Chapter 12:

Material Assets

12.0 MATERIAL ASSETS

12.1 INTRODUCTION

John Spain Associates, Chartered Planners and Development Consultants, undertook the preparation of this section of the Environmental Impact Assessment Report (EIAR), in association and consultation with HJL Architects, DBFL Consulting Engineers, JAK Consulting Engineers, and AWN Consulting. This chapter of the EIAR was prepared by Luke Wymer, BA, MRUP, Dip. Planning & Environmental Law, Dip PM, Prof. Cert. Environmental Management, MIPI, of John Spain Associates, Planning & Development Consultants and reviewed by Paul Turley, BA, MRUP, Dip Environmental & Planning Law, MIPI of John Spain Associates. DBFL Consulting Engineers (Nick Fenner - MEng (Hons) CEng MIEI) also collaborated with John Spain Associates in the preparation of this chapter, providing input in relation to material assets including services and infrastructure relevant to the proposed development.

Resources that are valued and that are intrinsic to specific places are called 'material assets'. They may be of either human or natural origin and the value may arise for either economic or cultural reasons. The assessment objectives vary considerably according to the type of assets, those for economic assets being concerned primarily with ensuring equitable and sustainable use of resources. Assessments of cultural assets are more typically concerned with securing the integrity and continuity of both the asset and its necessary context.

The EIA Directive requires that Archaeological and Cultural Heritage is assessed as part of Material Assets. However, such is the importance of this issue in Ireland, EIA best practice has established that it is important to address this issue separately and not as an adjunct to the Material Assets section in the EIAR document. Accordingly, Archaeology and Cultural Heritage is assessed in Chapter 4 of this EIAR document.

This chapter considers physical resources in the environment which may be of human origin, as those of a natural origin are addressed elsewhere in the EIAR. The objective of the assessment is to ensure that these assets are used in a sustainable manner, so that they will be available for future generations, after the delivery of the proposed development.

With regard to Material Assets, the August 2017 Draft EIAR Guidelines published by the EPA state:

> *"Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils."*

Having regard to this definition, the current chapter provides an assessment of material assets including urban settlements, ownership and access, foul and surface water, water supply, electricity supply, information and communications technology, and waste. A separate chapter (Chapter 13 of this EIAR) deals specifically with traffic and the impact of the development on roads infrastructure.

12.2 STUDY METHODOLOGY

This chapter of the EIAR document has been prepared with reference to the specific criteria set out in European Commission, Guidance on the preparation of the Environmental Impact Assessment Report (2017) and the Draft EPA guidelines published in 2017, both of which reflect the requirements of Directive 2014/52/EU.

These guidance documents include information on the assessment of the effects of development on material assets and guidance on the nature of the material assets which should be examined as part of the preparation of an EIAR. The following Material Assets are assessed in this Chapter of the EIAR Document:

- Economic Assets of Natural Origin

- Economic Assets of Human Origin

Economic assets of natural origin, which include biodiversity, land & soil and water, are addressed elsewhere in this EIAR, in particular Chapter 6, 7 and 8. Cultural Assets of a Physical Type and Cultural Heritage of a Social Type are addressed in Chapters 4 of this EIAR Document.

Economic assets of human origin are considered in this chapter. A desktop study was carried out on existing material assets of human origin associated with the site of the proposed development. Projections of resource use were undertaken for both the construction and operational phases of the proposed development, and the impacts assessed. Mitigation measures are proposed where appropriate.

12.3 EXISTING RECEIVING ENVIRONMENT

12.3.1 Introduction

In describing the receiving environment, the context, character, significance and sensitivity of the baseline receiving environment into which the proposed development will fit is assessed. This takes account of any other proposed developments that are also likely to proceed in the short to medium term.

12.3.2 Economic Assets of a Human Origin

This sub-section considers the key aspects relating to material assets of the proposed development site and the surrounding area, namely urban settlements, ownership and access, potable water supply, wastewater discharge, electricity supply, telecoms and municipal waste. It is noted that Chapter 13 of this EIAR deals specifically with the impact of the development on traffic and transport.

