ENVIRONMENTAL IMPACT ASSESSMENT REPORT
VOLUME 1 – NON-TECHNICAL SUMMARY

PART 10 PLANNING APPLICATION AT FORMER CENTRAL MENTAL HOSPITAL, DUNDRUM, DUBLIN 14

Source: Reddy Architecture +Urbanism Architectural Design Statement

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1.0 INTRODUCTION

1.1 Outline Details

This Environmental Impact Assessment Report (EIAR) relates to a Part 10 Planning Application by Dún Laoghaire Rathdown County Council (DLRCC) in partnership with the Land Development Agency[1] for the redevelopment of lands at the Former Central Mental Hospital, Dundrum, Dublin 14.

This EIAR provides an assessment of the environmental impact and associated mitigation measures arising as a result of the proposed development. It has been prepared in accordance with the requirements of the *Planning and Development Act 2000* (as amended), the *Planning and Development Regulations 2001* (as amended) and the relevant guidance documents.

The site measures c. 9.7 ha and is located on Dundrum Road, Dublin 14 and forms parts of the wider Central Mental Hospital lands which measure 11.39 ha in total.

In terms of an overview of the proposed development, the development will consist of the construction of a residential scheme of 934 no. dwellings on an overall site of c. 9.7 ha.

The development will consist of the demolition of existing structures associated with the existing use (3,677 sq m), including:

- Single storey former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Single storey ancillary and temporary structures including portacabins (618sq m);
- Removal of existing internal sub-divisions/ fencing, including removal of security fence at Dundrum Road entrance;
- Demolition of section of porch and glazed screens at Gate Lodge building (4 sq m);
- Removal of walls adjacent to Main Hospital Building;
- Alterations and removal of section of wall to Walled Garden.

The development will also consist of alterations and partial demolition of the perimeter wall, including:

- Alterations and removal of section of perimeter wall adjacent to Rosemount Green (south);
- Formation of a new opening in perimeter wall at Annaville Grove to provide a pedestrian and cyclist access;
- Alterations and removal of sections of wall adjacent to Dundrum Road (including removal of existing gates and entrance canopy), including reduction in height of section, widening of existing vehicular access, and provision of a new vehicle, cyclist and pedestrian access;

[1] Ashford House, 18-23 Tara Street, Dublin 2, S02 VX67

- Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access.

The development with a total gross floor area of c. 94,058 sq m (c. 93,980 sq m excluding retained existing buildings), will consist of 934 no. residential units comprising:

- 926 no. apartments (consisting of 342 no. one bedroom units; 98 no. two bedroom (3 person) units; 352 no. two bedroom (4 person) units; and 134 no. three bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 8 storeys in height (with a lower ground floor to Blocks 02 and Block 10 and Basements in Blocks 03 and 04), together with private balconies and private terraces and communal amenity open space provision (including courtyards) and ancillary residential facilities, including an 130 sq m internal residential amenity area at the Ground Floor Level of Block 3;
- 6 no. three bedroom duplex apartments located at Block 02, together with private balconies and terraces.
- 2 no. 5 bedroom assisted living units and private rear gardens located at Block 02.

The development will also consist of 4,380 sq m of non-residential uses, comprising:

- Change of use and renovation of existing single storey Gate Lodge building (former reception/staff area) to provide a café unit (78 sq m);
- 1 no. restaurant unit (266 sq m) located at ground floor level at Block 03;
- 3 no. retail units (1,160 sq m) located at ground floor level at Blocks 03 and 07;
- 1 no. medical unit (288 sq m) located at ground floor level at Block 02;
- A new childcare facility (716 sq m) and associated outdoor play area located at lower ground and ground floor level at Block 10;
- A management suite (123 sq m) located at ground floor level at Block 10; and
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,749 sq m) located at ground and first floor level at Block 06.

Vehicular access to the site will be from a new signalised access off Dundrum Road to the south of the existing access and the existing access of Dundrum Road will be retained for emergency vehicle, pedestrian and cyclist access only. The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, cycle and pedestrian routes, active travel routes for cyclists and pedestrians, pathways and boundary treatments, street furniture, wetland features, part-basement, car parking (524 no. spaces in total, including car sharing and accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections (including connection into existing surface water sewer in St. Columbanus Road); ducting; plant (including external plant for Air Source Heat Pumps and associated internal heating plantrooms); waste management provision; SuDS measures (including green roofs, blue roofs, bio-retention

areas); attenuation tanks; sustainability measures (including solar panels); signage; public lighting; any making good works to perimeter wall and all site development and excavation works above and below ground.

The application site is part of a wider land holding which is subject to a Masterplan in respect of the site wide development of the lands. Whilst this planning application and EIAR relates to the application lands specifically, any future planning application arising from the site wide Masterplan has been considered from a cumulative impact assessment perspective. A further planning application in the future on the remaining masterplan lands.

Figure 1.1: Extract from Reddy Architecture and Urbanism's Architectural Design Report showing the proposed site layout.

1.2 EIA Process

EIA requirements are governed by Directive 2014/52/EU, which amends the previous EIA Directive (Directive 2011/92/EU) (the 2014 Directive). The primary objective of the EIA Directive is to ensure that projects that are likely to have significant effects on the environment are subjected to an assessment of their likely impacts.

EIA forms part of the planning consent process and is prepared by / on behalf of a Developer in respect of a project seeking planning consent. The 2014 Directive has introduced strict new

requirements in respect of the competency of experts responsible for the preparation of the EIAR (see Appendix 1A below for details on the experts involved in the preparation of this document).

The EIA process may be summarised as follows:

1. Screening – Is EIA Required?
2. Scoping – If EIA is Required, what aspects of the Environment should be considered?
3. Preparation of EIAR
4. Review and Decision – The EIAR accompanies the planning application to the planning authority (i.e. An Bord Pleanála) for the determination of the application
5. Monitoring – Implement and monitor the proposed mitigation measures

A set of conclusions relating to each individual environmental consideration is set out under each chapter.

1.3 The Need for EIA

The proposed development has been screened for EIA in accordance with the *European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018*), in accordance with the EIA Directive.

Projects requiring mandatory EIA are listed in Part 1 and Part 2 of Schedule 5 of the *Planning and Development Regulations 2001-2020* ("*the Regulations*"), referred to as Annex I Projects, in accordance with the EIA Directive.

The Project is not listed within Part 1 of Schedule 5 of the Regulations and therefore mandatory EIA is not required in this instance.

With respect to Part 2 of Schedule 5 (Annex II Projects), the Project has been assessed against the following relevant criteria:

Class 10 – Infrastructure Projects

Subsection 10(b)(i):

> "*Construction of more than 500 dwelling units*"

The Project exceeds this threshold and therefore an EIA is required in the context of this Class of the Regulations.

Part 2 Class 10 – Infrastructure Projects

Subsection 10(b)(iv):

> "*Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere*"

(In this paragraph, "business district" means a district within a city or town in which the predominant land use is retail or commercial use.)"

The proposed development relates to a site of c.9.7 hectares and is located within an area which comes within the definition of "*other parts of a built-up area*". The Project therefore does not exceed the threshold of 10 hectares, with respect to site area of the proposed development, however it is noted that the overall Former Central Mental Lands (to which the Masterplan relates) are 11.39ha in area. Regardless, an EIAR is already triggered in respect of 10(b)(i).

Part 2 Class 14 – Works of Demolition

"Works of demolition carried out in order to facilitate a project listed in Part 1 or Part 2 of this Schedule where such works would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7. "

The site buildings and structures to be demolished have a total gross floor area of 3,736 sq m and range between 1-2 storeys in height. Given the scale and nature of buildings to be demolished, it is not envisaged that likely significant effects on the environment arising from the demolition will occur. On this basis, it is considered that the Project does not require the preparation of an EIAR with respect to this Class.

1.4 Purpose of the Environmental Impact Assessment Report

As noted, the 2014 Directive has redefined EIA as a process, whereby an EIAR is a key informing element. An EIAR's purpose is to predict and assess likely significant effects (direct and indirect) on the environment arising from the proposed development. It is used during the consent process to inform EIA.

As per Article 5(1) of the amended Directive, an EIAR should provide the following information:

- Description of Project
- Description of Baseline Scenario
- Description of Likely Significant Effects
- Description of Avoidance / Mitigation Measures
- Description of Reasonable Alternatives (and rationale for chosen option)
- A Non-Technical Summary

Annex IV of the Directive sets out a more detailed outline of the information required in an EIAR. The subject EIAR has been prepared in full accordance with these stated requirements of Annex IV.

The preparation of the *Environmental Impact Assessment Report* has been co-ordinated by Tom Phillips + Associates, Town Planning Consultants, in association with other members of the Project Team as identified in Appendix 1.1.

1.5 Scoping of the Environmental Impact Assessment

Scoping was carried out on an informal basis throughout the design process of this scheme.

1.6 EIAR Format

In addition to the 2014 Directive, the subject EIAR has been informed by:

- DHLGH (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment;*
- DHLGH (2017) *Circular letter PL 1/2017 - Advice on Administrative Provisions in Advance of Transposition*;
- EC (1999) *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*;
- EC (2013) *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment*;
- EC (2017) *Environmental Impact Assessment of Projects. Guidance on Scoping*;
- EC (2017) *Environmental Impact Assessment of Projects. Guidance on the preparation of Environmental Impact Assessment Report;*
- EPA (2022) *Guidelines on the Information to be Contained in EIARs* (the EPA Guidelines);
- EU (2014) Directive 2014/52/EC, amending Directive 2011/92/EU on the *Assessment of the Effects of Certain Public and Private Projects on the Environmen*t;
- *Planning and Development Act 2000*, as amended; and
- *Planning and Development Regulations 2001*, as amended.

1.6.1 Baseline Environment

This section provides a description of the current state of the environment related to the subject site.

1.6.2 Likely Potential Effects of the Proposed Development

This section allows for a description of the direct and indirect impacts that the proposed development is likely to have on aspects of the environment affected. This is done with reference to both the Baseline Environment sections and the Description of the Proposed Project chapter, while also referring to the magnitude, duration, consequences (including use of natural resources) and significance of any impact.

1.6.3 Mitigation Measures

This section provides a description of the measures envisaged to prevent, reduce and (where possible) offset any significant adverse effects on the environment that are practicable or reasonable, having regard to the potential impacts.

1.6.4 Monitoring

This section outlines monitoring measures (for both construction and operational stages), where appropriate, in cases where significant adverse impacts have been identified.

1.6.5 Consideration of Alternatives

This part of the EIAR describes the reasonable alternatives considered and provides a rationale for the chosen option, having regard to environmental factors listed at Article 3(1) of the EIA Directive.

1.6.6 Interactions

This section provides an overview of the inter-relationship between each of the different environmental aspects assessed, as identified by each of the specialists within their respective chapters.

1.6.7 Cumulative Impacts

This chapter has regard to the potential cumulative impact upon the environment arising from the proposed project, in combination with other developments (committed or planned projects) in the surrounding area. The other projects assessed in combination with the proposed development are outlined in Chapter 20 of this NTS.

1.7 EIAR Project Team and Guarantee of Competency and Independence

The Environmental Impact Assessment Report was completed by a project team led by Tom Phillips + Associates, who also prepared a number of the chapters.

In accordance with EIA Directive 2014/52/EU, we confirm that the experts involved in the preparation of this EIAR are fully qualified and competent in their respective fields. Each has extensive proven expertise in the relevant field concerned, thus ensuring that the information provided herein is complete and of high quality. The individual members of the team and their respective inputs and competency are detailed in Appendix 1 of this report.

2.0 DESCRIPTION OF THE PROPOSED PROJECT

2.1 Site History

There has been only one previous planning permission on the site, a Strategic Housing Development (SHD) (ABP ref. no. 313176-22) granted in May 2023. In summary, a 10-year permission was granted for 852 no. residential units (permission originally sought for 977 no. units) with a restaurant, retail units, medical units, creche and community centre.

This permission has not been implemented and the site remains in its form and layout as when it was the Former Central Mental Hospital. All existing structures on the site were built prior to the establishment of the planning system or built under special powers associated with the use of the site.

Prior to any development on the site, the grounds were used as farmland.

The original 'Central Criminal Lunatic Asylum' building was completed in 1850, with further building works in 1863. The enclosed environs of the asylum featured multiple airing courts, lean-to shelters and privies, being divided between male and female quarters by a single wall. Adjacent facilities to the main building included an infirmary, kitchen and laundry. A central yard was located inside the entrance, enclosed by the surrounding buildings.

The gate lodge (gate house) was built in 1853, echoing the style of the main hospital building. The protestant chapel was completed in 1866. An unspecified portion of the boundary wall was rebuilt in 1868.

Prior to 1871, a gazebo was erected, referred to as the 'bandstand', and was later relocated within the site, but has since been removed from the site. It was also in the years prior to 1871 that the final and current configuration of the boundary wall was established, now including a portion of land to the south of the site which had previously been farmland.

A Roman Catholic chapel was built in 1901, which caused a change to the entrance drive. A group of buildings were established to the west half of the now former kitchen garden after World War II, alongside other smaller structures located elsewhere on the site. The east half of the former kitchen garden was later redeveloped into a car park.

While most historic buildings remain in situ, losses include the mortuary and a small building to the south.

Many new additions to the site and its facilities were completed throughout the late 20th century, including a large HSE facility to the south of the main building in the late 1980s/ early 1990s.

2.2 Current Site Use

The site had been used by the HSE as the Former Central Mental Hospital for Ireland, until it was vacated in 2022, in a scheduled move to a new facility in Portrane. This move is written into law under the Central Mental Hospital (Relocation) Act 2020, with the current facility being described by the HSE as *"no longer fit to provide the best patient care experience".*

The site is now vacant although the grounds are currently in use as temporary accommodation erected by the Department of Children, Equality, Disability, Integration and Youth (DCEDIY) under exempted development provisions under a licenced agreement with the OPW (landowners).

2.3 Site Location and Surrounding Area

The site is located at the former Central Mental Hospital lands in Dundrum, Dublin 14. The entire site is 11.39 ha and is now vacant. The site is 9.7 ha.

The site is bound by a 4 – 5 m perimeter wall and is accessed via an entrance off Dundrum Road. The overall site comprises a number of existing buildings including the main Hospital building, the Chapel and a number of associated buildings and small temporary structures. The site also consists of a number of landscape features such as a walled garden, an orchard and mature trees.

In terms of statutory designations, the Hospital buildings and the Chapel appear on the National Inventory of Architectural Heritage (NIAH):

- Hospital (Reg. No. 60220001) – Rated as 'National' importance;
- Chapel (Reg. No. 60220002) – Rated as 'Regional' importance;
- Hospital (Reg. No. 60220003) – Rated as 'Regional' importance

Furthermore, the *Dún Laoghaire Rathdown County Development Plan 2022-2028*, listed a number of structures at the site as 'Protected Structures'. The 'Asylum', 'Catholic Chapel' and 'Hospital Building' are included in the Record of Protected Structures:

- Asylum (RPS No. 2072);
- Catholic Chapel (RPS No. 2071); and
- Hospital Building (RPS No. 2073)

None of the aforementioned buildings are located within the red line associated with the planning application.

In terms of surrounding existing context, Dundrum Road and the Luas Green Line is located to the west of the site, each providing a strong north-south connection. The site is bound by residential properties and gardens at Mulvey Park to the north, at Friarsland Road to the east, at Larchfield Road to the south and south east and at Annaville Grove, Annaville Park and Annaville Terrace to the west. The surrounding residential properties are generally one or two storeys in scale with a four-storey apartment block located close to the site boundary near Annaville Grove. In addition to the residential properties referred to above, part of the sites southernmost boundary abuts Rosemount Green, a DLRCC public open space and football pitch.

The site is well served by existing public transport infrastructure; the nearest Luas Green line stop is located approximately 450m west of the site at Windy Arbour. Dublin Bus network infrastructure includes stops at Dundrum Road (R117), Goatstown Road (R825), Churchtown Road and Taney Road (both R112).

The wider environs of the site are predominantly characterised by low scale residential. However, there are a number of commercial uses within close proximity.

This includes Dundrum Town Centre (and Shopping Centre), approx. 1.6 km to the south of the application site entrance. From the site, Dundrum Town Centre is reachable in 20 minutes by foot, 6 minutes by bike and 7 minutes by bus.

Dundrum Business Park is located approximately 200m to the north of the site which comprises a number of office blocks and associated car parking.

Dublin City Centre is located approximately 7.2 km from the application site and accessible by both Luas (27 minutes) and bus (22 minutes).

There are a number of schools in close proximity, namely, Our Lady's National School, Jesus and Mary College, Our Lady's Grove and Our Lady's Grove Primary School. University College Dublin (UCD) is located within c. 1 km (as the crow flies) to the northeast of the application site.

In terms of retail provision, as noted above, the proposed development site is located c. 1km north of Dundrum Town Centre, which is identified as a 'Level 2 – Major Town Centre' within the Retail Hierarchy for the Greater Dublin Area (GDA) set out in the *Dún Laoghaire-Rathdown County Development Plan 2022-2028.*

2.3.1 Site Specific Flood Risk Assessment (SSFRA)

The *Site Specific Flood Risk Assessment* (enclosed with this planning application) has been carried out in accordance with the OPW publication *"The Planning System and Flood Risk Assessment Guidelines for Planning Authorities".* The developed site is shown not to be at a significant risk from flooding and to not create a significant risk to adjoining areas or downstream.

Standard mitigation measures will apply on site such as house and apartment floor levels are set 150mm above the surrounding ground level to minimise flood risk. All basements on site will be waterproofed. The top of basement car park entrance ramps will be set 100mm above the surrounding ground levels to avoid backflow of surface water down the ramps.

Therefore, the development is deemed acceptable and appropriate from a flood risk assessment perspective.

2.3.2 Existing Site Access

The site is currently accessed via the vehicular entrance off Dundrum Road. The site is currently served by a single access point only.

2.4 The Need for the Proposed Project

The proposed development is supported by planning policy at all tiers. The project delivers a significant number of new homes as required to meet housing objectives outlined throughout the relevant policy documents. The relevant national, regional and local planning policy is

outlined in in Chapter 3 (Planning and Development Context) and further in the supporting planning documentation.

Furthermore, the Applicant (Dún-Laoghaire Rathdown County Council in partnership with the Land Development Agency) is making a significant positive contribution towards enabling an affordable housing sector in Ireland. As part of this, the LDA is working towards providing new homes and making them available to individuals and families through the schemes provided by the enactment of the *Affordable Housing Bill 2020.* Further detail surrounding the function of the LDA is contained within Section 14 of the *Land Development Agency Act 2021.*

The vision is to transform the former Central Mental Hospital site in Dundrum into a leading example of sustainable living which delivers a mix of tenures where people of all ages can live, whilst retaining and celebrating the site's historic assets and providing an outstanding destination for leisure with distinctive and diverse public spaces. Further to this, the proposal focuses on realising compact growth which promotes modal shift towards healthy, active and sustainable mobility.

2.4 Overview of Construction Phase and Construction Works

For full construction related details, refer to the *Construction Environmental Management Plan* (CEMP) prepared by Barrett Mahony Consulting Engineers. A summary is provided below.

2.4.1 Construction Phase

The following sets out the construction phases for the development proposed as part of this application as set out in Figure 2.1. This is separate to the phasing of masterplan for which there will be an additional planning application in the future on the remaining part of the masterplan lands. The proposed development will be constructed and handed over in two phased building clusters as illustrated in Figure 2.1. The phasing of the site will be subject to market conditions and commercial considerations at the time of construction. Phase 1 includes the roads and primary infrastructure/services for the full scheme including works to the new Dundrum Road junction. Block commencements and completions within each phase will be based on a programme to be agreed with the contractor. Construction of the phases is expected to overlap and run concurrently. Subject to a final planning grant, the expected start date is currently envisaged to be mid-2025 with an envisaged 5 to 6 year construction period. Completion of the first residential units is anticipated in mid-2027. It should be noted that these dates estimates only.

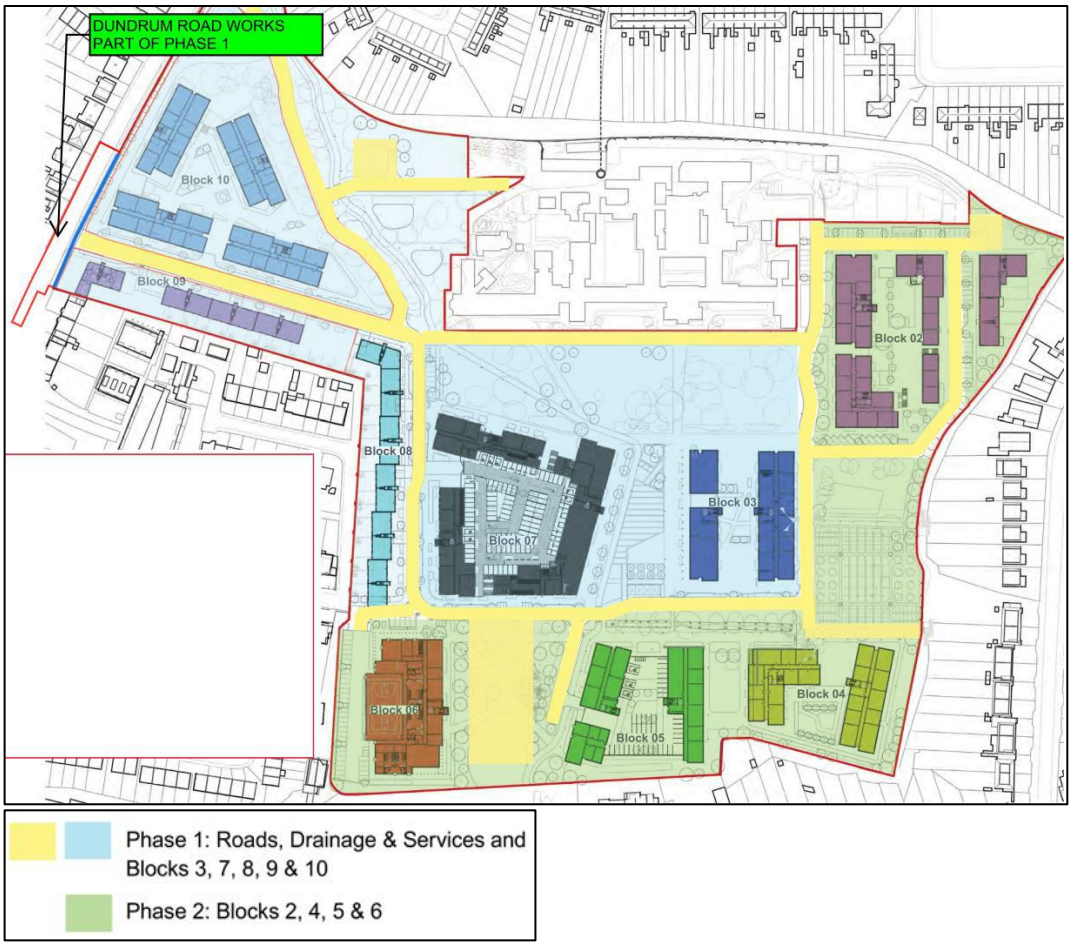

Figure 2.1: Plan of the Development showing outline phasing

2.4.2 Proposed Construction Works and Methods

The proposed development within this planning application will be divided into two phases as set out in the preceding section. Works in each phase will consist of the following:

Enabling Works:

- Secure site and set up contractor welfare facilities and site accommodation.
- Locate and terminate existing live services.
- Install tree protection and remove trees that are earmarked to be felled.
- Asbestos surveys to be carried out to existing buildings.
- Removal of structures listed for demolition.
- Excavate and remove material to the required formation. This will require a site strip and removal from the site of material or temporary stock piling.
- Maintain the existing entrance and incorporate new haul roads and hardstanding as required.
- Make good and install any finished boundary treatments that can be installed at this stage.

Main Construction Works:

- Foundations: Excavate foundations down to boulder clay for the houses and duplexes.
- Bored piled foundations will be required for the apartment blocks.
- Basement/half-basement: In-situ reinforced concrete (RC) walls and slabs. External waterproofing membrane.
- Retail, creche and community spaces: In-situ RC frame with beam and slab floors. Glazing and cladding. These spaces are generally incorporated into the new apartment buildings. The community hall will be constructed in structural steel.
- Residential Apartments: RC frame with flat slab floors, typically supported off RC blade columns. In-situ RC stair/lift cores. Precast concrete or brick cladding typically with glazing.
- Glazing & cladding to all buildings.
- Architectural finishes, non-loadbearing walls, ceilings, sanitary ware, ironmongery etc. associated with the construction of all proposed buildings.
- Mechanical and electrical services and lift installations.
- External landscaping and green roof finishes.
- Buried drainage, water supply and other buried services associated with the proposed development.

2.4.3 Demolition

The development will consist of the demolition of existing structures (3,736 sq m), including:

- Single storey former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Single storey ancillary and temporary structures including portacabins (677 sq m);
- Removal of existing internal sub-divisions/ fencing, including removal of security fence at Dundrum Road entrance;
- Demolition of section of porch and glazed screens at Gate Lodge building (4 sq m);
- Removal of walls adjacent to Main Hospital Building;
- Alterations and removal of section of wall to Walled Garden.

2.4.4 Construction Working Hours

Unless required otherwise by An Bord Pleanála, it is proposed that standard construction working hours should apply, i.e.:

- 7am to 7pm Monday to Friday
- 8am to 2pm on Saturdays.

If there is any occasion where work may be carried out outside normal daytime working hours, DLRCC, local residents and businesses in the area which are likely to be affected by the proposed works will be notified in advance.

The Project Supervisor Construction Stage (PSCS) will liaise with the applicant to agree specific arrangements for activities outside of normal working hours that will minimise the risk and disruption to residents and members of the public. All reasonable precautions will be taken

for the operation of plant and equipment to avoid nuisance and excess noise impact on the surrounding residents.

2.4.5 Site Access and Egress

It is proposed that construction traffic access to the site will be primarily via the existing access road off Dundrum Road with the new road into the site also to be used as set out in Figure 2.2. The new road entrance from the site onto the Dundrum Road is circa 150m south from the existing entrance.

Controlled access points to the site, in the form of gates or doors/turnstiles, will be kept locked any time that these areas are not monitored (e.g. outside working hours). During working hours, a gateman will control traffic movements and deliveries at any active site access to ensure safe access and egress to and from the site onto the public roads. All personnel working on site must have a valid Safe Pass card and be inducted by the Main Contractor with regard to site specific information.

2.4.6 Air Quality – Dust and Dirt

A dust minimisation plan will be formulated for the construction phase of the project. The Contactor will put in place a regime for monitoring dust deposition rates in the vicinity of the site during the works with mitigation measures in place to reduce impact of dust from construction.

2.4.7 Noise and Vibration

Some impact of noise is likely to occur as a result of the construction activity. Construction work is of a temporary nature and the resulting noise levels are usually acceptable, subject to typical management and time control procedures which are common to most urban based development projects.

The noise and vibration limits to be applied for the duration of the works.

Refer to the *Construction Environmental Management Plan* (CEMP) prepared by Barrett Mahony Consulting Engineers for a full set of mitigations relating to noise and vibration.

2.4.8 Construction Traffic Management

The works associated with the new development will result in additional traffic on the neighbouring road network, with vehicle movements associated with the removal of excavated material, demolition waste, construction waste, and the delivery of new materials, concrete trucks etc.

