likelihood of the risk occurring to determine the residual risk. Table 15-1 and Table 15-2 indicate the process used to rank the impact of risk and likelihood of risk occurring.

[49] https://assets.gov.ie/117528/e06a7ca8-a634-4f70-a9a7-b405ee08429a.pdf

[50] https://www.epa.ie/publications/monitoring--assessment/assessment/guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment.php

[51] https://www.iema.net/content/major-accidents-and-disasters-in-eia-an-iema-primer-october-2020/

[52] https://eur-lex.europa.eu/eli/dir/2012/18/oj

[53] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052&

Table 15-1 - Impact of Risk

Ranking	Category	Impact	Description
1	Minor	Life, Health, Welfare	Small number of people affected; no fatalities and small number of minor injuries with first aid treatment
		Environment	No contamination, localised effects
		Infrastructure	<0.5M Euros
		Social	Minor localised disruption to community services (<6 hours)
2	Limited	Life, Health, Welfare	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required Localised displacement of a small number of people for 6-24 hours Personal support satisfied through local arrangements
		Environment	Simple contamination, localised effects of short duration
		Infrastructure	0.5-3M Euros
		Social	Normal community functioning with some inconvenience
3	Serious	Life, Health, Welfare	Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation Large number of people displaced for 6-24 hours or possible beyond; up to 500 evacuated External resources required for personal supports
		Environment	Simple contamination, widespread effects, or extended duration
		Infrastructure	3-10M Euros
		Social	Community only partially functioning, some services available
4	Very Serious	Life, Health, Welfare	5 to 50 fatalities, up 10 100 serious injuries, up to 2,000 evacuated
		Environment	Heavy contamination, localised effects or extended duration
		Infrastructure	10-25M Euros Community functioning poorly, minimal services available

		Social	
5	Catastrophic	Life, Health, Welfare	large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated
		Environment	Very heavy contamination, widespread effects of extended duration
		Infrastructure	>25M Euros
		Social	Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support

Table 15-2 - Likelihood of Risk Occurring

Ranking	Category	Description
1	Extremely Unlikely	May occur only in exceptional circumstances; once every 500 or more years
2	Very unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communicates; and/or little opportunity, reason or means to occur; may occur once every 100-500 years
3	Unlikely	May occur at some time; and/or few, infrequent, random recorded incidents, or little anecdotal evidence; some incidents in associated or comparable organisations worldwide; some opportunity, reason or means to occur; may occur once per 10-100 years
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence, and will probably occur once per 1-10 years
5	Very Likely	very likely to occur; high level of recorded incidents and/or strong anecdotal evidence, will probably occur more than once a year

15.2 Potential Sources of Natural Disasters

15.2.1 Weather Related Hazards

There are several categories of weather-related hazards with the potential to cause natural disaster:

- Extreme rainfall events and subsequent flooding;
- Strong winds and tornadoes;
- High temperatures, heat waves and drought;
- Snow and ice; and,
- Lightning.

The 2024 Government of Ireland National Risk Assessment – Overview of Strategic Risks[54] states that *'There have been a number of severe weather events and storms in Ireland in recent years, particularly those leading to urban flooding such as storms Betty and Babet in 2023,'*. The most recent extreme weather event in Ireland was Storm Éowyn occurring on the 21st January 2025[55] and accounting for wind speeds exceeding 140km/h. There were 14no. named storms in Ireland in 2024 with 4no. storms to date in 2025[56] (between Sunday 1 September 2023 to Sunday 31 August 2024).

The most extreme cold spell on record for Ireland occurred in 2010 with accumulations of snow across the country accompanied by extremely low temperatures.

A Climate Change Risk Assessment conducted by Wicklow County Council in 2023, identified exposures, vulnerabilities and impacts for County Wicklow, with respect to the impact of climate and weather-related hazards under the following headings - negligible, minor, moderate, major and catastrophic (See Figure 15-1). For the identified hazards and vulnerabilities, County Wicklow was predominantly measured as 'Minor', with respect to impact on vulnerabilities under Wicklow Count Council jurisdiction.

Hazard	Current Frequency	Assets	Health and Wellbeing	Environment	Social	Cultural Heritage	Financial	Reputational	Overall Impact Score
Heatwave	Common	Moderate	Negligible	Moderate	Minor	Negligible	Minor	Minor	2.0
Drought	Occasional	Negligible	Negligible	Minor	Minor	Minor	Negligible	Negligible	1.4
Cold Spell	Frequent	Moderate	Moderate	Negligible	Moderate	Minor	Moderate	Minor	2.3
Heavy Snowfall	Frequent	Minor	Moderate	Minor	Moderate	Negligible	Minor	Minor	2.1
Severe Windstorm	Very Frequent	Moderate	Minor	Minor	Minor	Minor	Moderate	Moderate	2.3
Coastal Flood	Frequent	Moderate	Minor	Minor	Minor	Minor	Minor	Minor	2.1
Coastal Erosion	Frequent	Major	Negligible	Moderate	Moderate	Moderate	Major	Major	3.1
Pluvial Flood	Frequent	Minor	Minor	Minor	Minor	Negligible	Moderate	Moderate	2.1
River Flood	Frequent	Major	Minor	Minor	Moderate	Negligible	Moderate	Moderate	2.6
Groundwater Flood	Occasional	Minor	None	Negligible	Negligible	None	Negligible	None	0.7

Figure 15-1 - Climate Change Risk Assessment - Wicklow County Council (WCC, 2023)[57]

Other hazards that have the potential to cause natural disaster include wildfires, sea level rise and tsunamis.

The Annual Climate Statement 2024[58] (Met Éireann, 2024) reports that the average annual air temperature for Ireland increased by 0.55°C above the most recent 1991-2020 long-term average, making it the fourth warmest

[54] Government of Ireland, National Risk Assessment, Overview of Strategic Risks 2024, gov.ie - National Risk Assessment 2024 – Overview of Strategic Risks

[55] https://www.met.ie/

[56] Met Éireann, Storm Centre, 2025, https://cli.fusio.net/cli/stormcenter/index.html

[57] WCC, 2023, https://www.wicklow.ie/Portals/0/Documents/Environment/Climate%20Action%20Plan/Appendix%20B%20Climate%20Change%20RiskAssessment.pdf

[58] Met Éireann Annual Climate Statement, 2024 https://www.met.ie/annual-climate-statement-for-2024#:~:text=The%20average%20annual%20air%20temperature,the%20warmest%20year%20on%20record

year on record. Most of the annual rainfall totals across Ireland were below their long-term average 1981-2010 for 2024.

With regards to sea level rise, the Annual Climate Statement concludes:

'The latest Irish climate change projections indicate further warming in the future. This temperature change means the likelihood of extreme weather events occurring has increased. Irish rainfall patterns are expected to change, with an increase in both dry periods and heavy rainfall events. Global sea levels continues to rise. As a result, storm surge and coastal flooding risk around Irish coasts is expected to increase along with 'compound events' involving a combination of heavy rainfall and high tides. It is currently unclear how the frequency and intensity of storms impacting Ireland will change with climate change. There is high confidence, however, that maximum rainfall rates associated with these storms will increase with warming.'

The OPW Flood maps indicate low and medium risk of fluvial flooding along the River Dargle with numerous past flood events identified including in 1905, 1965, 1986 and 2002. CFRAM Flood risk at the Proposed Development is currently '*under review'.*

A Flood Risk Assessment conducted by ARUP (2025) concluded that '*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.'*

According to GSI (2025), while unlikely, the Irish coast is vulnerable to tsunamis from distant earthquakes and submarine landslides. The GSI believes that the likely worst-case tsunamis around Ireland would likely have a similar impact to the level of coastal flooding seen during storm surges. If this is the case, the Proposed Development is not likely to be affected by tsunamis.

As the Proposed Development is not vulnerable to wildfires, sea level rise or tsunamis, therefore these have not been considered further.

15.2.2 Geological and Seismic Hazards

There are several categories of geological hazards with the potential to cause natural disaster:

- Ground instability;
- Landslides;
- Ground collapse and sinkholes;
- Earthquakes; and,
- Tremors.

According to the Geological Survey Ireland (GSI), 2025[60] there is no history of landslides occurring at the location of the Proposed Development or the immediate surrounding area. Landslide susceptibility is classified as 'made' ground and low (inferred).

[60] Geological Survey Ireland, 2025, https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228

Irish National Seismic Network data[61] indicates that earthquakes in Ireland are rare with the largest reported earthquakes since 1980 having a magnitude of three. There have been no reported earthquakes within the vicinity of the Proposed Development. As the Proposed Development is not vulnerable to geological and seismic hazards, these have not been considered further.

15.2.3 Potential Sources of Offsite Hazards

There are 4no. licensed facilities within 3km of the Proposed Development, with the closest - Bray Chemicals Ltd (a licensed IEL) located ca. 269m from the Development.

There are 13no. Upper Tier Seveso Sites in County Dublin and 1no. in County Wicklow and 12no. Lower Tier Seveso Sites in County Dublin and 1no. in County Wicklow. The closest facility is Zoetis Belgium S.A. Ireland Branch (upper tier) located ca. 6km from the Proposed Development.

There will be an increase of traffic resulting from the Proposed Development during construction and operation. This has been considered and mitigated within Chapter 12 - Traffic.

Given the distance from site of any licenced and Seveso sites, these have not been considered further.

15.2.4 Assessment of Effects & Significance

The full assessment of major accidents and disasters is set out in Table 15-3. The following summarises the main findings.

15.2.4.1 Vulnerability of the Proposed Development to Natural Disasters

The Proposed Development is assessed as being at risk of minor impact from natural disasters, principally flooding and high winds. The likelihood of such disasters occurring is assessed as *'likely (once in 10-10 year event)'*.

15.2.4.2 Vulnerability of the Proposed Development to Main Onsite Hazards

Once operational, the Proposed Development is assessed as being at risk of minor impact from onsite hazards, road traffic accidents being considered the main threat. The likelihood of such disasters occurring is assessed as *'unlikely (once in 10-100 years)'*.

15.2.4.3 Vulnerability of the Proposed Development to Other Offsite Hazards

The Proposed Development is assessed as being at risk of minor impact from other onsite hazards during operation. The likelihood of such disasters occurring is assessed as '*unlikely (once in 10-100 years)'*.

15.2.4.4 Vulnerability of the Offsite Receptors to the Proposed Development

The Proposed Development will not impact on any licensed facilities or Seveso sites.

[61] Irish National Seismic Network, Catalogue of Local Earthquakes, 2025 https://www.insn.ie/confirmed/

15.2.4.5 Vulnerability Assessment

As illustrated in Table 15-3, none of the measured vulnerabilities have been classified with a residual risk score of above 4.

Table 15-3 - Risk Assessment

Risk	Risk Effect (Examples)	Likelihood	Unmitigated Impact	Evidence/Mitigation	Residual Impact	Residual Risk
Vulnerability of Proposed Development to Natural Disasters During Operation						
Extreme rainfall events and subsequent flooding	Flooding of the Proposed Development	3	2	Known incidences of extreme weather. Mitigation is addressed via. proposed drainage at the Proposed Development, and existing Flood Defence mechanisms along the River Dargle. A Flood Risk Assessment has been carried out for the Proposed Development by ARUP (2025). A Flood Emergency Response Plan has been prepared in conjunction with this Flood Risk Assessment report describing the plan in place in the event of a significant flooding or exceedance event (ARUP, 2025). 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, and setting 2no. of the retail unit spaces located within Block G, at levels of 3.5m AOD and 4.0m AOD respectively. 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 • Where raising of levels is not possible, demountable barriers and a water exclusion strategy is proposed for retail units (less vulnerable development).	1	3

Risk	Risk Effect (Examples)	Likelihood	Unmitigated Impact	Evidence/Mitigation	Residual Impact	Residual Risk
Strong winds, tornadoes	Increased pressure on Existing flood defences along the River Dargle	3	1	Known incidences of extreme weather Mitigation is addressed via. proposed drainage at the Proposed Development, and the design of the proposed development. A Flood Risk Assessment has been carried out for the Proposed Development by ARUP (2025). A Flood Emergency Response Plan has been prepared in conjunction with this Flood Risk Assessment report describing the plan in place in the event of a significant flooding or exceedance event (ARUP, 2025) or in the unlikely event of the existing flood defences failing (as detailed above).	1	3
High temperatures, heat waves and drought	Vulnerability to high temperatures, heat waves or drought due to climate change	3	2	Known incidences of extreme heat waves. Mitigation is addressed via. health and safety measures during construction, climate vulnerability has been assessed within Chapter 9 of the EIAR, and the design of the proposed development has taken account where relevant of this potential risk.	1	3
Vulnerability of Proposed Development from On-Site Sources During Operation						
Fire and/or explosion at the operational site	Road traffic accidents	3	3	Mitigation is addressed via. the design of the proposed development, appropriate traffic mitigation measures as presented in Chapter 12 of the EIAR, and implementation of road safety measures.	1	3
Impacts on road safety due to an increase in traffic movements associated with the Proposed Development	Increase in the number of vehicles travelling through Bray	4	2	Mitigation is addressed via. the design of the proposed development, appropriate traffic mitigation measures as	1	4

Risk	Risk Effect (Examples)	Likelihood	Unmitigated Impact	Evidence/Mitigation	Residual Impact	Residual Risk
				presented in Chapter 12 of the EIAR, and implementation of road safety measures.		
Vulnerability of Proposed Development from Off-site Sources During Operation						
Fire at a neighbouring site	Impact on the operation of the Proposed Development	3	1	None specifically - Neighbouring sites are residential and commercial in nature and therefore chances of fire are low.	1	3
Vulnerability of Other Receptors During Operation						
Impacts on road safety caused by the operational traffic of the Proposed development	Road traffic accidents involving Proposed Development's operational traffic	3	2	Mitigation is addressed via. the design of the proposed development, appropriate traffic mitigation measures as presented in Chapter 12 of the EIAR, and implementation of road safety measures.	1	3

15.2.5 Mitigation and Monitoring

As the Proposed Development will not have any significant effects on the potential for major accidents and disasters, there is no requirement for mitigation (over and above mitigation measures already detailed in the relevant technical chapters of this EIAR namely Chapter 7, Chapter 8, Chapter 9, Chapter 10, Chapter 12) to be implemented. No monitoring measures are proposed.

15.2.6 Residual Effects and Conclusions

There will be **no significant** residual effects as a result of the Proposed Development on the potential for major accidents and disasters during operation.

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[62], 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.

[62] WCC (2018) https://www.wicklow.ie/Portals/0/Documents/Planning/Development-Plans-Strategies/Local-Area-Town-Settlement-Plans/Bray/Bray-Municipal-District-Local-Area-Plan-2018/Bray%20MD%20LAP%202018-%202.%20Land%20Use%20Map-%20Bray%20Town%20and%20Environs.pdf

16. Cumulative Impacts

16.1 Introduction

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 Section 2.8. 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.