The following aspects of the proposed development will affect material assets within the vicinity of the proposed development site:

- Urban Settlements
- Ownership & Access
- Foul Water Disposal (also see DBFL Infrastructure Design Report)
- Potable Water Supply (also see DBFL Infrastructure Design Report)
- Surface Water Disposal (also see DBFL Infrastructure Design Report)
- Electrical Supply
- Telecoms; and
- Municipal Waste

Urban Settlements

The subject site currently comprises of the sites of previous dwellings which were demolished several years ago, and includes stands of trees, scrub and grassland. The site is appropriately zoned for residential development under the 2016-2022 Dun Laoghaire Rathdown County Development Plan. The provision of residential development on the site is also supported under the Ballyogan and Environs LAP 2019-2024, which also identifies the subject site for higher buildings.

This application relates to a site of c. 2.56 hectares, including a portion of the site under the ownership of DLRCC for which the appropriate consent is provided, which is located in a prominent gateway location. The site is immediately adjacent to the M50 motorway, while to the west, opposite Glenamuck Road, a new mixed-use neighbourhood centre, commercial, residential, and leisure scheme has recently been subject to a grant of permission at Quadrant 3. To the east / southeast of the subject site, on the opposite side of Golf Lane, is an

area of existing residential development comprising semi-detached, two and three storey dwellings, with an area of existing apartment development located further to the south

The proposed development will integrate fully with the surrounding area and the adjacent developments and is considered an appropriate form of development on the subject site which is currently underutilised. The site formerly consisted of 5 former residential buildings, which were demolished in the past by separate parties, leaving the site vacant.

Ownership & Access

The lands comprising of the planning application site are owned in part by the applicant, Bowbeck DAC. The boundary of the proposed development also takes in lands under the control of the Local Authority, to facilitate access and infrastructure works to facilitate the proposed development. The extent of the lands to which the proposal relates is c. 2.56 hectares, including the portion under the ownership of the Local Authority. The appropriate consent is provided for by the Local Authority and a letter of consent detailing this has been included as part of the planning application.

Vehicular access and egress to and from the SHD site will be provided via access points via Golf Lane, which connects to Glenamuck Road via an existing roundabout. Pedestrian and cyclist links are to be provided for directly through the proposal, connecting to Golf Lane and Glenamuck Road whilst providing enhanced accessibility for existing residences on Golf Lane.

The subject site is exceptionally well served by transport infrastructure, including a range of public and private transportation modes.

The location of the site provides for ease of access to the M50 via private car, and onward to the city centre, via this significant piece of road infrastructure which is located immediately adjacent to the subject site. The site is located less than 500 metres from the Ballyogan Wood Luas stop, and Glenamuck Road and Ballyogan Road are served by bus routes, providing services from Dun Laoghaire to Kiltiernan, with c. 20 minute frequencies.

Glenamuck Road lower includes high quality footpaths and cycle lanes. The proposed development includes a pedestrian crossing across the Glenamuck Road to improve pedestrian accessibility to the development from the adjacent Park at Carrickmines and the permitted Quadrant 3 development

Foul and Surface Water

The following in relation to foul and surface water is based on the reports (submitted under separate cover) prepared by DBFL Consulting Engineers. There is an existing 225mm diameter foul sewer located in the adjacent residential development following Golf Lane, which was installed as part of the recent residential development to the south east of the subject site. There is also a 300mm diameter Irish Water foul sewer located to the north of the subject site draining south-east. DBFL Consulting Engineers state within the Infrastructure Design Report that this sewer is believed to be of recent construction to create a mains connection for one of the previous dwellings which previously existed on the subject site, but which were demolished several years ago.

The figure below is an extract from the DBFL Consulting Engineers Infrastructure Design Report which illustrates the location of Irish Water sewers in the vicinity of the site.

Figure 12.1: Extract from DBFL IDR illustrating location of foul sewers

A confirmation of feasibility and statement of design acceptance has been received from Irish Water for the proposed development which confirms, that subject to agreement, the connection of the development to the Irish Water sewer network can be facilitated.