Figure 2.2 shows the recommended construction traffic routes from the site to the main road network (the M50 motorway).

Deliveries will be scheduled outside of peak traffic hours to avoid disturbance to pedestrian and vehicular traffic in the vicinity of the site. The vehicular site security barrier in both phases of the development will be located back from the site entrance to that phase to allow

construction traffic to build up inside of the site in the event of a high concentration of deliveries at once, for example, during a concrete pour. In Phase 1 the existing Dundrum Road entrance will be the primary construction access to that phase and vehicle site security barrier will be set back along the existing access road back from the Dundrum Road by 50metres minimum to allow for queuing of traffic inside the site. No construction or delivery vehicle will be left outside of the site while waiting to gain access to the site. There is no available space on Dundrum Road or roads within the vicinity of the development for construction traffic to queue.

Unloading bays will be provided for deliveries to the site within the hoarded perimeter of the site for each phase. The unloading bays will need to be accessible by tower crane and fork lifts. Appropriately demarcated storage zones will be used to separate and segregate materials. All deliveries to site will be scheduled to ensure their timely arrival and to avoid the need for storing large quantities of materials on site. No offsite storage of materials will be required.

The construction traffic access routes are shown on Figure 2.2 below.

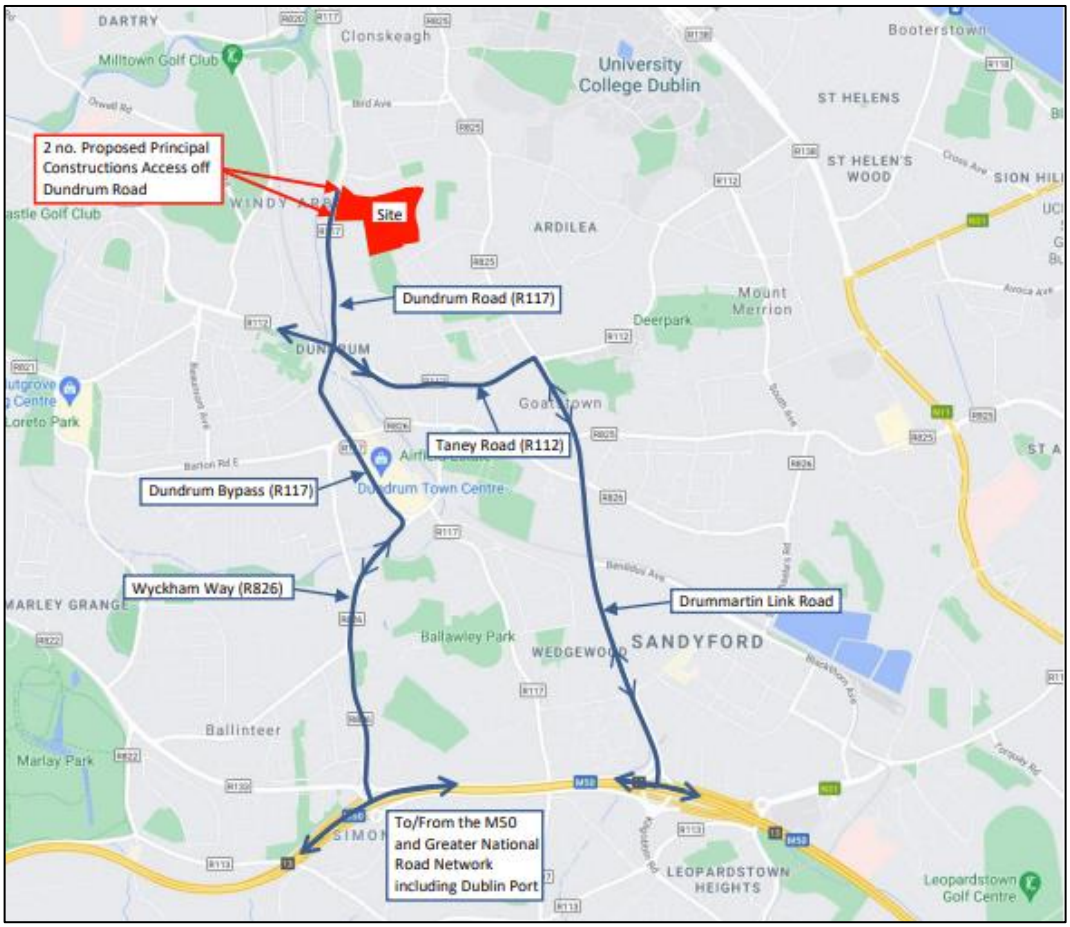

Figure 2.2: Construction Traffic Access Routes

2.4.9 Health and Safety

The site will be made secure during each phase by implementing the following measures:

- Operate a site induction process for all site staff.

- Ensure all site staff shall have current 'safe pass' cards.
- Install adequate site hoarding to the site boundary.
- Maintain site security staff at all times.
- Separate pedestrian access from construction at the main site entrance off the Dundrum Road and provide a safe walkway for pedestrians along the main access road into the site.
- Ensure restricted access is maintained to the works.

2.4.10 Construction Waste

Construction waste arising from the proposed development will be handled in line with the *Resource and Waste Management Plan* prepared by AWN and enclosed as Appendix 19.1 of this EIAR.

This plan will provide information necessary to ensure that the management of construction and demolition waste at the site is undertaken in accordance with all current legal and industry standards including the *Waste Management Act 1996* as amended and associated Regulations, *Environmental Protection Agency Act 1992* as amended, *Litter Pollution Act 1997* as amended and the National Waste Management Plan for a Circular Economy (NWMPCE) (2024).

In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also provides appropriate measures in relation to the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

2.5 Description of the Operational Phase of the Proposed Project

2.5.1 Key Statistics

Development Statistic	Part 10 Application
Site Area	9.7 ha (includes 0.1 ha outside of the former CMH site)
No. of Residential Units	934 no. units
Total Gross Floor Area	c. 94,058 sq m (c. 93,980 sq m excluding retained existing buildings)
Non-Residential Floorspace	4,380 sq m
Demolition of Certain Existing Structures	3,677 sq m
Gross Residential Density	97 units p/h (based on 9.6 ha site, which excludes the 0.1 ha of public road outside the former CMH site which is included in the Application site)
Net Residential Density	146 units p/h (based on a net site area of 6.7 ha excluding the public open space and Gate Lodge, and a portion of the site for the other non-residential uses, as per the methodology in the Compact Settlement Guidelines 2024)
Plot Ratio	0.98 (based on a 9.6 ha area, i.e. excluding the 0.1 ha outside the main former CMH site)

Site Coverage	30% (based on a 9.6 ha area, i.e. excluding the 0.1 ha outside the main former CMH site)
Height	2 – 8 storeys (including Lower Ground Floors at Block 02 and 10) over Basement Levels at Blocks 03 and 04.)
Car Parking	524 no. spaces (466 no. residential spaces, (including 57 no. visitor spaces and 12 no. Car Share spaces) (0.5 spaces per unit), and 58 no. non-residential)
Motorbike Parking	79 no. Motorbike Spaces (57 no. residential spaces and 22 no. spaces).
Public Open Space	2.9 ha

2.5.2 Overview of proposed development

The proposed development will deliver 934 no. residential units arranged in 9 no. blocks (Blocks 02-10) ranging between 2 and 8 storeys in height with part-basement. The proposal will also contain the following non-residential uses:

- Change of use and renovation of existing single storey Gate Lodge building (former reception/staff area) to provide a café unit (78 sq m);
  - 1 no restaurant unit (266 sq m) located at ground floor level at Block 03;
- 3 no. retail units (1,160 sq m) located at ground floor level at Blocks 03 and 07;
- 1 no. medical unit (288 sq m) located at ground floor level at Block 02;
- A new childcare facility (716 sq m) and associated outdoor play area located at lower ground and ground floor level at Block 10;
- A management suite (123 sq m) located at ground floor level at Block 10; and
  A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,749 sq m) located at ground and first floor level at Block 06

The proposed residential units will be arranged as follows:

Block 2

Block 02 consists of new build duplexes and apartments adjacent to the former Main Hospital Building. A medical centre is proposed at the north west of Block 02 accessible from ground level adjacent to the former Main Hospital Building.

Block 02 is broken into a number of elements which reflect the geometry of the adjacent buildings stepping up from 2-storeys at the boundary to 6-storeys closer to the centre of the site.

A homezone street is proposed between the apartments at Block 02 and the apartments/duplexes with on-street parking provided close to front doors integrated with the landscape design.

Residential amenity is provided in a communal landscaped courtyard above parking.

The building has a gross floor area of 11,245 sq m and comprises 104 no. residential units, including:

- 104 no. apartments, comprising:
  - 35 no. 1-bed units, 10 no. 2-bed 3 person units, 28 no. 2-bed 4 person units, 23 no. 3-bed units;
  - 6 no. duplex apartments (6 no. 3-bed units); and
  - 2 no. Assisted Living Units (2 no. 5-bed units).

The proposed medical centre (288 sq m) is located within Block 02.

Block 03

Block 03 consists of new build apartments adjacent to the walled garden and the new public plaza. Retail spaces and a restaurant are proposed at ground floor at the west side of Block 03 with a covered colonnade.
Residential amenity is provided partly in a communal landscaped courtyard, above car parking, with an internal residential amenity space (130 sq m) at ground floor overlooking the central plaza. The building heights at Block 03 are predominantly 6 and 8-storey comprising of two linear blocks to allow daylight into the courtyard. Plant areas are proposed at a lower ground level.
The building has a gross floor area of 15,662 sq m and comprises 156 no. residential units, including:

- 156 no. apartments (52 no. 1-bed units, 26 no. 2-bed 3 person units, 52 no. 2-bed 4 person units and 26 no. 3-bed units).

Proposed retail unit (274 sqm) and a restaurant unit (266 sqm) are located at the ground floor of Block 03.

Block 04

Block 04 consists of new build apartments located to the south of the Walled Garden. Residential amenity is provided in a communal landscaped courtyard above parking.

Block 04 steps from 4-storeys at the boundaries to existing neighbouring residences at Larchfield Road and Friarsland Road to a maximum height of 6-storeys at the north west corner, which relates to the massing at the adjacent section of Block 03. Clerestory windows are proposed to the south elevation of Block 04 to prevent overlooking from the proposed development

The building has a gross floor area of 8,957 sq m and comprises 92 no. apartments, including:

- 92 no. apartments (31 no. 1-bed units, 17 no. 2-bed 3 person units, 32 no. 2-bed 4 person units, and 12 no. 3-bed units).

Block 05

Block 05 consists of new build apartments adjacent to the proposed Public Park to the south of the site adjacent to Rosemount Green. Residential amenity is provided in a communal landscaped courtyard above car parking.

Block 05 steps in height from 4-storeys at the south, adjacent to existing residences at Larchfield Road, to 5- and 6-storeys at the north elevation. Placement of windows has been carefully considered to mitigate any potential impact to the privacy of neighbours at Larchfield Road.

The building has a gross floor area of 10,450 sq m and comprises 114 no. residential units, including:

- 114 no. apartments (56 no. 1-bed units, 2no. 2-bed 3 person units, 43 no. 2-bed 4 person units and 13 no. 3-bed units)

Block 06

Block 06 consists of new build apartments to the west of the proposed community park, in the southwestern corner of the site.

Extensive community facilities consisting of a multipurpose hall, community rooms and sports changing facilities are proposed at Ground and First Floor. Residential amenity is provided at second floor level with the provision of a landscaped roof garden to the south accessed from the residential cores. Surface car parking is provided for residents and visitors to the community facility.

Block 06 steps from one to two-storeys adjacent to the western site boundary to 4-storeys at the new communal park and is on-axis with the proposed street between Blocks 07 and 08. Balconies and window placement on the western facade have been designed to mitigate any potential impact to neighbouring properties at Annaville Grove.

The building has a gross floor area of 5,383 sq m and comprises 37 no. residential units, including:

- 37 no. apartments (17 no. 1-bed units, 4 no. 2-bed 3 person units, 12 no. 2-bed 4 persons and 4 no. 3-bed units).

The community facilities consist of a multipurpose hall, community rooms and sports changing facilities (1,749 sqm sq m).

Block 07

Block 07 is located in the central part of the site, it consists of new build apartments adjacent to the proposed plaza with retail spaces at the east at Ground Floor.

Residential amenity is provided in a communal landscaped courtyard above parking. Block 07 is primarily a six and seven-storey building with various set-backs and insets to break down the building's massing at primary locations. The building's footprint was designed to take account of the existing mature trees at the Central Parkland while also addressing the Public Plaza and the streets to the west and south. A break has been provided in the north east corner of the block, providing views through to the facade of the main hospital building from the residential amenity areas.

The building has a gross floor area of 20,960 sq m and comprises 218 no. residential units, including:

- 218 no. apartments (78 no. 1-bed units, 24 no. 2-bed 3 person units, 110 no. 2-bed 4 person units and 6 no. 3-bed units)

The building also comprises of retail floorspace 793 sq m sq m at ground floor level.

Block 08

Block 08 consists of new build apartments along the western boundary of the site adjacent to Annaville Grove.

Residential amenity is provided by communal landscape space to the rear between Block 08 and the boundary wall at Annaville Grove. Surface car parking provided.

The scale of Block 08 allows the development to 'step down' in height from the centre of the site to the site boundaries.

Block 08 has a gross residential area of 2,555 sq m and comprises 24 no. residential units, including:

- 24 no. apartments (2 no. 2 -bed 3 person units and 22 no. 2-bed 4 person units)

Block 09

Block 09 is located in the north western corner of the site adjacent to the boundary with Annaville Grove, it consists of 2-storey apartment Blocks provided close to the proposed new entrance at Dundrum Road, providing a transition in scale to adjoining developments to the south.

Residential amenity is provided by communal landscape space to the rear between Block 09 and the boundary wall at Annaville. Surface car parking is provided.

Block 09 has a gross residential area of 1,729 sq m and comprises 16 no. residential units, including:

- 16 no. apartments (16 no. 3-bed units)

Block 10

Block 10 consists of new build apartments adjacent to Dundrum Road, the existing tree-lined avenue and the proposed new access route into the site, at the western end of the site.

A childcare facility for the development is proposed at the eastern elevation with external play space proposed. Residential amenity is provided in a communal landscaped courtyard, with car parking below.

Block 10 is formed as a number of brick elements stepping in height from 5-storeys to 6-storeys with contrasting tones of materials provided creating visual interest in the facade. The existing ground levels allow for three no. apartments to be proposed towards the existing entrance at Dundrum Road, creating a 7-storey element one location.

Block 10 has a gross floor area of 17,038 sq m and comprises 173 no. residential units, including:

- 173 no. apartments (73 no. 1-bed units, 15 no. 2-bed 3 person units, 73 no. 2-bed 4 person and 12 no. 3-bed units)

The building also comprises a childcare facility (716 sq m) with external amenity space at ground floor level and a management suite (123 sq m).

2.5.3 Non-Residential Development

The proposed development will deliver a range of non-residential uses which will be integrated into the proposed residential blocks (mainly at ground floor level) and within the existing Gate Lodge.

The proposed non-residential uses include a childcare facility (716 sq m), a medical centre (288 sq m), a restaurant (266 sq m), a café (78 sq m), 3 no. retail units (1,160 sq m), a management suite (123 sq m) and a community facility (1,749 sq m). The new community centre facility includes a multi-purpose hall changing rooms, meetings rooms, storage and associated facilities. The community facility was designed in close coordination with DLRCC's Parks Department.

The proposed non-residential uses will serve both the residents of the proposed development and the existing community.

2.5.4 Landscape Strategy and Design

The proposed landscaping aims to create a diverse planting scheme that contributes to the overall biodiversity within the development and the wider area. Plant species have been selected with direct reference to the 'All-Ireland Pollinator Plan 2021-2025' and the approach aims to align with the specific policies and objectives as set out in the *Dún Laoghaire-Rathdown Development Plan 2022-2028*.

The overall planting approach is focused on creating a rich and biodiverse planting footprint in the context of a significant re-development of the site. The removal of existing hedgerows and grassland is offset by the addition of pollinator friendly wildflower meadows, tree planting and mixed native woodland along the Eco Corridor and in the community park south of the site. All retained tree and hedgerow protection measures will be in accordance with the mitigation recommendations prescribed in the ecologists and arborist report.

A variety of open space and softworks currently exists on the site. These elements function as part of the overall green framework of the site, providing a hierarchy of space that is not only visual aesthetic but provides opportunities for rest and recreation.

Proposed Tree Planting Species

The general planting strategy throughout the scheme is for significant structure tree planting with 2 metre clear stems to provide a leafy canopy layer, softening the proposed buildings and a base layer of low shrub/ groundcover and hedge planting to create low level seasonal interest and colour softening the hard surfaced areas and car parking. Eye level between the two planting types is kept clear to maintain sight lines throughout the scheme.

Native and naturalised tree species are to be planted within the public open space to increase opportunities for native wildlife. These will ultimately be large scale trees to designate a parkland character.

Street tree planting will consist of species suitable to the scale of the streetscape and those which will thrive in a streetscape environment. Street tree planting is located to avoid impacts with street lighting. Courtyard/Podium trees have been chosen for seasonal diversity and small form. They will be planted in raised beds in the podium developments. Private garden dwellings have a fruit tree planting in the gardens to enhance overall biodiversity and habitat creation on site.

Proposed Overall Planting Species

Native/adaptive climbers have been proposed through the scheme along the existing boundary wall. Species are chosen for robustness, seasonality, and biodiversity. Habitats will be formed along this boundary edge to the development public realm providing both visual and ecological rewards.

Low level shrub and groundcover planting will be in single species blocks taken from an overall palette of species throughout the scheme with flowers and fruits attractive to wildlife such as bees and butterflies. Species will be of maximum 1m height at maturity to maintain clear sight lines.

The principal objective of the landscape proposals is to provide a high quality public realm, which is accessible, safe and distinctive. Planting and landscape works will be carried out in accordance with BS4428. Trees will be advanced/semi-mature rootballed stock, in accordance with BS 8545.

Low level, low maintenance shrub planting will be used in planting beds containerised with a minimum size of 2 litre pots, Climbers will have 1 litre pots, all with a 75mm well composted fine bark mulch.

Hard Landscaping

The hardworks palette has been chosen to enhance the hard surfaces and network of plaza's, roads and paths which link and connect the development. For the historic landscape/ amenity trails, a self bound gravel in buff colour is proposed. This surface will form the main surface on the central park, offering an opportunity for walking and recreation. Hard paving will be provided to accent areas/ focal points. Further to this, roadside pathways will consist of brushed concrete. These paths will run alongside the road network and offer routes for pedestrians and cyclists. Macadam surface will incorporate buff textured aggregate to

compliments path surfaces. Blister paving will be provided at crossing to ensure legibility for the visually impaired.

Key Open Spaces

The development includes 2.9 ha of publicly accessible open space. The key open spaces include:

The proposed landscape strategy provides a number of key open spaces across the site, including:

- Central Parkland
- Entrance Plaza
- Central Square
- Community Park
- Walled Garden
- Elm Park Eco-Corridor
- Podiums

Figure 2.3: Extract from Aecom's Landscape Architecture and Public Realm Design Report showing the key aspects of the landscape strategy.

Play Strategy

The proposed landscape strategy includes a number of play spaces, including formal and informal play spaces. There are two designated playgrounds, one to the north of the site adjacent to the cycle track and the other in the community park south of site, in addition to informal 'natural play' opportunities throughout the site. Local play opportunities occur in the semi-private podium spaces.

Environment Strategy

In terms of habitat creation, the differing SuDs (Sustainable Drainage Systems) components contribute to habitat creation throughout the development. For example, water bodies and ponds will be vital habitats for frogs, newts and a variety of insects including dragonflies. Further to this, the public open spaces through the development have native meadow planting as per the All Ireland National Pollinator Plan together with species rich grasslands that provide habitats and food for insects and bees. Other habitats that will created through the proposed open space include:

- Open bonded brickwork within detailing of infrastructure buildings allowing for bat roosting;
- Bird and Mammalian nest boxes throughout the open public space;
- Log piles simulate fallen trees, and are valuable for mosses, lichens and fungi, as well as many insects through the wetlands and extensive greenroofs; and
- Crushed aggregate pathways along secondary pathways allows water to permeate naturally through the soil, without the need for drainage channels and associated infrastructure.

SuDs Components

The proposed SuDs strategy includes:

- Green roofs
- Permeable paving
- Bioretention systems
- Existing drains/ swales
- Raingardens
- Integrated wetlands
- Tree planting

Refer to the *Landscape Architecture and Public Realm Design Report* prepared by Aecom for full details in relation to landscaping proposals.

2.5.5 Public Open Space

The proposed development provides a significant quantum of high-quality open space which will be accessible to the public (2.9 ha). The proposed public open space provision equates to c. 30% of the total application site area. The space has been designed inclusively to serve the existing community as well as the residents of the proposed residential development. The removal of the southern section of the existing perimeter wall will result in a continuation of public open space between the proposed development and the existing Rosemount Green.

The proposed public open space incorporates a number of landscape features, such as the walled garden, mature trees and courtyard and open green space that contribute to the setting of the Main Hospital Building.

2.5.6 New Vehicular, Cyclist and Pedestrian Connections

In order to integrate the proposed development into the surrounding area, ensure permeability and improved connectivity between the application site and surrounding streets and achieve a positive interface with the surrounding public realm, the proposed development includes the removal of a number of sections of existing perimeter wall. It is noteworthy that the boundary wall remains intact at the various boundaries with neighbouring residential development. The proposed wall removal and resultant new connections are detailed below:

- A section of perimeter wall adjacent to Rosemount Green (south) will be removed to provide an interface with Rosemount Green. This will provide cyclist and pedestrian connection between the site and Rosemount Green.

- A new opening in the wall is proposed adjacent to Annaville Park, at the western boundary, to provide a cyclist and pedestrian connection.

- Partial wall removal is proposed adjacent to Dundrum Road, this will provide a second vehicular access onto Dundrum Road which will also facilitate cyclist and pedestrian access.

- To the north of the existing Dundrum Road entrance, further partial wall removal is proposed to enhance permeability and visibility.

2.5.7 Car Parking and Cycle Parking

The proposed development provides car parking for both the residential and non-residential components of the scheme comprising 466 no. residential parking spaces and 58 no. non-residential parking spaces. 79 no. motorcycle parking spaces are to be provided comprising 57 no. residential spaces and 22 no. non-residential spaces.

The proposed development will also provide a total of 2,532 no. bicycle spaces. Some 2,338 no. residential bicycle parking spaces (1,850 no. long stay and 488 no. short stay/ visitor), and 144 no. commercial bicycle parking spaces (60 no. long stay and 84 no. short stay).

2.5.8 Site Utilities

Foul Network Design

Each residential block is serviced by 225mm diameter branch connections in accordance with the Irish Water Code of Practice for Wastewater Infrastructure. It is noted the proposed foul outfall pipe is 300mm diameter pipe at 1:100 minimum fall which has a capacity of approximately 100 l/s and is deemed adequate for the peak foul flows anticipated.

Water Supply

The proposed development will be connected to the new public watermain in the Dundrum Road.

Natural Gas

The site is served by a 250mm main entering Northwest. The pipe enters Northwest and extends to the former Central Mental Hospital. There is an existing pressure reducing station within the site and the existing gas lines feed the hospital and swimming pool building.

The new development will primarily require electrical driven heat pumps and air source heat pumps, so the gas load is anticipated to be limited to commercial facilities. The new gas load is forecasted to be in the order of 3MW and following discussions with BGE is not anticipated to be a concern. If the load proves challenging at a later date in design development, there is a larger 315mm gas pipe available. The gas infrastructure in generally good in this area.

Electricity

The existing site consists of 2 ESBN supplies fed from two separate substations located on Larchfield Road and opposite St. Columbanus Road.

Connection 1 is tapped from the overhead line and is installed underground and terminates South of the site.

Connection 2 extends from the substation opposite St. Columbanus Road and terminates within the Central Mental Hospital grounds North of the main building.

The new development will require a new HV (high voltage) infrastructure that will feed multiple substations around the site. The final design details to be clarified by the ESB post planning.

The new substation will require unobstructed 24/7 access for the ESB in line with their guidelines. A formalised application process to the ESB will be required post planning.

Telecommunications

The former Central Mental Hospital is currently fed from the EIR network. The EIR network enters the site from the Dundrum Road.

Virgin Media is also currently available in the area with ample coverage around the site. A Virgin Media network extends around the perimeter wall adjacent to Dundrum Road.

The proposed development will consist of approximately 9 Comms rooms – to be finalised during detailed internal design. Each apartment block and commercial unit will have individual comms rooms to facilitate telecommunications. The proposed development will consist of separate underground networks connecting to all new apartment blocks and commercial premises.

3.0 CONSIDERATION OF ALTERNATIVES

3.1 Introduction

The consideration of alternatives is necessary to evaluate the likely environmental consequences of a range of development strategies for the site within the constraints imposed by environmental and planning conditions.

3.2 Legislative Context

Article 5 (1) of the 2014 Directive requires the consideration of reasonable alternatives which are relevant to the project and take into account the effects of the project on the environment. It states under Article 5 (1) that;

> *"Where an environmental impact assessment is required, the developer shall prepare and submit an environmental impact assessment report. The information to be provided by the developer shall include at least…"*
>
> *"…a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment."*

Schedule 6 of the *Planning and Development Regulations, 2001* (as amended) sets out the information which is to be contained in an EIAR and Part 1 (d) of Schedule 6 states that the following shall be included:

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

In accordance with the EPA Guidelines, different types of alternatives may be considered at several key stages during the process. As environmental issues emerge during the preparation of the EIAR, alternative designs may need to be considered early on in the process or alternative mitigation options may need to be considered towards the end of the process.

The EPA Guidelines states:

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

The consideration and examination of alternatives is set out below.

3.3 Alternatives Examined

3.3.1 *'Do-Nothing'* Alternative

A 'do-nothing scenario' has been considered in respect of the site. It was found to represent an unsustainable and inefficient use of strategically important lands for the delivery of residential development, as reflected by the land zoning objective and Core Strategy contained within the *Dún Laoghaire-Rathdown County Development Plan 2022-2028*.

As a result of the zoning of the lands and the specific reference to the strategic importance of the site from a residential capacity perspective contained within the Development Plan, together with consideration of the proximity of the lands and accessibility to Dublin City and significant employment locations, the 'do-nothing scenario' was discounted.

3.3.2 Alternative Locations

The Former Central Mental Hospital lands are state owned and deemed no longer required for institutional use. The planning policy provisions at all tiers support the redevelopment of the subject lands in line with the above objective, having regard to the land zoning objective, the location of the lands in an existing built-up area and the scale of the lands which provides capacity for a significant number of new homes. Furthermore, we note the identification of the site as a Strategic Regeneration Site in the *Dún Laoghaire-Rathdown County Development Plan 2022-2028.* The *Dundrum Local Area Plan (LAP) 2023* has also identified the site as a Key Development Area with the current proposal aligning with the indicative urban form for the site as set out in the LAP.

As well as this, the principle and general built form and layout were considered acceptable by An Bord Pleanála under the previously permitted Strategic Housing Development (SHD) (ABP ref. no. 313176-22) granted in May 2023. This scheme confirms the acceptability in principle of the site's re-development for higher density residential purposes.