16.1 Methodology

As previously stated in Section 2.8 of Chapter 2 of this EIAR, potential cumulative impacts, are defined as 'the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects' (EPA, 2022) and have been considered for each environmental topic within this EIAR. A summary of all committed developments in the immediate environs of the proposed development, which have been approved by Wicklow County Council or ABP within the last 7 years, have been reviewed as part of the preparation of this EIAR (refer to Chapter 2). The majority of these developments have already been constructed or are of small scale in nature (i.e. extension works, or property retention works) or are considered to be a reasonable distance from the Site and so do not warrant further consideration as part of this assessment. Relevant committed development has been considered under three broad categories; residential development, development within adjacent business parks, and community and utility development. Each environmental topic, where relevant, includes a cumulative impact assessment of the proposed development with other committed developments in the immediate area. Therefore, each of the committed developments, which are not part of the existing environment, has been reviewed in terms of potential cumulative environmental impacts that may arise with the proposed construction and operation of this development.

The search of the Wicklow County Council planning records identified 6 no. committed developments within the vicinity of the Site as well as the proposed Sea Gardens Masterplan development and Bray Sustainable Transport Bridge; all of which have been assessed as part of this EIAR. Of these 6 no. developments, each individual environmental topic further assessed only the developments which had the potential to act cumulatively with the proposed development. Therefore, some environmental topics assessed only the Masterplan Development, while others assessed this development as well as other committed developments within the area.

The proposed project is a standalone project and is therefore not functionally dependent on the Sea Gardens Masterplan development or any element of such development. This cumulative impacts assessment has been supplemented by the assessment of elements of the future Sea Gardens Masterplan Phase 3 development as far as is practical at this stage. It is noted that the future masterplan development and all elements of such development are currently at preliminary design stage and will be subject to detailed assessment at future application. It is also noted that Phase 3 of the masterplan development will be a standalone development, and will undergo a separate planning application which will include an EIAR (where required).

16.2 Cumulative Impacts Assessment

16.2.1 Population & 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 Chapter 4 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 Investments 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 Chapter 4 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 créche) 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 Chapter 4 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 Chapter 4 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.

16.2.2 Biodiversity

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

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

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

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 créche) 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 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.

16.2.3 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 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 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 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 Chapter 6 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 créche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. Mitigation measures as identified within Chapter 6 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 Chapter 6 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 Chapter 6 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 Chapter 6 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.

16.2.4 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 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 the 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 Chapter 7 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 Chapter 7 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 Chapter 7 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 créche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. Mitigation measures as identified within Chapter 7 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 Chapter 7 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 Chapter 7 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 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 Chapter 7 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.

16.2.5 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 Section 8.8.1 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 for further details).

The 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). The operational stage impact is long-term, localised, direct, negative, and slight which is overall not significant.

16.2.6 Climate Change

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.

16.2.7 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 is 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 developments 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.

16.2.8 Landscape and Visual

The assessment of potential townscape and visual effects in 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 River Dargle, 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 River Dargle 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 11.1 of the EIAR.
- Wicklow Co. Co. Reg. Ref. 22203: This development is located adjacent to the site on Dwyer Park, set back from the River Dargle 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 11.1.

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.

16.2.9 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.

16.2.10 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.

16.2.11 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, 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.

17. Interactions

17.1 Introduction

This chapter describes interactions between impacts on different environmental factors. All potential interactions have been addressed as required throughout the EIAR. During the scoping, baseline assessment and impact assessment stages of this report, contributors (as set out in Section 1.3 of the EIAR) have liaised with each other where relevant to ensure that all such potential interactions have been robustly addressed. A detailed description of the proposed development is presented in Chapter 2 – Project Description.

17.2 Summary of Interactions

The interactions between each of the topics as discussed within Chapter 4 to Chapter 15 of this EIAR have been considered in order to determine the potential direct and indirect environmental impacts, via. various pathways, which could arise as a result of the proposed residential development. This section of the EIAR has been prepared in accordance with EPA 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2022) which states the following;

'*Some topics could be placed under more than one heading, for example where hydrogeology is a relevant topic it may be relevant under the heading of 'Aquatic Ecology' as well as under 'Water' or 'Ground Water.' Another example would be amenity which may be relevant under 'Population and Human Health' and 'Landscape'. The requirement for the EIAR to consider 'Interactions' addresses this issue by ensuring that effects are cross-referenced between topics, thus reducing the need to duplicate coverage of such topics*.'

A summary matrix showing significant interaction and interdependencies between environmental attributes specifically in relation to the proposed development is presented in Table 17-1. Each environmental topic considered within this EIAR is further discussed below, in Section 17.3 (Population and Health) to Section 17.13 (Cultural Heritage).

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			✖	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✖	✖	✖	✖	✖	✖
Chapter 5 - Biodiversity	✖	✖			✖	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✖	✖	✖	✖	✖	✖
Chapter 6 - Land, Soils & Geology	✓	✓	✖	✖			✓	✓	✓	✓	✓	✓	✖	✖	✖	✖	✖	✖	✓	✓	✖	✖
Chapter 7 - Water	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✖	✖	✖	✖	✖	✖	✓	✓	✖	✖
Chapter 8 – Air Quality	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✖	✖	✖	✖	✓	✓	✓	✓	✖	✖
Chapter 9 – Climate	✖	✖	✖	✖	✓	✓	✓	✓	✓	✓			✖	✖	✖	✖	✓	✓	✓	✓	✖	✖

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	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✘	✓	✓	✘	✘	✘	✘		

17.3 Population & Health

Population and human health attributes interact with other environmental attributes as outlined in Chapter 4 of this EIAR and summarised as follows:

Air Quality - Potential impacts on the receiving air quality could result in associated human health impacts. However, the mitigation measures described in Chapter 4 – Population and Human Health, and those relevant in Chapter 8 – Air Quality will ensure that this will not occur.

Climate - Potential impacts on the climate environment could also result in associated human health impacts. However, the mitigation measures described in Chapter 4 – Population and Human Health, and those relevant in Chapter 9 – Climate will ensure that this will not occur.

Noise & Vibration - Potential impacts on the receiving noise and vibration environment could also result in associated human health impacts. However, the mitigation measures described in Chapter 4 – Population and Human Health, and those relevant in Chapter 10 – Noise and Vibration will ensure that this will not occur.

Land, Soils & Geology - Potential impacts on the receiving land, soils and geology environment could also result in associated human health impacts. However, the mitigation measures described in Chapter 4 – Population and Human Health, and those relevant in Chapter 6 – Land, Soils and Geology will ensure that this will not occur.

Water - Potential impacts on the receiving water environment could also result in associated human health impacts. However, the mitigation measures described in Chapter 4 – Population and Human Health, and those relevant in Chapter 7 – Water will ensure that this will not occur.

17.4 Biodiversity

Biodiversity attributes interact with other environmental attributes as outlined in Chapter 5 of this EIAR and summarised as follows:

Landscape & Visual - The biodiversity of the receiving environment has informed the landscape design associated with the proposed development. The most significant proposed soft landscaping feature is the creation of the Central Park and Coastal Gardens which will form an ecological corridor running through the proposed development. This ecological corridor accommodates a variety of landscape typologies including woodland planting, hedgerows, wildflower meadows, standard sized trees, shrubs and grasslands. Potential impacts on the receiving landscape could also result in associated biodiversity impacts. However, the mitigation measures described in Chapter 5 – Biodiversity, and those relevant in Chapter 11 – Landscape and Visual will ensure that this will not occur.

Air Quality - Potential impacts on the receiving air quality could result in associated biodiversity impacts. However, the mitigation measures described in Chapter 5 – Biodiversity, and those relevant in Chapter 8 – Air Quality will ensure that this will not occur.

Climate - Potential impacts on the receiving climate environment could also result in associated biodiversity impacts. However, the mitigation measures described in Chapter 5 – Biodiversity, and those relevant in Chapter 9 – Climate will ensure that this will not occur.

Noise & Vibration - Potential impacts on the receiving noise and vibration environment could also result in associated biodiversity impacts. However, the mitigation measures described in Chapter 5 – Biodiversity, and those relevant in Chapter 10 – Noise and Vibration will ensure that this will not occur.

Water – Potential impacts on the receiving hydrology and hydrogeology environment could also result in associated biodiversity impacts. However, the mitigation measures described in Chapter 5 – Biodiversity, and those relevant in Chapter 7 – Water will ensure that this will not occur.

17.5 Land Soils & Geology

Land, soils and geology attributes interact with other environmental attributes are summarised as follows: -

Population & Human Health - Potential impacts on the receiving land, soils and geology environment could also impact on human health. Potential human health risks associated with quality impacts to soils arising from the proposed development during the Demolition and Construction Phase have been identified as follows

Potential risk to receptors (i.e., construction workers) through direct contact, ingestion or inhalation with any soils which may potentially contain hydrocarbon concentrations from Site activities (potential minor leaks and spills of fuels, oils and paint). However, this risk will be addressed by implementation of the mitigation measures outlined in Chapter 6 – Land, Soils and Geology..

In addition, based on Phase 2 soils analytical data, one contaminant of potential concern (Barium) with regards to human health risk has been identified within the soils / made ground beneath the Site (at locations TP305 (0.6m) and TP306 (0.5m)). However, barium is a naturally occurring trace element in Ireland, and the concentrations detected onsite fall within the typical background concentrations in Irish soils. Therefore, the source of Barium beneath the Site is considered likely to be naturally occurring soils. Based on the reported concentrations (99mg/kg and 89mg/kg respectively) and the proposed land use in these areas, these concentrations do not pose a future human health risk. No human health risks associated with soil quality beneath the site are anticipated.

Therefore, taking account of the baseline environmental setting and the proposed mitigation measures during the Construction Phase presented in Chapter 6 – Land, Soils and Geology, and those relevant in Chapter 4 – Population and Human Health, no human health risks associated with exposure to contaminants (via. direct contact, ingestion or inhalation) resulting from the proposed development are anticipated.

Air Quality & Climate - Potential impacts on the receiving land, soils and geology environment could also impact on air quality conditions present. However, the mitigation measures described in Chapter 6 – Land, Soils and Geology, and those relevant in Chapter 8 - Air Quality, and Chapter 9 - Climate Change will ensure that this will not occur.

Water - Potential impacts on the receiving land, soils and geology environment could also impact on surface water and groundwater conditions present. However, the mitigation measures described in Chapter 6 – Land, Soils and Geology, and those relevant in Chapter 7 – Water will ensure that this will not occur.

Material Assets Service Infrastructure & Utilities - Potential impacts on the receiving land, soils and geology environment could also impact on material assets. However, the mitigation measures described in Chapter 6 – Land, Soils and Geology, and those relevant in Chapter 13– Material Assets will ensure that this will not occur.

17.6 Water

Water attributes interact with other environmental attributes are summarised as follows: -

Population & Human Health - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on human health. Taking account of the baseline environmental setting and proposed mitigation measures described in Chapter 7 – Hydrology and Hydrogeology, and those relevant in Chapter 4 – Population

and Human Health during the demolition and construction, and operational phases, any human health risks to onsite or offsite receptors as a result of groundwater or surface water impacts will be imperceptible. No human health risks associated with long term exposure to contaminants (via. surface water or groundwater pathways) resulting from the proposed development are anticipated.

Biodiversity - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on biodiversity conditions present. However, the mitigation measures described in Chapter 7 – Hydrology and Hydrogeology, and those relevant in Chapter 5 – Biodiversity will ensure that this will not occur.

Air Quality & Climate - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on air quality conditions present. However, the mitigation measures described in Chapter 7 – Hydrology and Hydrogeology, and those relevant in Chapter 8 - Air Quality, and Chapter 9 - Climate will ensure that this will not occur.

Land, Soils & Geology - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on land, soils and geology conditions present. However, the mitigation measures described in Chapter 7– Hydrology and Hydrogeology, and those relevant in Chapter 6 – Land, Soils and Geology will ensure that this will not occur.

Material Assets Service Infrastructure & Utilities - Potential impacts on the receiving hydrology and hydrogeology environment could also impact on material assets. However, the mitigation measures described in Chapter 7 – Hydrology and Hydrogeology, and those relevant in Chapter 13– Material Assets will ensure that this will not occur.

17.7 Air Quality

Air Quality and Human Health and Population

Construction Phase; An adverse air quality impact during the construction phase can cause health and dust nuisance issues. There is a low risk of dust-related human health impacts during the construction phase of the proposed development. Best practice mitigation measures will implemented during the construction phase to ensure that the impact of the proposed development complies with all ambient air quality legislative limits. Therefore, the predicted impact is direct, short-term, negative, localised and not significant with respect to Population and Human Health during the construction phase.

Operational Phase; Vehicles accessing the site will emit pollutants which may impact Air Quality and Human Health. However, the increased number of vehicles associated with the proposed development will not cause a significant change in air pollutant emissions in the locality. It has been assessed that emissions will be in compliance with the ambient air quality standards which are set for the protection of human health. Impacts will be long-term, localised, direct, negative and not significant.

Air Quality and Climate

Air Quality and Climate have interactions as the emissions from the burning of fossil fuels during the construction and operational phases generate both air quality and climate impacts. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

Air Quality and Land, Soils and Hydrogeology

Construction Phase; Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between Air Quality and Land and Soils in the form of dust emissions. With

the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils during the construction phase.

Operational Phase; There are no potentially significant interactions identified between Air Quality, and Land and Soils during the operational phase.

Air Quality and Biodiversity

Construction Phase; Dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. A high level of dust mitigation is proposed to ensure no significant effects occur. With the implementation of these mitigation measures dust emissions will be minimised and impacts will be direct, short-term, negative, localised and not significant with respect to biodiversity.

Operational Phase; There are no potentially significant interactions identified between Air Quality and Biodiversity during the operational phase.

Air Quality and Material Assets – Traffic & Transport

Construction Phase; Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the proposed development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between Traffic and Air Quality are considered to be direct, short-term, neutral, localised and not significant during the construction phase.

Operational Phase; The impact of the interactions between Traffic and Air Quality are considered to be long-term, direct, negative and not significant during the operational phase.

17.8 Climate

Climate has the potential to interact with a number of other environmental attributes.

Land, Soils, Geology and Hydrology - The impact of flood risk has been assessed and the surface water drainage network will be designed to cater for increased rainfall in future years as a result of climate change. The effect of the interactions between climate and land, soils, geology and hydrology are direct, short-term, negative and imperceptible during the construction phase and direct, long-term, negative and imperceptible during the operational phase, which is overall not significant in EIA terms.

Air Quality - Air quality and climate have interactions due to the emissions from the burning of fossil fuels during the construction and operational phases generating both air quality and climate impacts. Air quality modelling outputs are utilised within the Climate Chapter. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

Traffic and Transportation - During the construction and operational phase, there is the potential for interactions between climate and traffic. Vehicles accessing the site will result in emissions of CO2, a greenhouse gas. The effects of the proposed development on climate are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the effects of the interactions between traffic and climate are considered to be direct, short term, negative and not significant during the construction phase and direct, long-term, negative and not significant during the operational phase, which is overall not significant in EIA terms.

Waste - Waste management measures will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as recycling. The effect of the interactions between waste and climate are considered to be direct, short-term, negative and not significant during the construction phase and direct, long-term, negative and not significant during the operational phase, which is overall not significant in EIA terms.

17.9 Noise & Vibration

In compiling the impact assessment, reference has been made to the project description provided by the project co-ordinators, project drawings provided by the project architects and traffic flow projections associated with the development provided by the traffic consultants.

Population and Human Health - There is an interaction with Human Health, which has informed Chapter 4 - Population and Health of this EIAR.