There is an extensive surface water network that surrounds the subject site. To the north of the site a 225mm diameter UPVC sewer runs parallel to the foul sewer stated in the previous section. There is also a surface water network in Golf Lane which runs north towards the M50 where it meets the surface water sewer from the subject site and discharges into the Carrickmines River culvert between the slipway and motorway. There is also an extensive surface water network on Glemanuck Road, although it is believed that the surrounding area's surface water discharges into the Carrickmines River or tributaries.

Drainage for the existing site and proposed development is discussed in greater detail in the separate DBFL Report no. 170063-REP-003 prepared by DBFL Consulting Engineers. Calculations estimating the demand generated are included within this report.

Water supply

DBFL Consulting Engineers confirm that water main records identify a 3 inch cast iron watermain running along Golf Lane, in addition to a 200mm watermain to serve the recently constructed nearby residential development.

A confirmation of feasibility and statement of design acceptance has been received from Irish Water for the proposed development which confirms, that subject to agreement, the connection of the development to the Irish Water network can be facilitated.

Water supply for the existing site and proposed development is discussed in greater detail in the separate DBFL Report no. 170063-REP-003 prepared by DBFL Consulting Engineers. Calculations estimating the demand

generated are included within this report. The figure below is an extract from the DBFL Infrastructure Design Report, illustrating the location of existing Irish Water mains in the vicinity of the site.

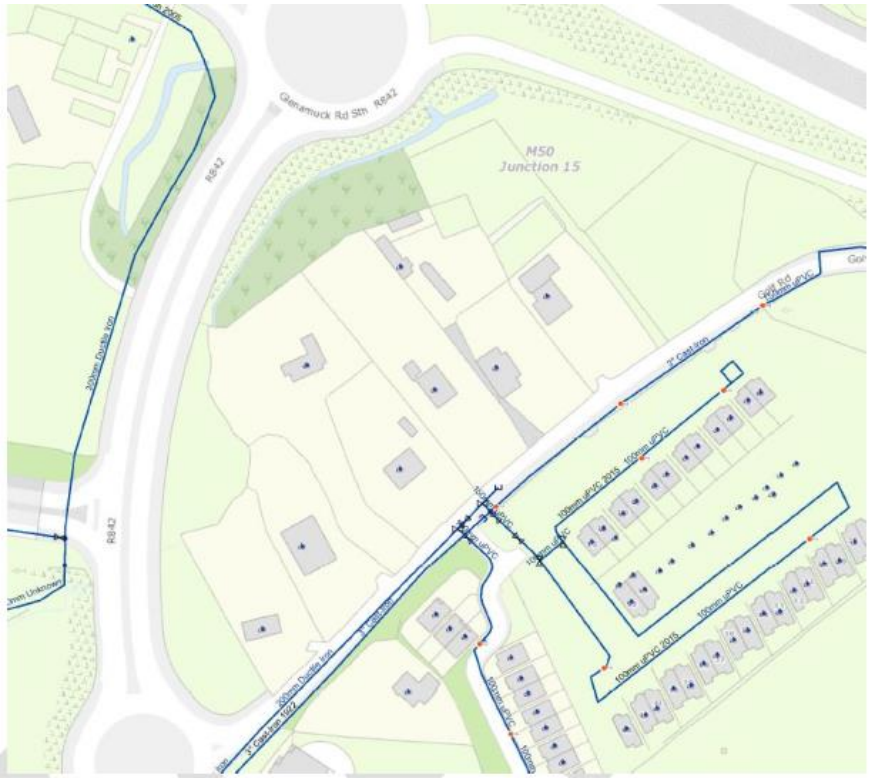

Figure 12.2: Map of existing potable water services in the vicinity of the subject site.

Electrical Supply

The site is served by existing ESB infrastructure on Golf Lane, as illustrated within the accompanying Sustainability and Energy Statement prepared by JAK Consulting Engineers.

JAK have engaged with ESB to ensure that there is sufficient capacity to serve the proposed development. Based on the number of residential units proposed and the small scale commercial uses included, three substations have been included within the site layout to serve the proposed development.