As such, from a planning perspective, the site is considered appropriate for a development of the proposed nature and will deliver housing on state lands, in line with an identified national priority.

In addition to the above planning considerations, the subject site was considered to be a suitable location for the proposed development taking into account the following environmental considerations:

- The connectivity of the subject site with the regional and national road network, public transport provision and existing social infrastructure was considered to have the potential to contribute to reduced transport emissions and associated noise and air quality impacts that could arise from a residential development.

- The availability of utilities, water, electrical and gas infrastructure provides opportunity to connect into existing services and infrastructure (subject to capacity), avoiding significant and further reaching construction activities associated with the introduction of new piped infrastructure etc. It is considered that this has the potential to reduce impact upon the land, soils and local biodiversity.

- The location of the lands in an existing urban built up area and in close proximity to a Major Town Centre (Dundrum Town Centre) is considered to provide potential for positive impacts surrounding the population, including employment opportunities at the construction and operation stage. It is also considered that the site is well located to provide benefits to the existing local population in relation to local facilities and amenities, public open space and community uses. It is also considered that the existing social infrastructure, including open space, educational institutions, retail and leisure provision in the surrounding area has the potential to support the proposed population.

- In landscape and visual terms, whilst the site is identified as having notable heritage and natural assets, the characteristics of the existing surrounding context (urban/ built up) is considered to have the potential to absorb further development.

In summary, having regard to the environmental considerations above, the proposed location is considered to be appropriate for a development of the proposed scale and nature.

3.3.3 Alternative Design and Layout

The proposal has evolved in line with the layout set out in the Dundrum LAP, this includes the block layout, height strategy, movement strategy principles relating to provision of green space. Since the approval of the Strategic Housing Development scheme (SHD) (ABP ref. no. 313176-22), alternative designs to further rationalise the design were considered as more information came to light about the site, the planning context evolved and as a result of the continued engagement with Dún Laoghaire-Rathdown County Council on the proposal. Therefore, while the design evolved prior to the submission of the SHD application, this proposal is based off the scheme that has already been consented by An Bord Pleanála and this section does not detail the design exercises and master-planning that took place prior to arriving at the SHD proposal which are all fully detailed in the EIAR relating to the SHD.

Four design options were considered:

Alternative Design 1 - Strategic Housing Development (SHD) Proposed Scheme (ABP ref. no. 313176-22)

This proposal was submitted to An Bord Pleanála in 2022 comprised of 977 no. new homes, 3,889 sq m of non-residential floorspace and approximately 3.05 ha of public open space. The development also included the partial demolition of the perimeter wall and creation of new vehicular, cyclist and pedestrian access points as well as the demolition of the existing structures on site (3,497sqm).

While a 10-year permission was granted in May 2024, a condition was attached to the permission that altered the layout and reduced the number of homes to be provided. Therefore, Alternative Design 1 as proposed was discounted by An Bord Pleanála and resulted in Alternative Design 1A.

Alternative Design 1A – Strategic Housing Development (SHD) Approved Scheme (ABP ref. no. 313176-22)

The approved SHD scheme resulted in a condition that significantly reduced the number of residential units permitted, however, this resulted in an inefficient form of development because of internal design changes.

It was therefore considered that in order to facilitate the most appropriate form of development for the site, a re-design of the scheme was required and Alternative Design 1A was discounted

Alternative Design 2 – Large-scale Residential Development (LRD) s247 scheme

A re-design of the scheme was initially progressed as a Large-scale Residential Development (LRD). The re-design was submitted to the Planning Authority for a s247 pre-planning consultation which was held in February 2024.

This re-design broadly followed the form and layout of the SHD application, in line with the Dundrum LAP with the main changes including the reduction in height along the site perimeter, an increase in height in the central blocks and an increase in the size of the creche. Following feedback from Dun Laoghaire Rathdown County Council, the scheme evolved and progressed to Alternative Design 3.

Alternative Design 3 – Engagement with DLR May 2024

Following continued engagement with DLRCC and given the shared aims of the Council and the LDA to increase the provision of social and affordable housing, a decision was made to jointly submit a Part 10 planning application directly to An Bord Pleanála.

In May 2024, a further iteration of the scheme was submitted to DLRCC setting out the changes to the design and layout following the feedback received in February 2024. Following continued engagement between various departments within DLRCC and the LDA, the scheme evolved into Alternative Design 4.

Alternative Design 4 – The Proposed Project

The proposed project is considered to be the final alternative and preferred option. This planning application submission, which includes this EIAR, provides a full assessment of the proposed project from a planning and environmental perspective.

3.3.4 Alternative Process

In terms of the planning process followed, the Large-scale Residential Development (LRD) process was introduced on 17th December 2021 to replace the Strategic Housing Development (SHD) process. This process includes a Section 247 pre-planning meeting. This application was to originally follow the LRD process, as indicated by the s247 pre-planning in February 2024, however after continued engagement with DLRCC it was decided to jointly pursue a Part 10 Planning Application.

The decision to pursue a Part 10 Planning Application in respect of the proposed project is considered to represent the optimal solution in the context of the various project specific constraints and the remit of the LDA as a state agency and Dún Laoghaire Rathdown County Council.

Given the residential nature of the scheme, it is not envisaged that there are any alternative processes that could have been followed in respect of the assessment of environmental impact. It is therefore concluded that the consideration of an alternative process is not considered relevant to this EIAR.

4.0 POPULATION AND HUMAN HEALTH

4.1 Introduction

This chapter has been prepared by AWN consulting Ltd to assess and evaluate the likely impacts of the Proposed Development on population and human health.

4.2 Methodology

This chapter evaluates the effects, if any, which the development has had or will have on Population and Human Heath as defined in Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022), Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (EU, 2017) this chapter has considered the "existence, activities and health of people" with respect to "topics which are manifested in the env+ironment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions"

The assessment of significance is a professional appraisal based on the sensitivity of the receptor and the magnitude of effect.

4.3 Baseline Environment

The Proposed Development site is located in the Local Authority Area of Dún Laoghaire-Rathdown County Council (DLRCC), and in the electoral divisions (ED) of Clonskeagh-Windy Arbour (267059) and Churchtown-Woodlawn (267046). The area selected for the assessment of the impact on human health has been defined as the ED containing the Proposed Development site and those within 1 km of the Proposed Development site. The EDs which will be included alongside Clonskeagh-Windy Arbour and Churchtown-Woodlawn are Clonskeagh-Farranboley (267057), Clonskeagh-Milltown (267055), Clonskeagh-Belfield (267056), Clonskeagh-Roebuck (267058), Dundrum-Taney (267082), Dundrum-Kilmacud (267079), Dundrum-Sweetmount (267081) and Churchtown-Orwell (267045) which are also located within the DLRCC Local Authority Area.

The sensitivity of the surrounding area has been considered based on the details of the published data available from CSO and Pobal. The study area has seen an overall growth in the population between the 2016 and 2022 census. The Pobal HP Deprivation Index shows the area to be 'Marginally Above Average' to 'Affluent', indicating a Low Population Sensitivity (Deprivation) within the study area.

There is a low age dependency ratio, therefore large proportion of the population is within working age, implying a higher degree of self-sufficiency and resilience to change. There is a high proportion of the population in the study are [54.2% - 66.9%] describing their health status as 'Very Good' and a very low proportion as 'Bad' or 'Very Bad'. The data presented above shows that the study area has a similar to slightly lower % of persons with a disability than the national average, which indicates that for persons within the area there are no greater restrictions on daily activities, compared to the national average.

Taking these factors into account, it can be concluded that the population in the study area is not particularly sensitive to change, categorising it with regard to the criteria set out in Figure 7.2 of Chapter 7 as having Low Population Sensitivity.

4.4 Potential Impacts of the Proposed Project

4.4.1 Construction Phase

Construction will have an indirect positive effect on support industries such as builder suppliers, construction material manufacture, maintenance contracts, equipment supply, landscaping and other local services. There will also be a need to bring in specialist workers on a regular basis that may increase the above estimated working population at times. Specialists are only likely to stay for shorter periods depending on the nature of the work. The construction phase, therefore, is considered to have the potential to have a **positive, not significant, short term** impact on the economy and employment of the local and wider area.

Visual impacts and amenity impacts perceived by individual persons are highly subjective and difficult to characterise however, generally, the effects would be negative since construction is an inherently, unavoidably unsightly activity. It is considered that the overall impact on the community will be **negative, moderate** and **short term** during the construction phase.

Humans can also be exposed to petroleum hydrocarbons or other contaminants by inhaling the fumes / dust from contaminated soil. Hydrocarbons and petroleum products have the greatest risk for human health when they are in drinking water. Therefore, on this basis in the absence of mitigation measures the potential impacts during the construction phase on human health and populations due to changes to land and emissions are **negative, not significant** to **slight** and **short-term.**

The greatest potential impact on air quality during the construction phase of the Proposed Development is from construction dust emissions and the potential for nuisance dust and through human health impacts from PM_{10} and $PM_{2.5}$ emissions. In the absence of mitigation there is the potential for **short-term, negative** and **slight** impacts to human health from air quality.

At the closest Noise Sensitive Locations (NSLs), i.e. locations such as residences, schools, hospitals, etc, which would be impacted by high noise levels, (5 – 15m), in the absence of mitigation, there will be a **negative**, **significant** to **very significant** and **short term** impact. The potential impact reduces with distance from the works, at the furthest NSLs the impact will be **negative, not significant** and **short term.**

The projected peak volume of construction traffic, including both truck and staff movements, is lower than the peak traffic volumes projected for the fully occupied development during the operational stage. Therefore, the impact on human beings and in particular road users such as local Businesses, and Residences would be **slight, negative** and **short term.**

The potential effect is **imperceptible** and unlikely in respect of Major Accident Hazards or Natural Disasters on Population and Human Health during the construction phase of the Proposed Development.

4.4.2 Operational Phase

The addition of new residential accommodation to the area will have a positive impact on the vibrancy and vitality of the area and will help to support existing community and social infrastructure, in addition to further supporting nearby neighbourhood centre and commercial businesses. . The Proposed Development will also provide café, restaurant, retail, medical, childcare and community centre units. As such, in providing these facilities the Proposed Development will also provide long term job opportunities for people living in the area to operate the facilities. The impact on population will be **positive, moderate** and **long term.**

The Proposed Development design includes communal amenity open spaces, such as courtyards, as well as public open spaces and play areas. Therefore, the Proposed Development when operational will have a **positive, not significant** and **long term** impact on local amenities.

As discussed in Chapter 14 – Landscape and Visual, there is a strong functional and thematic relationship between the Proposed Development and the nearby Dundrum Town Centre. They both represent intensive contemporary design responses to the needs of a rapidly growing urban population. The potential effects of the Proposed Development on the local population in terms of landscape are **moderate, positive** and **long term**.

There are no discharges to any open water courses included in the design. The projected surface water network has been designed to provide sufficient capacity to contain and convey all surface water runoff associated with the 1 in 100 year event to the attenuation basins without any overland flooding. In the event of an accidental leakage of oil from the parking areas, this will be intercepted by the drainage infrastructure proposed. In the absence of mitigation measures the potential impacts during the construction phase on human health and populations due to land and water emissions are **negative**, **slight** and **long term**.

Operational phase traffic has the potential to impact local air quality as a result of increased vehicle movements associated with the implementation of the Proposed Development. The impact of NO_2, PM_{10} and $PM_{2.5}$ emissions for the modelled Opening Year and Design Year was predicted at the nearest sensitive receptors to the development. Therefore, it can be determined that the impact from air quality to human health during the operational stage is **direct, negative, long-term** and **not significant.**

In the absence of mitigation, the resulting impact of noise generated during the operational phase of the Proposed Development on human health is likely to be **negative, long-term, not significant** for the vast majority of noise sensitive locations, while the potential impact at the nearest residences during the operational phase will be **negative, long-term,** and **slight.**

Traffic modelling analysis was undertaken for AM and PM peak weekday periods to assess the capacity of the proposed new signalised access junction onto Dundrum Road with the Proposed Development traffic in place. In the absence of mitigation, the potential impacts of traffic generated by the Proposed Development on human health will be **negative, moderate** and **long term.**

The potential effect is **imperceptible**, and unlikely, respect of Major Accident Hazards or Natural Disasters on Population and Human Health Operational Phase of the Proposed Development.

4.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

4.6 Residual Impacts (post-mitigation)

Following the implementation of the appropriate mitigation measures, the residual impacts during the construction phase will be:

- Businesses and Residences: **positive, not significant** and **short term**;
- Landscape, Amenity and Tourism: **neutral, imperceptible** and **short term**;
- Land and Water Emissions: **neutral, imperceptible** and **short term**;
- Air Emissions: **short term, direct, negative** and **not significant**;
- Noise and Vibration Emissions:
    - **negative, moderate** to **significant** and **temporary** residual impact from construction noise during initial works occurring at distances of up to 50m and other construction works at a distance of up to 20m from the nearest noise sensitive locations;
    - **short term, negative** and **slight** to **moderate** residual impact from construction noise for the remainder of construction; and
    - **neutral, short term** and **imperceptible** residual impact from construction vibration;
- Traffic and Transportation: **short term, slight** and **negative**; and
- Major Accident Hazards and/or Natural Disasters: no residual impact.

Following the implementation of the appropriate mitigation measures, the residual impacts during the operational phase will be:

- Businesses and Residences: **positive, moderate** and **long term**;
- Landscape, Amenity and Tourism:
    - **positive, long term** and **not significant** residual impact on amenity and tourism; and
    - **positive, moderate** and **long term** residual impact on landscape;
- Land and Water Emissions: **neutral, imperceptible** and **long term**;
- Air Emissions: **direct, long term, negative** and **not significant**;
- Noise and Vibration Emissions: **negative, not significant** and **long term**;
- Traffic and Transportation: **negative, not significant** and **long term**; and
- Major Accident Hazards and/or Natural Disasters: no residual impact.

The Proposed Development will result in several positive impacts. These include a positive economic impact during both the construction and operational phases of the Proposed Development, along with positive impacts regarding provision of residential units and public open spaces.

5.0 BIODIVERSITY

5.1 Introduction

This section of the EIAR was carried out by Altemar Ltd. It assesses the biodiversity value of the proposed development area and the potential impacts of the development on the ecology of the surrounding area within the potential Zone of Influence (ZOI). It also outlines the standard construction, operational, and monitoring measures that are proposed to minimise potential impacts and to improve the biodiversity potential of the proposed development site.

5.2 Methodology

A pre-survey data search was carried out. This included examining records and data from the National Parks and Wildlife Service, National Biological Data Centre, the Environmental Protection Agency, in addition to aerial, 6 inch maps and historic satellite imagery. A detailed desktop review and field surveys were carried out, initially in April 2020 and continued through 2021 to 2024. Bat surveys were carried out from 2020-2024.

The Breeding Bird Assessments in 2023 & 2024 were also carried out by Altemar (Appendix 8.4) (Frank (BSc. Zoology & MSc. Zoology). The 2024 habitat and species assessments were carried out by Emma Peters BSc Environmental Science of Altemar.

The Wintering Bird Assessment 2020/2021 was carried out by MKO (Appendix 8.1). This wintering bird assessment report was prepared by Kathryn Sheridan (M.Sc.), an Ornithologist with MKO, Patrick Manley (B.Sc.), a Project Ornithologist with MKO and Project Director, Dervla O'Dowd (B.Sc. Env.). The field surveys were undertaken in the 2020/2021 winter season by Donnacha Woods and Kathryn Sheridan, both of whom are competent experts in bird surveying. The Wintering Bird Assessment in 2021/2022 was carried out by Flynn Furney (Appendix 8.2) and again by Flynn Furney in 2023/2024 (Appendix 8.3). The 2021/2022 and 2023/2024 survey work was carried out by Eric Dempsey.

5.3 Baseline Environment

Proximity to Designated Conservation Sites and Habitats or Species of Conservation Interest

There are a number of conservation sites located in close proximity to the proposed development site, namely, South Dublin Bay SAC (2.8 km), South Dublin Bay and River Tolka Estuary SPA (2.8 km), South Dublin Bay pNHA (2.8 km), and Sandymount Strand/Tolka Estuary Ramsar site (2.9 km). There is a direct hydrological pathway to these conservation sites via the proposed surface water drainage strategy and the existing drain that runs through the site. Out of an abundance of caution, it is considered that this direct hydrological pathway has the potential to significantly affect the conservational objectives of the above sites in addition to North Dublin Bay (SAC & pNHA), North Bull Island (SPA & Ramsar site), and North-West Irish Sea SPA (7.7 km).

Evaluation of Species and Habitats on-site

The site was previously highly maintained and has increased biodiversity value due to the lack of management. Wildflowers are blooming from the seed bank, longer vegetation and encroaching scrub has provided a larger resource for birds to nest. No rare or protected habitats were noted. However, the treelines and mature trees within the scattered trees and parkland habitats would be deemed to be of local biodiversity importance primarily as a result of being a foraging and roosting habitat for both birds and bats.

The protected species badger (*Meles meles)* was observed on site. Two active badger setts were identified, one of which was an active breeding sett with two cubs regularly observed emerging via camera footage. A Badger Survey, Assessment and Mitigation Measures Report was prepared by Dr. Chris Smal (Mammal ecologist) in consultation with NPWS and a Badger Conservation Plan was prepared by Bryan Deegan MSc. Environmental science based on consultation with Dr. Chris Smal and NPWS. Bats were also noted foraging and roosting within two trees on site and in buildings adjacent to the site.

5.4 Potential Impacts of the Proposed Project

5.4.1 Construction Phase

The proposed construction of a residential development could potentially impact on the existing ecology of the site and the surrounding area. These potential construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development. There is an intact biodiversity corridor/pathway from the proposed development site to the Dublin Bay Designated sites via the drain on site and the Elm Park Stream and via the surface water drainage to the River Slang. As a result, there is the potential for downstream impacts on designated conservation sites and aquatic ecology via surface water runoff.

The impact of the development during construction phase will also be a loss of habitats and species in the vicinity of the treelines, scattered trees and parkland, the onsite drain and grassland. It would be expected that the avian fauna associated with these habitats would also be displaced. No flora or habitats of conservation importance were noted during the surveys. The most significant impact to birds will be during the construction phase with the permanent removal of any grassland, trees and to a lesser extent the levelling of the land to accommodate the houses.

The protected species badger (*Meles meles)* was observed on site. Two active badger setts were identified, one of which was an active breeding sett with two cubs regularly observed emerging via camera footage. The badger is a Red Data Book species. It is standard best practice to make special provisions for badgers affected by development, specifically the implementation of exclusion zones around setts. A Badger conservation plan has been prepared in consultation with NPWS and Dr. Chris Smal. The small set under the concrete slab is not in the proposed development site. The breeding sett will be retained on site. Phasing of the project is designed to mitigate the potential effects on badgers in consultation with NPWSE. Phasing of the project has been designed to allow for the works to be carried out in

line with the Badger Conservation Plan which has been developed in consultation with Dr. Chris Smal (mammal ecologist), Bryan Deegan (MCIEEM) and the NPWS.

In relation to bats, in 2020 & 2021 the site was brightly lit with security lighting however, in 2023 & 2024 this was reduced to just the main buildings. As a result of reduced lighting and potentially a lack of management on site bat activity on site appeared to increase in 2023 & 2024. Construction lighting could reduce foraging on site. Trees on site have the potential for bat roosting and two bat roosts were noted within two trees. The removal of large trees on site will result in the loss of at least two bat roosts in addition to reducing the sites foraging potential. The removal of two bat roosts within two trees would be a Negative; Slight; permanent, localised, not significant impact. However, mitigation is required.

5.4.2 Operational Phase

In relation to designated conservation sites, during operation of the development foul water will be discharged to online mains services. Runoff from the development and roads will have to comply with the Water Pollution Acts and SUDS (Sustainable Urban Drainage System) requirements and will be attenuated and discharged at greenfield rates to the public surface water network. No significant impacts on biodiversity as a result in changes in hydrology or hydrogeology are foreseen. The waterflow will be maintained in the drain on site and no significant loss in water or deterioration in water quality is foreseen. As a result, no negative impact on conservation sites is foreseen.

In relation to bats, loss of foraging sites and commuting habitat may temporarily displace certain species. Artificial light creates a barrier to bats so lighting of treelines should be avoided where possible. Low impact lighting has been chosen in the vicinity of the retained treeline (See lux lighting contour on lighting plan). The proposed lighting plan should not significantly impact the bat species that will utilise the retained treelines. Mitigation is required in the form of a post construction light spill assessment

Petrochemical runoff from the site and road could potentially negatively directly or indirectly impact the aquatic ecology. Runoff from the development and roads will have to comply with County Council requirements and will require petrochemical interception and will be attenuated and discharged at greenfield rates to the public surface water network. The drainage connections and the installations in relation to petrochemical interception should be inspected by the project ecologist. New ponds and water features are proposed that would encourage frogs within the area.

With regard to birds, during the operational phase of the development there will be an increase in disturbance including noise and light that could potentially impact on birds on site. As the landscaping elements improve with maturity it would be expected that the biodiversity value of the site to birds and flora would also increase. Landscape, light spill and habitat management will be important to overall impact of the operational phase. Ecological supervision of the elements of the accompanying Habitat management Plan are required.

In relation to terrestrial mammal species, the protected species badger was noted on site. A Badger conservation plan had been prepared in consultation with NPWS and DLR biodiversity officer. The small set under the concrete slab is not in the proposed development site. The breeding sett will be retained on site. Phasing of the project is designed to mitigate the potential effects on badgers in consultation with NPWS. Mitigation is required.

5.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

5.6 Residual Impacts (post-mitigation)

Based on the implementation of the mitigation measures outlined in the Biodiversity (Ch. 08) and Hydrology (Ch. 10) Chapters of the EIAR, no designated sites will be impacted by the proposed development. The successful implementation of the CEMP and additional measures outlined in the EIAR will be essential to the successful mitigation/offsetting of the loss of biodiversity on site.

The project ecologist will oversee the implementation of the mitigation measures outlined in the biodiversity chapter of the EIAR. This will include the carrying out of works in compliance with the Badger Conservation Plan and the Habitat Management Plan. In addition, bat mitigation measures will be in place in relation to the removal of trees on site and the potential effects on light spill on existing bats roosting on site. In addition, pollution control measures will be implemented to prevent downstream effects on biodiversity and designated sites.

The proposed development has satisfactorily addressed the current ecology on site into its design so that application of the mitigation measures outlined in this EIAR will help reduce its impact on the local ecology to an adequate level. Where possible biodiversity enhancement measures have been retained and implemented into design to enhance the overall biodiversity value of the site. As a result of the loss of certain biodiversity features on site and the introduction of new buildings and increased human disturbance in addition to the implementation of a sensitive landscaping strategy, with biodiversity enhancement measures it is considered that the overall impact on the ecology of the proposed development will result in a long term neutral residual impact on the existing ecology of the site and locality overall. This is primarily as a result of the loss of terrestrial habitats on site, supported by the creation of additional terrestrial biodiversity features, mitigation measures and a sensitive lighting strategy.

6.0 LAND, SOILS, GEOLOGY AND HYDROGEOLOGY

6.1 Introduction

This chapter of the EIAR assesses the impacts of a proposed development, primarily residential at the lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14. This chapter of the EIAR will be read in conjunction with the architectural and engineering drawings submitted as part of this planning application. This chapter has been prepared by Barrett Mahony Consulting Engineers.

6.2 Methodology

The assessment of the potential impact of the proposed development on the water bodies was carried out according to the methodology specified by the EPA and the specific criteria set out in the Guidelines on Information to be Contained in an Environmental Impact Statement (EPA 2022), the EIA Directive, Advice Notes on Current Practice (in preparation of Environmental Impact Statements) (EPA 20015), Environmental Impact Assessment (EIA), Guidance for Consent Authorities Regarding Sub-Threshold Development (DoEHLG 2003), Development Management Guidelines (DoEHLG, 2007) and Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessments August 2018.

The following sources of information were used in the completion of this assessment:

- Site Visit
- Geotechnical Site Investigation Report
- Civil Engineering Drawings Prepared by Barrett Mahony Consulting Engineers
- Geological Survey of Ireland (GSI) online maps and databases
- Eastern CFRAMS Flood Mapping from OPW
- EPA online maps and databases
- Topographical Survey
- Teagasc soil and sub-soil data.

6.3 Baseline Environment

6.3.1 Existing Site

The subject site is c9.6 ha with an additional 0.1 ha of works area on the Dundrum Road. It is currently occupied by the former Central Mental Hospital. There are other ancillary buildings on the site which are proposed to be demolished as part of the works, these include a swimming pool/sports hall, 2-storey red-brick building and temporary structures including portacabins.

The site is bounded on all sides by a boundary wall. Vehicular access to the site is through existing gates off the Dundrum Road at the Northwest corner.

There is considerable variation in ground levels across the site. In broad terms the main part of the site slopes down gradually from the southwest corner towards the northeast corner, from +45.21m OD down to +39.76m OD. The western portion of the site slopes down towards the Dundrum Road entrance at +38.44m OD. These low points are the furthest locations from the high topography in the south corner at a distance of 410m and 430m away respectively. Please refer to Figure 6.1 which is a summarised topographical survey.

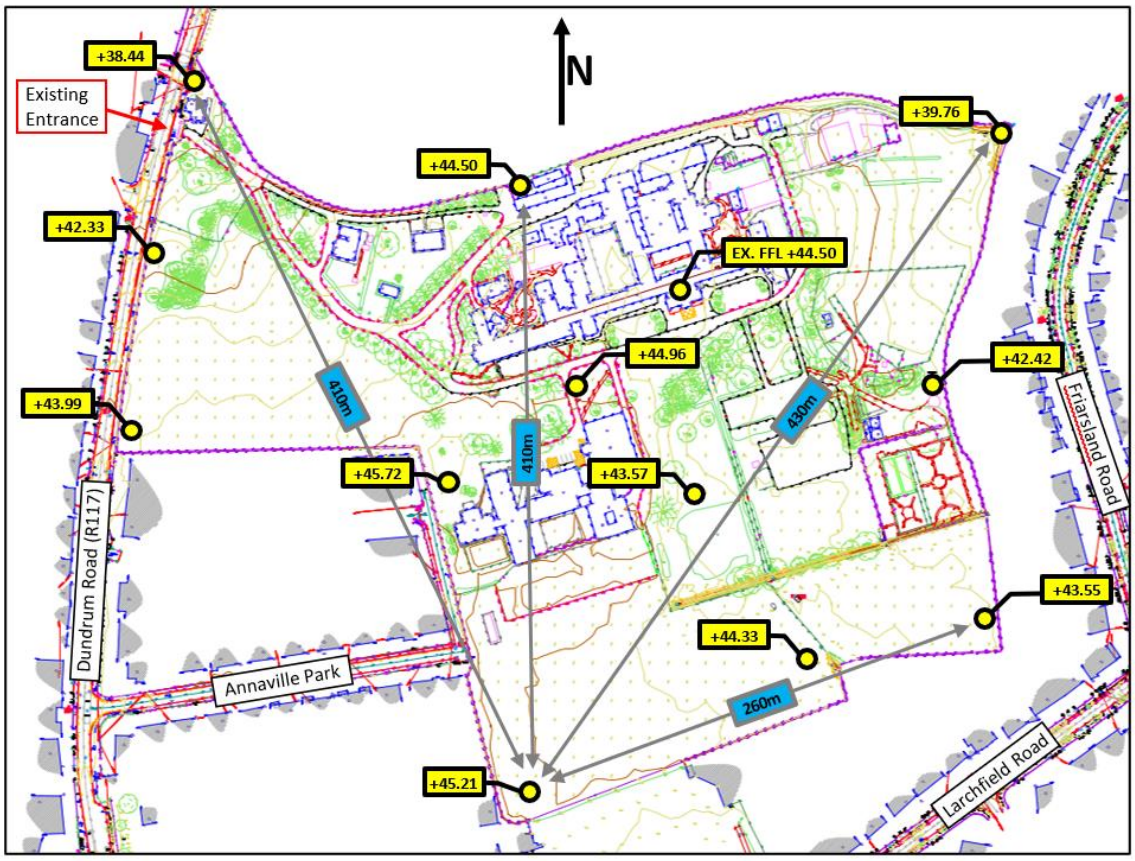

Figure 6.1 – Summary of the Existing Site Topography Superimposed on Topographical Survey Drawing (Ordnance Datum Levels).