Traffic - Interactions between noise quality and traffic can be significant. With increased access to the site, comes increased traffic movements and increased noise levels. However given the likely traffic volumes during the construction stage in this assessment, the impact of the interactions between traffic and noise quality are considered to be imperceptible.

17.10 Landscape & Visual

Landscape/Townscape and Population and Human Health (Noise and Dust Emissions)

During the construction phase, there is potential for negative landscape and visual effects of construction to combine with noise and dust emissions from the construction site to negatively affect the residential amenity of residential areas/receptors near the site. These include Dwyer Park to the west, the Coastal Quarter (once complete and occupied) to the north and – to lesser extent due to a wider separation distance - Seapoint Court and the riverside houses on Seapoint Road across the River Dargle to the south.

Landscape/Townscape and Population and Human Health

Following the construction phase, the remainder of the former Bray Golf Club lands would be transformed into a mixed use, mixed density urban quarter with a large new resident population. This population would benefit directly from the change in the townscape – from the provision of homes and shops, etc., a network of public open spaces and a network of pedestrian and cycle routes connecting the new quarter to the surrounding townscape.

The central location adjacent to the town centre, the associated access to rail and bus services, and access to nearby existing public open space (e.g. the Promenade, Bray Head, People's Park) for active recreation, would promote a healthy lifestyle for the new population.

Landscape/Townscape and Climate Change

The change in townscape character by the introduction of high density residential building typologies, has implications for climate change. Higher density development, appropriately located, is more sustainable than low density development. The new resident population, adjacent to the existing town centre, would have access - by foot or bicycle - to shops, services, schools, employment opportunities, public transport services and public open space, reducing the need for use of private cars.

Landscape/Townscape and Biodiversity

It is proposed to remove a large number of existing (former golf course) trees 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 for maximum habitat/biodiversity value.

17.11 Traffic

All interactions with traffic during both Construction and Operational Phases have been identified in the relevant Chapters and where appropriate, mitigation measures have been applied. The following provides a summary of the identified interactions:-

Air Quality and Climate - During the construction stage, on-site construction works will contribute to a temporary decrease in air quality. In the development operational stage traffic generation associated with the development will contribute to increased traffic volumes on the surrounding network which in turn will decrease air quality. Further details in relation to direct impacts are addressed in Chapter 8 – Air Quality and Chapter 9 – Climate.

Noise and Vibration - During the construction stage, development of the Site will result in a short term increase of construction traffic related to noise and vibration. In the development operational stage, traffic generation associated with the development will contribute to increased noise levels on the surrounding local road network. Further details in relation to direct impacts are addressed in Chapter 10 – Noise and Vibration

17.12 Material Assets

Material Assets attributes interact with other environmental attributes summarised as follows:

Land, Soils & Geology, Water , **Air Quality and Climate** - Waste management strategies during the construction phase of the proposed development have been informed by the receiving land, soils and geology environment. Refer to Chapter 6 – Land, Soils and Geology, Chapter 7 – Water, Chapter 8 – Air Quality, Chapter 9 - Climate and relevant sections including mitigation measures described in Chapter 13 – Material Assets.

Traffic - Traffic is one of the environmental attributes typically assessed under Material Assets. For the purposes of this EIAR a full Traffic Impact Assessment has been undertaken and is presented in Chapter 12 – Traffic, along with all relevant mitigation measures.

17.13 Cultural Heritage

It was considered that the Landscape and Visual aspect of the environment assessed in this EIAR may have had the potential to interact with the assessment of effects on the cultural heritage resource. The Landscape and Visual assessment detailed in Chapter 11 of the EIAR was, therefore, reviewed during the compilation of this assessment. Following review of the landscape and visual assessment no interaction of consequence with cultural heritage was identified.

18. Schedule of Environmental Commitments

All mitigation and monitoring commitments detailed within this EIAR have been included in a separate compendium and are presented in Table 18-1 and 18-2 below. Together these tables form the Schedule of Environmental Commitments which will be implemented as required during the construction and operational phases of the proposed development for Sea Gardens Phase 2. In addition, the following reinstatement commitments must be fully implemented upon completion of the construction phase:

- All temporary construction compounds and site entrances are to be removed upon completion of the construction phase. Such areas are to be reinstated in accordance with the landscape architects plan and engineer's drawings;
- All construction waste and / or scrapped building materials are to be removed from the Site on completion of the construction phase;
- Oil, fuel etc. storage areas are to be decommissioned on completion of the construction phase; and,
- Any remaining liquids are to be removed from Site and disposed of at an appropriately licenced waste facility.

All of the mitigation and monitoring commitments detailed below have been incorporated into the Outline Construction Environmental Management Plan (CEMP) submitted as part of this planning application; this is a live document which will be further added to in the Detailed CEMP prepared by the Contractor and will include any future additional mitigation measures as may be required.

Table 18-1 - Schedule of Environmental Commitments – Mitigation Measures (Construction and Operational Phases)

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 4 – Population and Human Health	During the construction phase, all legal duties under the Construction Regulations (Safety, Health and Welfare at Work (Construction) Regulations 2013) will be adhered to. In accordance with these duties, a Project Supervisor Design Process (PSDP) will be appointed by the relevant contractor to co-ordinate the design effort and minimise the construction risks during the design period. In addition, a Project Supervisor - Construction Stage (PSCS) will be appointed to coordinate and supervise all safety aspects of the project. The CEMP (document ref.: 0089313DG0029) for the project which accompanies this planning application, sets out the basic measures to be employed in order to mitigate potential negative effects during construction. This document represents a comprehensive approach to construction phase mitigation which in accordance with good practice, will be refined and added to as the project proceeds on Site. The CEMP includes the following with regard to population and human health. *"A rodent and pest control plan will be put in place so as to manage and limit any potential disturbance to populations that may utilise the Site. The pest control plan will be in accordance with the Chartered Institute of Environmental Health's "Pest minimisation Best practice for the construction industry" guidelines or a similar appropriate standard."* Procedures shall also be adopted to ensure that noise impacts from construction operations are minimised, to protect local amenity as detailed in Chapter 10 - Noise and Vibration. The proposed mitigation measures to minimise noise impacts during the construction phase are detailed in Section 10.8.1 in Chapter 10 – Noise and Vibration. Prior to the commencement of construction, the CEMP will be refined by the selected contractor prior to work commencing on Site. The main purpose of a CEMP is to provide a mechanism for implementation of the various mitigation measures which are described in this EIAR and contained within the CEMP that accompanies this application under separate cover. All personnel will be required to understand and implement the requirements of the CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites. Mitigation measures will be implemented during the detailed design, and construction phase, and are detailed in full in the following sections of this EIAR: Chapter 6 – Land, Soils and Geology, Chapter 7 – Water		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	, Chapter 8 – Air Quality, Chapter 9 – Climate and Chapter 10 – Noise and Vibration, Chapter 11 - Landscape and Visual Impact Assessment. Adherence to the construction phase mitigation measures presented in this EIAR will ensure that the construction of the Proposed Development will have an imperceptible and neutral impact in terms of health and safety.		
Chapter 4 – Population and Human Health	Taking account of the relevant mitigation measures to be implemented during the Detailed Design Stage and Demolition and Construction Stage (including the installation of an appropriate ground gas membrane beneath Block H), no further mitigation measures will be required during the operational phase.		
Chapter 5 – Biodiversity Chapter 5 – Biodiversity	The appointed Contractor shall ensure specialist ecological surveying is undertaken where required i.e. mammal surveys, bat surveys, and nesting bird surveys as detailed further below. Construction phase ecological mitigation measures shall be developed and undertaken in coordination with ecological specialists (i.e. bat specialist and suitably qualified ecologist) as required. Pre-construction / pre-Site clearance bat surveys by the Contractor appointed suitably qualified ecologist to assess if bats have established roosts within the Site. If protected bats roosts are found within the Site, then consultation with NPWS will be undertaken by the project ecologist and associated method statements and mitigation will be proffered and derogation sought from NPWS. Pre-construction / pre-Site clearance terrestrial mammal surveys will be undertaken by the Contractor appointed suitably qualified ecologist to assess if badgers, or any other protected mammals, have established refugia (e.g. a badger sett) within the Site. If protected mammal refugia is found within the Site, then consultation with NPWS will be undertaken by the project ecologist and associated method statements and mitigation will be proffered and derogation sought from NPWS. **Protection of Sites Designated for Nature Conservation** Protection of sites designated for conservation, and the features of interests associated with designated sites, is through prevention of potential impacts to surface waters and the aquatic environment during the construction phase, refer to section Prevention of pollution to surface waters, below.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	Mitigation measures as set out in Chapter 6 – Land, Soils and Geology; and Chapter 7 – Water will also be implemented during the Construction phase. Works will follow best practice guidance as outlined in *Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters* (IFI, 2016). **Mitigation of habitat loss/damage during construction** 45 no. trees are to be retained on-site; trees will be protected from any accidental damage during construction by means of exclusion through use of fencing. This is set out in full in the accompanying Tree Survey Report and Landscape Planting Plan. Measures will be taken to ensure that trees being retained are incorporated into the development without being impacted upon. Protective fencing will be provided around retained trees and fencing will be erected so as to encompass the Root Protection areas (RPAs) of trees and hedgerows. The fencing will be at least 2m high and constructed in accordance with the RPA outlines in the Tree Survey Report (Appendix 5.1). Site clearance of potential bird nesting habitat is detailed below. To compensate for the loss of trees substantial native tree planting will be planted on the Site. This will reduce the impact of the proposed development upon habitats in the area and there will be no significant operational impact upon habitats due to the provision of substantial native and pollinator friendly habitats proposed for the Site (refer to Landscape Planting Plan Drawings Nos. 2301-PA-00 to 10). **Bats** **Loss of Foraging and Commuting Habitat** Loss of commuting and foraging habitat at the Site will be mitigated by the landscaping proposals, which include extensive tree, shrub and wildflower planting. Planting schemes should ensure connectivity to linear/woodland habitats in the wider landscape. Trees that are being retained in the Site shall be protected during clearance and construction works in line with current guidelines e.g. British Standard 5837:2012 and National Roads Authority 2006a.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	**Lighting** To minimise disturbance to bats and other fauna (badger and otter) that are roosting/resting or active at night, no construction operations will be undertaken during the hours of darkness during spring and summer months (i.e. when bats are active). If construction lighting is required during the bat activity period (dusk April to September), lighting shall be directed away from all boundary habitats. This can be achieved by using directional lighting (i.e. lighting which only shines on the proposed works and not nearby countryside) to prevent overspill. **Birds** Removal of nesting habitat (scattered trees and treeline by local and common bird species) will be carried out outside the breeding bird season from 1st March to 31st August inclusive. Where nesting habitat clearance cannot be avoided during this period the NPWS will be consulted in advance and if, in consultation, it is deemed necessary then a suitably qualified ecologist will be appointed by the Contractor to oversee clearance of nesting habitat and ensure the area is free of nesting birds. The appointed ecologist will develop a method statement for the nesting habitat clearance in consultation with local NPWS staff. The comprehensive landscaping design calls for the planting of native trees and plant species suitable for pollinating insect species. The landscape design should provide for a net gain in suitable bird nesting and foraging habitat. The landscaping design has followed the principles outlined in the All-Ireland Pollinator Plan 2021-2025. **Terrestrial mammals** **Badgers** During the construction phase the Contractor will adhere to the '*Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes*' (NRA 2006). The Site and all areas within 150m around the perimeter of the Site will be resurveyed for badger activity and the presence of setts by a suitably qualified ecologist (appointed by the Contractor) prior to the commencement of construction activities. Should an active sett be noted within the Site or survey area, NPWS will be informed and consulted. The suitable qualified ecologist will develop a method statement in agreement with NPWS for construction activities near an active badger sett. Method statement for works near an active sett will include; there shall be no blasting		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	or pile driving within 150m of an active sett during the breeding season (December to June) or construction works within 50m of such an active sett during the breeding season. The creation of an ecological buffer zone along the eastern boundary of the overall Masterplan Lands will allow for connectivity of habitats and the continuance of the site to be used as a badger foraging area. The buffer zone allows for connectivity between Rathmichael woodlands/stream and the River Dargle and includes easy access for mammals to the railway underpass which leads to scrub habitat and Woodbrook golf club lands which are known to be badger foraging territory. During the construction phase no works will be undertaken during night time hours and as such the construction activities will not take place whilst local badgers are foraging. During the construction phase an access track will be in situ along the northern and eastern boundaries which will allow for continued connectivity from Rathmichael woodlands to the railway underpass and to the important foraging habitats to the east of the railway line. During the construction phase the following standard management and protection measures will be implemented during the construction works and monitored by the project ecologist: ▪ No excavations are to be left uncovered overnight or without a means of egress (e.g. a ramp or sloped plank) to prevent badgers from falling in or entering in search of food and becoming trapped; ▪ No buildings or storage units are to be left open overnight to prevent badgers from entering in search of food and becoming trapped; ▪ All food waste is to be properly secured and disposed of to avoid attracting badgers to the Site; ▪ No toxic, poisonous or potentially harmful substances or materials are to be left unsecured overnight; and, ▪ Should any new badger setts or mammal burrows be discovered within the Site or immediately adjoining areas the project ecologist is to be contacted for immediate inspection, advice and liaison with NPWS as necessary. **Otters** Protection of otters is through prevention of potential impacts to surface waters and the aquatic environment during the construction phase, refer to Section Prevention of pollution to surface waters, below.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	**Prevention of pollution to surface waters** With regard to potential surface water quality impacts the following construction phase mitigation measures are proposed: - ▪ The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guidelines '*Control of Water Pollution from Construction Sites' and 'Groundwater control - design and practice*' and CIRIA 2010 '*Environmental Good Practice on Site'* to minimise as far as possible the risk of pollution. ▪ Works will follow best practice guidance as outlined in Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016). ▪ The existing drainage network, specifically along the existing road, and as required elsewhere across the site, will be suitably protected (via. the use of physical barriers and / or the implementation a Site-specific water run-off management plan as required). ▪ A response procedure will be put in place to deal with any accidental pollution events. Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the proposed development and properly disposed of in accordance with all relevant waste management legislation: - ▫ All Site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area; ▫ All oil stored on Site for construction vehicles will be kept in a locked and bunded area; ▫ Generators, pumps and similar plant will be placed on drip-trays to prevent contamination; ▫ All Site vehicles used will be refuelled in bunded areas; ▫ All temporary construction fuel tanks will also be located in a suitably bunded area and all tanks will be double skinned. Relevant Material Safety Data Sheets along with oil absorbent materials will be kept on Site in close proximity to any fuel storage tanks or bowsers during proposed Site development works; and,		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	▫ All fuel / oil deliveries to on-Site oil storage tanks will be supervised, and records will be kept of delivery dates and volumes. ▪ In order to prevent any potential surface water impacts via release of cementitious materials the following measures will be implemented where poured concrete is being used on Site; ▫ The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on Site and therefore these aspects will not pose a risk to the waterbodies present, namely the River Dargle or the Irish Sea; ▫ Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed; ▫ Any spillages will be cleaned up and disposed of correctly; ▫ Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening; ▫ Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete; ▫ Mixer washings and excess concrete will not be discharged directly into the drainage network, or any drainage ditches, surface water bodies or exposed groundwater; and, ▫ Surplus concrete will be returned to batch plant after completion of a pour. **Surface Water Drainage Outfall Installation Works** The construction methodology for the installation of the surface water drainage outfall on the River Dangle's flood defence wall / promenade will include the following measures to ensure there are no adverse water quality impacts which could affect the aquatic environment:-		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	▪ The installation of the surface water drainage outfall pipe on the man-made northern bank of the River Dargle shall follow the same construction methodology as was utilised during the Phase 1 Coastal Quarter Development for outfall pipe installation. ▪ The flood defence / sea defence wall directly alongside the river channel will remain entirely in situ and intact whilst the promenade path and subbase materials on the landside / northside of the flood defence wall are being excavated to create a pipeline route. There will be no excavation or breaking up of the flood defence wall itself. ▪ A working platform using scaffolding framework (or similar) shall be hung / suspended from flood defence wall on the river channel side to create a works area for core drilling through the flood defence wall. The scaffolding framework shall be covered to prevent rainfall ingress and dust and debris egress from the working platform area. The working platform will be hung / suspended above water level. ▪ The flood defence wall will be core drilled (225mm diameter) from the working platform, i.e. drilling direction will be towards landside, so that no drilled materials fall into the river channel. ▪ Following completion of the core drilling, the outfall pipe will be installed through the hole and grouted followed by bolting on the non-return valve. ▪ No excavations within or above the river channel will be permitted. ▪ No mechanical equipment bar the core dill shall be used above the river channel. • No cement or viscous substances, bar grouting material, shall be used above the river channel. Mitigation measures as set out in Chapter 6– Land, Soils and Geology and Chapter 7– Water will be implemented during the Construction phase. Works will follow best practice guidance as outlined in *Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters* (IFI, 2016). **Biosecurity measures** One singular Japanese knotweed plant was found on Site along the proposed entrance roadway (northwest Site boundary). The excavation works in the area of the knotweed plant will be supervised by the Contractor appointed suitably qualified ecologist or an Invasive Plant Species Specialist. The Contractor's ecologist or specialist shall supervise the excavation works to ensure the development site is free from all Japanese knotweed plant material prior to road construction in the northwest of the Site. Surface plant materials and all knotweed rhizomes will be excavated and removed off Site by an appropriately licenced haulier for		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	disposal to a licenced waste facility (e.g. IMS[63] in Naul). The Contractor's ecologist / specialist will develop Site biosecurity methodologies to ensure plant and equipment is clean and free of knotweed plant material post knotweed excavation works. It is recommended that a herbicide spraying programme is undertaken for the knotweed stand located in the lands Off Site (subject to landowner agreement). Strict bio-security protocols will be implemented during the construction phase so as to ensure no imported materials potentially contaminated with invasive plant species are brought to Site. All imported soil materials will be visually inspected by the Contractor's ecologist for signs of invasive plant contamination (such as root fragments, rhizome material) prior to arrival on Site. The area of knotweed will be inspected one year after works are complete to ensure that there has been no res-stablish of knotweed within the Site. **Disturbance of faunal species mitigation** Removal of nesting habitat (scattered trees and woodland) will be carried out outside the breeding bird season from 1st March to 31st August inclusive. Where nesting habitat clearance cannot be avoided during this period the NPWS will be consulted in advance and if, in consultation, it is deemed necessary then a suitably qualified ecologist will be appointed by the Contractor to oversee clearance of nesting habitat and ensure the area is free of nesting birds. The appointed ecologist will develop a method statement for the nesting habitat clearance in consultation with local NPWS staff. **Additional Construction Phase Ecological Mitigation Measures** With regard to potential impacts on ecological features the following mitigation measures are proposed: ▪ The Contractor shall engage a suitably experienced and qualified ecologist and/or specialist ecologist to undertake the required ecological surveying prior to construction activities. Pre-construction ecological surveys should include; terrestrial mammal surveys, bat roost surveys and breeding bird surveys (breeding bird surveys will be required if vegetation clearance is to be undertaken within nesting season 1st March – 31st August);		