Information and Communications Technology (ICT)

The JAK Consulting Engineers Sustainability and Energy Statement submitted along with the application details that the subject site is served by existing ICT (internet and phone) services from various providers including EIR and Virgin Media. Postal services to the area are provided by An Post. The JAK Sustainability and Energy Statement sets out that EIR and Virgin Media will provide agreement of the most appropriate connection points following connection application.

Within the development itself, underground carpark service routes will be utilised to link to the risers within the proposed buildings. The figures below are extracts from the JAK Sustainability and Energy Statement which indicate the location of EIR and Virgin Media infrastructure in the vicinity of the proposed development.

Figure 12.3: Extract from Sustainability and Energy Statement illustrating the location of existing EIR infrastructure.

Figure 12.4: Extract from Sustainability and Energy Statement illustrating the location of existing Virgin Media infrastructure

Waste

A Construction and Demolition Waste Management Plan, and an Operational Waste Management Plan have been prepared by AWN for the proposed development, detailing how waste will be managed both during the construction phase and the operational phase of the development. This includes information on the predicted waste arising from the construction phase of the proposed development. During the operational stage the

development will be served by existing waste collectors in the area, with waste generated held in designated storage areas.

The Construction and Demolition Waste Management Plan notes that waste materials will be generated from site clearance and excavation works. During the construction phase, there may also be waste arising from surpluses of construction materials. Waste will also be generated from construction workers, including organic and non-organic waste. There is no demolition as part of the proposed development, although as noted within the waste management plan, residual waste from previously demolished dwellings on site will be removed as part of the site clearance / construction works.

The Operational Waste Management Plan states that various contractors offer waste collection services for the in the DLRCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational and are all operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

The DLRCC Ballyogan Recycling Park (Recycling Centre) is located approximately
1.2km to the north-west, which can be utilised by the residents of the development for other household waste streams.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all waste/IE licenses issued are available from the EPA.

12.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

A full description of the proposed development is provided in Section 2. In summary the proposed development comprises a residential development of 482 no. units (all apartments), along with ancillary residential amenities, and provision of a childcare facility, gym, and local shop. The proposal is set out in 7 no. separate blocks within the 2.56 hectare subject site, as follows:

The proposed development is set out in 7 no. blocks which comprise the following:

- Block A1 comprises 62. no, apartments within a part four, part six storey building, including 10 no. studio units, 7 no. 1-bedroom units, 41 no. 2 bedroom units, and 4 no. 3-bedroom units. An ESB substation is provided at ground floor level.
- Block A2 comprises 85 no. apartments within a part four, part eight storey building, including 25 no. 1-bedroom units, 45 no. 2-bedroom units, and 15 no. 3-bedroom units.
- Block A3 comprises 79 no. apartments within a part four, part twelve storey building, including 21 no. studio units, 19 no. 1-bedroom units, 28 no. 2-bedroom units, and 11 no. 3-bedroom units.
- Block B0 comprises 150 no. apartments and resident's amenities within a part four, part eighteen, part twenty-one and part twenty-two storey building. The apartments include 76 no. 1-bedroom units, 68 no. 2-bedroom units, and 6 no. 3-bedroom units (including 2 no. duplex type units). An ESB substation, resident's concierge area and amenity space (171 sq.m sq.m) are provided at ground floor level. A further resident's amenity / event space is provided at the twentieth and twenty-first floor levels (83 sq.m).
- Block B1 comprises 8 no. apartments and is four storeys in height, directly abutting Block B. The apartments include 4 no. 1-bedroom units, and 4 no. 2-bedroom units.

- Block C comprises 42 no. apartments and a local shop within a part five, part seven storey building. The apartments include 30 no. 1-bedroom units, 9 no. 2-bedroom units, and 3 no. 3-bedroom units. A local shop (154 sq.m) and an ESB substation are provided at ground floor level.
- Block D comprises 56 no. apartments, a commercial gym, resident's concierge area, resident's lounge, and a childcare facility in a part four, part seven storey building. The apartments include 22 no. 1-bedroom units, and 34 no. 2-bedroom units. The resident's concierge area (99 sq.m), commercial gym (340 sq.m), and childcare facility (300 sq.m) units are located at ground floor level. The resident's lounge (292 sq.m) is located at first floor level.