6.3.2 Site Investigation Works

A site investigation was carried out in November 2021 by Site Investigations Ltd. The site investigation consisted of cable percussive boreholes, trial pits, soakaway tests, foundations pits, slit trenches and California Bearing Ratio (CBR) tests. All fieldworks were carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design. Below is a breakdown of the works carried out:

- 16 no. Cable Percussive Boreholes
- 35 no. Trial Pits
- 4 no. Soakaway Tests
- 7 no. Foundation Inspection Pits
- 3 no. Slit Trenches

- 6 no. CBR Tests

There was a total of 16no. boreholes which were put down in a minimum diameter of 200mm through soils and rock strata to their completion depths by a combination of methods, including light percussion boring using a Dando 150 rig.

Figure 6.2 – Site Investigation Works Plan

6.3.3 Bedrock Geology

The bedrock is identified as a combination of dark limestone and shale, refer to Figure 6.3 below. Bedrock was located approximately 8.5m below ground level, per the site investigation report.

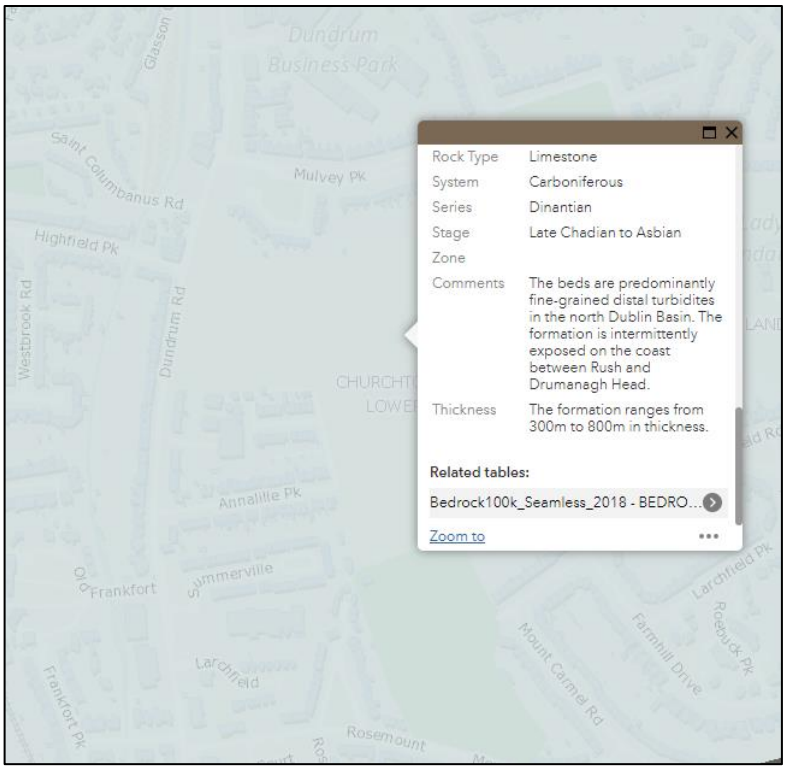

Figure 6.3 – Bedrock Mapping of Site by GSI *(https://gis.epa.ie/EPAMaps/, n.d.)*

6.3.5 Soils

The GSI soils map indicates the predominant soil type in the development area to be till derived from limestones. An extract from the GSI soils map relevant to the site is detailed in Figure 6.4 below.

Teagasc soil maps classify soils beneath most of the site as Urban, refer to Figure 6.5.

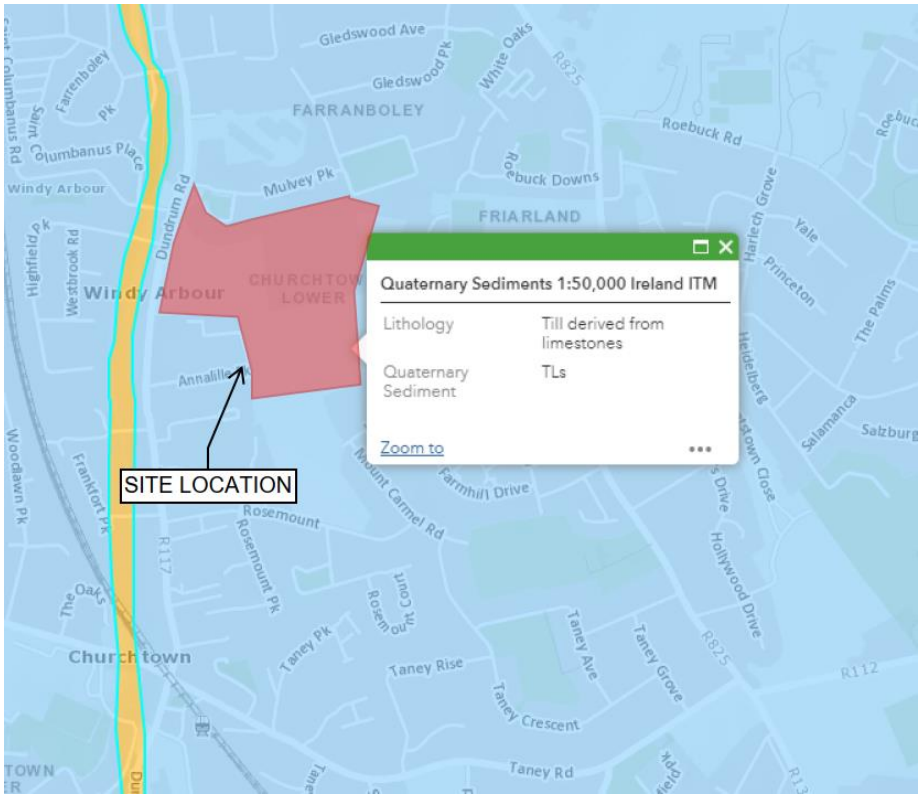

Figure 6.4 – Extract from GSI Quaternary Mapping – Till Derived from Limestones (GSI, n.d.)

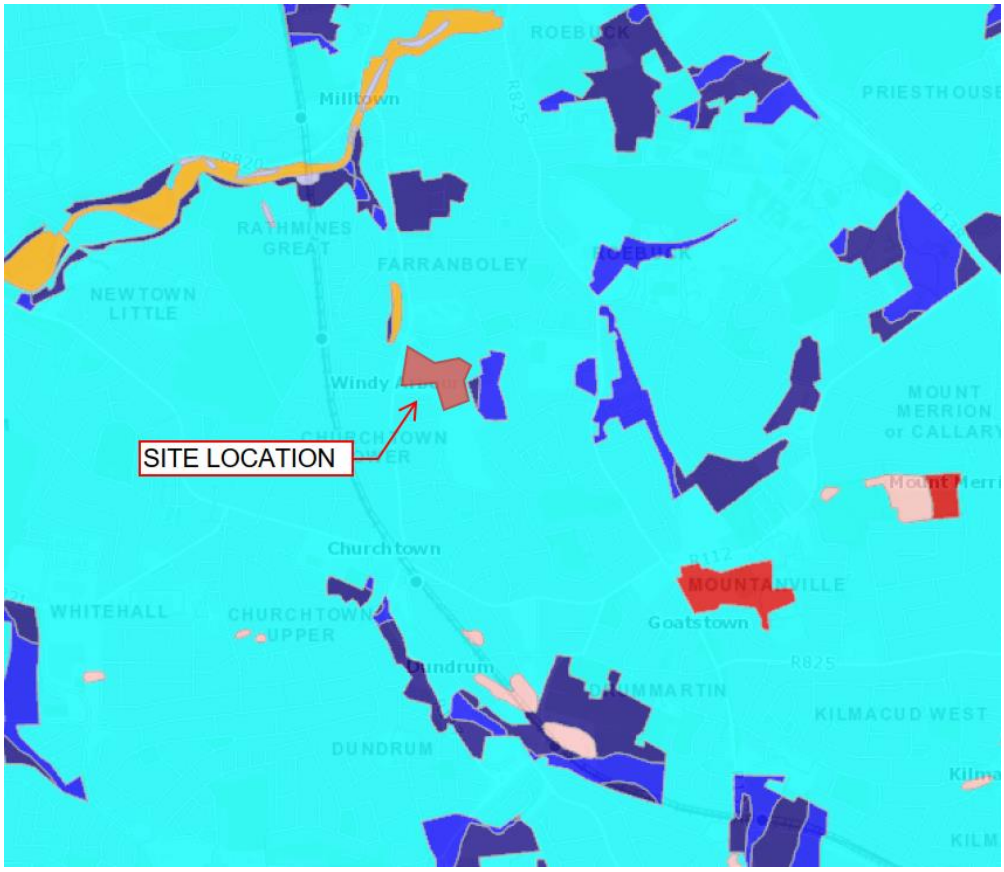

Figure 6.5 – Extract from Teagasc Soil Map (Teagasc, n.d.) (blue = urban soil types)

6.4 Potential Impacts of the Proposed Project

6.4.1 Construction Phase

6.4.1.1 Direct

The predicted direct impacts of the proposed development on the land and soils of the surrounding environment are assessed in this section for the construction phase.

It is anticipated that the general development site works, and excavation proposals will not impact the underlying bedrock geology during the construction phase. The maximum excavation depth for lift pits in basements is anticipated to extend to a depth of 4.5m below ground level. The impacts on the underlying bedrock geology arising from the construction phase will be minimal, with maximum excavation depths terminating c.4.0m above encountered bedrock levels.

The initial development of the site will involve extensive stripping of the topsoil and existing hardstanding (approximately the upper 300mm of soil). Excavation of subsoil layers is required to facilitate site development works, in particular the construction of foul and surface water sewers and underground surface water storage structures (attenuation). Bulk excavation is also required for several basements in the development. Reusable excavated soils and rock will be retained on-site for backfilling or drainage purposes to reduce the total volume of imported & exported material. Non-reusable surplus subsoil caused by excavations for foundations, roads and drainage will be stockpiled and taken off-site to a licensed landfill facility.

The associated construction earthworks and the removal of the topsoil and site hardstanding will expose subsoil layers to the effects of weathering. This will result in the erosion of soil, particularly in times of adverse weather conditions. Final buildings, roads and landscaping will eliminate these impacts. It is anticipated that the impact on soils arising from the construction phase will be negative, temporary and not significant.

The bulk earthworks are associated with the site strip and excavation of basements, half-basements and foundations for the new buildings with some levelling & re-grading of the site to accommodate roads & footpaths as necessary. The material excavated in the site strip is expected to be either made ground or Brown Boulder clay. Brown Boulder clay leading to Black Boulder clay is expected to be encountered during bulk excavation for the basement. Rock is not expected to be present within the excavated depth. The likely impact from the works will be moderate, permanent and negative.

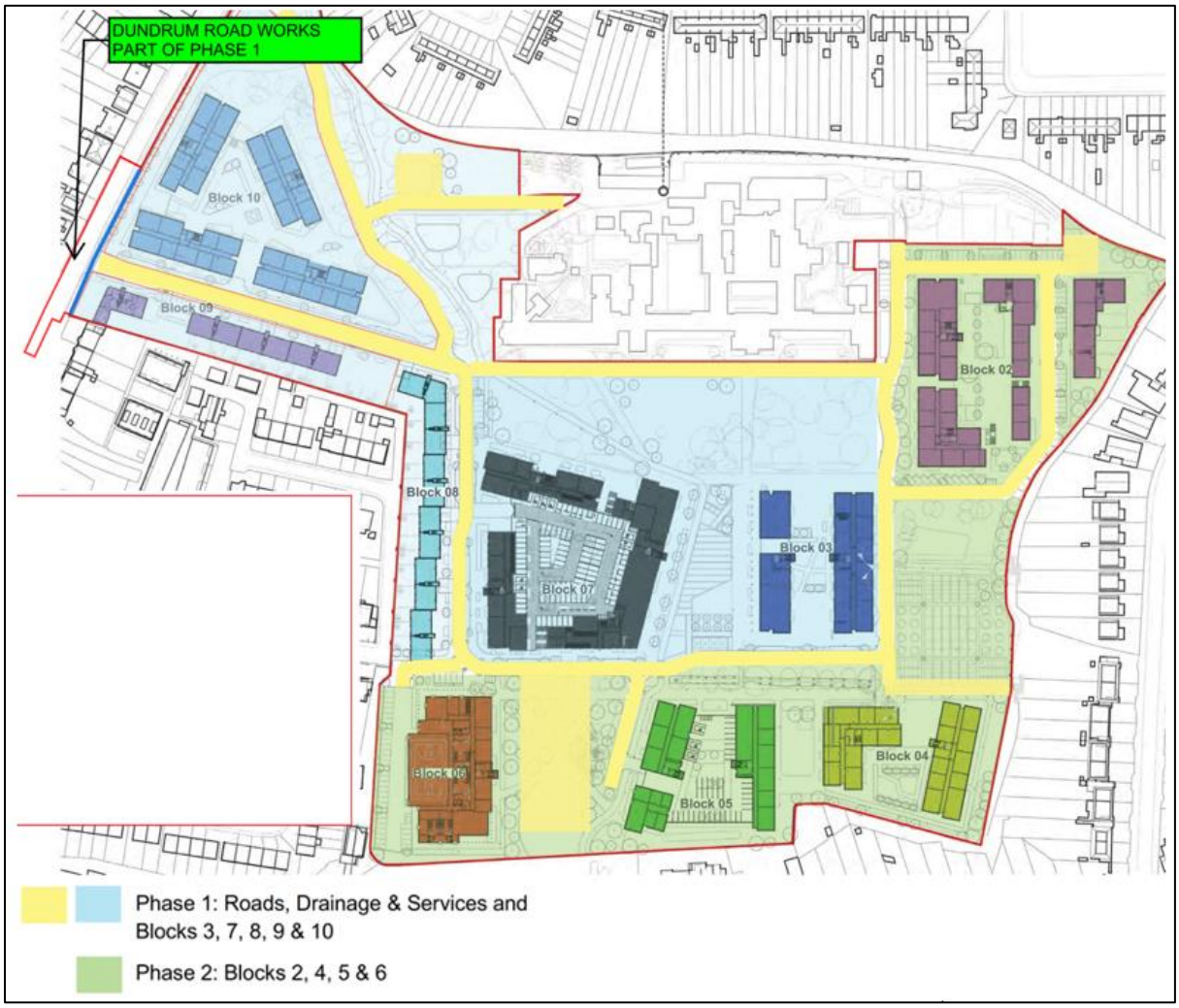

Figure 6.6 – Plan View of the Development Showing the Block Layout and Outline Phasing.

6.4.1.2 Indirect

There are areas of the site covered in hardstanding and it will be necessary to remove surplus and potentially hazardous materials (soil contaminated with fuel from tanks/vehicles) from the site via trucks. As part of the construction process, there will also be increased traffic to the site to facilitate the delivery of the required materials. Large volumes of stone will be required for construction of the roads, foundations and services and large quantities of concrete, bricks, steel, tar etc. will also be required for the construction works on-site.

The regular movement of heavy machinery and plant to and from the site would also result in an increased risk to the integrity of the surrounding road network, as well as facilitating the unwelcome transfer of mud and dust to surrounding access routes in the absence of mitigation.

6.4.1.3 Worst Case Scenario

There is a potential risk of localised contamination of the land and soils due to the accidental release of diesel fuel or similar hazardous materials during the construction phase, through

the failure of secondary containment or a material handling accident on the site, resulting in a negative, moderate, permanent impact on the land and soils. Appropriate remediation measures would be required depending on the nature and extent of any contamination caused under such a scenario. Potential remediation measures may include the excavation and treatment of contaminated soil and in-situ remediation techniques.

Small amounts of asbestos may be encountered as part of the demolition of existing infrastructure on site. Asbestos survey to be prepared in advance of any works being undertaken on site. In the unlikely event that asbestos is encountered DLRCC are to be notified, and a specialist contractor is to be commissioned to remove and dispose of any asbestos safely.

6.4.2 Operational Phase

6.4.2.1 Direct

Buildings, roads and landscaping for the development will negate the initial negative impact from the operational phase and will protect the exposed soils from ongoing weathering and erosion. The affects to the land & soils from the operational phase of the project will be neutral, imperceptible, and permanent.

6.4.2.2 Indirect

No indirect impacts on the land and soils are predicted for the operational phase.

6.4.2.3 Worst Case Scenario

On completion of the construction phase, it is not envisaged that there would be a further direct impact on the soil or geological structure. The day-to-day activities of the completed development would be unlikely to have any direct impact on the land and soils in the surrounding environment.

6.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

6.6 Residual Impacts

6.6.1 Construction Phase

The residual impacts are the final or intended effects which occur after the proposed mitigation measures have been implemented. The residual impacts from the construction phase of the development on the land and soils in the surrounding environment will be negative, temporary, and not significant.

6.6.2 Operational Phase

The residual impacts on the surrounding land and soils environment due to the operational phase works will be neutral, imperceptible, and permanent.

7.0 HYDROLOGY

7.1 Introduction

This chapter assesses and evaluates the likely significant impacts on the surrounding hydrological environment associated with the proposed development. AWN Consulting has carried out this assessment.

7.2 Methodology

This section examines the potential impacts of the development on hydrology, as outlined in the Environmental Protection Agency (EPA) 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022).. Additionally, the 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology, and Hydrogeology for National Road Schemes' by the National Roads Authority (now TII, 2009) are referenced where relevant assessment methodologies apply.

The potential environmental effects on the hydrological environment are rated based on the standard Environmental Impact Assessment Report (EIAR) impact predictions table, which considers the quality, significance, duration, and type of identified effect, following the criteria provided in the EPA Guidelines (2022). Each effect's duration is categorized as momentary, brief, temporary, short-term, medium-term, long-term, or permanent.

7.3 Baseline Environment

The proposed development site lies within the Liffey and Dublin Bay Catchment (Hydrometric Area 09) and Dodder River sub-catchment.

The Slang River runs from south of Dundrum Village northwards down to the River Dodder and passes c. 70 m west of the western site boundary on the Dundrum Road. An existing sewer also connects drainage to the Slang River. There is a hydrological connection between the drainage ditches on site to the Elm Park Stream.

The Slang River joins the River Dodder c. 850 m north of the development site. From here the River Dodder flows for approx. 2.0km before discharging into the Liffey Estuary lower transitional waterbody which in turn discharges into Dublin Bay coastal waterbody which includes Special Area of Conservation (SAC)/ proposed Natural Heritage Area (pNHA). As such there is a source pathway linkage to Dublin Bay though stormwater drainage. The distance and pathway will result in a high level of dilution and attenuation. There is also an indirect pathway to Dublin bay through the foul sewer network (post treatment at Ringsend WWTP licenced wastewater facility).

The rivers in this area are associated with the WFD surface waterbody Dodder_050. The most recent published status (www.epa.ie – River Waterbody WFD Status 2016-2021) of this waterbody is 'Moderate' and its environmental risk is qualified by the Water Framework Directive (2000/60/EC) (**WFD**) as 'At Risk of not achieving good status'. The Dublin Bay coastal waterbody has a WFD status (2016-2021) of 'Good' and a WFD risk score of 'Not at

risk'. The surface water quality data for the Liffey Estuary Lower and Dublin Bay (EPA, 2024) indicate that they are 'Unpolluted'.

The site is located within Flood Zone C (i.e. probability of fluvial flooding is low risk).

Based on the TII methodology (2009), the importance of the hydrological features at this site is rated as 'Low Importance'. The Attribute has a low quality or value on a local scale.

7.4 Potential Impacts of the Proposed Project

7.4.1 Construction Phase

During construction, surface water runoff may carry increased silt or become polluted from construction activities which could potentially damage water systems and watercourses if not adequately mitigated. Silt can come from dewatering, exposed ground, stockpiles, and access roads. Construction activities will necessitate use and storage of cement and concrete materials, temporary oils, and fuels on site. Small localised accidental releases of contaminating substances including hydrocarbons have the potential to occur from construction traffic and vehicles operating on site.

Mitigation measures include bunded storage areas for hazardous materials, designated refuelling areas, mobile double-skinned fuel storage tanks, and silt and sediment barriers to prevent soil erosion. A method statement will be prepared by the contractor and agreed with Dún Laoghaire-Rathdown County Council prior to commencement of the works, detailing the measures to be taken to ensure that no water run-off (without treatment) from the site occurs during the construction period. It is proposed that water be discharged into the existing sewer network on the surrounding public roads under a discharge license regulated by Dún Laoghaire-Rathdown County Council / Irish Water, issued under the Water Pollution Act (Section 4 License). Monitoring will be adopted to ensure that the water is of sufficient quality to discharge to the sewers.

The potential impact (with mitigation in place) on hydrology during construction is considered short-term and imperceptible (meaning measurable but without noticeable consequences), with a neutral impact on water quality.

7.4.2 Operational Phase

The proposed surface water drainage system is designed to comply with the 'Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies Technical Document – Volume 2, New Developments, 2005' and the 'Greater Dublin Regional Code of Practice for Drainage Works, V6.0 2005'.

The development will be split into three catchments. The catchments will be attenuated separately by means of blue roofs and attenuation tanks, which follow approximately the existing site topography and natural drainage routes on site. Catchment A drains to the Slang, via an existing surface water sewer. Catchments B drains to the open drainage ditch on site (B1) or just outside the site (B2).

In line with GDSDS requirements, flood waters be managed within the site for a 1 in 100-year flood. The surface water from each sub-catchment will flow into an attenuation tank or detention basin, which has been designed for that drained area. Discharge flow is restricted to the greenfield equivalent runoff for the catchment area.

The site will use the existing water supply and foul water network. The development will minimally affect local groundwater recharge and have an insignificant impact on the overall hydrological regime.

The total peak wastewater discharge is calculated at 22.884 l/s and be treated at the Irish Water Ringsend Wastewater Treatment Plant (WWTP), which operates under an EPA licence and is being upgraded to meet increased demand and improve treatment quality. The upgrade is expected to complete by 2025, includes additional secondary treatment capacity, upgraded treatment tanks, and a new phosphorus recovery process.
The development will not contribute additional stormwater to the WWTP, so it will not affect water quality during overflow situations caused by heavy rainfall.

7.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

7.6 Residual Impacts (post-mitigation)

The mitigation measures will ensure no significant impacts on the hydrological environment during construction, resulting in a short-term, imperceptible, and neutral residual impact.

Design measures will prevent significant impacts on the hydrological environment during the operational phase, resulting in a long-term, imperceptible, and neutral residual impact. The impact magnitude is considered negligible according to TII criteria.

8.0 AIR QUALITY

8.1 Introduction

The assessment of Air Quality is contained within Chapter 11 of Volume 2.

8.2 Baseline Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) and are generally well below the National and European Union (EU) ambient air quality standards.

8.3 Potential Impacts of the Proposed Project

8.3.1 Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document *'Guidance on the assessment of Dust from Demolition and Construction'*. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health and ecological effects. The surrounding area was assessed as being of high sensitivity to dust soiling and of low sensitivity to dust-related human health effects.

The sensitivity of the area was combined with the dust emission magnitude for the site under three distinct categories: demolition, earthworks, construction and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most a high risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for ***direct, short-term, negative,*** and ***slight*** impacts to air quality.

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

8.3.2 Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. The change in traffic associated with the operational phase of the proposed development met the PE-ENV-01106 criteria requiring a detailed air dispersion modelling assessment. Therefore, it can be

determined that during the operational phase, the proposed development will have a ***direct, long-term, negative*** and ***not significant*** impact on air quality.

8.4 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

8.5 Residual Impacts (post-mitigation)

8.5.1 Construction Phase

Detailed dust mitigation measures are outlined within Section 11.5 of Chapter 11 and also included in the Construction Environmental Management Plan (CEMP) to ensure that no significant nuisance as a result of construction dust emissions from demolition, earthworks, construction and trackout (movement of vehicles) occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction'* as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered ***direct, short-term, negative*** and ***not significant***, posing no nuisance at nearby sensitive receptors (such as local residences).

8.5.2 Operational Phase

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

8.6 Cumulative Impacts

8.6.1 Construction Phase

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken and relevant developments with the potential for cumulative impacts were identified.

There is a medium risk of dust impacts associated with the proposed development. The dust mitigation measures outlined in Section 11.5 of Chapter 11 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development and the permitted cumulative developments are deemed ***direct, short-term, negative*** and ***not significant.***

8.6.2 Operational Phase

The direct impacts of the operational phase on air quality associated with the proposed development are predicted to be imperceptible. Cumulative impacts are considered ***direct, long-term, negative*** and ***not significant.***

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

9.0 CLIMATE

9.1 Introduction

The assessment of Climate is contained within Chapter 12 of Volume 2.

9.2 Baseline Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision *"EU 2020 Strategy"* (Decision 406/2009/EC). Data published by the EPA indicates that Ireland exceeded (without the use of flexibilities) its 2022 annual limit by 3.54 Mt CO_2e. For 2023 total national emissions (excluding LULUCF) were 57.4 Mt CO_2e. EPA projections indicate that assuming full implementation of the Climate Action Plan and the use of the flexibilities available Ireland can achieve an emissions reduction of 30% by 2030.

9.3 Potential Impacts of the Proposed Project

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

9.3.1 Construction Phase

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

9.3.2 Operational Phase

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were substantial enough the meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance "*PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document".* The proposed development is not predicted to significantly impact climate during the operational stage. Increases in traffic derived levels of CO_2 have been assessed against Ireland's obligations under the EU 2030 non-ETS target and Ireland's carbon emission ceilings. The proposed development has also incorporated a number of sustainability measures into the design of the development which will aid in reducing impacts to climate once operational.

Impacts to climate are deemed ***direct, long-term, negative*** and ***slight,*** which is considered ***not significant*** with regard to the construction and operational phase.

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

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

9.4 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

9.5 Residual Impacts (post-mitigation)

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised. These mitigation measures include a demolition and construction program, determine material reuse and waste recycling opportunities (in compliance with the EU Taxonomy Regulation 2020/852) and identifying and implementing lower carbon material choices and quantities during detailed design. Operational phase emissions will be mitigated by the implementation of energy efficiency measures in accordance with the Building Regulations Technical Guidance Document L 2021 and the relevant sustainability policies within the Dún Laoghaire-Rathdown County Development Plan 2022-2028. Design mitigation in the form of adequate drainage to allow for a 20% increase in rainfall as a result of climate change in line with the *"Medium Risk"* RCP4.5 scenario (2021-2050) has been considered when assessing the vulnerability of the development to future climate change.