[63] https://www.imsirl.ie/

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	▪ The Contractor shall employ good practice environmental and pollution control measures with regard to current best practice guidance such as Environmental Good Practice On-site Guide (CIRIA, 2018); ▪ The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guides 'Control of Water Pollution from Construction Sites' and 'Groundwater control - design and practice' to minimise as far as possible the risk of pollution; ▪ All of the mitigation measures for the protection of soils listed in Chapter 6 will be implemented onsite during the construction phase; ▪ The Contractor shall take all necessary precautions to potential impact upon aquatic species of the River Dargle from construction activities. The mitigation measures for prevention of potential surface water impacts as detailed in Water Chapter 7 shall be implemented; ▪ The Contractor shall take all necessary precautions to prevent potential impact upon aquatic species of the River Dargle via the local groundwater body. All groundwater mitigation measures as outlined in Chapter 7 - Water shall be implemented; and, ▪ The Contractor shall take all necessary precautions to prevent potential impact upon habitats and species from dust generated during the construction phase. All air quality mitigation measures as outlined in Chapter 8- Air Quality shall be implemented. The above mitigation measures will form part of the Construction Environmental Management Plan (CEMP) submitted as part of this planning application, and which will be further added to by the Contractor within the project-specific Detailed CEMP which will be in operation during the construction phase. **Design Measure Mitigation** **Landscaping** A comprehensive landscaping design has been developed for the Site which will include for the creation of an ecological buffer zone along the eastern boundaries of the Site. In line with WCC Biodiversity Action Plan and the All Ireland National Pollinator Plan and in order to create a biodiversity net grain at the Site the landscaping plan will include areas of ecological enhancement such as substantial areas of tree planting and wild flower areas. The planted areas will link with the Rathmichael woodland and the River Dargle. The landscape design includes for linear shrub planting along the eastern boundary adjacent to the railway line to provide cover for the movement of terrestrial mammals and to provide for habitat suitable for local		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	passerine bird species. This planting will comprise an appropriate mixture of trees and shrubs, preferably of local provenance, and including species attractive to pollinators. The planting will incorporate a range of species that will attract feeding invertebrates, including moths, butterflies and bees. Refer to Landscape Planting Plans (Drawings Nos. 2301-PA-00 to 10) for details of the landscaping design. The landscape planting design provides for a net gain in number of trees within the Site. There are 535 no. standard sized trees (3-4m height) and 447 no. of semi-standard sized trees (c. 2m) within the planting schedule. Included within the proposed design including species:- *Pinus nigra subsp. nigra* (Black Pine), *Betula pendula* (Silver Birch), *Magnolia grandiflora* (Southern Magnolia), *Arbutus unedo* (Strawberry Tree), *Tamarix tetrandra* (Four-angled Tamarisk), *Gleditsia triacanthos* (Honey Locust), *Tilia tomentosa* (Silver Lime), *Pinus sylvestris* (Scots Pine), *Quercus cerris* (Turkey Oak), *Crataegus leavigata* (Crimson Hawthorn) and *Prunus 'Accolade'* (Accolade Cherry). Small trees; *Pinus Chamaerops humilis cerifera* (Mediterranean Fan Palm), *Syringa vulgaris* (Common Lilac), *Cotinus coggygria* (Smoke Tree), *Argyrocytisus battandieri* (Moroccan Broom), *Erica arborea* (Tree Heath), *Sambucus nigra black lace* (Black Lace Elderberry), *Ceanothus arboreus* (California Lilac), *Pinus mugo* (Mugo Pine), *Crataegus monogyna* (Common Hawthorn) and *Cornus florida* (Flowering Dogwood). The soft landscaping design includes for extensive areas of herbaceous shrub planting; c.174,150 no. including species:- *Achillea ptarmica flore pleno (Sneezewort), Agapanthus africanus albus (White Agapanthus), Agapanthus africanus 'big blue' (Big Blue Agapanthus), Alcea rosea spotlight blacknight (Blacknight Hollyhock), Armeria maritima (Thrift), Anemanthele lessoniana (Wind Grass), Anthriscus sylvestris ravenswing (Ravenswing Chervil), Bupleurum fruticosum (Shrubby Hare's Ear), Crambe cordifolia (Giant White Crambe), Chasmanthium latifolium (Northern Sea Oats), Dierama pulcherrimum (Angel's Fishing Rod), Dryopteris filix mas (Male Fern), Echinops ritro (Globe Thistle), Erigeron karvinskianus (Mexican Fleabane), Eryngium big blue (Big Blue Sea Holly), Eryngium yuccifolium (Rattlesnake Master), Euphorbia wulfenii (Wulfen's Spurge), Foeniculum vulgare 'Smoky' (Smoky Fennel), Francoa bridal wreath (Bridal Wreath), Geranium rozanne (Rozanne Geranium), Grevillea canberra gem (Canberra Gem Grevillea), Helianthemum the bride (The Bride Rock Rose), Helleborus hybridus (Lenten Rose), Helleborus niger (Christmas Rose), Hemerocallis black emanuelle (Black Emanuelle Daylily), Hydrangea quercifolia (Oakleaf Hydrangea), Hydrangea serrata blue bird (Blue Bird Hydrangea), Iris barbata elatior louvois*		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	*(Louvois Bearded Iris), Kniphofia 'Bees Lemon' (Bees Lemon Torch Lily), Lobularia maritima (Sweet Alyssum), Limonium gmelinii (Gmelin's Statice) and Lychnis coronaria alba (White Campion).* The soft landscaping design includes for extensive areas of bulb planting, 47,000 no., including species; Allium *purple sensation* (Allium), *Camassia leichtlinii* 'alba' (White Camas), *Camassia leichtlinii* caerulea (Blue Camas), *Eremurus cleopatra* (Cleopatra Foxtail Lily), *Fritillaria persica* 'minaret' (Persian Fritillary), *Galanthus nivalis* (Snowdrop), Galtonia *candicans* (Summer Snowflake), *Hyacinthoides non-scripta* (Bluebell), *Iris hollandica* 'black beauty' (Black Beauty Dutch Iris), *Iris hollandica* 'lion king' (Lion King Dutch Iris), *Leucojum aestivum* (Summer Snowflake), *Muscari magic mix* (Grape Hyacinth), *Narcissus 'Thalia'* (Thalia Daffodil), *Nerine bowdenii* 'alba' (White Nerine), *Tulipa ballerina* (Ballerina Tulip), and *Tulipa 'purissima'* (Purissima Tulip). Extensive areas of wildflower meadows are also included in the soft landscaping design including species: - Black *veris* (Cowslip), *Knautia arvensis* (Field Scabious), *Lotus pedunculatus* (Greater Bird's-foot Trefoil), *Eupatorium cannabinum* (Hemp Agrimony), *Lesser Knapweed* (*Centaurea nigra*), *Ranunculus acris* (Meadow Buttercup), *Leucanthemum vulgare* (Ox-eye Daisy), *Lythrum salicaria* (Purple Loosestrife), *Silene flos-cuculi* (Ragged Robin), *Plantago lanceolata* (Ribwort Plantain), *Hypochaeris radicata* (Rough Hawksbit), *Prunella vulgaris* (Selfheal), *Malva moschata* (Musk Mallow), *Daucus carota* (Wild Carrot), *Oenothera biennis* (Wild Primrose), *Stachys sylvatica* (Hedge Woundwort), *Achillea millefolium* (Yarrow), *Rhinanthus minor* (Yellow Rattle), *Agrostis capillaris* (Browntop Bentgrass), *Agrostis stolonifera* (Slender Creeping Red), and *Festuca rubra* (Chewings Fescue). There is 1140m^2 of woodland screen planting for the new access road area including the following species; Alder (*Alnus glutinosa*), Silver Birch (*Betula pendula*), Hawthorn (*Crataegus monogyna*), Burning Bush (*Euonymus alatus*), Sweet Box (*Sarcococca confusa*), Siberian Dogwood (*Cornus alba sibirica*), Tatarian Dogwood (*Cornus alba kesselringii*), Juneberry (*Amelanchier lamarckii*), Dogrose (*Rosa canina*), Wild cherry (*Prunus avium*) and Black Elder (*Sambucus nigra* 'Black Lace'). Alder catkins provide an early source of nectar and pollen for bees, and the seed are eaten by birds[64]. Silver birch provides food and habitat for more than 300 insect species. Seeds are often eaten by a range of birds. Hawthorn is a food plant for the caterpillars of many moths, its flowers also provide nectar and pollen for bees and flies to enable pollination.		

[64] https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/a-z-of-british trees/alder/#:~:text=Value%20to%20wildlife,the%20siskin%2C%20redpoll%20and%20goldfinch.

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	Burning bush can be found at a woodland edge or an exposed or coastal location. Sweet box plant provides nectar and pollen for bees and other pollinating insects. Siberian dogwood can be used as a hedgerow plant and is provides berries for birds and small mammals in late summer[65]. Juneberry blossom in the spring and its berries are foraged by birds. Dog rose can be found in hedgerows, woodland edges and on scrubland and small birds are able to extract the seeds[66]. Wild cherry, the spring flowers provide an early source of nectar and pollen for bees; while the cherries are eaten by birds, its hollow branches provide nest chambers for bumble bee larvae, and shelter for hibernating insects[67] There is 674m of hedging proposed within the landscaping design including the following species; *Fagus sylvatica* (European Beech), and *Crataegus monogyna* (Hawthorn). **Bats** The following recommendations for enhancement are adapted from Landscape and Urban Design for Bats and Biodiversity (BCT, 2012). To attract nocturnal flying insects, plant: ▪ Mixtures of flowering plants, trees and shrubs to encourage a diversity of insects to sustain bats and other wildlife throughout the year. New planting will include pollinator-friendly tree species (Refer to Landscape Planting Plan); ▪ Hedgerows will include a range of different species to provide food throughout the year, for example blackthorn for early season nectar; hawthorn and bramble for summer flowers and autumn berries; ivy for autumn nectar and later winter berries; ▪ Flowers that vary in colour, fragrance, shape, amount of nectar and time of flowering; ▪ Pale flowers that are more easily seen in poor light, so attracting insects at dusk;		

[65] https://www.fernhill.ie/news/762/dramatic-dogwoods-winter-s-best-friend?srsltid=AfmBOoqavoxOI1QM2IYq3BRLsyrUM-5RuTcyW6ara7jfbbmFNfmKUUPF

[66] https://www.treecouncil.ie/native-irish-tree-item/dog-rose-

[67] https://www.treecouncil.ie/native-irish-tree-item/elder-

<table>
<tr><th>Environmental Topic</th><th>Schedule of Environmental Commitments – Mitigation Measures</th><th>Construction Phase</th><th>Operational Phase</th></tr>
<tr><td>Chapter 5 – Biodiversity</td><td>

Single flowers, which tend to produce more nectar than double varieties; and
Flowers with insect-friendly landing platforms and short florets, like those in the daisy families.