Two basement levels are proposed, providing car parking spaces (299 no.), bin stores, plant rooms, bicycle parking (1,000 no. spaces), and circulation areas. A further 240 no. bicycle parking spaces and 4 no. car parking spaces are provided at ground level. The proposed development includes landscaping, boundary treatments, public, private and communal open space (including roof terraces), two cycle / pedestrian crossings over the stream at the western side of the site, along with a new pedestrian and cycle crossing of Glenamuck Road South at the west of the site, cycle and pedestrian facilities, play facilities, and lighting. The proposed buildings include the provision of private open space in the form of balconies and winter gardens to all elevations of the proposed buildings. The development also includes vehicular, pedestrian, and cycle accesses, drop off areas, boundary treatments, services, and all associated ancillary and site development works.

The site at present represents an opportunity to provide for a high quality development at a suitable location which is readily accessible by public transport and adjacent to a host of employment and social opportunities.

The overall development would allow for an appropriately sited land parcel to be development to a high density to meet the levels of housing demand currently existing within Dublin County as a whole. The proposal includes a large gym and childcare facility at accessible ground floor locations where they can be readily utilised by those living within the development in addition to those who live nearby, while delivering wider improvements to public realm and amenities in accordance with national and local planning policy objectives, which advocates for higher densities at appropriate locations.

12.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

12.5.1 Introduction

This section provides a description of the potential direct and indirect impacts that the proposed development may have during both the construction and operational phases of the proposed project. This is provided with reference to both the Characteristics of the Receiving Baseline Environment and Characteristics of the Proposed Development sections while also referring to the (i) magnitude and intensity, (ii) integrity, (iii) duration and (iv) probability of impacts. Impact assessment addresses direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions.

12.5.2 Urban Settlements

Construction Phase

The construction phase of the proposed development is likely to have some temporary impacts on the existing urban settlement in the vicinity of the site, in the absence of consideration of mitigation measures. This would be due to disturbance during the construction phase and some additional minor and temporary additions to the local population which may arise out of the construction activity.

However, with the implementation of the proposed mitigation measures, the predicted residual impacts are as set out in the relevant Chapters of this EIAR.

Operational Phase

The proposal will result in the provision of an additional 482 no. residential units, childhood facility, shop and gym along with open space, recreational areas and infrastructural upgrades.

The proposal is in accordance with the zoning objectives pertaining to the site and will result in an increase in the local population and residential density.

As set out in greater detail within Chapter 3 of this EIAR (population and human health), the provision of 482 new housing units will have a positive impact on urban settlements, through the delivery of new homes to meet established housing need and demand. This represents an intrinsically positive impact in the context of the long-standing and severe housing shortage in the state and the Dublin area. The additional residential accommodation play a role in the support of projected population growth in the area, while the population of the proposed development itself will assist in the realisation of the critical mass required to support existing and permitted facilities in the surrounding area.

12.5.3 Ownership & Access

Construction Phase

The subject lands are not developed at present. There will be some temporary disturbance during construction to the surrounding area, however, this will be minimised as best as possible through appropriate mitigation measures as set out in the construction and environmental management plan included as a standalone report with this planning application.

Operational Phase

The proposed development will provide for easy access to the Luas line and the Park, along with new pedestrian links with Golf Lane and Glenamuck Road, including enhanced links through the provision of a pedestrian bridge and main pedestrian / cycle route traversing the subject site along a desire line for pedestrians and cyclists between Glenamuck Road and Golf Lane. The proposal is designed to be permeable for pedestrians, with vehicular access along the existing Golf Lane.

The traffic and transport impact of the proposed development is assessed within the next chapter of this EIAR, which has been prepared by DBFL Consulting Engineers to assess the impact of the proposed development on Traffic and Transportation. Further details are also provided within the Traffic and Transportation Assessment report prepared by DBFL Consulting Engineers which is submitted with this planning application.