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

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

9.6 Cumulative Impacts

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that *"for GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable."*

However, by presenting the GHG impact of a project in the context of its alignment to Ireland's trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland's ability to meet its national carbon reduction target. Therefore, the assessment approach is considered to be inherently cumulative.

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

10.0 NOISE AND VIBRATION

10.1 Introduction

Chapter 13 of the EIAR provides information on the assessment of noise and vibration effects of impacts on the surrounding environment during the construction and operational phases of the proposed development on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

10.2 Methodology

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

10.3 Baseline Environment

The existing and future noise and vibration environments across the development site and in the vicinity of the nearest existing NSLs are dictated by transportation sources in the study area including the R117 Dundrum Road and local road within the vicinity of the proposed development. Existing noise levels have been found to be typical of a suburban area.

10.4 Potential Impacts of the Proposed Project

10.4.1 Construction Phase

The demolition and construction phase will involve intrusive works and high noise activities, utilities and structural works, substructure and lower noise activities. The assessment has determined that there is the potential for some temporary significant noise effects of impacts at the closest receptor locations when intrusive works are undertaken within close proximity, 30m to 50m, and within 10m to 20m from all other works.

However, these occurrences will only be temporary, and the vast majority of the construction works will take place at distances from the receptors where no significant effects of impacts are predicted and the construction criterion will be complied with. Construction vibration effects of impacts are negative, not significant and short-term.

The use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits and noise monitoring during this phase will ensure effects of impacts are controlled to within the adopted criteria. Similarly, vibration effects of impacts during the construction phase will be well controlled through the use of low effects of impact equipment and adherence to strict limit values which will be subject to monitoring at the nearest sensitive buildings. The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration areas at times that are considered of greatest sensitivity.

10.4.2 Operational Phase

During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area required to facilitate the development is predicted to be of no significant effects of impact along the existing road network. In the context of the existing noise environment, the overall contribution is considered to be of neutral, not significant and long-term effects of impact to nearby residential locations.

Proprietary noise and vibration control measures will be employed as part of the detailed design in order to ensure that noise emissions from building services plant do not exceed the adopted criterion at any nearby NSLs. In addition, noise emissions should be broadband in nature and should not contain any tonal or impulsive elements.

Any change in noise levels associated with other potential sources of noise in the vicinity of the Proposed Development is expected to be not significant

In addition the potential for inward noise effect on the proposed development has been assessed. The assessment was carried out with reference to the guidance contained in Professional Practice Guidance on Planning & Noise (ProPG), BS 8233:2014 *Guidance on Sound Insulation and Noise Reduction for Buildings* (BSI); and the local and national Noise Action Plans relevant to the area. Due to the noise environment from the R117 Dundrum Road Block 9 and 10 western facing facades are expected to require enhanced sound insulation specifications for glazing and ventilation to achieve suitable internal noise levels. It has been found that all the inhabitants will have access to a quiet external area that is screened by the development itself from road traffic noise.

10.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

10.6 Residual Impacts (post-mitigation)

A variety of plant items will be in use during the construction stage. The type and number of equipment will vary between the varying construction phases, and depending on the phasing of the works. During periods when initial construction works (demolition, site clearance, basement and foundations excavation) are occurring at distances of up to 50m and other construction works at a distance of up to 20m from the nearest noise sensitive locations to the site boundary, there is potential for temporary, negative, moderate to significant noise effects of impacts to occur. For the remainder of construction periods, construction noise effects of impacts will be short-term, negative, slight to moderate. Vibration effects of impacts during the construction phase will be neutral, short-term and imperceptible.

Cumulative noise levels associated with the construction phases have been considered and cumulative effects of impacts are likely at the nearest receptor should all sites progress construction works simultaneously. Once cumulative construction effects of impacts are

considered and managed during the construction phase potential cumulative effects of impacts on nearby sensitive receptors are expected to be negative, significant and short-term.

During the operational phase the predicted change in noise levels associated with additional traffic is expected to be neutral, not significant and long-term along the existing road network. The effects of impact from building services and plant is predicted to be negative, not significant and long term.

During the operational phase any cumulative effects of impacts will be due to an increase in road traffic noise. However, given the insignificant levels of noise increase as a result of the traffic associated with this proposed development, it is not expected that cumulative traffic noise will increase by any significant margin as a result of this proposed development.

11.0 LANDSCAPE AND VISUAL

11.1 Introduction

The Landscape and Visual chapter report describes the townscape/visual context of the proposed development and assesses the likely impacts of the scheme on the receiving environment, in terms of both townscape character and visual amenity. Townscape Impact Assessment relates to changes in the physical environment brought about by a proposed development, which may alter its composition and character. Visual Impact Assessment relates to changes in views experienced by people resident in different places and/or engaged in particular activities, which influences their sensitivity to such changes.

11.2 Methodology

Production of this Townscape and Visual Impact Assessment involved desk studies and fieldwork to establish the nature of the receiving environment and determine relevant planning policies in, particularly, the Dun Laoghaire Rathdown County Development Plan. The assessment of the significance of both townscape and visual impacts of the proposed development is determined by weighing the sensitivity of the townscape / visual receptor against the magnitude (scale and nature) of the impact. The 'quality' of the effect is also assessed in terms of whether the potential townscape / visual changes are deemed positive, neutral or negative relative to the existing baseline scenario.

This methodology is prescribed in the Institute of Environmental Management and Assessment (IEMA) and landscape Institute (UK) 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA-2013), which is used as the basis for all such assessment in the UK and Ireland.

11.3 Baseline Environment

The Central Mental Hospital site itself comprises of the Main Hospital Building within the north-central portion of the land holding. This stone clad, three storey over basement, gothic-style facility has multiple wings and semi-enclosed internal circulation areas. Within the surrounding grounds is an array of lower and more modern structures along with associated car parking and vehicular circulation areas. Open areas consist of both formal gardens and parkland containing grass lawns and mature specimen trees. Around the entire perimeter of the site is an imposing c. 5m high stone wall.

Adjoining the site in almost all directions are mid-low density residential housing estates where the rear yards of dwellings are backed by the stone perimeter wall of the CMH site. The only exception is a portion of the southern boundary, which adjoins the northern end of a recreational open space accessed from Mount Carmel Avenue and a portion of the western Boundary wall, which fronts the Dundrum Road. Other key features of note within the wider study area include Dundrum Town Centre and the LUAS light rail line with its distinctive suspension bridge ,which both lie to the south.

11.4 Potential Impacts of the Proposed Project

11.4.1 Construction Phase

Townscape and visual effects at construction stage will involve the movement of heavy vehicles to and from the site as well as tower cranes within the site. There will also be a gradual emergence of partially completed apartment buildings. Due to the rapidly evolving nature of the project during construction, effects are deemed to be Moderate and Negative. It should be noted, however, that the substantial retention of the site perimeter wall will screen much of the ground-based activity and material stockpiling within the site from view.

11.4.2 Operational Phase

In terms of Townscape impacts, the operation phase of the proposed development represents a marked and comprehensive change to the land use of the site, the scale and nature of development within the site and its perception within its receiving environment. The completely insular CMH site, which currently serves as something of a perceptual void in the landscape fabric of Dundrum, will be transformed into a modern, outwardly bold, high density residential precinct. In the wider urban context, there is a strong functional and thematic relationship between the proposed development and the nearby Dundrum Town Centre.

The design of the development intends to strike a balance between the surrounding lower intensity residential neighbourhoods by terracing up in scale away from the site boundaries and retaining perimeter tree cover where possible. There are also direct open space connections to Rosemount Green to the south and the Dundrum Road to the northwest with sections of the imposing perimeter stone wall removed to facilitate this. It is considered that these design objectives are successful in integrating this development within its townscape setting particularly in a relative sense against the existing baseline of a ‘perceptual void’. Consequently, the operational phase townscape impact is deemed to be Moderate / Positive.

In terms of visual impacts, seventeen representative viewpoints were used for the assessment from a range of viewing distances, angles and receptor contexts around the site. Most of these are within 1km of the site as early stage visibility mapping indicated that visibility of the proposed development reduces rapidly with increased viewing distance due to intervening screening from surrounding built development and vegetation. The majority of viewpoint assessments were in the lower range of visual impact magnitude due to limited visibility of the taller / closer elements of the proposed development rising just above intervening vegetation and buildings. In such cases there is not a strong sense of visual/ contextual legibility and the quality of the effects is generally considered to be Negative. By contrast, where the proposed development is more readily visible within its surrounding context and the design objectives are clearly presented, the magnitude of impact is deemed to be in the higher range, but the quality of effect is deemed to be Neutral or Positive.

11.5 Residual Impacts (post-mitigation)

In the case of this Townscape and Visual Impact Assessment, there are no specific mitigation measures proposed as the main siting, design and landscaping measures are all deemed

appropriate and are integral to the design of the development as already assessed. Table 11.1 sets out the summary of Residual Impacts.

Table 11.1 Summary of Residual Impacts

Townscape Impacts			
	Receptor Sensitivity	**Impact magnitude**	**Significance / Quality**
Construction Stage	Medium-low	Medium	**Moderate / Negative**
Operational Stage	Medium-low	High-medium	**Moderate / Positive**
Visual Impacts			
VP1	Low	Negligible	**Imperceptible / Neutral**
VP2	Medium low	High-medium	**Moderate / Neutral**
VP3	Medium low	Low	**Slight / Negative**
VP4	Medium low	Low-negligible	**Slight-imperceptible / Negative**
VP4a	Medium low	Low	**Slight / Negative**
VP5	Medium low	Medium low	**Moderate-slight / Negative**
VP6	Low	Low-negligible	**Slight-imperceptible / Neutral - Negative**
VP7	Medium low	Low	**Slight / Neutral - negative**
VP8	Medium low	Low-negligible	**Slight-imperceptible/ Neutral-Negative**
VP9	Medium-low	Negligible	**Imperceptible / Neutral**
VP10	Medium-low	High-medium	**Moderate / Neutral-Negative**
VP11	Low	High	**Moderate-slight / Neutral-Positive**
VP12	Medium low	Negligible	**Imperceptible / Neutral**
VP13	Low	Medium	**Slight/ Positive**
VP14	Low	High	**Moderate-slight/ Positive**
VP15	Medium low	Negligible	**Imperceptible**
VP16	Medium low	High medium	**Moderate / Negative**
VP17	Medium-low	Medium	**Moderate-slight/ Negative**

Figure 11.1 – Viewpoint Selection Map

12.0 MICROCLIMATE

12.1 Introduction

This Chapter of the EIAR was prepared by GIA and assesses the impact of the Proposed Site A Mixed-Use Development at Dundrum on the wind conditions affecting activities in areas within and surrounding the development. The Site of the Proposed Development is located at Central Mental Hospital, Dundrum.

12.2 Methodology

Baseline conditions were established using a high-resolution Computational Fluid Dynamics (CFD) model, extending in a 400m radius from the site. CFD is a digital modelling technique, which simulates the effect of wind for the built environment.

The following scenarios were tested as part of the assessment:

- Scenario 1: Baseline for site and surrounds;
- Scenario 2: Proposed Development in baseline surrounds; and
- Scenario 3: Proposed Development with Proposed Landscaping in baseline surrounds.

The assessment was performed using the London Docklands Development Corporation (LDDC) variant of the Lawson Comfort Criteria.

12.3 Baseline Environment

Winter conditions range between sitting, standing, leisure walking and business walking. Summer conditions range between sitting, standing and leisure walking.

There are no safety exceedances on or off the site.

Conditions at the key off site entrances (marked “O” on the results figures) are suitable for sitting or standing in any season, which is suitable for the intended use.

Conditions for the Dundrum Road bus stop (to the north west of the study area, marked “B” on results figures) are suitable for leisure walking in winter and standing in summer. This is one category windier than required in winter and suitable in summer.

Conditions for Rosemount Park are suitable for a mixture of leisure walking and business walking in winter and standing in summer. This is one category windier than is required for the intended use.

12.4 Potential Impacts of the Proposed Project

12.4.1 Construction Phase

As the site of the Proposed Development is currently empty, during the Construction Phase, the conditions will gradually transition from the baseline conditions to those of the completed and operational Proposed Development.

12.4.2 Operational Phase

Winter conditions range between sitting, standing, leisure walking and business walking. Summer conditions range between sitting, standing and leisure walking.

Overall, the region which is suitable for business walking is of significantly lesser extent than the region of business walking recorded for the baseline scenario, and the Proposed Development is expected to make conditions calmer overall within the local area.

There are no regions of safety exceedance introduced.

Conditions for the Dundrum Road bus stop (to the north west of the study area, marked “B” on the results figures) are suitable for standing in all seasons. This is suitable for the intended use so is a negligible wind impact

There are a number of areas that require attention, these include: one entrance of block 4, podiums 3 and 4, amenity space A2, A3,

Conditions on the balconies range between sitting, standing and leisure walking in winter, and between sitting, standing and leisure walking in summer.

There are a small number of balconies which are suitable for leisure walking in summer. These balconies are one category windier than required for the intended use, which is a minor adverse wind effect and will require mitigation.

12.5 Residual Impacts (with landscaping included)

All trees within the landscaping plan were included in the assessment.

The landscaping is sufficient to resolve all identified areas that are above threshold levels, creating conditions that are suitable for the intended use, and as such, there are no residual impacts on the microclimate expected as a result of the proposed development.

13.0 CULTURAL HERITAGE AND ARCHAEOLOGY

13.1 Introduction

IAC Archaeology has prepared this chapter to assess the impact, if any, on the archaeological and cultural heritage resource of a proposed development at the Central Mental Hospital, Dundrum Road, Dublin. The assessment aims to ascertain any likely and significant impacts that the proposed development may have on the existing archaeological and cultural heritage resource.

The assessment was undertaken by Faith Bailey (MA, BA (Hons), MIAI, MCIfA) who has over 20 years of experience in archaeological and cultural heritage consultancy and has been responsible for the production of multiple EIAR and assessments for all aspects of development nationwide.

13.2 Methodology

Research has been undertaken in three phases. The first phase comprised a paper survey of all available archaeological, historical, and cartographic sources, including the following:

- Record of Monuments and Places for County Dublin;
- Sites and Monuments Record for County Dublin;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Dun Laoghaire Rathdown County Development Plan (2022–2028);
- Place Name Analysis;
- Aerial photographs; and
- Excavations Bulletin (1970–2024).

The second phase comprised a geophysical survey, which creates ‘maps’ of subsurface archaeological features. Features are the non-portable part of the archaeological record, whether standing structures or traces of human activities left in the soil. A geophysical survey was undertaken within the proposed development in March 2021 (Leigh 2021, Licence No. 21R0015).

The third phase involved two phases of archaeological test trenching (2021 and 2024). Archaeological Test Trenching can be defined as ‘a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality’ (CIfA 2020a, 4). Testing was carried out within the proposed development in October 2021 and March 2024. This was undertaken by Marc Piera of IAC under licence 21E0610 and 21E0610ext.

13.3 Baseline Environment

The proposed development area is located at the former Central Mental Hospital campus, directly east of Dundrum Road, County Dublin. There are no recorded monuments located within the site, with the closest being the site of an ecclesiastical enclosure located c. 540m to the southwest (DU022-016001).

An archaeological geophysical survey was carried out across the proposed development area in April 2021 (Leigh 2021; Licence No. 21R0015). The survey successfully identified traces of a possible rectilinear enclosure measuring c. 12m x 9m, which was also identified in satellite imagery. An area of possible rubble material, which may represent a former building was also identified during the survey. Linear features which correspond to field boundaries shown on historic mapping, as well as an additional field boundary not shown on historic mapping were also noted within the proposed development area.

Archaeological test excavations were carried out at the site in October 2021 under licence no. 21E0610 (Piera 2021). The trenches targeted geophysical anomalies and open green space to fully investigate the archaeological potential of the site. The test excavations revealed five areas of archaeological significance, which have been designated as Archaeological Areas AA1-AA5. These comprise two small enclosures dating to the post-medieval era (AA1-2), a kiln (AA3), an isolated pit (AA4) and a cluster of hearths with postholes (AA5). A second phase of archaeological testing was carried out in 2024, but no further features of archaeological potential were identified.

Full detail on the history of the Central Lunatic Asylum is given in Chapter 17 of the EIAR. It is acknowledged that the original asylum structures and its associated designed landscape are on cultural heritage value, especially from a social history perspective. Specific assets include the main hospital building (to the immediate north of the development area), perimeter wall, gate lodge, chapel, airing yards (20th century), hay barn and pig yards, farmyard buildings, walled garden including two covered entrances and the historic designed landscape. Whilst the overall cultural heritage of the site is considered in this chapter, the potential impacts on the architectural heritage are detailed in Chapter 17 and not repeated here.

13.4 Potential Impacts of the Proposed Project

13.4.1 Construction Phase

There will be a direct negative and permanent impact on the archaeological features identified during the course of test trenching in AA1-AA5. AA1-2, which are located within the footprint of Block 10, whilst AA3 is located in the footprint of Block 03 and AA4-5 in the footprint of Block 02. Ground disturbances associated with the construction of these blocks will truncate or remove the identified archaeological remains. The significance of effect, prior to the application of mitigation, is very significant.

There may be a direct negative and permanent impact on small or isolated previously unrecorded archaeological features or deposits that have the potential to survive beneath the current ground level and outside the footprint of the excavated test trenches. Effects may range from moderate to very significant negative dependant on the nature, extent and

significance of any such identified remains. This would be caused by ground disturbances associated with the proposed development.

The designed landscape associated with the Central Mental Asylum will be impacted by the construction of the proposed development due to alterations to construction within what was a private designed setting. The impact on the existing landscape, from a cultural heritage perspective is considered to be direct, negative and permanent with a very significant effect.

13.4.2 Operational Phase

There are no predicted impacts on any archaeological assets during the operation of the proposed development. This is due to the fact that any recorded monuments within the study area are located over 500m from the proposed development and will not be indirectly affected by the operation of the development. In addition, the operation of the development will not affect any of the surrounding former demesne landscapes due to the fact that they have been fully developed and have lost their designed landscape character.

The operation of the proposed development will have a direct negative and permanent impact on the designed landscape associated with the Central Mental Asylum, given its change of use, the additional of modern development and change from a private complex, to one that is publicly accessible. The effect is considered to be very significant negative.

13.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

13.6 Residual Impacts (post-mitigation)

Following the implementation of the above mitigation measures, there would be no significant residual effects on the archaeological resource as the remains will be fully preserved by record.

The development of the historic landscape significantly changes the character of the Development Site, including views into and out of the site. In addition to the historic landscape, eight heritage structures have been identified in the site that will be affected by the proposal. The proposal will alter the setting of the current historic landscape and heritage structures on the site. Mitigation measures in respect of landscape and visual appearance are discussed in Chapters 14 and 17 of the EIAR. Following the implementation of the proposed mitigation measures, the remaining residual impacts would range from significantly beneficial to significantly negative in relation to each of the heritage assets on the site. This is set out in full under Chapter 17.

14.0 ARCHITECTURAL HERITAGE

14.1 Introduction

This chapter of the Environmental Impact Assessment Report has been prepared by Alastair Coey Architects, a RIAI Grade 1 accredited Conservation Practice. The chapter examines the likely impacts, both direct and indirect, on protected structures and other heritage assets. This assessment extends to both built-heritage within the site and in the wider area.

14.2 Methodology

Heritage assets affected or likely to be affected by the development have been identified and characterised. The characterisation has taken into consideration the guidance provided by the Planning & Development Act on evaluating historic or protected structures for their special interest. The evaluation has involved careful consideration of Architectural, Historical, Archaeological, Artistic, Cultural, Scientific, Technical and Social interest.

Heritage assets have been assessed in terms of their sensitivity to change, and the degree to which the proposed development will impose change on the assets, directly or indirectly. The understanding of the sensitivity to change and the degree of change probable allows a quantitate and qualitative determination of the likely impact on the heritage assets. Impacts are determined to be Positive, Neutral or Negative, and the degree of impact is established, ranging from Very Significant to Negligible.

Where negative impacts are noted as a possibility, mitigation measures to reduce the severity of the impact or eliminate it are identified. These mitigation measures include i) Control over the height of proposed structures in proximity to Heritage Assets, ii) The retention and enhancement of historic landscape, iii) a sensitive approach to interventions in historic fabric, and iv) enhancing public access to heritage assets.

14.3 Baseline Environment

The former Central Mental Hospital site, with some interventions and additions, largely retains the Country House Demesne model that was adopted at its inception. The pioneering approach to the treatment of the criminally insane that the former CMH represented is directly evidenced by the composition of the site and the structures present. Those which have been identified as being of specific importance, and susceptible to change by the Development, are:

- The Main Hospital Building (a Protected Structure) including its adjoined ancillary structures such as the dining-hall.
- The Infirmary (a Protected Structure)
- The Perimeter Wall which surrounds the site.
- The Gate Lodge.
- The Chapel (a Protected Structure)
- The ‘Airing Yards’ (patient exercise areas)
- The Farmstead Buildings including ancillary structures.
- The Walled Garden.
- The Historic Landscape.

14.4 Potential Impacts of the Proposed Project

14.4.1 Principal Potential Impacts

The principal potential impacts to Heritage Assets from the developments are:

14.4.1.1 Impact to Main Hospital Building

- Impacts to the setting and context of the Main Hospital Building (a Protected Structure) that arise from the siting of new residential buildings in proximity to it and within its curtilage. The Main Hospital Building, as planned and as it currently exists, is the dominant building on the site, and sits in the context of a park-land demesne. The proposed apartment blocks in close proximity to the Main Hospital Building impact this dominance, particularly in respect of their height. Their presence additionally changes the parkland character of their setting to be one more urban in character, impacting the aesthetic value of the existing building and its evidential role as a hospital set specifically in a landscape ascribed therapeutic value.

14.4.1.2 Impact to the Perimeter Wall

- Loss of historic fabric to the perimeter wall arising from the creation of new vehicular and pedestrian openings. A defining characteristic of the Perimeter Wall is its continuity. With the exception of the main vehicular entrance and some sporadic, and blanked-off, doorways it is unbroken over its c.1660m length. This complete enclosure makes a strong evidential contribution to the character of the site as being a parkland demesne. Punctures in the wall, as proposed for new pedestrian and cycle access, do not alter this character in any substantial sense, nor do the proposed sections of height-reduction. The complete removal of sections to create the necessary vehicular access routes does however alter the localised character of the perimeter wall.

14.4.1.3 Impact to the Chapel

- Impacts to the setting and context of the chapel (a Protected Structure), farmstead and walled garden. As with the Main Hospital Building these structures exist in a planned park-land setting. The insertion of new-build apartment blocks in that shared setting impacts the original and planned setting for those elements.

14.4.1.4 Impact to the Historic Landscape

- Loss of Historic Landscape due to development. Although there have been changes to land-usage since the formal landscape was set out (creation of car-parking areas, late 20C built reception centre, the almost full abandonment of its productive agricultural and market-garden capacity) the Historic Landscape still reflects to a greater extent its original role as a therapeutic and productive resource. Development of housing on this land impacts this evidential value.

14.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

14.6 Residual Impacts (post-mitigation)

Impacts to the setting and context of heritage assets may be mitigated as noted in section 17.2. By the nature of the Heritage Assets, these mitigation measures are aimed principally at reducing the severity of the impact. With mitigation measures applied:

- The siting and massing of new-build elements will ensure that the dominance of the Main Hospital Building is not compromised, and the relationship it enjoys with the historic landscape in its immediate curtilage is retained and enhanced.

- Openings in the perimeter wall will be limited to those necessitated by the change of use of the site, and new openings will be sensitively and appropriately detailed. The perimeter wall will continue to be a defining feature of the site.

- The most significant elements of the Historic Landscape, that being the walled garden and the landscaping to the immediate south of the Main Hospital Building, will be retained and enhanced. Impacts to these will be reduced to the change in setting/context and the loss of extent.

Residual impacts of a Moderately Negative nature do remain after the implementation of the mitigation measures, applying to the Main Hospital Building, Perimeter Wall and Historic Landscape. These impacts arise from the unavoidable and fundamental change from the site as a ‘closed-world’ private demesne to a public site largely characterised by residential development.

The justification for the acceptance of these residual impacts on the historic structures and landscape, quite apart from the substantial social gain accrued form the provision of affordable and social housing, is grounded in an assessment that the ‘do-nothing’ option exposes the historic structures to considerable and ongoing risk. Disuse of historic structures invites increasing levels of dereliction, from which recovery becomes exponentially more difficult. Accepting change as part of adaptive re-use, whether that applies to Protected Structures or their attendant grounds, has consistently been proven as a necessary compromise to protect the most significant aspects for the appreciation of future generations.

15.0 MATERIAL ASSETS - ROADS AND TRAFFIC

15.1 Introduction

The Traffic and Transport chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by ILTP Consulting (ILTP) and assesses any likely and significant impacts associated with traffic due to the proposed development. Mitigation measures are proposed where negative effects are identified.

15.2 Methodology

ILTP coordinated traffic count surveys undertaken in April 2024 in order to collate the full set of traffic data considered necessary to support the planning application for the proposed development.

ILTP conducted an assessment of available information on projected traffic trends, including the Transport Strategy for the Greater Dublin Area, the current Dun Laoghaire Rathdown Development Plan 2022 – 2028 and National Sustainable Mobility Policy.

ILTP estimated the level of traffic that would be generated by the proposed development and added these figures to the base flows. A Picady analysis was also undertaken to assess the capacity of the upgraded northern access and proposed southern access onto Dundrum Road (R117). Picady and LinSig Traffic Signal Junction modelling software was also utilised to assess the capacity of the adjacent junctions with the proposed development in place.

From these results a conclusion could be drawn as to the impact that the development will have on the overall traffic flows. Once details were available ILTP then assessed what impact the development had on the road network.

A study of public transport provisions in the area was also carried out to determine the likely usage of public transport services by residents, staff and customers to the new development.

As part of the Traffic & Transport Assessment (TTA) undertaken, ILTP prepared a Mobility Management Plan for the proposed development, with the specific objectives of reducing in overall terms both the number of trips generated by the development and ensuring that greater numbers use the extensive public transport services in the immediate area.

ILTP also assessed the construction stage traffic impacts of the proposed development on the wider road network.

In terms of projecting future year traffic scenarios beyond the 2024 Base Year, the assumed Opening Year of the proposed development was taken to be 2027, with the Design Year taken as 2042.

15.3 Baseline Environment

The site of the proposed development is in Dundrum, Dublin 14. The planning application site is approximately 9.7Ha in area and located approximately 5km from Dublin City Centre. The area is largely residential with established schools, community and social facilities in the vicinity.

The Former Central Mental Hospital site is located in a well-established residential area and close to schools, University College Dublin, major retail facilities including Dundrum Town Centre, and local amenities. It is also within a short walk of the Luas Green Line and a variety of Bus services.

15.4 Potential Impacts of the Proposed Project

15.4.1 Construction Phase

Construction of the Proposed Development will have slight short-term negative impacts on the adjoining road network with construction traffic on Dundrum Road (R117) in the vicinity of the proposed access and on the assigned dedicated haul route.

Additional construction personnel car / light vehicle movements which will have an insignificant short-term adverse effect on the local road network during the construction works.

The assessment traffic impact during the construction phase of the proposed development was carried with reference to the Construction & Environmental Management Plan (CEMP) prepared by Barrett Mahony Consulting Engineers (BMCE). Any changes to the proposed construction phasing, or the CEMP, would need to be reassessed and agreed in writing with the Planning Authority prior to commencement of development.