Birds
Within the landscape plan wildflowers, shrubs and trees which have the potential to support foraging populations of birds are proposed in the landscape plan and include (non-exhaustive list): -
<table>
<tr><th>Common Name</th><th>Scientific Name</th><th>Location</th></tr>
<tr><td>Hawthorn</td><td>Crataegus monogyna</td><td>Central Park, Residential</td></tr>
<tr><td>Holly</td><td>Ilex aquifolium</td><td>Central Park</td></tr>
<tr><td>Rowan/Mountain Ash</td><td>Sorbus aucuparia</td><td>Residential</td></tr>
<tr><td>African lily</td><td>Agapanthus africanus</td><td>Central Park, Residential</td></tr>
<tr><td>Thrift</td><td>Armeria maritima</td><td>Western Gateway, Residential</td></tr>
<tr><td>Honeysuckle</td><td>Lonicera periclymenum</td><td>Residential</td></tr>
<tr><td>Crab apple</td><td>Malus sylvestris</td><td>Residential</td></tr>
<tr><td>Silver Birch</td><td>Betula pendula</td><td>Central Park, Residential</td></tr>
<tr><td>English Oak</td><td>Quercus robur</td><td>Central Park</td></tr>
<tr><td>Hazel</td><td>Corylus avellana</td><td>Central Park</td></tr>
<tr><td>Common vetch</td><td>Vicia sativa</td><td>Central Park, Coastal Gardens</td></tr>
<tr><td>Elder</td><td>Sambucus nigra</td><td>Central Park, Residential</td></tr>
<tr><td>June berry</td><td>Amelanchier spp.</td><td>Central Park, Residential</td></tr>
<tr><td>Knapweed</td><td>Centaurea</td><td>Central Park, Coastal Gardens</td></tr>
</table>
</td><td></td><td></td></tr>
</table>

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase

The development design also includes for 7 no. bird nesting boxes to be erected in the woodland area to the northwest of the Site as well as along the ecological buffer zone along the northern and eastern boundaries of the Site.

Invertebrates

The Landscape design for the proposed development includes for the creation of wildflower areas to incorporate plant species which will attract pollinating insects. The installation of 5 no. insect hotels will also form part of the wildflower and shrub landscaping measures and these insect boxes will allow for insects to establish and have refuge in the landscaped areas.

The planting schedule contains a mix of native species and emphasis has been placed on adhering to the objectives outlined in the All-Ireland Pollinator Plan 2021-2025 with the aim of planting species which are beneficial to pollinator species. Pollinator beneficial plant species include (non-exhaustive list): -

Common Name	Scientific Name	Location
English Lavender	*Lavandula angustifolia*	Residential
Thrift	*Armeria maritima*	Western Gateway, Residential
Hemp Agrimony	*Eupatorium cannabinum*	Central Park, Coastal Gardens
Black Meddick	*Medicago lupulina*	Central Park, Coastal Gardens
Hedge woundwort	*Stachys sylvatica*	Central Park, Costal Gardens
Yellow-rattle	*Rhinanthus minor*	Central Park, Coastal Gardens
Selfheal	*Prunella vulgaris*	Central Park, Coastal Gardens
Ox-eye Daisy	*Leucanthemum vulgare*	Central Park, Coastal Gardens
Meadowsweet	*Filipendula ulmaria*	Central Park, Coastal Gardens
Devils Bit Scabious	*Succisa pratensis*	Central Park, Coastal Gardens

<table>
<tr><th>Environmental Topic</th><th>Schedule of Environmental Commitments – Mitigation Measures</th><th>Construction Phase</th><th>Operational Phase</th></tr>
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<tr><td>Knapweed</td><td>Centaurea</td><td>Central Park, Coastal Gardens</td></tr>
<tr><td>Rowan/Mountain Ash</td><td>Sorbus aucuparia</td><td>Residential</td></tr>
<tr><td>Elder</td><td>Sambucus nigra</td><td>Central Park, Residential</td></tr>
<tr><td>Hawthorn</td><td>Crataegus monogyna</td><td>Central Park, Residential</td></tr>
<tr><td>Ragged Robin</td><td>Silene flos-cuculi</td><td>Central Park, Coastal Gardens</td></tr>
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In addition, the roof level of apartment blocks will be developed into green spaces to have a mix of sedum and wildflowers to further benefit pollinating species.
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<tr><td>Chapter 5 – Biodiversity</td><td>
The following operational mitigation measures will be implemented either through the design of the proposed development (e.g. lighting, foul drainage, landscaping etc.), or by those in charge of maintenance and management of the development.

Lighting

The design of the lighting within and around the proposed development has been designed to be cognisant of minimising effects on local nocturnal species, such as bats and badgers, and has been developed so as to allow for a dark ecological corridor around the eastern boundary of the Site. The lighting scheme for the Site has been developed with the following principals; only illuminating what needs to be illuminated (e.g. light directed to the path only), reducing night time light levels, reducing the height of the luminaires, shielding of luminaires and correct choice of light (e.g. a warm white spectrum <2700 Kelvins).

The lighting scheme has been designed in accordance with guidance contained in; Guidance Note 08/23; Bats and Artificial Lighting at Night- Institute of Lighting Professionals.

Project specific lighting designs has included: -
• Column height ≤6m
• Directional lighting to prevent light spillage & light pollution.
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Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 5 – Biodiversity	• All street lanterns calculated at 0° tilt in relevant areas • All street lanterns available in 2700K LED (warm White) • Modern light technology to restrict the horizontal plane of luminaires. Lights on environmentally sensitive pathways for bats are 5m in height and have a warm white colour (2700K LED). The eastern boundary of the Phase 2 development has 'bat friendly' lighting (as detailed above) which will be a continuance of the bat friendly lighting along the eastern boundary of the Phase 1 development (which is under construction). This will provide a darker corridor along the eastern boundary ecological buffer zone which will allow for bats to commute between the River Dargle to the south and Rathmichael woods to the north. In addition, the lighting design calls for bat friendly lighting within the entirety of the Central Park area which will create additional areas for commuting and foraging bats. The low height and low Kelvin lights are placed along the edge of Central Park, allowing the middle of this area to be in complete darkness. These lights are also placed around the perimeter of the community garden. All LED lights will have Constant Light Output (CLO) and the lights used in environmentally sensitive pathways will have a CLO of 7w LED. The lights will be automatically dimmed to 75% each night from 12 midnight to 6am. **Surface water drainage** Sustainable drainage (SuDS) is also a key focus for the entire design of the development. Along with permeable paving, the landscape design includes for attenuation areas throughout the development by channelling runoff to planted areas and tree pits. This has the added benefit of reducing surface water runoff rates. In addition, planted swales will be created to aid with storm water flow and these planted areas will contain suitably water tolerant plant species. The roof areas which will include sedum and wildflower green roof treatments will further slowdown the flow of water from areas that traditionally contribute to high runoff flow rates during rainfall events.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	Foul Disposal Mains infrastructure for foul sewage disposal has been designed in accordance with Irish Water Code of Practice. All wastewater streams will be collected within the local foul water network and will be transferred to Shanganagh Wastewater Treatment Plant (WWTP). Uisce Eireann has confirmed that the existing foul network has sufficient capacity to meet the wastewater discharge volumes expected from the proposed development, once operational. **Landscaping Establishment** The landscape design calls for an ecological buffer zone around the eastern boundary of the Masterplan Lands. This planted buffer zone will ensure the area provides for bat flight lines and badger foraging connectivity to/from the ecological features to the north (Rathmichael woodlands), east (scrub habitat and golf club lands) and south (River Dargle). Once operational the implementation of the landscape plan and compensatory habitat such as wild flower meadows and additional planting will be inspected by the Contractor within one year post planting. If measures have failed due to lack of management an alternative solution will be proposed by the Contractor. Operational phase monitoring (in order to ensure the continued success of the landscape features, specifically in relation to biodiversity enhancement measures) shall be undertaken by those in charge of the maintenance and management of the development. **Refuge Habitats** The design of the development calls for the installation of bird nesting boxes and insect boxes. Refuge boxes will be checked and maintained to ensure they do not fall into disrepair. It is recommended that bird boxes are checked and cleared of remnant nests during the winter season (as required). Operational phase monitoring in order to ensure the success of the refuge habitats shall be undertaken by those in charge of the maintenance and management of the development.		
Chapter 6 – Land Soils and Geology	Stripping and management of hardstanding, made ground, subsoil and C&D waste materials (arising from the demolition of the derelict cottage and associated outbuildings, and the removal of existing roads and hardstanding surfaces / base slab) will be carried out in a controlled way, coordinated with the proposed staging for the development, and will be removed from Site as soon as possible. All waste material will be removed for offsite disposal to a suitably licenced / permitted waste facility. The Contractor, in consultation		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	with the Client and the Engineer, will be responsible for removing and replacing with suitable material as required. The design of road levels and finished floor levels has been carried out in such a way as to minimise cut/fill type earthworks operations. The duration that subsoil layers are exposed to the effects of weather will be minimised. Disturbed subsoil layers will be stabilised as soon as practicable (e.g., backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping). The excavation of material will be minimised as much as possible to reduce the impact on soils and geology. All waste soils (including made ground) will be classified in accordance with the EPA Guidance Document *'Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* (2019). It will be the Contractors responsibility to ensure that all waste soils are classified correctly and managed, transported and disposed of offsite in accordance with the requirements of the Waste Management Act 1996, as amended, the Waste Framework Directive 2008/98/EC of the European Parliament and Council on waste and any relevant subsequent waste management legislation. Based on CIRIA 665 guidance, gas protection measures would be required in the vicinity of proposed Block H, based on this part of the Site being CS2. The typical scope of protective measures for residential buildings (not low rise traditional housing), such as apartment blocks (for CS2) is as follows (CIRIA 665, 2007): ▪ Option a) - Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft) with at least 1200g damp proof membrane (DPM) and underfloor venting; or; ▪ Option b) - Beam and block or pre-cast concrete and 2000g DPM / reinforced gas membrane and underfloor venting; and, ▪ All joints and penetrations sealed. Gas protection measures (based on the above scope) for Block H will be incorporated into the Detailed Design Stage of the proposed development; and will be installed by experienced and trained specialists and will be subject to inspection and certification, during the Construction Stage. The Contractor, in consultation with the Client and the design team, will be responsible for ensuring that these measures are fully implemented and verified. It will be the Contractors responsibility to ensure that a project specific Detailed Resource and Waste Management Plan (developed in accordance with relevant 2021 EPA Guidance) is fully implemented onsite for the duration of the project.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	Further mitigation measures for the prevention of soil / bedrock contamination during construction are proposed below. The Contractor will be responsible for ensuring these measures are fully implemented. Mitigation measures outlined in Chapter 7 - Water are also applicable to the protection of soils and geology during the construction phase: ▪ Earthworks / piling plant and vehicles delivering construction materials to Site will be confined to predetermined haul routes around the Site for each phase of the proposed development; ▪ The need for vehicle wheel wash facilities will be assessed by the Contractor depending on the phasing of works and onsite activity and will be installed as needed, near any Site entrances and road sweeping implemented as necessary to maintain the road network in the immediate vicinity of the Site; ▪ Dust suppression measures (e.g., dampening down) will be implemented as necessary during dry periods; ▪ All excavated materials will be stored away from the excavations / immediate works area, in an appropriate manner at a safe and stable location. The maximum height of temporary stockpiles will be 3m; ▪ A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the Site; ▪ In the unlikely event that ground contamination is encountered beneath the site during the construction works, all works will cease. Advice will be sought from an experienced contaminated land specialist and a phased environmental risk assessment (specifically to assess any associated potential environmental and/ or human health risks) will be undertaken in accordance with relevant EPA guidance 'Guidance On The Management Of Contaminated Land And Groundwater At EPA Licensed Sites' (EPA, 2013) and UK Environment Agency Guidance 'Land contamination risk management (LCRM)' (UK EA, 202368). ▪ The employment of good construction management practices will serve to minimise the risk of pollution from construction activities at the proposed development in line with the Construction Industry Research and Information Association (CIRIA) publication entitled, Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, CIRIA - C532 (2001) which are also detailed in Chapter 7 – Water;		