12.5.5 Foul Water Disposal

Construction Phase

The Infrastructure Design Report sets out that the development proposals entail decommissioning the existing unused foul infrastructure on the subject site and providing a new connection to the existing 300mm Irish Water foul sewer north of the proposed development. There is potential for some short term impacts due to these works in the absence of mitigation however the potential impact from the construction phase of the proposed development on the foul network is likely to be neutral.

Operational Phase

During the operational phase there will be an increase in the foul discharge from the proposed development therefore reducing the capacity of the public foul sewer. The public foul sewer, however, does have sufficient

spare capacity to cater for the proposed development as per the confirmation of feasibility received from Irish Water.

12.5.6 Potable Water Supply

Construction Phase

The Infrastructure Design Report states that the provision of a new watermain connection to the proposed development will involve the construction of a short length of pipe within the public realm mainly involving trench excavations conducted in parallel with the other services. The potential adverse impact on the local public water supply network would be short term and imperceptible in the absence of mitigation which is set out below.

Operational Phase

The impact of the operational phase of the proposed development on the public water supply is likely to be to increase the demand on the existing supply. As such additional water quantities would need to be treated and supplied through the existing network to the site. The potential adverse impact of the proposed development on the public water supply network is likely to be long term and minimal.

12.5.7 Surface Water Disposal

Construction Phase

The installation of the surface water sewers and attenuation tanks for the development will be conducted in parallel with the other services. This will mainly involve construction of pipes and manholes using trench excavation. The potential adverse impact of the proposed development on the Golf Stream during the construction phase of the development is addressed in detail within the Water and Biodiversity chapters of this EIAR, with mitigation provided to ensure that the watercourse if protected from impacts during the construction phase. Therefore, the proposed development is unlikely to have any significant effect on the existing material asset in terms of surface water disposal during the construction phase. .

Operational Phase

Adequate capacity exists in the Golf Stream to cater for discharge from development of the subject lands, given the fact that the site will be attenuated and the discharge to the stream will be limited to greenfield run-off rates. In the absence of the SUDs measures proposed to be implemented on site, increased impermeable areas would reduce local ground water recharge and potentially increase surface water flow to the Golf Stream. However, as the proposed development will entail the limiting of discharge to the stream to greenfield run-off rates, the impact arising from surface water disposal will be negligible.

12.5.8 Electrical Supply

Construction Phase

Construction related activities will require temporary connection to the local electrical supply network. The potential impact from the construction phase of the proposed development on the local electrical supply network is likely to be short-term and negligible.

Operational Phase

The impact of the operational phase of the proposed development on the electricity supply network is likely to be to increase the demand on the existing supply.

The potential impact from the operational phase on the electricity supply network is likely to be long term and negligible.

12.5.10 Telecoms

Construction Phase

Fixed telecoms will not be operational during the construction phase. The construction phase is likely to give rise to the requirement to divert existing fixed telecom lines. If not undertaken in accordance with best practice procedure, this has the potential to impact on local telecoms connectivity. The potential impact from the construction phase of the proposed development on the local telecoms network is likely to be short-term and low.

Operational Phase

The impact of the operational phase of the proposed development on the telecoms network is likely to be a marginal increase in demand. A telecommunications assessment prepared by Charterhouse has been prepared and is submitted along with the current application. The assessment reviews the existing telecommunications infrastructure in the vicinity of the subject site, and provides an assessment of the impact of the proposed development on this infrastructure. The report finds that the proposed development will not cause meaningful disruption to microwave link connectivity between nearby base stations. Where disruption occurs, this will be minor and can be rectified at minimal cost. The potential impact from the operational phase on the telecoms network is likely to be long term and neutral.

12.5.11 Municipal Waste

Construction Phase

The construction phase of the proposed development will give rise to the requirement to remove or to bring on to the site quantities of material. Construction related waste will also be created on the proposed development site. This has the potential to impact on the local municipal waste disposal network. The following comprises a summary of the pertinent points from the Construction and Demolition Waste Management Plan prepared by AWN Consulting. The CDWMP should be referred to for further detail in relation to waste management during the construction phase of the project.