15.4.2 Operational Phase

The likely effect of the Proposed Development at operational stage will be additional traffic which may have a slight long-term adverse effect on the adjoining road network.

14.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

15.6 Residual Impacts (post-mitigation)

The implementation of mitigation measures during the construction and operational phases will ensure that the Proposed Development will not give rise to any likely significant long-term traffic impacts.

16.0 MATERIAL ASSETS – WASTE MANAGEMENT

16.1 Introduction

This chapter evaluates the likely impacts, if any, which the proposed development may have on Material Assets (related to waste management) as defined in the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) and the Environmental Protection Agency (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022).

16.2 Methodology

The assessment of the impacts of the proposed Development, arising from the consumption of resources and the generation of waste materials, was carried out taking into account the methodology specified in relevant guidance documents, along with an extensive document review to assist in identifying current and future requirements for waste management, including national and regional waste policy, waste strategies, management plans, legislative requirements and relevant reports.

16.3 Baseline Environment

16.3.1 Characteristics of the Proposed Development

A full description of the proposed Development can be found in Chapter 5 (Description of the Proposed Development). The characteristics of the proposed Development that are relevant in terms of waste management are summarised below.

16.3.1.1 Construction & Demolition Phase

There will be waste materials generated from the demolition and refurbishment of some of the existing buildings and hardstanding areas on site, as well as from the further excavation of the building foundations.

During the construction phase, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete, tiles, bricks, etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials may also be generated. As well as this waste will also be generated from construction phase workers e.g. organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and, potentially, sewage sludge from temporary welfare facilities provided on-site during the Construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated in small volumes from site offices.

There will be soil and stone excavated to facilitate site preparation for the construction of building and road foundations. The volume of material has been estimated by the project engineer (Barrett Mahony) to be c. 78,509m^3. It is envisaged that all of the excavated material

apart from 7,048m^3 (which will be reused as fill) will be required to be removed off site. Material moved offsite will be taken for offsite reuse, recovery and/or disposal.
Further detail on the waste materials likely to be generated during the excavation and construction works are presented in the project-specific Construction & Demolition Resource & Waste Management Plan (RWMP) (Appendix 19.2). The RWMP provides an estimate of the main waste types likely to be generated during the Demolition and Construction phase of the proposed development.

16.3.1.3 Operational Phase

An Operational Waste Management Plan has been prepared which provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, mixed non-recyclable waste and glass as well as providing a strategy for management of waste batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil, furniture and abandoned bicycles (Appendix 19.2). The Plan complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

The OWMP seeks to ensure the development contributes to the targets outlined in the National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024) *Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland* and the DLRCC waste Bye-laws.

16.4 Potential Impacts of the Proposed Project

This section details the potential waste effects associated with the proposed Development.

16.4.1 Construction Phase

The potential impacts of construction and environmental control measures proposed have been identified as follows:

- Incorrect waste storage - vermin, litter and pollution
- Unauthorised waste contractors and facilities - illegal dumping and pollution
- Incorrect classification of excavated material - pollution of water and soil environments

16.4.2 Operational Phase

The potential impacts of operational and environmental control measures proposed have been identified as follows:

- Insufficient waste management and insufficient storage capacity - Increased landfill dependency and unnecessary use of landfills, litter, pollution and vermin.
- Unauthorised waste contractors and facilities - illegal dumping and pollution

16.5 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

16.6 Residual Impacts (post-mitigation)

Waste generated at the site will be managed and undertaken in accordance with all current legal and industry standards.

16.6.1 Construction Phase

A carefully planned approach to waste management as set out in Section 18.5 and adherence to the RWMP (which include mitigation) during the construction phase will ensure that the predicted effect on the environment will be ***short-term*, *imperceptible* and *neutral*.**

16.6.2 Operational Phase

During the operational phase, a structured approach to waste management as set out in Section 19.5 and adherence to the OWMP (which include mitigation) will promote resource efficiency and waste minimisation. Provided the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be ***long-term, imperceptible* and *neutral*.**

16.6.2 Conclusion

Assuming the full and proper implementation of the mitigation measures set out herein and in the RWMP (Appendix 19.1) and the OWMP (Appendix 19.2), no likely significant negative effects are predicted to occur as a result of the construction or operational of the proposed Development.

17.0 MATERIAL ASSETS – BUILT SERVICES

17.1 Introduction

This chapter of the EIAR assesses the impacts of a proposed development, primarily residential, at the lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14, on the Material Assets – Built Services, namely the Foul Drainage, Potable Water Supply, Electricity, Gas network and telecommunications on the environment and the surrounding area.

17.2 Methodology

The assessment of the potential impact of the proposed development on the material assets was carried out according to the methodology specified by the EPA and the other standard documentations as set out in the full Material Assets chapter. Drainage (surface and foul) and water supply in the development is designed in accordance with the requirements of Dun Laoghaire-Rathdown County Council and with the requirements of others as set out in the list standard texts provided in the full Material Asset chapter.

17.3 Baseline Environment

17.3.1 General

The subject site is c9.46 ha with an additional 0.1 ha of works area on the Dundrum Road. It is currently occupied by the former Central Mental Hospital. The site is bounded on all sides by a boundary wall. Refer to Figure 17.1 for the site topography.

17.3.2 Foul Water Drainage

The foul drainage from the existing buildings on site drains to a combined drainage system on site which discharges to the Ø300mm combined buried sewer on the Dundrum Road. The combined sewer drains in a northerly direction towards the Dodder Valley Sewer System.

17.3.3 Potable Water Supply

The existing 9-inch public watermain in Dundrum Road was recently upgraded by Uisce Éireann to a 355mm diameter HDPE main. The existing buildings on site are serviced from this upgraded main with the connection to the public main located at the existing entrance.

17.3.4 Natural Gas

The site is served by a 250mm main entering Northwest on the site per diagram below. The pipe, at 25mBar low-pressure enters at the northwest and extends to the Central Mental Hospital. There is an existing pressure reducing station within the site and the existing gas lines feed the hospital and swimming pool building.

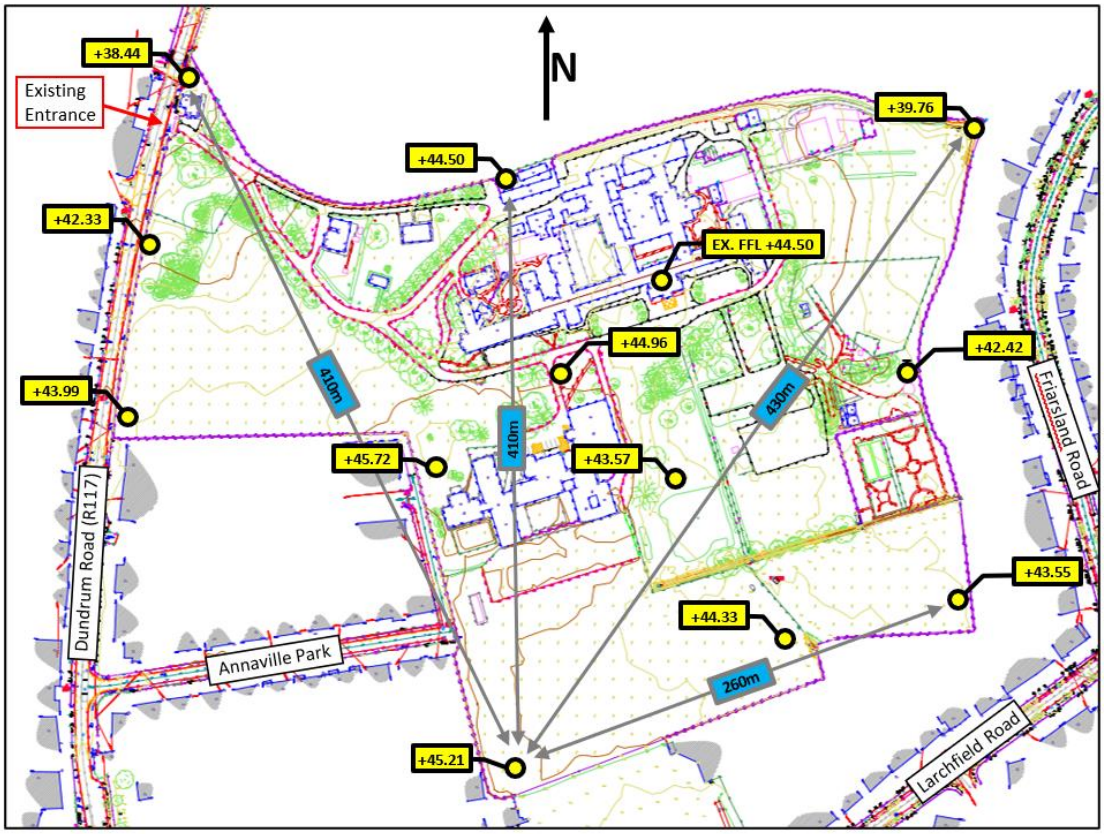

Figure 17.1 – Summary of the Existing Site Topography Superimposed on Topographical Survey Drawing (Ordnance Datum Levels).

17.3.5 Electricity

The existing site consists of 2 ESBN supplies fed from 2 separate substations located on Larchfield Road and opposite St. Columbanus Road. Connection 1 is rated at 10KV/20KV/400V/230V and consists of an overhead line terminating at the end of Larchfield Road South of the site.

17.3.6 Telecommunications

The Central Mental Hospital is currently fed from the EIR network. The EIR network enters the site from the Dundrum Road. Virgin Media, although not entering the site currently, is also currently available in the area with ample coverage around the site.

17.4 Characteristics of the Proposed Development

17.4.1 Gas

The requirement for natural gas is limited to just restaurants, and similar commercial type uses. The new gas load is forecasted to be in the order of 3MW. The gas infrastructure in generally good in this area.

17.4.2 Electricity

The new development will require a new HV infrastructure that will feed multiple substations around the site, all as agreed in principle with the ESB. The final design details will be clarified by the ESB post planning.

17.4.3 Telecommunications

The new development will consist of approximately 9 Comms rooms – will be finalised during detailed internal design. It is important to note that two alternative suppliers are available to the end tenants/users for broadband and telecoms services. This infrastructure will ensure that the LDA can provide current and next generation broadband to each home.

17.4.4 Foul Water Drainage

The proposed foul drainage system will be designed to take discharges from the new residential units & other proposed limited non-residential uses on site – creche, retail units, community centre, medical centre, a restaurant & a café. The foul drainage system will connect to the Uisce Éireann network at the existing 300mm combined sewer in the Dundrum Road.

A Pre-connection Enquiry application was submitted to Uisce Éireann to confirm capacity in the receiving network and a Confirmation of Feasibility letter was obtained on the 26th of March 2024 CDS number CDS24000356. To address UE requirements, a new controlled flow wastewater pumping station will be provided on site prior to discharge to the combined sewer. Refer to Barrett Mahony (BM) drawings nr C11220 and C11221 for details.

17.4.5 Water Supply

The proposed development will be connected to the new 355mm diameter public watermain in the Dundrum Road. A stub connection has been left out from this main to receive the connection from the site. Refer to the BM Watermain layout drawing C-11040. The proposed watermain system through the site will vary between 250mm diameter, 200 diameter, 150mm diameter and 100mm diameter – as shown on Barrett Mahony drawing C-11040.

A Pre-connection Enquiry application was submitted to Uisce Éireann to confirm capacity in the receiving network and a Confirmation of Feasibility letter was obtained on the 26th of March 2024 CDS number CDS24000356.

17.5 Potential Impacts of the Proposed Project

17.5.1 Construction Phase

17.5.1.1 Direct

Accidental spills of harmful substances such as petrol/diesel or oil during the delivery and storage of harmful substances or by leakages from construction machinery. Potential for building materials or silts to be washed into the surface water system, causing blockages and pollution.

During the connection of new mains to existing mains on site there is a small risk that contamination of the existing supply may occur. The potential impact on the local public water supply network would be short term and significant.

Telecommunications

During the connection of services, there could be short term outages in the area. These impacts would be short term and significant.

17.5.1.2 Indirect

There is not anticipated to be any indirect affects to the built assets during the construction phase.

17.5.1.3 Worst Case Scenario

The worst-case scenario is that flooding occurs on-site and in the surrounding area due to this development. On-site measures are to be provided during construction as outlined in this chapter and the water chapter, to ensure such flooding does not occur.

17.5.2 Operational Phase

17.5.2.1 Direct

Surface Water Drainage

There will be an impact on the surface water in the area due to the new development. However, the surface water system will ensure the impact from the operational phase on surface water will be minimal and constitute an improvement from existing conditions, given the proposed extensive use of SuDS measures on site.

Wastewater Drainage Network

The development will result in an increase in the wastewater discharged from the site to the public sewer system. Irish Water have confirmed feasibility for connection of the proposed development to the existing public sewer system subject to controlled flow provisions on the new development. Therefore, any impact from the increased wastewater flows on the existing sewer network will be permanent and not significant.

Basement and undercroft car parking areas on site will discharge to the foul system via a petrol interceptor to prevent pollution from accidental oil spills.

Water Supply Network

The new development will lead to an increase in the water supply demand on the public water supply network. Uisce Éireann has confirmed that there is capacity in the system to take the additional demand. Therefore, any impact from the increased water demand on the existing

water supply network will be permanent and not significant. The likelihood or accidental damage occurring to the water supply system during the operational phase of the development.

Natural Gas Supply

As there is very small requirement for Gas this will not impact the site. The impact is negligible and will be less than or similar to existing usage.

Electrical Supply

The impact of the proposed development on the electricity supply is likely to be an increase in demand on the existing supply. The ESB have been consulted and have advised that there will be capacity following a HT upgrade to facilitate the project. The potential impact of the proposed development on the electricity network is likely to be neutral.

Telecommunications

EIR & Virgin Duct networks are to be extended along roadway to service the development. The potential impact of the proposed development on the EIR/Virgin networks is likely to be neutral.

17.5.2.3 Worst Case Scenario

The worst-case scenario would be a failure of one of the systems on the site, which may cause flooding or pollutants to enter the surrounding environment and cause negative effects. There is a small risk of this occurring during the operational stage.

17.6 Mitigation Measures

Mitigation measures are proposed to minimise any potential impacts as a result of the proposed development. These measures are set out in the full in the corresponding chapter of the EIAR, Appendix 24.1 of the EIAR and in Appendix 2 of this Non-technical summary.

17.7 Residual Impacts

Implementation of the mitigation measures and adherence to the Construction and Environmental Management Plan prepared for the project will ensure that any potential residual impacts will be short term and negligible.

18.0 RISK MANAGEMENT

18.1 Introduction

The assessment of Climate is contained within Chapter 18 of Volume 2.

18.2 Methodology

Alongside the legislation, policy, and guidance outlined in Chapter 1, the following relevant legislation, policy, and guidance has informed the preparation of this chapter:

- EPA 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2022),
- EPA 'Advice Notes on Current Practice in the Preparation of Environmental Impact Statements' (2018),
- Health and Safety Authority Guidance on Technical Land-Use Planning Advice, for planning authorities and COMAH establishment operators (2023)
- Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015
- HSA Guide to the COMAH Regulations 2015 (S.I. No. 209 of 2015)
- Building Regulations (Part A Amendment) Regulations 2012 (as amended) (SI No. 138 of 2012)
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (as amended) (hereafter referred to as the Safety, Health and Welfare (Construction) Regulations) (S.I. No. 291 of 2013)
- A Framework for Major Emergency Management. Guidance Document 10 (DECLG 2015)

18.3 Baseline Environment

The existing facility is a non-COMAH site and the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, 2015 (COMAH Regulations 2015) does not apply.

The closest Seveso Establishment is *ca*. 4.5 km from the proposed development. The proposed development site is not located within the consultation zones of any Seveso establishment; therefore, there are no constraints to the Proposed Development at this location from nearby Seveso establishments.

18.4 Potential Impacts of the Proposed Project

18.4.1 Construction Phase

General construction activities will include ground preparation, excavation, construction of structures. These activities will require the use of vehicles and tools. The hazards associated with activities include the potential for vehicle impact, particularly during reversing and vehicle overturning. The controls around this work will be managed by appropriate risk

assessments to control the risks to people, the environment and also to the existing operational areas.

The following scenarios have been identified that could impact the construction phase of the project:

- Natural Gas release from pipeline
- Compressed Gas Cylinder release
- Extreme heat or cold weather resulting in result structural damage and/or pollution to soils, groundwater or surface waters
- Storm events resulting in structural damage and/or pollution to groundwater and surface waters
- Flooding
- Pollution to soils / groundwater / surface water

The impact and likelihood of these scenarios have been assessed and it has been concluded that there are no likely impacts on the project or to off-site receptors during the construction phase in relation to major accidents and disasters.

18.4.2 Operational Phase

The following scenarios have been identified that could impact the construction phase of the project:

- Natural Gas release from pipeline
- Extreme heat or cold weather resulting in result structural damage a
- Storm events resulting in structural damage
- Flooding

The impact and likelihood of these scenarios have been assessed and it has been concluded that there are no likely impacts on the project or to off-site receptors during the operational phase in relation to major accidents and disasters.

18.5 Mitigation Measures and Proposed Response to such Emergencies

A site Emergency Response Plan will be developed prior to the commencement of operations and will include detailed procedures in the event of a major accident. This plan will follow the framework detailed in Guidance Document 10 of A Framework for Major Emergency Management (DECLG 2015).

This plan will contain detailed plans for the response to emergencies such as loss of containment of natural gas, fuel oil, fires and severe weather events. A stock of emergency equipment such as spill kits will be maintained on site in particular around the fuel storage areas.

The proposed development has been designed in line with good industry practice, and, as such, mitigation against the risk of major accidents and/or disasters is embedded through the design and in accordance with planning and legislative requirements. As no likely significant effects were identified, no additional mitigation measures are proposed.

18.6 Residual Impacts (post-mitigation)

The residual effects are the final predicted or intended effects which occur after the proposed mitigation measures have been implemented. As no likely significant effects were identified, no additional mitigation measures are proposed. Therefore, residual effects are not relevant for this assessment.

- Storm events resulting in structural damage and/or pollution to groundwater and surface waters
- Flooding
- Pollution to soils / groundwater / surface water

The impact and likelihood of these scenarios have been assessed and it has been concluded that there are no likely impacts on the project or to off-site receptors during the construction phase in relation to major accidents and disasters.

18.4.2 Operational Phase

The following scenarios have been identified that could impact the construction phase of the project:

- Natural Gas release from pipeline
- Extreme heat or cold weather resulting in result structural damage a
- Storm events resulting in structural damage
- Flooding

The impact and likelihood of these scenarios have been assessed and it has been concluded that there are no likely impacts on the project or to off-site receptors during the operational phase in relation to major accidents and disasters.

18.5 Residual Impacts (post-mitigation)

The residual effects are the final predicted or intended effects which occur after the proposed mitigation measures have been implemented. As no likely significant effects were identified, no additional mitigation measures are proposed. Therefore, residual effects are not relevant for this assessment.

19.0 INTERACTIONS

19.1 Introduction

This Chapter of the EIAR has been prepared by Tom Phillips + Associates and deals with likely interactions between effects predicted as a result of the proposed development.

In addition, this Chapter has regard to the potential cumulative impact upon the environment arising from the proposed project, in combination with other developments (committed or planned projects) in the surrounding area.

19.2 Description of Potential Interactions

In addition to the requirement under the *Planning and Development Regulations 2001 (as amended)* to describe the likely significant effects of the proposed development on particular aspects of the environment, it is also required to consider the interaction between impacts on different environmental factors. As such, these are assessed below.

The interaction of effects within the Proposed Development in respect of each of the environmental factors, listed in Article 3(1) of the EIA Directive, has been identified and addressed in the respective chapters in this EIAR. This chapter presents an overview of these interactions of impacts, from the Proposed Development, between the various environmental factors.

This Chapter outlines the areas where potential interactions may arise as a result of the proposed development.

All aspects of the environment are likely to interact to some extent and to various degrees of complexity. The likely significant interactions between factors arising from the proposed development are set out in the matrix provided as Table 19.1 below.

Table 19.1: Summary of interactions at construction (Con) and operational (Opp) phases predicted as a result of the proposed development.

Interactions Between Environmental Factors		Population & Human Health		Biodiversity		Land, Soils, Geology and Hydrogeology		Hydrology		Air Quality		Climate		Noise & Vibration		Landscape & Visual		Microclimate		Architectural Heritage		Cultural Heritage and Archaeology		Roads and Traffic		Waste		Built Services	
		Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp	Cons	Opp
Population & Human Health						x	x																	x	x	x	x		
Biodiversity						x				x	x			x	x									x	x	x	x	x	x
Land, Soils, Geology and Hydrogeology								x	x	x	x													x	x	x	x	x	
Hydrology																													
Air Quality												x	x												x				
Climate																													
Noise & Vibration																													
Landscape & Visual																				x	x								
Microclimate																				x									
Architectural Heritage																													
Cultural Heritage and Archaeology																						x	x						
Roads and Traffic						x																		x	x				
Waste						x	x																	x	x				
Built Services						x	x																						

19.2.1 Interactions between Population and Human Health and Land, Soils and Hydrogeology

As set out in Chapter 7 and 9, the potential impact during construction on Population and Human Health in respect of the environmental factor of Land, Soils and Geology is negative, short term and not significant. The potential impact during operation on Population and Human Health in respect of the environmental factor of Land, Soils, and Geology is long term, neutral and imperceptible.

19.2.2 Interactions between Population and Human Health and Hydrology

As set out in Chapter 7 and 10, the potential impact during construction on Population and Human Health in respect of the environmental factor of Water is negative, not significant and short term.

When operational, there are no discharges to any open water courses included in the design. As such, the potential for unmitigated off-site flooding or contamination of surface water from oil / diesel spillages will not have potential to impact on human health, populations, and material assets. The effect is considered to be long-term, imperceptible and neutral.

19.2.3 Interactions between Population and Human Health and Air Quality

As set out in Chapter 7, 11 and 12, dust emissions from the construction stage of the Proposed Development have the potential to impact populations through nuisance dust. In the absence of mitigation there is the potential for not significant, direct, negative, short-term effects to nearby sensitive receptors as a result of dust emissions from the Proposed Development.

The traffic generated by the Proposed Development during operation has been assessed and it has been determined that pollutant concentrations will be in compliance with the Air Quality Standards. The effect to human health during the operational stage will be direct, negative, long-term, and not significant.

19.2.4 Interactions between Population and Human Health and Noise and Vibration

As set out in Chapter 7 and 13, during the construction phase of the Proposed Development there will be a potential temporary to short term impact on nearby properties due to noise emissions from site traffic and other construction activities.

During operations predicted noise emissions from the additional traffic, and mechanical and electrical services do not exceed the adopted criterion at any nearby noise sensitive locations. The resultant noise impact is negative, not significant and long-term.

19.2.5 Interactions between Population and Human Health and Landscape and Visual

As set out in Chapters 7 and 14, visual impacts perceived by individual persons are highly subjective and difficult to characterise however, generally, the effects would be negative since construction is an inherently, unavoidably unsightly activity. It is considered that the overall interaction between the community and landscape and visual will be negative, moderate and short term during the construction phase.

In terms of the operational element of the proposal, it is anticipated that the interaction between the local population and landscape and visual will be positive, moderate, and long term.

19.2.6 Interactions between Population and Human Health and Material Assets (Roads and Traffic)

As set out in Chapters 7 and 18, there is potential for construction traffic to impact from a noise and dust perspective in relation to the surrounding road network. There is also potential for traffic congestion. However, the duration of this impact will be short-term.

When operational the Proposed Development will generate a number of trips by various modes of travel including vehicular, pedestrian, cycle and public transport. As the affected junctions have sufficient capacity impact from the Proposed Development will be minimal. The interaction will be negative, not significant and long-term.

19.2.7 Interactions between Population and Human Health and Material Assets (Waste Management)

As set out in Chapter 7 and 19, the potential impacts on human beings are in relation to incorrect management of waste during construction and / or operation. A carefully planned approach to waste management and adherence to the project specific RWMP and mitigation measures in Chapter 7 (Population & Human Health) and Chapter 20, will ensure appropriate management of waste and avoid any negative impacts on the local population. The effects should be long-term, imperceptible and neutral.

19.2.8 Interactions between Population and Human Health and Material Assets (Built Services)

As identified by Chapter 7 and Chapter 20, the Proposed Development will have not have an impact on material assets such as water supply and power supply. The predicted interaction between the connection to utilities and the populations and businesses in the surrounding area is imperceptible and neutral.

19.2.9 Interactions between Biodiversity and Land, Soils, Geology and Hydrogeology

During the construction phase, excavated soil, stone, clay and made ground will be generated from the excavations required to facilitate site levelling and construction of the new foundations. As such, there is the potential for impacts on local biodiversity via the proposed excavation and re-profiling works. Following the implementation of mitigation measures outlined in Chapter 8 and Chapter 9, the predicted effects on biodiversity are short to long term, imperceptible, and neutral. The biodiversity of the subject site is likely to improve following the completion of landscaping works.

19.2.10 Interactions between Biodiversity and Hydrology

During the construction and operational phases of development, there is the potential for downstream impacts on the on-site drainage ditches, proximate watercourses, and designated conservation sites via contaminated surface water runoff. Following the implementation of mitigation measures outlined in Chapter 8 and Chapter 10, the predicted effects on biodiversity are short term, imperceptible, and neutral.

During the operational phase, the potential effects on surface water drainage can involve the Biodiversity component due to a potential hydrological connection between the site and protected habitats. As stated above, no impacts are expected on South Dublin Bay SPA/SAC/pNHA, given the potential loading and the distance from source to the Natura 2000 sites. The potential risk is considered to be imperceptible as potential contaminant would be attenuated, diluted and dispersed below statutory guidelines (i.e., S.I. European Communities Environmental Objectives Regulations, 2022. Adherence to the mitigation measures in Chapter 24 will ensure the effect is long-term, imperceptible and neutral.

19.2.11 Interactions between Biodiversity and Air Quality

During construction, there is the potential for dust and materials to enter the existing surface water sewer, drainage ditches, and proximate watercourses during site clearance and re-profiling works with the potential for downstream impacts on biodiversity and designated conservation sites. Following the implementation of mitigation measures outlined in Chapter 8, Chapter 11 and Chapter 12, the predicted effects on biodiversity are short term, imperceptible, and neutral. There are no anticipated operational impacts.

19.2.12 Interactions between Biodiversity and Noise and Vibration

During the construction and operational phase of the development, there will be an increase in disturbance including noise and vibration that could potentially impact on birds on site. Following the implementation of mitigation measures outlined in Chapter 8 and Chapter 13, the predicted effects are short term and minor adverse.

19.2.13 Interactions between Biodiversity and Material Assets (Roads and Traffic)

During the construction and operational phase of development, heightened traffic within and immediately surrounding the subject site (resulting from the transport of construction materials and the commuting of workers to the site) has the potential to impact on local biodiversity through increased disturbance. Following the implementation of mitigation measures outlined in Chapter 8 and Chapter 18, the predicted effects on biodiversity are short and long term, imperceptible, and neutral.