[68] https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	▪ Temporary onsite groundwater and gas monitoring wells should be either suitably protected for the duration of the works and / or appropriately decommissioned in accordance with best practice guidance (SEPA guidance document "Good Practice for Decommissioning Redundant Boreholes and Wells"). ▪ All fill material imported to the Site for the Scheme will be clean, uncontaminated, suitable engineering grade fill material. ▪ Specifically, regarding pollution control measures, the following will be adhered to; - Fuels, lubricants and hydraulic fluids for equipment used on the construction Site, as well as any solvents, oils, and paints will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice; - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the proposed development for disposal or re-cycling; - Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the proposed development and properly disposed of; - All Site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area; - All machinery will be serviced before being mobilised to Site; - Refuelling will be completed in a controlled manner using drip trays at all times; - Mobile bowsers, tanks and drums will be stored in secure, impermeable storage areas away from open water; - Ancillary equipment such as hoses and pipes will be contained within the bund; - Taps, nozzles or valves will be fitted with a lock system; - Fuel and chemical stores including tanks and drums will be regularly inspected for leaks and signs of damage; - Drip-trays will be used for fixed or mobile plant such as pumps and generators to retain oil leaks and spills; - Only designated trained operators will be authorised to refuel plant on Site; - Procedures and contingency plans will be set up to deal with emergency accidents or spills;		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	- An emergency spill kit with oil boom, absorbers etc. will be kept on-site for use in the event of an accidental spill. A specific team of staff will be trained in the use of spill containment; - Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-Site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site. This will minimise the risk of soils and bedrock becoming contaminated through Site activity; and, - The highest standards of Site management will be maintained and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the Site and surrounding environment during construction. A named person will be given the task of overseeing the pollution prevention measures agreed for the Site to ensure that they are operating safely and effectively. The above mitigation measures will be incorporated (as required) during Detailed Design Stage and will form part of a site-specific Construction Environmental Management Plan (CEMP) which will be implemented during the Construction Stage (including initial Site preparatory / enabling works). **Monitoring Requirements** A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the Site.		
Chapter 6 – Land Soils and Geology	Taking account of the relevant mitigation measures to be implemented during the Detailed Design Stage and Demolition and Construction Stage (specifically the installation of an appropriate ground gas membrane beneath Block H), no further mitigation measures will be required during the operational phase.		
Chapter 7– Water	With regard to groundwater and surface water quality impacts the following mitigation measures are proposed. The Contractor will be responsible for ensuring these measures are fully implemented: In advance of commencement of the Construction Stage, all onsite monitoring wells (as identified in the Ground Investigation Report (IGSL, 2024) presented in Appendix 6.1 will be fully decommissioned by an		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 7– Water	experienced borehole specialist in accordance with relevant guidelines, '*Good practice for decommissioning redundant boreholes and wells'* (UK Environment Agency, 2012; SEPA, 2003); An Outline Construction 'Surface Water Management Plan' will be prepared by the Contractor. The plan will set out clear guidelines and mitigation measures to ensure that surface water quality and quantity is managed throughout the construction stage to prevent impacts on the River Dargle. This should include details on project phasing. A meeting with Inland Fisheries Ireland (IFI), the Project Team and the Contractor should be specified in the document. The meeting should take place before commencement on site. The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guidelines C750 (2016) '*Control of Water Pollution from Construction Sites' and 'Groundwater control - design and practice*' and C811 (2023) '*Environmental Good Practice on Site'* to minimise as far as possible the risk of pollution. All of the mitigation measures (for the protection of soils and geology) listed in Chapter 6 will be implemented onsite during the construction phase. Any groundwater temporarily dewatered during the excavation works for the proposed attenuation tanks, services and utilities, and roadways, and during piling (as required), will be treated via. the installation of a temporary in-situ water treatment system; ▪ This system should be designed and sized to ensure that all pumped groundwater water is treated via. a temporary attenuation pond, prior to discharge to a selected onsite location (via. a temporary soakaway). ▪ The Contractor will be required to provide a Site-specific dewatering plan, clearly setting out proposed excavation methodology, estimated dewatering rates, details of proposed treatment system, and discharge location. The Contractor will be responsible for ensuring that the existing drainage network, specifically along the existing road, and as required elsewhere across the site, will be suitably protected (via. the use of physical barriers and / or the implementation a Site-specific water run-off management plan as required). As outlined within Chapter 5 – Biodiversity, the specific construction methodology for the installation of the surface water		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 7– Water	drainage outfall on the River Dangle's flood defence wall / promenade will include the following measures to ensure there are no adverse water quality impacts which could affect the aquatic environment:- ▪ The installation of the surface water drainage outfall pipe on the man-made northern bank of the River Dargle will follow the same construction methodology as was utilised during the Phase 1 Coastal Quarter Development for outfall pipe installation. ▪ The flood defence / sea defence wall directly alongside the river channel will remain entirely in situ and intact whilst the promenade path and subbase materials on the landside / northside of the flood defence wall are being excavated to create a pipeline route. There will be no excavation or breaking up of the flood defence wall itself. ▪ A working platform using scaffolding framework (or similar) shall be hung / suspended from flood defence wall on the river channel side to create a works area for core drilling through the flood defence wall. The scaffolding framework shall be covered to prevent rainfall ingress and dust and debris egress from the working platform area. The working platform will be hung / suspended above water level. ▪ The flood defence wall will be core drilled (225mm diameter) from the working platform, i.e. drilling direction will be towards landside, so that no drilled materials fall into the river channel. ▪ Following completion of the core drilling, the outfall pipe will be installed through the hole and grouted followed by bolting on the non-return valve. ▪ No excavations within or above the river channel will be permitted. ▪ No mechanical equipment bar the core dill shall be used above the river channel. ▪ No cement or viscous substances, bar grouting material, shall be used above the river channel. In order to prevent any potential surface water / groundwater impacts via. release of hydrocarbon / chemical contaminants the following standard measures will be implemented: ▪ Fuels, lubricants and hydraulic fluids for equipment used on the construction Site, as well as any solvents, oils, and paints will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice; ▪ Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the proposed development for disposal or re-cycling;		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 7– Water	▪ A response procedure will be put in place to deal with any accidental pollution events. Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the proposed development and properly disposed of in accordance with all relevant waste management legislation; ▪ All Site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area. ▪ Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-Site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site. This will minimise the risk of groundwater becoming contaminated through Site activity. ▪ All oil stored on Site for construction vehicles will be kept in a locked and bunded area; ▪ Generators, pumps and similar plant will be placed on drip-trays to prevent contamination; ▪ All Site vehicles used will be refuelled in bunded areas; ▪ All temporary construction fuel tanks will also be located in a suitably bunded area and all tanks will be double skinned. Relevant Material Safety Data Sheets along with oil absorbent materials will be kept on Site in close proximity to any fuel storage tanks or bowsers during proposed Site development works; and, ▪ All fuel / oil deliveries to on-Site oil storage tanks will be supervised, and records will be kept of delivery dates and volumes. In order to prevent any potential surface water / groundwater impacts via. release of cementitious materials the following measures will be implemented where poured concrete is being used on Site; ▪ The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on Site and therefore these aspects will not pose a risk to the waterbodies present, namely any temporarily exposed groundwater, the River Dargle or the Irish Sea; ▪ Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed; ▪ Any spillages will be cleaned up and disposed of correctly; ▪ Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening;		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 7– Water	▪ Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete; ▪ Mixer washings and excess concrete will not be discharged directly into the drainage network, or any drainage ditches, surface water bodies or exposed groundwater; and, ▪ Surplus concrete will be returned to batch plant after completion of a pour. Foul drainage from Site offices and Site compounds will be directed to the existing wastewater network or will be contained and disposed of off-site in an appropriate manner and in accordance with the relevant statutory regulations. No fuels, chemicals, oils or hazardous materials shall be stored within any lower lying portions of the site, specifically along the south, due to potential flood risk. Any such hazardous materials must be stored in identified compound areas within the site boundary. The above mitigation measures will form part of the Outline Construction Environmental Management Plan (CEMP) submitted as part of this planning application, and which will be further developed by the Contractor within the project-specific Detailed CEMP which will be in operation during the construction phase.		
Chapter 7– Water	With regard to groundwater and surface water quality impacts the following mitigation measures are proposed; All of the mitigation measures (for the protection of soils and geology) listed in Chapter 6 will be implemented onsite during the Detailed Design Stage and Construction Stage (specifically the installation of an appropriate ground gas membrane beneath Block H. The Contractor, in consultation with the Client and the design team, will be responsible for ensuring that these measures are fully implemented. All plant and equipment utilised onsite during maintenance works should be checked and in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site. Relevant maintenance contractors will be responsible for ensuring that these measures are fully implemented; Any minor volumes of fuel, oil or chemicals required during routine maintenance works will be brought to and from Site by the maintenance contractor. While temporarily onsite all chemicals will be kept in secure and		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	bunded areas, with relevant Material Safety Data Sheets available onsite. Any fuel / oil tanks temporarily stored on Site will be located in a suitably bunded area and all tanks will be double skinned, with oil / chemical absorbent materials held onsite in close proximity to the tanks. Relevant maintenance contractors will be responsible for ensuring that these measures are fully implemented; In the unlikely event of a fuel / oil or chemical spill / leak during routine maintenance works, emergency spill response measures will be implemented with the aim of limiting the volume spilled and recovering as much of the lost product as possible (relevant maintenance contractors will be responsible for ensuring that these measures are fully implemented); and, A maintenance programme for the proposed surface water drainage system should be implemented, as recommended in the Stormwater Impact Assessment Report (AtkinsRéalis, 2025) (Doc. Ref: 0088726DG0007) submitted as part of this planning application. The Contractor, in consultation with the Client and the design team, will be responsible for ensuring that these measures are fully implemented.		
Chapter 8 – Air Quality	The proposed development has been assessed as having a high risk of dust soiling impacts and a low risk of dust related human health impacts during the construction phase as a result of earthworks, construction and trackout activities (see Section 8.4.1). Therefore, the following dust mitigation measures shall be implemented during the construction phase of the proposed development. These measures are appropriate for sites with a high risk of dust impacts and aim to ensure that no significant nuisance occurs at nearby sensitive receptors. The mitigation measures draw on best practice guidance from Ireland (DLRCC, 2022; DCC, 2018), the UK (IAQM (2024), BRE (2003), The Scottish Office (1996), UK ODPM (2002)) and the USA (USEPA, 1997). These measures will be incorporated into the overall Construction Environmental Management Plan (CEMP) prepared for the site. The measures are divided into different categories for different activities. *Communications* ▪ Develop and implement a stakeholder communications plan that includes community engagement before works commence on site. Community engagement includes explaining the nature and duration of the works to local residents and businesses.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 8 – Air Quality	▪ The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details. *Site Management* ▪ During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions. Dry and windy conditions are favourable to dust suspension therefore mitigations must be implemented if undertaking dust generating activities during these weather conditions. ▪ A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out *Preparing and Maintaining the Site* ▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. ▪ Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. ▪ Avoid site runoff of water or mud. ▪ Keep site fencing, barriers and scaffolding clean using wet methods. ▪ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. ▪ Cover, seed or fence stockpiles to prevent wind whipping. ▪ Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period. *Operating Vehicles / Machinery and Sustainable Travel* ▪ Ensure all vehicles switch off engines when stationary - no idling vehicles. ▪ Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. ▪ Impose and signpost a maximum-speed-limit of 15 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 8 – Air Quality	to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate). ▪ Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. ▪ Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing) *Operations* ▪ Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. ▪ Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. ▪ Use enclosed chutes and conveyors and covered skips. ▪ Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. ▪ Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. *Waste Management* ▪ Avoid bonfires and burning of waste materials. *Measures Specific to Demolition* ▪ Prior to demolition blocks should be soft striped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). ▪ During the demolition process, water suppression should be used, preferably with a hand-held spray. Only the use of cutting, grinding or sawing equipment fitted or used in conjunction with a suitable dust suppression technique such as water sprays/local extraction should be used. ▪ Drop heights from conveyors, loading shovels, hoppers and other loading equipment should be minimised, if necessary fine water sprays should be employed. ▪ Avoid explosive blasting, using appropriate manual or mechanical alternatives.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 8 – Air Quality	*Measures Specific to Earthworks* ▪ Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. ▪ Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. ▪ Only remove the cover in small areas during work and not all at once. ▪ During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust. *Measures Specific to Construction* ▪ Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. ▪ Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. ▪ For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. *Measures Specific to Trackout* ▪ A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles. ▪ Avoid dry sweeping of large areas. ▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. ▪ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. ▪ Record all inspections of haul routes and any subsequent action in a site log book. ▪ Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. ▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 8 – Air Quality	▪ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. ▪ Access gates to be located at least 10 m from receptors where possible. *Monitoring* ▪ Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary. ▪ Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.		
Chapter 8 – Air Quality	No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be not significant.		
	Monitoring Requirements Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m^2/day during the monitoring period of 30 days (+/- 2 days). There is no monitoring recommended for the operational phase of the development as impacts to air quality are predicted to be not significant.		
Chapter 9 - Climate	Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	▪ Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods. ▪ Ensure all plant and machinery are well maintained and inspected regularly. ▪ Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. A construction waste management plan will be implemented to minimise construction waste sent to landfills. Recycling of materials will be promoted to and reduce the environmental footprint of the site. ▪ Sourcing materials locally will be prioritised. This will help to reduce transport related CO2 emissions and helps support local suppliers, further promoting economic sustainability. ▪ Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible. In terms of impact on the proposed development due to climate change, during construction the Contractor will be required to mitigate against the effects of extreme rainfall/flooding through site risk assessments and method statements. The Contractor will also be required to mitigate against the effects of extreme wind/storms, temperature extremes through site risk assessments and method statements. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures. Temperatures can affect the performance of some materials, and this will require consideration during construction. During construction, the Contractor will be required to mitigate against the effects of fog, lighting and hail through site risk assessments and method statements.		
Chapter 9 - Climate	A number of mitigation measures have been incorporated into the design of the development to reduce the impact on climate wherever possible. Metec Consulting Engineers have prepared a Climate Action and Energy Statement in relation to the proposed development. As per the Climate Action and Energy Statement, the development will be a Nearly Zero Energy Building (NZEB) in accordance with the 2022 Part L requirements and the relevant sustainability policies within the Wicklow County Development Plan 2022-2028. The residential units and commercial spaces will aim to achieve a Building Energy Ratio (BER) of A3. The residential units will have an energy performance coefficient (EPC) that complies with NZEB (maximum permitted under NZEB requirements is <0.3). The units will also have a carbon performance coefficient (CPC) and renewable energy ratio (RER) that comply with NZEB requirements (maximum permitted CPC under NZEB requirements is <0.35 and RER is 0.20). Similar to the residential units, the non-domestic spaces will also comply with the NZEB requirements. The EPC will comply with the NZEB requirements		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	(maximum permitted under NZEB requirements is <1.0). The units will also have a CPC and RER that comply with NZEB requirements (maximum permitted CPC under NZEB requirements is <1.15 and RER is 0.20). The Energy & Sustainability Statement outlines that the design of the development has incorporated the principles of the energy hierarchy which are: ▪ Be Lean – this encourages a passive strategy whereby space heating, cooling and lighting energy demand is minimised through a fabric first approach. ▪ Be Clean – this stage encourages that energy supplied to the development, such as heating or domestic hot water is delivered efficiently through communal or highly efficient systems. ▪ Be Green – this stage ties in with the Renewable Energy Ratio requirement of Part L 2022, whereby any remaining requirements are addressed through on-site renewable energy or low zero carbon technologies. The following measures will ensure the development minimises the impact to climate during its operation: - ▪ The fabric specification will ensure compliance with the NZEB and Part L requirements for thermal bridging, air permeability and thermal comfort. ▪ Centralised Heating with Air Source Heat Pumps (ASHP), ASHP and EAHP options. ▪ Efficient water fittings to sanitaryware such as flow restrictors will be investigated as to their feasibility to reduce water consumption. The above measures will assist in optimising the energy consumed by the development and will also have the benefit of reducing the impact to climate during the operational phase of the development. Some measures have been incorporated into the design of the development to mitigate the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated to avoid potential flooding impacts due to increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the proposed development to climate change (see Section 9.5.2).		
Chapter 10 – Noise and Vibration	With regard to construction activities, best practice control measures from construction sites within BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2 will be used to control noise and vibration impacts. The implementation of all best practice noise and vibration control methods will ensure potential impacts to nearby residential noise sensitive locations are not		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 10 – Noise and Vibration	significant. This will be particularly important during excavation and foundation construction which are likely to be the activities to have the highest potential noise and vibration impact. Noise-related mitigation methods are described below and will be implemented for the project in accordance with best practice. These methods include: ▪ No plant used on site will be permitted to cause an ongoing public nuisance due to noise; ▪ The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations; ▪ All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract; ▪ Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers; ▪ Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use; ▪ During construction, the contractor will manage the works to comply with noise limits outlined in BS 5228-1:2009+A1 2014. Part 1 – Noise; ▪ All items of plant will be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures; ▪ Limiting the hours during which site activities which are likely to create high levels of noise or vibration are permitted; and, ▪ Monitoring levels of noise and vibration during critical periods and at sensitive locations (i.e. at the boundary between the development site and the school and residential buildings. Furthermore, it is envisaged that a variety of practicable noise and vibration control measures will be employed. These will include: ▪ Selection of plant with low inherent potential for generation of noise and/ or vibration; ▪ Erection of good quality site hoarding to the site perimeters adjacent to sensitive receptors which will act as a noise barrier to general construction activity at ground level;		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	▪ Erection of barriers as necessary around items such as generators or high duty compressors, and; ▪ Situate any noisy plant as far away from sensitive properties as permitted by site constraints.		
Chapter 10 – Noise and Vibration	**Mechanical and Electrical Plant** As part of the detailed design of the development, plant items with appropriate noise and vibration ratings and, where necessary, appropriately selected remedial measures (e.g. enclosures, silencers, anti-vibration mounts etc.) will be specified in order that the adopted plant noise criteria is achieved at the façades of noise sensitive properties, including those within the development itself. **Event Room Breakout Noise** A noise survey is recommended when future local infrastructure is developed and operational so that appropriate noise thresholds can be set for event noise at local receptors. In addition, as part of the detailed design of the hotel, it is recommended that appropriate noise control measures are considered for the event room, such as enhanced sound insulation for the facades in order to minimise the potential for noise breakout. The specifications for the design would be informed by the expected level of noise internal to the event room. **Inward Noise (Acoustic Design Strategy Part 2)** As is the case in most buildings, the glazed elements and ventilation paths of the building envelope are typically the weakest element from a sound insulation perspective. In general, all wall constructions (i.e. blockwork or concrete and spandrel elements) offer a high degree of sound insulation, much greater than that offered by the glazing systems. Therefore, noise intrusion via the wall construction will be minimal. In this instance the facades highlighted in **Figure 10-5** will be provided with upgraded acoustic glazing and ventilation that achieves the minimum sound insulation performance as set out in **Table 10-18** and **Table 10-19.** **Table 10-19**Other facades in the development have no minimum requirement for sound insulation.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase

The sound insulation specifications are expressed in the following units:

R_w Weighted Sound Reduction Index – This is the value of the sound insulation performance of a partition or element measured under laboratory conditions. It is a weighted single figure index that is derived from values of sound insulation across a defined frequency spectrum. Technical literature typically presents sound insulation data in terms of the R_w parameter.