There will be soil and stones excavated to facilitate construction of the new building foundations, installation of services and basements for apartment blocks. The volume of material to be excavated has been estimated by the project engineers (DBFL) at c. 30,500m3. Any suitable excavated material will be reused on site, where possible, however it is anticipated that there will be limited chances to reuse on site and all of the excavated material will be required to be removed offsite for appropriate reuse, recycling or disposal.

The Construction and Demolition Waste Management Plan also addresses all other expected waste types, which are set out in the figure below which is an extract from the AWN Construction and Demolition Waste Management Plan.

Waste Material	LoW/EWC Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

Figure 12.5: Extract from Construction and Demolition Waste Management Plan indicating typical waste types generated

As set out within the Waste Management Plan prepared by AWN, waste materials generated will be segregated on site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source where feasible. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the DLRCC Region that provide this service

AWN state that all waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arising's requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

Written records will be maintained by the contractor(s) detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contactors who collect waste from the site and COR/permit or licence for the receiving waste facility for all waste removed off site for appropriate reuse, recycling, recovery and/or disposal

Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc, if required.

Topsoil and Subsoil

In terms of topsoil and sub soil generated from the construction stage, the Construction and Demolition Waste Management Plan sets out that the Waste Management Hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling/recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. It is intended to export some excavated material onsite so the preferred option of prevention can nor be accommodated.

The Waste Management Plan states the following in relation to the management of waste during the construction phase:

When material is removed off-site it could be reused as a by-product (and not as a waste), if this is done, it will be done in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011. Article 27 requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. It is not envisaged that article 27 will be used to export excavated material off this site.

The next option (beneficial reuse) may be appropriate for the excavated material pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end-use.

If any soils/stones are imported onto the site from another construction site as a by- product, this will also be done in accordance with Article 27. It is not envisaged that article 27 will be used to import material onto this site.

If the material is deemed to be a waste, then removal and reuse/recovery/disposal of the material will be carried out in accordance with the Waste Management Acts 1996

– 2011 as amended, the Waste Management (Collection Permit) Regulations 2007 as amended and the Waste Management (Facility Permit & Registration) Regulations

2007 as amended. Once all available beneficial reuse options have been exhausted the options of recycling and recovery at waste permitted and licensed sites will be considered. In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

Bedrock

It is anticipated that bedrock will be encountered during the excavation phase of this development. Where bedrock is to be excavated it will not be crushed onsite without the appropriate waste permit being obtained from DLRCC.

Silt & Sludge

During the construction phase, silt and petrochemical interception should be carried out on runoff and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed offsite.

Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible.

Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skip and recycled off-site.

Metal

Metals will be segregated where practical and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

Glass

Glass materials will be segregated for recycling, where possible.

Waste Electrical and Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling.

Other Recyclables

Where any other recyclable wastes such as cardboard and soft plastic are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and/or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

The potential impact from the construction phase on municipal waste disposal is likely to be short-term and moderate. Please refer to the Construction and Demolition Waste Management Plan prepared by AWN for further details.

Operational Phase

In relation to the operational phase of the development, the accompanying Operational Waste Management Plan sets out detailed proposals for the management of waste arising.

Five dedicated communal Waste Storage Areas (WSAs) have been allocated within the development design for the residential units. These shared residential WSAs are located on the basement level of the development. One shared WSA has been allocated for the commercial units (including the crèche) at basement level of the development. The location of the WSAs can be viewed on the drawings submitted with the planning application.

Facilities management will supply all tenants with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development.

The Operational Waste Management Plan confirms that the WSAs have been sized and designed to meet the projected operational waste requirements of the proposed development.

The Operational Waste Management Plan confirms that space will be provided in the residential units to accommodate 3 no. bins to facilitate waste segregation. The waste storage areas have also been designed to accommodate the projected waste arising from the local shop, gym and childcare facility proposed as part of the development.