19.2.14 Interactions between Biodiversity and Material Assets (Waste)

There is the potential for impacts on local biodiversity and the potential for downstream impacts on proximate watercourses and designated sites via the storage and transportation of waste and pollution from the subject site during the construction phase of development. Following the implementation of mitigation measures designed to reduce the amount of waste produced, manage the wastes generated responsibly and handle the waste in such a manner as to minimise the effects on the environment as outlined in Chapter 8 and Chapter 19, the predicted effects on biodiversity are short long term, imperceptible, and neutral. There are no anticipated operational impacts.

19.2.15 Interactions between Biodiversity and Material Assets (Built Services)

During the construction phase of development, there is the potential for impacts on local biodiversity and downstream impacts on proximate watercourses and designated sites via

excavation and installation works during the proposed implementation of infrastructure throughout the site. During the operational phase of development, there is a direct hydrological pathway to designated conservation sites located within Dublin Bay via surface water drainage. There is an indirect hydrological pathway to designated conservation sites located within Dublin Bay via the proposed outfall of foul wastewater drainage to Ringsend WwTP. Following the implementation of mitigation measures outlined in Chapter 8 and Chapter 20, the predicted effects on biodiversity are short and long term, imperceptible, and neutral.

19.2.16 Interactions between Land, Soils, Geology and Hydrogeology and Hydrology

As set out in Chapter 9, there are potential interactions between land, soils, geology and hydrogeology and surface water, with some surface water conveyed and stored in SuDS features such as soakaways and discharging to the ground where possible, replicating the existing greenfield site drainage as closely as possible. The likely impact will be permanent, slight and neutral.

Chapter 10 also notes that, during the construction phase, there is an inter-relationship between soils, geology and hydrogeology and surface water due to the potential increasing of sediments loading in run-off as a result of the excavation required to facilitate site levelling and construction of the new foundations. Adherence to the mitigation measures in Chapter 9 and 10 and the requirements of the CEMP, will ensure the effect is long-term, imperceptible and neutral.

19.2.17 Interactions between Land, Soils, Geology and Hydrogeology and Material Assets (Roads and Traffic)

As set out in Chapter 9, there are potential interactions between lands and soils and material assets (roads and traffic) on the basis that throughout the construction stage of the project, there will be an increase in traffic on the roads due to deliveries to and from the site, site personnel and construction works. This impact will be negative, temporary and significant. There will be an increase in traffic in the general vicinity of the site during the operational stage, this will be negative, permanent and slight.

19.2.18 Interactions between Land, Soils, Geology and Hydrogeology and Material Assets (Waste)

As set out in Chapter 9 and 18, during the construction phase, excavated material will be disposed of off-site. Refer to the *Resource Waste Management Plan* for further information. Adherence to the mitigation measures in Chapter 9 & 19 and the requirements of the RWMP, will ensure the effect is long-term, imperceptible, and neutral. There are no anticipated operational impacts.

19.2.19 Interactions between Land, Soils, Geology and Hydrogeology and Material Assets (Built Services)

As set out in Chapters 9 and 20, there are potential interactions between lands and soils and material assets (built services) on the basis that during the installation process of the necessary built services, excavations will be required. These excavations will be limited in their

depth and therefore any impact they have on the land, soils, geology, and hydrogeology will be negative, imperceptible, and temporary.

There are also interactions between land, soils, geology and hydrogeology and material assets, with the construction of basements and drainage/utilities impacting the quantity of soil and subsoil as these materials will be removed to facilitate construction. The likely impact will be moderate, permanent and negative.

19.2.20 Interactions between Air Quality and Traffic and Transportation

As set out in Chapter 11, with increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The effects 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 effects of the interactions between traffic and air quality are considered to be direct, long-term, negative and not significant.

19.2.21 Interactions between Air Quality and Climate

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 effects. Air quality modelling outputs are utilised within Chapter 12 (Climate). There is no impact on climate due to air quality; however, the sources of impacts on air quality and climate are strongly linked.

19.2.22 Interactions between Air Quality and Land, Soils and Geology

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, soils and geology.

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 (Ch.9) 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.

19.2.23 Interactions between Climate and 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 air quality 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.

19.2.24 Interactions between Climate and Waste

Waste (Ch.19) 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.

19.2.25 Interactions between Microclimate and Population and Human Health

As set out in Chapter 15, during the Operational Phase the Proposed Development will impact on the wind microclimate within and around the Site, which ultimately can impact positively or negatively on people's health and well-being. The wind microclimate has the potential to impact on the level of pedestrian comfort and safety within the development.

19.2.26 Interactions between Archaeology and Cultural Heritage and Architectural Heritage

Due to the nature of Chapters 16 and 17, there are potential interactions between Archaeology and Cultural Heritage and Architectural Heritage on the basis that heritage considerations form the basis of both chapters. It is however concluded in Chapter 16 that following the implementation of the mitigation measures laid out in Chapter 17, in relation to the architectural heritage resource, there would be a remaining moderate negative residual impact on the cultural heritage of the original asylum complex. This is offset by the fact that the site and its heritage, at operation, will be publicly accessible.

19.2.27 Interactions between Architectural Heritage and Landscape and Visual

The development of the historic landscape significantly changes the character of the Development Site, including views into and out of the site. Mitigation measures in respect of landscape and visual appearance are discussed in Chapter 14 of this report.

19.2.28 Interactions between Waste and Material Assets (Roads and Traffic)

Local traffic and transportation will be impacted by the additional vehicle movements generated by removal of waste from the site during the construction and operational phases of the proposed development. The increase in vehicle movements as a result of waste generated during the construction phase will be temporary in duration. There will be an increase in vehicle movements in the area as a result of waste collections during the operational phase but these movement will be imperceptible in the context of the overall traffic and transportation increase. Provided the mitigation measures detailed in Chapter 18 and Chapter 19 are adhered to, the predicted effects are short to long-term, imperceptible and neutral.

20.0 CUMULATIVE ASSESSMENT

20.1 Introduction

This section has regard to the potential cumulative impact upon the environment arising from the proposed project, in combination with other developments (committed or planned projects) in the surrounding area.

The accepted meaning of "cumulative impacts" is as set out in the Guidance on the Preparation of the EIA Report (Directive 2011/92/EU as amended by 2014/52/EU) as:

> "*changes to the environment that are caused by activities/projects in combination with other activities/projects.*"

This very broad interpretation has been further defined in the Irish context in the EPA's 2017 Guidelines on the Information to be Contained in Environmental Impact Assessment Report to mean:

> "t*he addition of many minor or significant effects including effects of other projects, to create larger, more significant effects*".

The EPA guidance goes on to provide that while a single activity may itself result in a minor impact, it may, when combined with other impacts (minor or significant), result in a cumulative impact that is collectively significant.

Having regard to the built-up urban environment within which the subject lands are located, there is a significant amount of new development either under construction, permitted or proposed. In recognition of this, and the potential for cumulative impacts upon the environment, an extensive exercise has been undertaken to identify projects within the surrounding area that have the potential to give rise to cumulative impact, when considered in combination with the proposed development. The methodology surrounding the identification of relevant projects is set out below.

20.2 Methodology

A scoping exercise was first undertaken to identify an appropriate study area in respect of cumulative assessment. This comprised an initial survey of all planning applications within a spatial limit of c. 2km radius of the site boundary. An initial radius of c. 2km was selected for the reasons outlined in Table 23.1 below.

A screening exercise was then undertaken to determine whether each identified project has the potential to generate cumulative impacts of significance on the environment, when considered in combination with the proposed development. Table 20.1 sets out the parameters used in identifying the list of projects relevant to the cumulative assessment.

Table 20.1: Parameters/ Terms adopted in determining the study area and relevant projects for cumulative impact assessment with the proposed development.

Parameter/ term	Detail/ Definition	Justification
2 km radius	The initial 2 km radius was adopted to undertake the initial survey which identified all extant permissions within the area surrounding the planning boundary.	Having reviewed a number of recent EIARs that relate to development within existing built up areas, the general spatial catchment adopted in respect of cumulative impact assessment is 1km. For the purposes of this project, the EIAR team have had particular regard to the spatial catchment from a visual impact and traffic impact perspective which are determined to have the furthest reaching potential impacts. Otherwise, any further impacts are considered to be very localised. In addition to this, we have also considered the potential nature and extent of pedestrian circulation in the surrounding area (i.e. where are people likely to travel to on foot), having regard to surrounding public open spaces, employment locations and social infrastructure. Whilst 1km was considered by the competent experts to be sufficient to capture any potential cumulative impacts arising, it was decided to extend the spatial catchment to 2km to ensure that the assessment is as thorough and robust as possible given the scale of the proposed project. It is however noteworthy that following the screening exercise by the competent experts, the majority of projects identified as having potential for cumulative impact are within a 1km radius of site.
Extant Permissions	Planning permissions relating to committed development projects that have the potential to be implemented, at the time of writing.	The identification of all extant permissions ensures that any development that has the potential to interact with the proposed project from a cumulative impact perspective is identified (subject to the other parameters outlined in this section). This excludes planning permissions that have

		been granted but have since lapsed or been fully implemented/ operational at the time of writing. Implemented/ operational projects are captured as part of the assessment of the baseline environment.
Major projects	All development within 2km was screened for projects of a 'major' scale and nature. For the purposes of this exercise, the following developments were excluded: • Minor change of use applications; • New residential schemes of less than 50 units; • New commercial schemes (including change of use) of less than 3000 sq m) • Retention applications; • Minor amendments to permitted applications; • Minor signage applications; • Other development types of scale that would not exacerbate significant environmental concerns (including car parking proposals, internal reconfigurations etc.) It is noteworthy that where sub-threshold development (in the context of the above criteria) was considered to	The parameters for determining whether development is identified as 'major' or not was first considered in the context of Schedule 5, Part 1 and 2 of the *Planning and Development Regulations 2001* (as amended), in respect of development that requires mandatory EIA. The parameters were set to ensure that all surrounding development of a scale and nature requiring mandatory EIA would be captured, in recognition of their potential for significant environmental impact. Further to this, recognising that sub-threshold development (in an EIA sense) has the potential to give rise to significant environmental impact, both on its own or/ and in combination with other projects, the stated parameters were selected. In our opinion, this strategy is considered sufficient to capture the potential for incremental impact associated with the combination of a number of smaller projects. Notwithstanding this, as noted, where sub-threshold development (in the context of the selected parameters/ criteria) was considered to have the potential for significant interactions with the proposed project, it was not screened out of the assessment.

	have the potential for potential significant interactions with the proposed project, it was not screened out of the assessment.	
Committed Projects	Development projects with an extant planning permission, including projects currently under construction.	This parameter aligns with EIA Guidance surrounding the projects that should be included for cumulative impact assessment.
Planned Projects	Development projects (i.e. planning applications) that have been submitted to a Planning Authority for a decision, but were yet to be decided at the time of writing. Or potential projects that are at pre-application stage and within the public domain.	This parameter aligns with EIA best practice surrounding the projects that should be included for cumulative impact assessment.
Time of writing	30 July 2024	Considered to be appropriate cut-off date to enable to completion of the EIAR and submission of planning application. The scope of cumulative assessment, which gives consideration to planned projects, ensures that pipeline planning applications, if in the public domain, are captured by the assessment.
Expert consultants	The consultants that are responsible for the preparation of the chapters in respect of each environmental aspect assessed within the EIAR. The EIAR team, together with their qualifications, is outlined in Chapter 1 (Table 1.3).	This aligns with the amended EIA Directive (Directive 2014/52/EU) which states the following in relation to the persons responsible for preparing the environmental impact assessment reports: *"Experts involved in the preparation of environmental impact assessment reports should be qualified and competent. Sufficient expertise, in the relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and of a high level of quality."*

20.2 Potential Cumulative Impact

Each Chapter which addresses a specific environmental factor provides a detailed cumulative impact assessment in respect of the committed and planned projects identified in Chapter 3 (Sections 3.7.1, 3.7.2 and 3.7.3), including the future Section 34 application in respect of the wider Masterplan lands. The aforementioned chapters should be referred to for full details of the assessment; this chapter provides a summary of the cumulative impact assessment.

Table 20.2: Summary of the conclusions of the Cumulative impact assessment undertaken in respect of each environmental aspect.

Chapter/ Environmental Factor	Potential Cumulative Impact
Population and Human Health	Chapter 7 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR and concludes that other than the potential (short term and temporary) significant cumulative impacts arising from construction noise upon human health (addressed in detail in Chapters 7 and 12), no further significant adverse cumulative effects would arise.
Biodiversity	Chapter 8 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR and concludes that there would be no significant adverse cumulative effects arising.
Land, Soils, Geology and Hydrogeology	Chapter 9 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR and concludes that there would be no significant adverse cumulative effects arising.
Hydrology	Chapter 10 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Air Quality	Chapter 11 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Climate	Chapter 12 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Noise and Vibration	Chapter 13 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no

	significant adverse cumulative effects arising from the operational phase of the project. In respect of the construction phase, the assessment concludes that there is potential for cumulative construction noise impacts to arise which are expected to be negative, moderate to significant and short-term.
Landscape (Townscape) and Visual	Chapter 14 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Microclimate - Wind	Chapter 15 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Cultural Heritage and Archaeology	Chapter 16 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Architectural Heritage	Chapter 17 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Material Assets (Roads and Traffic)	Chapter 18 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR. The estimated traffic arising from the development incorporates a number of committed and planned projects deemed to have potential cumulative interactions with the development. In this regard, Chapter 18 concludes that *"the likely effect of the proposed development during the operational phase will be additional traffic which will have a significant long-term impact in the immediate vicinity of the proposed development on Dundrum Road and a moderate long-term adverse effect on the adjoining section of Dundrum Road and a slight traffic impact on the wider road network."*
Material Assets (Waste Management)	Chapter 19 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.
Material Assets (Built Services)	Chapter 20 has undertaken a cumulative impact assessment of the proposed development in combination with the projects outlined in Sections 3.7.1, 3.7.2 and 3.7.3

	of this EIAR, and concludes that there would be no significant adverse cumulative effects arising.

20.3 Mitigation and Monitoring

Having regard to the conclusions set out in Table 20.2 above, the proposed project, when considered in combination with the committed and planned projects set out in Sections 3.7.1, 3.7.2 and 3.7.3 of this EIAR, is not expected to give rise to significant cumulative impacts.

It is therefore further concluded that no further mitigation or monitoring measures are required, beyond those proposed by each chapter in respect of the proposed project.

21.0 MITIGATION AND MONITORING

21.1 Summary

This Chapter provides a consolidated list of all of the environmental commitments/ mitigation measures that have been recommended by the various specialists throughout the Chapters of this EIAR.

The mitigation and monitoring measures have been recommended on that basis that they are considered necessary to protect the environment during both the construction and operational phases of the proposed project. A table is provided as an Appendix to Chapter 24 of Volume 2 and is also included as Appendix 2 to this Non-technical Summary document.

APPENDIX 1

Details in respect of the competence of the various experts

Name	Role	Company	Qualification/ Experience
Julie Costello / Ciara Lester	EIAR Project Manager, Co-ordinator and Planner	Tom Phillips + Associates	**Julie Costello BA(Hons) MRUP** • Associate Planner • Corporate Member of the Irish Planning Institute (IPI) • Over 17 years' experience in Planning and EIA **Ciara Lester BA(Hons) MPlan** • Executive Planner • Chartered Member of the Royal Town Planning Institute (RTPI) • 4 years' experience in Planning and EIA
Sarah Tierney	Population and Human Health	AWN	**Sarah Tierney, BA in Environmental Science** • Graduate member of the Institute of Environmental Management and Assessment (GradIEMA) • Member of the Environmental Sciences Association of Ireland • Experience in EIA and EPA IE licence applications and compliance for pharmaceutical, ICT and residential developments
Bryan Deegan	Biodiversity Assessment	Altemar	**M.Sc. Environmental Science;** **BSc (Hons.) in Applied Marine Biology** **National Diploma in Applied Aquatic Science; National Certificate in Science** • (MCIEEM) Member of Chartered Institute of Ecology and Environmental Management • Over 29 years' experience as an Environmental Team Leader working on Irish aquatic and terrestrial development projects.
John Considine / Christina Fox	Lands, Soils and Geology	BMCE	**John Considine, BE, MIStructE, MIEI, CEng, FConsEIM** • Chartered Civil/Structural Engineer and a Fellow of the Association of Consulting Engineers of Ireland • 35 years experience of civil and structural engineering experience in the UK and Ireland • 10 years' experience in the preparation of EIAR documents **Christina Fox BEng (Hons) MSc CEng MIEI** • Chartered Engineer with Engineers Ireland

			• Practicing as a consulting engineer for over eleven years
Ana Keeley/ Teri Hayes	Hydrology	AWN	**Ana Keeley BSc** • 2 years experience in environmental consultancy and engineering geology • Member of International Association of Hydrogeologists • Worked on a range of projects involving hydrological/ hydrogeological risk assessments, site investigations and groundwater, surface water and soil monitoring on various operational developments. **Teri Hayes BSc MSc PGeol EurGeol** • Director of EIA and Water (EIA) • Former President of the Irish Group of the Association of Hydrogeologists (IAH) • qualified as a competent person as recognised by the EPA in relation to contaminated land assessment • 25 years experience in water resource management and impact assessment
Aisling Cashell / Dr Jovanna Arndt	Air Quality and Climate	AWN	**Aisling Cashell BA MAI** • Air Quality and Climate Consultant • BA and MAI in Civil, Structural and Environmental Engineering from Trinity College Dublin • Member of the Institute of Engineers Ireland • 1 year specialising in air quality and climate impact assessments for residential, commercial and industrial developments throughout Ireland **Dr Jovanna Arndt BSc PhD** • Senior Air Quality and Climate Consultant • BSc. in Environmental Science and a Ph.D. in Atmospheric Chemistry from University College Cork • Associate Member of both the Institute of Air Quality Management and the Institute of Environmental Sciences • 7 years specialising in air quality and climate impact assessments for residential, commercial, industrial, renewable energy and transportation developments
Abe Scheele	Noise and Vibration	AWN	**Abe Scheele**

			• City and Guilds Level 1 and 2 in Sound Engineering and City and Guilds Music Technology • Diploma in Acoustics and Noise Control from the Institute of Acoustics (IOA) • 8 years experience in environmental, building and architectural acoustics
Richard Barker	Landscape (Townscape) and Visual	Macroworks	**Richard barker MLA, PG Dip (Forestry), BA (Environmental)** • Principal Landscape Architect • Corporate member ILI • 20 years experience in LVIA
Faith Bailey	Cultural Heritage and Archaeology	IAC	**Faith Bailey MA, BA (Hons), MIAI, MCIfA** • Associate Director of IAC and Senior Archaeologist and Cultural Heritage Consultant • 20 years experience • Responsible for multiple EIAR's nationwide
Alastair Coey/Erl Johnston	Architectural Heritage	Coey Architects	**Erl Johnston** • RIBA Chartered Architect: 12460911 • Member of the RIAI (Ref 23023) • Registered with Architects Registration Board (Ref 095938C) • Over 10 years experience working on Protected Structures in Ireland and Listed Buildings in the UK **Alastair Coey BSC(Hons) and Dip Arch, Architecture, MUBC - Master of Urban and Building Conservation** • Member of the Royal Institute of British Architects: 4727683 • Registered with the Architects Registration Board: 046256J • Member of the Royal Institute of the Architects of Ireland: 98087 • Grade One Conservation Architect • Member of the Institute of Historic Buildings Conservation: 0828 • 30+ years experience as a specialist Conservation Architect
Dr Chris Harley	Microclimate	GIA	**Dr Chris Harley PhD MEng** • Director (Wind Analysis Department • MEng in Aerospace Engineering, PhD in Aerodynamics • 10 years experience in delivering wind microclimate assessments

Christy O'Sullivan	Traffic and Transport	ILTP	**Christy O'Sullivan** • a Chartered Engineer (CEng) • a Fellow of the Institution of Highways and Transportation (FIEI). • Over 30 years' experience in Traffic and Transportation. **Ben Waite – BA (Hons.) in Geography and an MSc. (Hons) in Geographic Information Science.** • Senior Transport Analyst; • Over 12 year's experience in traffic and transport design, analysis and planning.
Chonaill Bradley	Material Assets – Waste	AWN	**Chonaill Bradley BScEnv AssocMCIWM** • Principal Environmental Consultant • Associate Member of the Chartered Institute of Waste Management • Over 9 years' experience in EIA, Environmental reporting and Waste Management
John Considine / Christina Fox/ Richard O'Farrell	Material Assets – Built Services	BMCE/EDC	**John Considine, BE, MIStructE, MIEI, CEng, FConsEIM** • Chartered Civil/Structural Engineer and a Fellow of the Association of Consulting Engineers of Ireland • 35 years experience of civil and structural engineering experience in the UK and Ireland • 10 years' experience in the preparation of EIAR documents **Christina Fox BEng (Hons) MSc CEng MIEI** • Chartered Engineer with Engineers Ireland • Practicing as a consulting engineer for over eleven years **Richard O'Farrell BEng, MCIBSE** • Managing Director of Engineering Design Consultants Limited • Over 25 years' experience in the construction industry in Ireland and the UK
Matthew Michie	Risk Management	AWN	**Matthew Michie MChem, MSc (Physical Chemistry** • Senior Environmental Consultant • 5 years' experience in environmental consulting and EIARs for commercial, residential, industrial, pharmaceutical and data centre developments

APPENDIX 2 – Mitigation Measures

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Population and Human Health (Chapter 7)		
Mitigation		
P_1	The construction contractor will establish a feedback mechanism for residents to report any concerns or issues related to construction activities. By establishing this feedback mechanism, the construction contractor will engage with the community to address concerns and provide updates on mitigation efforts.	Construction
P_2	All excavated materials will be visually assessed by suitably qualified persons for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted / licensed waste disposal contractor. All sampling and soil handling will be undertaken by suitably qualified and trained persons using suitable personal protective equipment to avoid risks to human health.	Construction
P_3	The mitigation measures set out in Chapter 9: Land, Soils, Geology and Hydrogeology, Section 9.5.1 and Chapter 10: Hydrology, Section 10.6.1, will be implemented during the construction works for the protection of human health and populations. These measures relate to controlling sediment runoff, preventing spillage of hydrocarbons, soil excavation and other chemicals and groundwater dewatering works.	Construction
P_4	In order to mitigate the potential dust-related health impacts during the Construction Phase, dust related mitigation measures have been provided in Chapter 11 Air Quality of this EIAR. The mitigation measures draw on best practice guidance from Ireland (DCC, 2018), the UK (IAQM (2023), 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.	Construction
P_5	Best practice noise and vibration control measures will be employed by the contractor during the Construction Phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in *BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Noise* and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001 will be complied with. Further details are provided in Chapter 13: Noise & Vibration.	Construction
P_6	The mitigation measures set out in Chapter 18: Materials Assets (Roads and Traffic) will be implemented to mitigate against traffic relates impacts to human health.	Construction

P_7	Measures incorporated into the development design to mitigate the potential effects on hydrology will be implemented, as outlined in Chapter 10 Hydrology. Design measures to minimise the likelihood of any spills entering the water environment includes the design of the car park with hydrocarbon interceptors.	Construction
P_8	The best practice noise control techniques outlined in Chapter 13 Noise and Vibration will be reviewed and implemented as appropriate. This will ensure that noise levels are acceptable for the protection of human health.	Construction
P_9	The mitigation measures set out in Chapter 18: Materials Assets (Roads and Traffic) should be implemented to mitigate against traffic relates impacts to human health. This includes the implementation of a Mobility Management Plan.	Construction

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Biodiversity (Chapter 8)		
Mitigation		
B_1	An Ecological Clerk of Works will oversee the project and will operate in consultation with NPWS and the DLR biodiversity officer.	Construction
B_2	A pre-construction inspection for terrestrial mammals will be carried out.	Construction
B_3	An Ecological Clerk of Works (ECoW) will be appointed to oversee the construction phase and to oversee the implementation of all mitigation including compliance with Wildlife Acts and Water Pollution Acts and ensure that biodiversity in neighbouring areas including birds will not be impacted.	Construction
B_4	Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds will be followed e.g. do not remove trees or shrubs during the nesting season (1st March to 31st August). If removal is required during this season the removal of woody material will be carried out under the supervision of an ecologist. If nesting birds are present NPWS will be contacted and removal will be subject to conditions outlined by NPWS.	Construction
B_5	Lighting during construction will be carried out in consultation with the project ecologist.	Construction
B_6	Removal of deciduous trees. Should any mature broadleaved tree be scheduled for removal as part of the development plans, it will first be surveyed for bat presence by a suitably experienced specialist. If bats are found, an application for a derogation licence should be made to the National Parks and Wildlife Service to allow its legal removal. Such trees will be felled in the period late August to late October, or early November,	Construction

	in order to avoid disturbance of any roosting bats as per National Roads Authority guidelines (NRA 2006a and 2006b) and also to avoid the bird breeding seasons. Any tree felling will be completed by mid-November at the latest as bats roosting in trees are very vulnerable to disturbance during their hibernation period (November – April). Trees may be removed at other times but the likelihood of encountering bats during works will be higher. Trees with ivy-cover, once felled, will be left intact onsite for 24 hours prior to disposal to allow any bats beneath foliage to escape overnight. A derogation licence for bats for bat roosts on site is seen in Appendix 2 of Appendix 8.6.	
B_7	Trees to be retained. Several species of bats roost in trees. Where possible, treelines and mature trees that are located immediately adjacent to planned construction areas or are not directly impacted will be avoided and retained intact. Retained trees will be protected from root damage by machinery by an exclusion zone of at least 5 metres or equivalent to canopy height. Such protected trees should be fenced off by adequate temporary fencing prior to other works commencing.	Construction
B_8	A pre-construction bat assessment will be carried out on all buildings to be demolished.	Construction
B_9	Native species will be chosen in all landscaping schemes. Planting schemes will attempt to link in with existing wildlife corridors (hedgerows and treelines), both onsite and off, to provide continuity of wildlife corridors. Retention of boundary hedgerows and treelines will also serve to screen the development.	Construction
B_10	Lighting restrictions. In general, artificial light creates a barrier to bats so lighting will be avoided where possible. Where lighting is required, directional lighting (i.e. lighting which only shines on work areas and not nearby countryside) will be used to prevent overspill during construction. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only. Mature trees will not be directly lit during construction or operation of the proposed development.	Construction
B_11	45 bird boxes and 10 bat boxes will be placed on site as an enhancement and mitigation measure. The position of these boxes will be carried out in consultation with an ecologist.	Construction
B_12	Control measures will be carried out on the Himalayan balsam on site as outlined in the CEMP.	Construction
B_13	Measures and recommendations outlined in Appendix 8.7. Badger Survey Assessment and Mitigation Measures will be followed in consultation with NPWS. Mitigation measures outlined in the Badger Conservation Management Plan (Appendix 8.8) will be carried out.	Construction
B_14	The measures outlines in the Invasive Species management Plan (Appendix 8.10) will be followed.	Construction