$D_{n,e,w}$ Weighted element-normalized level difference. This is the value of sound insulation performance of a ventilator measured under laboratory conditions. It is a weighted single figure index that is derived from values of sound insulation across a defined frequency spectrum. Technical literature for acoustic ventilators typically presents sound insulation data in terms of the $D_{n,e,w}$ parameter

Table 10-18- Sound Insulation Performance Requirements for Upgraded Acoustic Glazing, SRI (dB)

Façade Ref	SRI (dB) per Octave Band Centre Frequency (Hz)						dB R_w
	125	250	500	1k	2k	4k	
Red	26	27	34	40	38	46	38
Blue	25	22	33	40	43	44	36

Table 10-19 - Sound Insulation Performance Requirements for Upgraded Acoustic Ventilation, SRI (dB)

Façade Ref	SRI (dB) per Octave Band Centre Frequency (Hz)						dB D_n
	125	250	500	1k	2k	4k	
Red & Blue	31	33	42	43	39	44	42

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	It is important to note that the acoustic performance specifications detailed herein in **Table 10-18** and **Table 10-19** are minimum requirements which apply to the overall glazing and ventilation systems. In the context of the acoustic performance specification the 'glazing system' is understood to include any and all of the component parts that form part of the glazing element of the façade, i.e. glass, frames, seals, openable elements etc. The assessment has demonstrated that the recommended internal noise criteria can be achieved through consideration of the proposed façade elements at the detailed design stage. The calculated glazing and ventilation specifications are preliminary and are intended to form the basis for noise mitigation at the detailed design stage, consequently, these may be subject to change as the project progresses. The overriding factor is that suitable glazing and ventilation systems are selected at design stage so that the internal noise levels presented in Section 10.2.7 are achieved.		
Chapter 11 – Landscape and Visual Assessment	**Townscape Impacts** Since the proposed development represents a considered and appropriate response to the townscape context, and its townscape effects would be positive, no mitigation measures are recommended		
	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 proposed. This assumes that all measures for tree protection during construction (as recommended in the *Tree Survey & Planning Report* (2024) by Independent Tree Surveys Ltd) would be implemented.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	Visual Impacts The majority of the viewpoints would experience negative visual effects during the construction phase. This is an unavoidable impact of construction and there are limited effective mitigation measures available. No mitigation measures other than (a) the erection and proper maintenance of site hoarding and (b) best practice in site management are proposed.		
	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 visual effects have been identified; all the predicted effects are either neutral or positive. Therefore, no mitigation measures are recommended for visual impacts.		
Chapter 12 – Traffic	All construction activities will be managed and directed by a Construction Environmental Management Plan (CEMP) Report (AtkinsRéalis ref: 0089313DG0029) . The details of the CTMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-site		
	The proposed development is consistent with all national, regional and local policies. In particular, those policies and objectives aligned with active and sustainable travel and transportation. Specific mitigation measures proposed include the following: - ▪ Dart+ - The proposed development is located circa. 600 from the Bray Train Station. Dart+ will increase the frequency, capacity and reliability of the existing DART service which are expected to decrease dependence on private vehicles; ▪ The proposed BusConnects – Core Bus Corridor Route 13 has been included in the development plans which will further decrease dependence on private vehicle usage in the future; ▪ The development takes cognisance of the NTA's plans to redesign the bus network and provide a more efficient network with high frequency spines, new orbital routes and increased bus services. ▪ Greater Dubin Area Cycle Network Plan- Primary Route 12 is located on Dublin Road. This route will be upgraded as part of Bus Connect Corridor 13. Route 14 /N5, The East Coast Trail, is located adjacent the eastern site boundary which is from the Dublin City to Bray ▪ Demand Management is also underpinned by the co-location of residential, education, local retail and leisure and amenity facilities.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 12 - Traffic	▪ The propensity for car ownership and car use is managed through measures that include reduced residential parking provision and increased cycle parking provision in line the 'Design Standards for New Apartments'. The provision of car club parking spaces will facilitate a lower level of car ownership. ▪ Long term, the Luas extension to Bray is still yet to be confirmed- this would comprise of the Green line luas being extended to Bray, with a proposed stop nearby the proposed development offering a reliable rail connection from the development through Central South Dublin.		
Chapter 13 – Material Assets	The following mitigation measures will be implemented during the construction phase; ▪ A project-specific Detailed Construction Environmental Management Plan (CEMP) will be prepared by the appointed Contractor prior to the commencement of construction works. This document will take account of all of the environmental considerations (including water, dust and noise nuisance control; soil / stockpile management; temporary groundwater management; appropriate Site management of compound area; fuel, oil and chemical storage and use; and waste management) set out in the Outline CEMP submitted as part of this planning application; ▪ The construction compounds will include adequate temporary welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the compound will be removed off site to an appropriately licensed facility for disposal until a connection to the public foul drainage network has been established; ▪ All newly installed utilities/ services will be assessed, tested and certified as required prior to being fully commissioned; ▪ Connections to the existing and proposed foul networks will be coordinated with the relevant utility provider. All works associated with the existing and proposed utilities for the proposed development will be carried out in strict accordance with the guidelines of the relevant stakeholders (specifically ESB, eir and Uisce Éireann), Health and Safety Authority and any additional site specific requirements; ▪ A copy of all available existing, and as built utility plans will be maintained on Site during the construction of the proposed development. The underground power lines and foul water mains within the existing Uisce Éireann services, located onsite will be clearly marked and all Site personnel will be made aware of the known location of any onsite underground or over ground services during the construction phase; and, ▪ Street Lighting will be implemented in accordance with the Lighting Report prepared by Metec Consulting Engineers (2025).		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	The following mitigation measures (with respect to waste) will be implemented during the construction phase: ▪ All waste management procedures implemented onsite during the construction phase will be in accordance with the CRWMP (AtkinsRéalis, 2025) submitted as part of this planning application. In advance of commencement onsite, the Contractor will prepare a project specific Detailed CRWMP which will further develop this plan, and will provide specific details in terms of proposed permitted haulage contractors, and permitted / licenced waste disposal / recovery facilities; ▪ Scheduling and planning the delivery of materials will be carried out on an 'as needed' basis to limit any surplus materials; ▪ Materials will be ordered in sufficient dimensions so as to optimise the use of these materials onsite, and will be carefully handled and stored so as to limit the potential for any damage; ▪ Where feasible, sub-contractors will be responsible for the provision of any materials they require onsite in order to help reduce any surplus waste; ▪ All loaded trucks entering and exiting the Site will be appropriately secured and covered; and, ▪ Dust will be controlled at entry and exits to the Site using wheel washes (as required) and/or road sweepers, and tools and plant will be washed out and cleaned in designated areas. Wheel / road sweeper washings will be contained and treated prior to discharge. The proposed demolition works includes the old cottage on site. An Asbestos Survey Report was prepared by Phoenix Environmental Safety Ltd (Report No: PE24-1187) to assess the current condition of the existing cottage. The following asbestos containing materials were identified: ▪ Asbestos cement sheeting on the main roof (150 m2 approx.); ▪ Asbestos containing felt on the rear flat roof (50 m2 approx.); and, ▪ Asbestos containing felt pads on the underside of the sink units. A summary of the conclusions and recommendations are provided below: **Main roof**		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	▪ The cement sheeting identified on the main roof contains Chrysotile (white) & Amosite (brown) asbestos fibres. Asbestos cement products usually contain between 10-15% asbestos fibres, bound in Portland cement. ▪ The asbestos cement sheeting should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence. ▪ All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. **Flat roof** ▪ The felt identified on the rear flat roof contains Chrysotile (white) asbestos fibres. Felt products generally contain a small quantity of asbestos fibres mixed into the product matrix. ▪ The asbestos felt should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence. The roof has fallen in and debris can be found throughout the areas underneath. ▪ All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. **Sink unit** ▪ The felt pads identified on the underside of the sink unit contains Chrysotile (white) asbestos fibres. Felt products generally contain a small quantity of asbestos fibres mixed into the product matrix ▪ The asbestos felt pads should be removed by an asbestos removal contractor and disposed of as asbestos waste before the demolition works commence. ▪ All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.		
Chapter 13 – Material Assets	Waste management during the operational phase of the development will be undertaken by private waste contractors (in accordance with statutory waste management and environmental requirements, regional waste related policy, and best practice waste management guidance), and regulated by Wicklow County Council. All waste management procedures implemented onsite during the operational phase will be in accordance with the Operational WMP (AtkinsRéalis, 2025) submitted as part of this planning application.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	Therefore, no further mitigation measures are required with regard to the transport and disposal or recovery of all waste streams which will be generated during the operational phase. The following mitigation measures will be implemented during the operational phase in order to minimise the potential impact of litter pollution: ▪ Suitably sized waste receptacles will be provided in communal areas within the residential development and commercial units by private waste contractors; ▪ During the operational phase waste shall be collected on a fortnightly basis from all houses and duplexes, and on a weekly basis from all apartment blocks and commercial units; and, ▪ It will be the responsibility of residents, crèche users, commercial unit occupants and maintenance workers to ensure that all waste generated is disposed of appropriately and responsibly, with penalties and legal sanctions being issued to anyone who is found to litter in accordance with the Litter Management Plan 2019-2024 by Wicklow County Council.		
Chapter 14- Cultural Heritage	There are no extant archaeological sites listed in the SMR/RMP located within the proposed development site, however the development boundary encroaches slightly on the Zone of Archaeological Potential associated with the historic town of Bray. There are no Protected Structures or structures listed in the NIAH located within the site and it is not within, or in the close environs of, an Architectural Conservation Area. The NIAH records the former location of a section of the garden of Ravenswell House within the development lands, however this is no longer extant. No mitigation measures for the architectural heritage resource are, therefore, required. The programme of targeted archaeological test trenching at the locations of geophysical survey Anomalies 1-6 has confirmed the presence of one potential archaeological site/features (comprising one burnt mound) within the boundary of the proposed development (see Figure 14.12 and Appendix 14.5). Following a grant of planning, and in advance of the construction phase, a suitably qualified archaeologist will be appointed to prepare and submit a licence application to the National Monuments to preserve by record (through archaeological excavation) the full extent of the archaeological sites/features located within the boundary of the proposed development. All archaeological excavation works to preserve by record identified archaeological remains will be carried out under licence by the National Monuments Service and in advance of construction works at their locations.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	All required archaeological excavation works, including post-excavation analyses and reporting, will be carried out in accordance with the archaeological method statement submitted to the National Monuments Service and the National Museum of Ireland as part of the licence application. An archive containing stratigraphic records (including all associated digital and hard copy records and reports) will be submitted to the National Monuments Service upon completion of archaeological works. Any archaeological objects and relevant environmental material retrieved during archaeological excavation works, as well as all relevant reports, including post-excavation analysis reporting, will be provided to the National Museum of Ireland upon completion of all archaeological works. The results of all excavation works will also be published in the Database of Irish Excavation Reports and dependent on the nature of the results, the potential for additional publication in appropriate periodicals/journals will also be appraised. While no additional anomalies indicating the probable locations of previously unrecorded archaeological sites within the boundary of the proposed development were identified during the geophysical surveys, the appointed archaeologist will also carry out further programmes of archaeological monitoring of topsoil stripping within previously unavailable areas within the proposed development site as a precautionary measure. This will be carried out under licence by the National Monuments Service. Any archaeological remains identified during the monitoring will be cordoned off, recorded in written, drawn and photographic formats and the National Monuments Service will be notified. A report on the results of the archaeological monitoring, including written, illustrative and photographic records, will be submitted to the National Monuments Service, per licensing requirements, who will then be consulted to determine appropriate mitigation measures in the event that previously unrecorded archaeological remains are identified. This will entail either total/partial preservation *in situ* by avoidance or preservation by record by systematic archaeological excavation of any identified archaeological remains where direct impacts are predicted. The report will also detail proposals for short term (construction phase) and long term (operation phase) preservation measures for any previously unrecorded archaeological remains identified during testing that will be preserved *in situ*.		
Chapter 14- Cultural Heritage	All of the mitigation measures identified in Section 14.8.1 will be enacted and completed prior to and during the construction phase and, therefore, no mitigation measures during the operational phase of the proposed development are predicted.		

Table 18-2 - Schedule of Environmental Commitments – Monitoring Requirements (Construction and Operational Phases)

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
Chapter 4 – Population and Human Health	Measures to avoid negative impacts on population and human health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development. Monitoring will be undertaken by the Building Regulations certification process and by the requirements of specific conditions of a planning permission. Monitoring of compliance with Health and Safety requirements will be undertaken by the Project Supervisor for the Construction Stage. It is considered that the monitoring measures outlined in regard to the other environmental topics will ensure that the proposed development is unlikely to result in any adverse impacts in relation to population and human health.		
Chapter 5 - Biodiversity	Pre-construction / pre-Site clearance bat surveys by the Contractor appointed suitably qualified ecologist to assess if bats have established roosts within the Site. If protected bats roosts are found within the Site, then consultation with NPWS will be undertaken by the project ecologist and associated method statements and mitigation will be proffered and derogation sought from NPWS. Pre-construction / pre-Site clearance terrestrial mammal surveys will be undertaken by the Contractor appointed suitably qualified ecologist to assess if badgers, or any other protected mammals, have established refugia (e.g. a badger sett) within the Site. If protected mammal refugia is found within the Site, then consultation with NPWS will be undertaken by the project ecologist and associated method statements and mitigation will be proffered and derogation sought from NPWS. Removal of nesting habitat (trees and woodland) must be carried out outside of the bird breeding season (from 1st March to 31st August). Consultation must be undertaken with the National Parks and Wildlife Service for any nesting habitat clearance works outside of this seasonal window (as detailed in the Construction phase mitigation measures above).		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	One year after the entrance roadway has been constructed, the Contractor's ecologist will inspect the area where the knotweed plant was located to ensure the Site is free from invasive plants. Once operational the implementation of the landscape plan and compensatory habitat such as wild flower meadows and additional planting should be inspected by the Contractor within one year post planting. If landscaping measures have failed an alternative solution should be proposed by the Contractor. Operational phase monitoring (in order to ensure the continued success of the landscape features, specifically in relation to biodiversity enhancement measures) shall be undertaken by those in charge of the maintenance and management of the development. Operational phase monitoring in order to ensure the success of the refuge habitats shall be undertaken by those in charge of the maintenance and management of the development.		
Chapter 6 – Land, Soils an d Geology	A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the Site. No monitoring is required during the operational phase of the proposed development		
Chapter 7 - Water	A maintenance programme for the proposed surface water drainage system should be implemented, as recommended in the Stormwater Impact Assessment Report (AtkinsRéalis, 2025) (document. ref.: 0088726DG0007) submitted as part of this planning application, which states ' *Regular checks and maintenance of the SuDS systems is required and have been considered as part of the overall drainage design for the proposed development. This will ensure both the design life of the SuDS systems, ongoing improved water quality, reduced water runoff and reduce the risk of onsite flooding and exceedance flows.*'. A comprehensive monitoring and supervisory regime including monitoring of all excavations and stability assessments as required will be put in place to ensure that the proposed construction works do not constitute a risk to the stability of the Site.		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	A maintenance programme for the proposed surface water drainage system should be implemented, as recommended in the Stormwater Impact Assessment Report (AtkinsRéalis, 2025) (document. ref.: 0088726DG0007) submitted as part of this planning application, which states ' *Regular checks and maintenance of the SuDS systems is required and have been considered as part of the overall drainage design for the proposed development. This will ensure both the design life of the SuDS systems, ongoing improved water quality, reduced water runoff and reduce the risk of onsite flooding and exceedance flows.*'.		
Chapter 8 – Air Quality	Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions		
	Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m^2/day during the monitoring period of 30 days (+/- 2 days). There is no monitoring recommended for the operational phase of the development as impacts to air quality are predicted to be not significant.		
Chapter 10- Noise and Vibration	There is a requirement to ensure that construction activities operate within the noise and vibration limits set out within this EIAR. There is also a requirement to undertake regular noise and vibration monitoring at locations representative of the closest sensitive locations to ensure		

Environmental Topic	Schedule of Environmental Commitments – Mitigation Measures	Construction Phase	Operational Phase
	the relevant criteria are not exceeded. Noise monitoring shall be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise. Vibration monitoring shall be conducted in accordance with BS 6472 for human disturbance and BS ISO 4866:2010 for building damage.		
Chapter 13- Material Assets	As detailed within the CRWMP (AtkinsRéalis, 2025) prepared as part of this planning application, the Contractor will be responsible for maintaining waste records and documentation for the full duration of the construction phase. The Contractor will track and monitor all waste volumes 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. No monitoring is required during the operational phase of the proposed development		
Chapter 14 – Cultural Heritage	There are a number of obligatory processes to be undertaken as part of applications to the National Monuments Service for licences to carry out archaeological excavation works which will allow for monitoring of the successful implementation of the mitigation measures detailed in Section 14.8. A detailed method statement stating the proposed strategy for the archaeological excavation works will accompany the submitted licence application which will clearly detail the extent of the archaeological works and the onsite and post-excavation processes that will be enacted in order to preserve identified archaeological remains by record. Following the completion of all archaeological excavation works, preliminary and final reports will be submitted to the National Monuments Service, the National Museum of Ireland and the Planning Authority which will clearly describe the results of all onsite archaeological works and post-excavation analyses in written, illustrative and photographic formats.		

19. Summary of Residual Effects

19.1 Introduction

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 14 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) have taken effect.

The terminology used in this chapter (and in Chapter 4 – Chapter 14) to describe the residual impact significance reflects the assessment terminology and guidelines as outlined in; 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (EPA 2022).

19.2 Population & Health

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 6 to Chapter 10 , and Chapter 12 respectively), 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.

19.3 Biodiversity

The proposed development will result in the loss of grassland and scattered trees. Mitigation by avoidance is proposed for breeding birds, bats, trees and to prevent the spread of invasive species. Measures to reduce the effects of artificial lighting and loss of habitats are also proposed. Planting of numerous trees and shrubs and wildflower meadows in public spaces is also proposed as mitigation in the Landscape Masterplan (refer to accompanying Planning Pack).

Enhancement proposals incorporated into the Site landscape masterplan will improve the Site potential for foraging bats and birds and will increase the potential for nesting and roosting opportunities for both. There will be a loss of foraging area for badgers but no loss of habitat connectivity between foraging areas. The introduction of wildflower areas and insect boxes will lead to an increased availability for pollinating insects and food source for local bat and passerine bird populations.

This 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. Provided ecological mitigation measures and monitoring are implemented correctly no cumulative impacts are expected.

19.4 Land, Soils & Geology

19.4.1 Demolition and Construction Phase

The impact on land take is likely to have a slight negative permanent impact on the environment of the area, however, this change is consistent with existing and emerging trends.

Implementation of the measures outlined above will ensure that potential moderate impacts of the proposed development on soils and the geological environment do not occur during the construction phase, and that any residual impacts (with the exception of offsite soil removal) will be slight negative and short term in duration.

The primary impact is the potential removal of ca. 5,026m3 of C&D waste and ca. 19,366m3 of waste soils for offsite disposal (via. excavation). However all waste soils will be classified in accordance with the EPA Guidance Document 'Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (2019), prior to offsite disposal at an appropriate local authority permitted / EPA licenced waste facility. The relevant local authority registered, permitted and /or EPA licenced waste facilities will be operated and managed according to the relevant conditions of their waste permits or EPA waste licences. The Contractor will ensure that all waste soils are classified correctly (as per relevant EPA (2015) Guidance) and managed, transported and disposed of offsite in accordance with the requirements of the Waste Management Act 1996, as amended, the Waste Framework Directive 2008/98/EC of the European Parliament and Council on waste and any relevant subsequent waste management legislation. The residual impact with respect to offsite soil removal is therefore likely to be slight negative and permanent.

Therefore no significant effects (with respect to Land, Soils and Geology) to the receiving environment are likely to arise as a result of the proposed Scheme during the Demolition and Construction Phase.

19.4.2 Operational Phase

The impact on land take is likely to have a slight negative permanent impact on the environment of the area; however, this change is consistent with existing and emerging trends.

Implementation of the measures outlined previously during the Detailed Design and Demolition and Construction Stages (specifically the installation of an appropriate ground gas membrane beneath Block H) will ensure that potential moderate negative permanent impacts do not occur during the operational phase. Accordingly, no predicted residual impacts with regards to soils or geology will arise during the operational phase.

Therefore no significant effects (with respect to Land, Soils and Geology) to the receiving environment are likely to arise as a result of the proposed Scheme during the Operational Phase.

19.5 Water

The development as proposed will not result in an adverse impact to the existing hydrological regime of the area. The proposed development comprises of 'highly and less vulnerable development', and partially lies within Flood Zone A. Both the Development Plan and Development Management Justification Tests are passed. The FRA prepared to support this Phase 2 planning application demonstrates that the risks relating to flooding can be managed and mitigated to acceptable levels and therefore comply with DoEHLG / OPW and Dublin City Council planning guidance and the Wicklow County Council Development Plan 2022-2028 objective CPO 14.09 (ARUP, 2025)

Taking account of the relevant mitigation measures, the residual impact to groundwater quality and surface water quality including receiving coastal waters (Irish Sea), resulting from potential pollution caused by Site activities (plant,

fuel/ chemical spillage etc.) or associated with cement handling and pouring during the demolition and construction phase is slight adverse and short-term. The residual impact to surface water quality, including receiving coastal waters (Irish Sea), resulting from excess loadings of suspended solids, via. inadequate onsite soil / storm water management, during the construction phase is slight adverse and short-term, taking account of the relevant mitigation measures. Any dewatering as required in the central and southern portions of the Site during the construction phase, will be temporary and will pass through a temporary onsite attenuation pond prior to discharge to ground; therefore, dewatering will have no residual adverse impact on groundwater quality or surface including receiving coastal waters (Irish Sea). In summary, anticipated residual adverse impacts on surface water or groundwater will be short-term and slight adverse during the Demolition and Construction Phase of the proposed development, given the mitigation measures proposed.

Taking account of the relevant mitigation measures, the residual impact to groundwater quality and surface water quality including receiving coastal waters (Irish Sea), resulting from occasional / routine Site maintenance works during the Operational Phase is slight adverse, temporary and is unlikely to occur. The residual impact to groundwater quality and surface water quality including receiving coastal waters (Irish Sea) resulting from occasional fuel / oil leaks along the access roads and paved areas during the operational phase is also slight adverse and temporary, taking account of the relevant mitigation measures. The residual impact to groundwater and surface water quality including receiving coastal waters (Irish Sea), resulting from unplanned events during the operational phase (traffic collision, emergency onsite fuel / oil spill, or fire water arising from a property fire), taking account of the relevant mitigation measures, is slight adverse, temporary, and unlikely to occur. In summary, anticipated residual adverse impacts on surface water or groundwater will be temporary and slight adverse, given the mitigation measures proposed during the Operational Phase of the proposed development.

On a regional scale, the proposed development will not affect the current '*Good'* surface water quality status of both the Rathmicheal Stream and the River Dargle, and will not affect the current *High'* coastal water quality status of the Irish Sea, east of the proposed development, as required under the European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (as amended 2012-2023). Similarly, the proposed development will not affect the current '*Good'* groundwater quality status of the Wicklow Groundwater Body as required under the European Communities Environmental Objectives (Groundwater) Regulations, 2010, as amended 2016 - 2022.

Therefore, taking account of proposed mitigation measures, **no significant adverse effects** are anticipated to occur with respect to the receiving water environment arising from the proposed development during the construction or operational phases. **No significant adverse cumulative effects** are anticipated to occur with respect to the receiving water environment.

19.6 Air Quality

19.6.1 Construction Phase

In order to minimise dust emissions during construction, a series of mitigation measures have been prepared as outlined in Section 8.7.1. Provided the dust minimisation measures are adhered to, the predicted residual air quality impacts during the construction phase are ***short-term, direct, negative, localised*** and ***not significant***.

Best practice mitigation measures are proposed for the construction phase of the proposed development, which will focus on the proactive control of dust and other air pollutants, to minimise generation of emissions at source. The mitigation measures that will be put in place during construction will ensure that the impact complies with all EU ambient air quality legislative limit values (set out in Directive 2008/50/EC), which are based on the protection of human health (see Table 8-1). Therefore, the predicted residual, dust-related, human health impact of the construction phase of the proposed development is ***short-term, direct, negative, localised*** and ***not significant***.

19.6.2 Operational Phase

Dispersion modelling of traffic emissions at sensitive receptors in proximity to impacted road links during the operational phase indicate pollutant emissions will be in compliance with the TII assessment criteria which is based on the impacts in the opening year. Section 8.5.1 determined that the impact to air quality as a result of increased traffic volumes during the operational phase of the proposed development will be ***localised, direct, long-term, negative*** and ***slight*** for the opening year, which is overall ***not significant*** in EIA terms. However, Ireland will need to develop measures to ensure continuing improvements in air quality in future years in order to meet the objectives of the Clean Air Strategy for Ireland (Government of Ireland, 2023) and to ensure the ambient air quality limit values set out in Directive (EU) 2024/2881 are achieved.

19.7 Climate

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 proposed some best practice mitigation measures and is committing to reducing climate impacts where feasible. As per the assessment criteria in Table 9-4 the residual 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.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change. The residual effect of climate change on the proposed development is considered ***direct, long-term, negative*** and ***imperceptible***, which is overall ***not significant*** in EIA terms.

19.8 Noise & Vibration

19.8.1 Construction Noise

When construction works are undertaken within 30m of the receptors it is predicted that a negative, temporary and potentially significant impact may occur. It should be noted that this would be a worst case scenario where all items of plant are in operation within 30m of the identified receptors.

Quality	*Significance*	*Duration*
Negative	Moderate to Significant	Temporary

When construction works are undertaken at a distance of 45m or more from the receptors the impact is predicted as negative, short-term and slight to moderate.

Quality	*Significance*	*Duration*
Negative	Slight to Moderate	Short Term

19.8.2 Construction Vibration

Construction vibration impacts are as follows:

Quality	*Significance*	*Duration*
Negative	Not Significant	Temporary

19.8.3 Additional Vehicular Traffic

The predicted impacts for Junction 6 Arm C are as follows:

Quality	*Significance*	*Duration*
Neutral	Not Significant to Slight	Long Term

Effects at all other routes are predicted to be as follows:

Quality	*Significance*	*Duration*
Neutral	Imperceptible to Slight	Long Term

19.8.4 Mechanical and Electrical Plant

The impacts are predicted as follows:

Quality	*Significance*	*Duration*
Negative	Not Significant	Long Term

19.8.5 Inward Noise Impact

The impacts are predicted as follows:

Quality	*Significance*	*Duration*
Neutral	Not Significant	Long Term

19.9 Landscape & Visual

Since no mitigation measures have been recommended for townscape or visual impacts, the residual impacts are the same as the potential impacts described in Sections 11.4 and 11.5, and summarised below:

19.9.1 Townscape Impacts

19.9.1.1 Operation Phase

Measuring the magnitude of change ('high' - refer to 11.4.2) against the sensitivity of the receiving environment ('medium' - refer to 11.4.1), the significance of the townscape effects during operation was predicted to be 'significant'. Based on the assessment (in Table 11-6) of the proposal against the relevant 'Urban Design Criteria and Indicators' in the *Urban Design Manual - A Best Practice Guide*, the effects were classified 'positive'. The townscape effects during operation are thus predicted to be 'significant positive'.

19.9.1.2 Construction Phase

The townscape effects during construction are predicted to be 'moderate negative'.

19.9.2 Visual Impacts

The visual effects on the 42 no. representative viewpoints, during construction and operation, are predicted to be as follows:

Table 19-1 - Summary of predicted visual effects

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

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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
River Dargle 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 River Dargle						
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

No.	Viewpoint Location	Viewpoint Sensitivity	Magnitude of Change		Significance of Visual Effects	
			Construction (temporary)	Operation (long term)	Construction (temporary)	Operation (long term)
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

19.10 Traffic

No residual effects are anticipated for the proposed development.

19.11 Material Assets

Taking account of the proposed mitigation measures for Material Assets, specifically built services the residual impacts of the proposed development will be short-term and slight adverse during the construction phase, and long-term and not significant during the operational phase.

Taking account of the proposed mitigation measures for Material Assets, specifically waste management, the residual impacts of the proposed development will be short-term and imperceptible during the construction phase, and long-term and imperceptible during the operational phase.

19.12 Cultural Heritage

The proposed development site does not contain any recorded archaeological sites or designated architectural heritage structures and no direct effects on examples within the surrounding 250m study area are predicted. The geophysical surveys and programme of targeted archaeological test trenching carried out as part of this assessment have identified one previously unrecorded archaeological site/feature within the proposed development site, a burnt mound. The identified site, Anomaly 4 (potential burnt mound) will be preserved by record through full archaeological excavation (see Sections 14.2.5.1 and 14.4). Preservation by record shall allow for a high magnitude of impact, albeit ameliorated by the creation of a full and detailed archaeological record, the results of which shall be publicly disseminated. This shall result in a potential slight/moderate range of significance of effect in the context of residual impacts on the unrecorded archaeological resource. The predicted residual effects on the geophysical anomalies within and in the environs of the proposed development are identified in the table below.

Table 19-2 - Construction Effects, Mitigation and Residual Effects on Geophysical Anomalies

Geophysical Anomaly	Description	Construction Phase Effect	Mitigation	Residual Effect Significance
Anomaly 4	Potential burnt mound	Permanent, high magnitude, direct, moderate to significant, negative effect on the burnt mound within the development boundary.	Archaeological excavation of extent of site within development boundary.	Slight to Moderate

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