B_15	A post construction inspection of drainage connections to the onsite drain will be carried out by the project ecologist to ensure that the petrochemical interceptor is in place and working.	Operational
B_16	A post construction inspection of drainage connections to the onsite drain will be carried out by the project ecologist to ensure that the petrochemical interceptor is in place and working.	Operational
B_17	A Habitat Management Plan will be in place and monitored by the project ecologist. The Habitat Management Plan (Appendix 8.9) has been prepared by Altemar with the support of AECOM Ireland Ltd. It involves the implementation of significant Habitat Management measures in line with the Dun Laoghaire Rathdown County Council Development Plan 2022-2028.	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Land, Soils, Geology and Hydrogeology (Chapter 9)		
Mitigation		
LS_1	To prevent the accidental release of hazardous materials (fuels, paints, cleaning agents, etc.) during construction site activity all hazardous materials will be stored within secondary containment designed to retain at least 110% of the storage contents. Temporary bunds for oil/diesel storage tanks will be used on the site during the construction phase of the project. Safe materials handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the project.	Construction
LS_2	Sediment runoff will be minimised by sediment skirts around soil stockpiles, sediment retention barriers in temporary surface water drains and the use of adequate construction roads.	Construction
LS_3	The provision of wheel wash areas at the construction entrances to the development will minimise the amount of soil deposited on the surrounding road network.	Construction
LS_4	Measures will be implemented throughout the construction stage to minimise the risk of contamination of the soil from accidental oil and petrol leakage from site plant. All lock up/storage areas will have a metal or concrete leak proof floor. Any accidental chemical spillages will be cleaned up and disposed of in an approved landfill site in accordance with the chemical manufacturer's recommendations.	Construction
LS_5	Exposed soil surfaces to be protected with 150mm stone hardcore layer	Construction

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Hydrology (Chapter 10)		
Mitigation		
H_1	Any run-off will be intercepted on site, where the ground falls towards adjoining properties or public roads/footpaths. This will be achieved with open drains or French drains and collected for treatment based on the conditions of a DLRCC and/or Irish Water licence, prior to pumping to the surface sewer network.	Construction
H_2	Should any discharge of construction water be required during the construction phase, discharge will be to foul sewer. Pre-treatment and silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, 20 m buffer zone between machinery and watercourses/ stormwater sewer/ drainage ditch, refuelling of machinery off site) and hydrocarbon interceptors.	Construction
H_3	Any minor ingress of groundwater and collected rainfall in the excavation will be pumped out during construction. It is estimated that the inflow rate of groundwater will be low and limited to localised perched water. It is therefore proposed that the water be discharged via the existing stormwater sewer network. Extensive monitoring will be adopted to ensure that the water is of sufficient quality to discharge to the sewer. The use of slit traps and an oil interceptor (if required) will be adopted if the monitoring indicates the requirements for the same with no silt or contaminated water permitted to discharge to the sewer. There may be localised pumping of surface run-off from the excavations during and after heavy rainfall events to ensure that the excavations are kept relatively dry. Due to the very low permeability of the Dublin Boulder Clay and the relative shallow nature for excavations, infiltration to the underlying aquifer is not anticipated. Based on SI information (Site Investigations Ltd, 2021), it is not anticipated that there will be rock removal required for the proposed single storey basements in the development, for building foundations, for service trenches or for any other works.	Construction
H_4	Run-off water containing silt will be contained on site via settlement tanks and treated to ensure adequate silt removal. Silt reduction measures on site will include a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds).	Construction
H_5	The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted to reduce runoff and graded to aid in runoff collection. This will prevent any potential negative impact on the stormwater drainage and the material will be stored away from any surface water drains. Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water	Construction

	ingress into excavations. Soil from works will be stored away from existing drainage features to remove any potential impact.	
H_6	Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site and the suitable distance of topsoil piles from surface water drains will be maintained.	Construction
H_7	To minimise any impact on the underlying subsurface strata from material spillages, all oils, solvents and paints used during construction will be stored within temporary bunded areas. Oil and fuel storage tanks shall be stored in designated areas, and these areas shall be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area(s) (plus an allowance of 30 mm for rainwater ingress). Drainage from the bunded area(s) shall be diverted for collection and safe disposal.	Construction
H_8	Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area (or where possible off the site) which will be away from surface water gulleys, the existing open ditch or drains. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double skinned tank. An adequate supply of spill kits and hydrocarbon adsorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. Guidelines such as "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001) will be complied with.	Construction
H_9	Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil. Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite.	
H_10	In the case of drummed fuel or other chemical which may be used during construction, containers should be stored in a dedicated internally bunded chemical storage cabinet and labelled clearly to allow appropriate remedial action in the event of a spillage.	Construction
H_11	Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment. The material will be stored away from any surface water drains (see Surface Water Run-off section above). Movement of material will be minimised to reduce degradation of soil structure and generation of dust.	Construction
H_12	All excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be	Construction

	determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.	
H_13	Site investigations carried out at the site in 2021 found no residual contamination on site. Nonetheless, all excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.	Construction

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Air Quality (Chapter 11)		
Mitigation		
A_1	Communications • Prior to construction works commencing on site, develop and implement a stakeholder communications plan that includes community engagement. Community engagement includes explaining the nature and duration of the works to local residents and businesses. The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board will also include head/regional office contact details.	Construction
A_2	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	Construction

	remedial actions carried out. The complaints log will be made available to the local authority when asked. • Any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation will be recorded in the log book. • Regular liaison meetings will be held with other high risk construction sites within 250 m of the site boundary where feasible, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.	
A_3	Preparing and Maintaining the Site • The site layout will be planned so that machinery and dust causing activities are located away from receptors, as far as is possible. • solid screens or barriers will be erected around dusty activities or the site boundary that are at least as high as any stockpiles on site. • site runoff of water or mud will be avoided. • site fencing, barriers and scaffolding will be kept clean using wet methods. • materials that have a potential to produce dust from site will be removed as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. • stockpiles will be covered, seeded or fenced to prevent wind whipping.	Construction
A_4	Operating Vehicles/Machinery and Sustainable Travel • all vehicles engines will be switched off when stationary - no idling vehicles. • the use of diesel or petrol powered generators will be avoided and mains electricity or battery powered equipment used where practicable. • a maximum-speed-limit of 15 kph will be imposed and signposted on haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	Construction

	• a Construction Logistics Plan will be produced to manage the sustainable delivery of goods and materials. • a Travel Plan will be implemented that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	
A_5	Operations • Only 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 will be used • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • enclosed chutes and conveyors and covered skips will be used • drop heights will be minimised 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.	Construction
A_6	Waste Management • No bonfires or burning of waste materials.	Construction
A_7	Measures Specific to Demolition • Prior to demolition blocks will 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 will 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 will be minimised, if necessary fine water sprays will be employed.	Construction

	• explosive blasting will be avoided, using appropriate manual or mechanical alternatives.	
A_8	Measures Specific to Earthworks • earthworks and exposed areas/soil stockpiles will be re-vegetated to stabilise surfaces as soon as practicable. • Hessian, mulches or trackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. • the cover in small areas will only be removed 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.	Construction
A_9	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.	Construction
A_10	Measures Specific to Trackout • A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles. • dry sweeping of large areas will be avoided. • Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Construction

	• on-site haul routes will be inspected for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. • all inspections of haul routes and any subsequent action in a site will be recorded in log book. • hard surfaced haul routes will be installed, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. • a wheel washing system will be implemented (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. • Access gates will be located at least 10 m from receptors where possible.	
A_11	Monitoring • daily on-site and off-site inspections will be undertaken, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This will 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. regular site inspections will be carried out to monitor compliance with the CEMP, record inspection results, and make an inspection log available to the local authority when asked. • the frequency of site inspections will be increased 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. dust deposition monitoring locations will be agreed with the relevant environmental management official within Dún Laoghaire-Rathdown County Council. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Refer to Section 11.7.1 of the EIAR for more detail on this monitoring.	Construction

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Climate (Chapter 12)		
Mitigation		
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:		
C_1	Creating a demolition and construction program which allows for sufficient time to determine reuse and recycling opportunities for demolition wastes	Construction
C_2	Appointing a suitably competent demolition contractor who will undertake a pre-demolition audit detailing resource recovery best practice and identify materials/building components that can be reused/recycled	Construction
C_3	Materials will be reused on site where possible	Construction
C_4	Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods	Construction
C_5	Ensure all plant and machinery are well maintained and inspected regularly	Construction
C_6	Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site	Construction
C_7	Waste materials will be re-used on site where possible and where re-use is not possible on-site they will be sent off-site for recycling, re-use or recovery	Construction
C_8	Material choices and quantities will be reviewed during detailed design, to identify and implement lower embodied carbon options where feasible	Construction
C_9	Sourcing materials locally where possible to reduce transport related CO_2 emissions	Construction
C_10	The project shall review and determine compliance with the requirements set out in the EU Taxonomy Regulation (Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Text with EEA relevance)) in relation to circular economy. This is specific to reuse, recycling and material recovery of demolition and construction wastes	Construction

C_11	Based on the waste volumes and disposal methods presented in Ch. 19 Material Assets – Waste, an estimated total of approx. 12,686 tonnes of excavated material generated during the construction phase of the development site can be reused. This will be further refined at detailed design and construction stage. This material re-use represents GHG savings of 53.4 tCO_2e;	Construction
C_12	Other materials such as concrete, bricks, tiles and ceramics, metals and timber may be diverted from waste processing by recycling or disposal in landfill, and can instead be reused on-site. This will reduce the associated CO_2 by approximately 20.6 tonnes	Construction
C_13	The residential units will aim to achieve a minimum Building Energy Ratio (BER) of A2 (25-50 kwh/m^2/yr with CO_2 emissions <10 kg CO_2/m^2 per year)	Operational
C_14	Achieve air permeability performance of 3 m^3/m^2/hr @ 50 Pa	Operational
C_15	Ensure thermal bridging details are designed to achieve thermal bridging factors of 0.08W/m^2K	Operational
C_16	Energy Performance Coefficient (EPC) < 0.30	Operational
C_17	Carbon Performance Coefficient (CPC) < 0.35	Operational
C_18	Meet or exceed minimum U-Value standards identified in Part L 2022 Dwellings	Operational
C_19	A combination of low energy strategies such as air to water heat pumps, a continuous whole-house ventilation system and solar photovoltaic energy will be decided and implemented to achieve A2 BER Rating	Operational
C_20	Provide an appropriate combination of technologies to ensure energy consumption is in line with Part L 2022 Dwellings requirements	Operational
C_21	Use of natural daylight will be maximised to reduce the need for artificial lighting	Operational
C_22	Where artificial lighting is required this will be in the form of energy efficient light fittings within in the dwellings and common areas, with latter being on dusk-dawn profiles	Operational
C_23	Solar gains will be optimised to reduce space heating demands during the winter months, whilst limiting summertime solar gains to reduce space cooling demands	Operational
C_24	Natural/passive ventilation in circulation areas, car parks and other common areas removes need for mechanical ventilation	Operational

C_25	All in-curtilage parking spaces will be capable of being fitted with EV charging points. All off-curtilage spaces will be ducted for EV charging, with 10% fitted out from the outset	Operational
C_26	High quality secure short-term and long-term bicycle parking facilities will be provided and the connectivity of onsite pedestrian and cycle infrastructure has been incorporated into the design of the proposed development	Operational
C_27	The proposed development location maximises connectivity to existing and proposed public transport bus and Luas services, providing sustainable alternative to private vehicles	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Noise and Vibration (Chapter 13)		
Mitigation		
N_1	Selection of quiet plant is recommended in relation to static plant such as compressors and generators. It is recommended that these units be supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item will be selected wherever possible. Should a particular item of plant already on the site be found to generate excessive noise levels, the first action will be to identify whether or not said item can be replaced with a quieter alternative.	Construction
N_2	If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control at source. This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact. The following best practice migration measures will be employed : • Site compounds will be located away from noise sensitive boundaries within the site constraints. • The lifting of bulky items, dropping and loading of materials within these areas will be restricted to normal working hours. • For mobile plant items such as cranes, dump trucks, excavators and loaders, , utilising an acoustic canopy to replace the normal engine cover and/or ensuring the enclosure panels are closed during operation can reduce noise levels over normal operation. Mobile plant will be switched off when not in use and not left idling.	Construction

	• For steady continuous noise, such as that generated by diesel engines, noise control measures include fitting a more effective exhaust silencer system to reduce the noise emitted. • For percussive tools such as pneumatic breakers, a number of noise control measures include fitting muffler or sound reducing equipment to the breaker tool and ensuring any leaks in the air lines are sealed. • Erecting localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries. • For concrete mixers, control measures will be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum. • For all materials handling, materials will not be dropped from excessive heights, lining drops chutes and dump trucks with resilient materials. • For compressors, generators and pumps, these will be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation. • 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.	
N_3	Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Standard construction site hoarding (2.4m in height) with a mass per unit of surface area greater than 7 kg/m^2 can provide adequate sound insulation. This will be required, as a minimum around the site perimeter.	Construction
N_4	A designated Community Liaison Officer (CLO) will be appointed to site during construction works. Any noise complaints will be logged and followed up in a prompt fashion by the CLO. In addition, prior to particularly noisy construction activity (e.g. demolition), the CLO will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.	Construction
N_5	The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. If piling works are in progress on another site at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to ensure noise limits are not exceeded due to cumulative activities. This will be reviewed in relation to other potential cumulative works occurring on adjacent construction site in close proximity to noise sensitive properties which have the potential to lead to significant construction noise impacts.	Construction

N_6	The assessment outlined previously has specified noise limits at the nearest noise sensitive properties that must be achieved in order to ensure the impact is acceptable, summarised in Section 13.2.2.1 of Chapter 13 Noise and Vibration To achieve these noise limits, it will be necessary to review (at the detailed design stage) the variety of mitigation measures and forms of noise control techniques that will be applicable. Some example of these measures are as follows: • Duct-mounted attenuators on the atmosphere side of air moving plant; • Splitter attenuators or acoustic louvres providing free ventilation to internal plant areas; • Solid barriers screening any external plant; and • Anti-vibration mounts on reciprocating plant. In addition to the above, the following measures will be adopted to minimise potential noise disturbance for neighbours: • All mechanical plant items (e.g. motors, pumps etc.) shall be regularly maintained to ensure that excessive noise generated by any worn or rattling components is minimised; • Any new or replacement mechanical plant items, including plant located inside new or existing buildings, shall be designed so that all noise emissions from site do not exceed the noise limits outlined in this document; and • Plant items will be selected such that site noise emissions do not contain tonal or impulsive characteristics at nearby noise sensitive locations.	Operational
N_7	Taking into account that sensitive receivers within the development are much closer than off-site sensitive receivers, once the relevant noise criteria included in Section 13.6.2 of the Noise and Vibration Chapter (i.e. design criterion is the order of **40dB $L_{Aeq,15min}$** during daytime periods and **35dB $L_{Aeq,15min}$** at night at the façades of the nearest noise sensitive locations). It is expected that there will be no negative impact at sensitive receivers on or off site, and therefore no further mitigation required.	Operational
N_8	The British Standard BS EN 12354-3: 2000: *Building acoustics – Estimation of acoustic performance of buildings from the performance of elements – Part 3: Airborne sound insulation against outdoor sound* provides a calculation methodology for determining the sound insulation performance of the external envelope of a	Operational

	building. The method is based on an elemental analysis of the building envelope and can take into account both the direct and flanking transmission paths. The Standard allows the acoustic performance of the building to be assessed taking into account the following: • Construction type of each element (i.e. windows, walls, etc.); • Area of each element; • Shape of the façade, and; • Characteristics of the receiving room. The principals outlined in BS EN 12354-3 are also referred to in BS8233 and Annex G of BS8233 provides a calculation method to determine the internal noise level within a building using the composite sound insulation performance calculated using the methods outlined in BS EN 12354-3. The methodology outlined in Annex G of BS8233 has been adopted here to determine the required performance of the building facades.	

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Landscape and Visual (Chapter 14)		
Mitigation		
	No specific Mitigation measures required	

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Microclimate (Chapter 15)		
Mitigation		
	No specific Mitigation measures required	

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Cultural Heritage and Archaeology (Chapter 16)		
Mitigation		
CA_1	Whilst it is acknowledged that preservation in-situ is the preferred method to conserve the archaeological resource, the layout of the proposed blocks, as designed, cannot avoid the predicted direct impacts. As such,	Construction

	prior to the commencement of construction, AA1-AA5 will be preserved by record through full archaeological excavation. The work will be carried out under licence to the National Monuments Service of the DoHLGH	
CA_2	All topsoil stripping associated with the proposed development will be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works, further archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the DoHLGH	Construction
CA_3	Detailed mitigation is provided in the Architectural Heritage chapter (17) in relation to the historic landscape and is not repeated here. Aspects of the landscape have been retained as part of the proposed development, including the hospital buildings to the immediate north, access drive and gate lodge, walled gardens, farm outbuildings, chapel and the perimeter wall	Construction
CA_4	Detailed mitigation is provided in the Architectural Heritage chapter in relation to the historic landscape and is not repeated here. Aspects of the landscape have been retained as part of the proposed development, including the hospital buildings to the immediate north, access drive and gate lodge, walled gardens, farm outbuildings, chapel and the perimeter wall	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Architectural Heritage (Chapter 17)		
Mitigation		
CH_1	The heights of Block 2 to the immediate east of the Main Hospital Building have been set to ensure that the dominance of the Main Hospital Building is retained.	Operational
CH_2	The historic landscape to the immediate south of the Main Hospital Building will be retained and enhanced. The main car-park and the C20 swimming-pool building are both proposed for removal and the areas of landscaping reinstated	Operational
CH_3	Where sections of the wall are being removed, and where it is feasible to do so, the wall will not be removed in full but reduced to a height of 1200mm	Operational
CH_4	Where sections of wall are being removed completely, and where it is feasible to do so, the former position of the wall will be indicated in the landscaping by use of natural stone as the paving material	Operational

CH_5	Where sections of the wall are removed completely, the retained sections will be terminated in such a fashion as to indicate that the wall did not merely terminate there but has been purposely interrupted, e.g. by the use of sensitively and appropriately detailed piers in masonry, concrete or metal	Operational
CH_6	The historic landscape in the immediate environs of the Chapel will be retained and enhanced	Operational
CH_7	Changing the site from being a private demesne to a publicly accessible area brings with it the possibility of the Chapel acquiring a larger congregation and playing a productive part in the lives of more people	Operational
CH_8	The proposed road alignment in proximity to the farmstead preserves the ability to view and appreciate the complex of buildings	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Material Assets – Roads and Traffic (Chapter 18)		
Mitigation		
RT_1	Tracked excavators will be moved to and from the Site on low-loaders and will not be permitted to drive onto the adjacent roadway	Construction
RT_2	The applicant shall at all times keep all public and private roads and footpaths entirely free of excavated materials, debris and rubbish	Construction
RT_3	Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris	Construction
RT_4	The applicant shall be responsible for and make good any damages to existing roads or footpaths caused by his own contractors or suppliers transporting to and from the Site	Construction
RT_5	The contractor shall confine his activities to the area of the Site occupied by the works and the builders' compound, as far as practicably possible, during any particular phase of the works	Construction
RT_6	All construction workers will be encouraged to use public transport, and also to car share where appropriate. On site staff car parking can also be provided to ensure no construction workers will be required to park on adjacent roads or streets	Construction
RT_7	No daytime or night-time parking of site vehicles or construction staff vehicles will be permitted outside agreed areas.	Construction
RT_8	Construction work will be limited to normal working hours; that are 08.00 – 19.00 on weekdays and 08.00 – 14.00 on Saturdays. All deliveries of materials, plant and machinery to the Site and removals of waste or other	Construction

	material will take place within the permitted hours of work. Vehicle movements will be planned to ensure arrival and departure times are maintained inside the agreed working hours.	
RT_9	Deliveries will be co-ordinated to prevent queuing of vehicles adversely affecting traffic flow and to minimise disruption to local traffic. They will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly to adjoining owners), and rush hour traffic. Large deliveries will be scheduled outside peak traffic hours to minimise disruption.	Construction
RT_10	Properly designed and designated access and egress points to the construction site will be used to minimise impact on external traffic	Construction
RT_11	Firm, level, and well-drained pedestrian walkways will be provided	Construction
RT_12	Adequate visibility will be provided at the proposed access point to the proposed development off Dundrum Road	Construction
RT_13	Footpaths will not be blocked resulting in pedestrians having to step onto the carriageway	Construction
RT_14	The final Construction Traffic Management Plan with be submitted and agreed with the planning department prior to the commencement of any development	Construction
RT_15	A Mobility Management Plan has been prepared for the proposed development which includes recommended mitigation measures to reduce usage of private cars and increase the use by residents and patrons within the development of more sustainable modes of travel, such as including good cycle parking provision, will further promote the greater use of sustainable travel modes. It is projected that successful implementation of the mobility management plan measures included will reduce the vehicular trip generation from the proposed development below that included for in the Traffic Impact Assessment for the proposed development.	Operational
RT_16	A Stage 2 Road Safety Audit (RSA) will be undertaken at the detailed design stage to ensure that the final design is in accordance with the TII Road Safety Audit Guidelines (December 2017) prior to the commencement of construction. A Stage 3 post construction and pre-opening of the proposed development in accordance with RSA guidelines to address any potential road safety issues related to the completed scheme.	Operational
RT_17	During the operational phase of the development, it is projected that the adjoining road network can readily accommodate the additional traffic from the proposed development	Operational
RT_18	The recent improvement to the Luas has significantly increased the capacity of the route and the Luas is future proofed to accommodate further capacity increases to 2030. The bus network capacity is also proposed to be increased city wide over the coming years up to 2030.	Operational

RT_19	DLR have updated the Dundrum LAP and the overall transport network proposed for the proposed development is consistent with the LAP. This will further promote sustainable travel modes in the area	Operational
RT_20	Wider national, regional and local policy objectives combined with planned investment in sustainable travel modes will further mitigate the impact of the development over time	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Material Assets – Waste (Chapter 19)		
Mitigation		
WM_1	A project specific RWMP has been prepared in line with the requirements of the requirements of the EPA 'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021) and is included as Appendix 19.1. The mitigation measures outlined in the RWMP will be implemented in full and form part of the mitigation strategy for the site. The mitigation measures presented in this RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development. • Prior to commencement, the appointed Contractor(s) will be required to refine / update the RWMP (Appendix 19.1) in agreement with DLRCC and in compliance with any planning conditions, or submit an addendum to the RWMP to DLRCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream. • The Contractor will implement the RWMP throughout the duration of the proposed excavation and construction phases.	Construction
WM_2	A quantity of topsoil and sub soil will need to be excavated to facilitate the proposed development. The Development Engineers have estimated that the majority excavated material will need to be removed off-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.	Construction
WM_3	Building materials will be chosen to 'design out waste'	Construction

WM_4	On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated: o Concrete rubble (including ceramics, tiles and bricks); o Plasterboard; o Metals; o Glass; and o Timber.	Construction
WM_5	Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; (alternatively, the waste will be sorted for recycling, recovery or disposal)	Construction
WM_6	All waste materials will be stored in skips or other suitable receptacles in designated areas of the site	Construction
WM_7	Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);	Construction
WM_8	A Resource Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works	Construction
WM_9	All construction staff will be provided with training regarding the waste management procedures	Construction
WM_10	All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal	Construction
WM_11	All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities	Construction

WM_12	All waste leaving the site will be recorded and copies of relevant documentation maintained	Construction
WM_13	Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Regulation 27 (By-products), as amended, European Union (Waste Directive) Regulations 2011-2020. EPA approval will be obtained prior to moving material as a by-product.	Construction
WM_14	All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins or other suitable receptacles in a designated, easily accessible areas of the site.	Operational
WM_15	A project specific OWMP has been prepared and is included as Appendix 19.2. The mitigation measures outlined in the OWMP will be implemented in full and form part of the mitigation strategy for the site. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the NWMPCE , Waste Action Plan for a Circular Economy – Waste Management Policy in Ireland and the DLRCC waste bye-laws. The Facilities Management Company / Residents and Tenants of the site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of this OWMP, ensuring a high level of recycling, reuse and recovery at the site of the proposed development.	Operational
WM_16	On-site segregation of all waste materials into appropriate categories including (but not limited to): ○ Organic waste; ○ Dry Mixed Recyclables; ○ Mixed Non-Recyclable Waste; ○ Glass; ○ Waste electrical and electronic equipment (WEEE); ○ Batteries (non-hazardous and hazardous);	Operational

	○ Cooking oil; ○ Light bulbs; ○ Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.); ○ Furniture (and from time to time other bulky waste); and ○ Abandoned bicycles	
WM_17	The Facilities Management Company / Residents and Tenants will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials.	Operational
WM_18	The Facilities Management Company / Residents and Tenants will ensure that all waste collected from the Site of the proposed development will be reused, recycled or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available	Operational
WM_19	The Facilities Management Company / Residents and Tenants will ensure that all waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Material Assets – Built Services (Chapter 20)		
Mitigation		
BS_1	A method statement for all works to be carried out will be prepared by the contractor and agreed with the various service providers prior to commencement of works to outline what measures are to be taken to ensure there is no loss of service during the works or to ensure such losses are minimised when they are unavoidable.	Construction
BS_2	Dewatering measures will only be employed where necessary.	Construction

BS_3	If concrete mixing is carried out on site, the mixing plant will be sited in a designated area with an impervious surface	Construction
BS_4	The existing surface drainage channel within the lands that serve adjacent lands will be retained for as long as possible.	Construction
BS_5	Construction methods used will comply with the noise and dust requirements as set out in the relevant EIAR chapters to reduce, as much as possible, dust and noise pollution	Construction
BS_6	Comprehensive traffic management procedures, including the provision of access to all roads, and access/egress points will be prepared and agreed with the DLRCC. These traffic management measures will be implemented at times when traffic disruption may be experienced.	Construction
BS_7	Road sweeping and/or wheel wash facilities will be provided, as required	Construction
BS_8	All oils/diesel stored on site for construction equipment will be located in appropriately bunded areas.	Construction
BS_9	Filters and silt traps will be used to prevent rain washing silts and other materials into the surface water network and creating blockages	Construction
BS_10	All onsite sewers will be tested and surveyed prior to connection to the public sewer to prevent any possibility of ingress of ground water.	Construction
BS_11	All sewers will be inspected and where necessary sealed to ensure that uncontrolled ground water inflow does not occur	Construction
BS_12	Any leakage from the foul sewer will be cordoned off and the contaminated effluent and soil collected and disposed by licensed contractors	Construction
BS_13	The contractor will adhere to any specific requirements, required by the local authority when introducing a new watermain connection	Construction
BS_14	Commissioning of the system to be carried out in accordance with the engineering specifications set out in the drawings and specifications document	Construction
BS_15	Provision of Utilities will be carried out in accordance with the recommendations of the relevant statutory bodies (ESB, Gas Networks Ireland, Irish Water, EIR, Virgin, City and County Councils etc.)	Construction
BS_16	The watermain connection to the public system is to be in accordance with the Uisce Éireann requirements to avoid any contamination risk	Construction
BS_17	SuDS measures on site include green roofs, blue roofs, attenuation tanks/soakaway's, permeable paving and detention basins	Operational
BS_18	Dual & low flush toilets and water economy outlets will be used to reduce flows from the development and water demand	Operational

BS_19	The site water main system will be metered as directed by Uisce Éireann to facilitate detection of leakage and the prevention of water loss	Operational

Mitigation/Monitoring No.	Description of Mitigation/Environmental Commitment	Phase
Major Accidents and Disasters (Chapter 21)		
Mitigation		
RM_1	A Site Emergency Response Plan will be developed prior to the commencement of operations and will include detailed procedures in the event of a major accident. This plan will contain detailed plans for the response to emergencies such as loss of containment of natural gas, fuel oil, fires and severe weather events. A stock of emergency equipment such as spill kits will be maintained on site in particular around the fuel storage areas.	Operational