It is further confirmed that the strategy set out within the Operational Waste Management Plan will ensure that waste management in the development is carried out in accordance with the DLRCC Guidance Notes for Waste Management in Residential and Commercial Development and the DLRCC Waste Bye-Laws.

The impact of the operational phase of the proposed development on municipal waste disposal will result in an increase in demand. The potential impact from the operational phase on municipal waste disposal is likely to be long term and imperceptable.

12.6 POTENTIAL CUMULATIVE IMPACTS

The cumulative effects of development on material assets have been assessed taking other planned, existing and permitted developments in the surrounding area into account. The following chapters of this EIAR set out the cumulative impacts relevant to each environmental topic. The area surrounding the proposed development site consists of a number of uses, including residential and commercial / retail. The Park, Carrickmines, is located in close proximity, while the permitted development at Quadrant 3 has yet to be constructed or become operational. Quadrant 3 consists of a neighbourhood centre with office, retail, commercial, a linear park, and 130 no. residential units, permitted under Reg. Ref.: D18A/0257.

This permitted development can be considered the most likely development which may have cumulative effects on the proposed development. In the context of the proposed SHD development, this adjacent development is not considered to contribute significantly to any impact on material assets when considered cumulatively.

There is also existing and permitted residential development in the vicinity of the site, including existing residential development at Blackberry hill to the west, permitted residential development under Reg. Ref.: D18A/1175 to the west of the subject site, and existing and permitted residential development to the south on Glenamuck Road, and in the wider area including Clay Farm and Cherrywood. These developments when considered cumulatively will result in increased demand on material assets, including water services. In this regard, it is noted that the current application is accompanied by a Confirmation of Feasibility from Irish Water, confirming that the development can be connected to all necessary services without any requirement for upgrade. The pre-connection enquiry process takes account of the cumulative demand of other existing and permitted development.

Additional upgrades to Glenamuck Road have been permitted and will result in an improvement in terms of urban settlements, roads infrastructure and pedestrian / cycle facilities in the area when considered cumulatively with the proposed development.

Cumulatively with other surrounding, permitted, planned and existing development, it is predicted that the proposed development will contribute to the improvement of the overall urban structure and grain, will benefit the surrounding area through improvements to the public realm and both cyclist and pedestrian infrastructure, while providing a local population at a suitable location that minimises dependencies on car use, where public transport is frequent and accessible. Therefore, there will be a positive and permanent impact cumulatively on urban settlements.

The cumulative effects of development on electrical supply, telecoms and municipal waste are anticipated to be negligible.

12.7 DO NOTHING IMPACT

In order to provide a qualitative and equitable assessment of the proposed development, this section considers the proposed development in the context of the likely impacts upon the receiving environment should the proposed development not take place.

If the proposed development does not proceed there would be no additional demand or loading on material assets of natural or human origin.

12.8 MITIGATION MEASURES

Remedial, mitigation and avoidance measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential impacts. This includes avoidance, reduction and remedy measures as set out in Section 4.7 of the Development Management Guidelines 2007 to reduce or eliminate any significant adverse impacts identified. It should be noted that a number of mitigation measures proposed in the other EIAR Chapters are also of relevance to material assets but will not be repeated here.

Construction Phase

The following mitigation measures are proposed for the construction phase of the proposed development with reference to Material Assets:

MA CONST 1: The proposed development will comply with the provisions of the Construction and Demolition Waste Management Plan and Operational Waste Management Plan with respect to construction waste.

MA CONST 2: A construction and environmental management plan, including measures for construction traffic management, has been submitted with the EIAR and will be implemented in order to protect local amenities and the integrity and operation of the local road network during the construction phase.

MA CONST 3: Provision of utilities will be carried out in accordance with the recommendations of the relevant statutory bodies and providers (ESB, Gas Networks Ireland, Irish Water, EIR, DLRCC etc.)

MA CONST 4: Water Metering will be included in each unit to record consumption.

Operational Phase

No mitigation measures are considered necessary during the operational phase.

12.9 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions

which the proposed development may have, assuming all mitigation measures are fully and successfully applied. It should be noted that in addition to remedial and mitigation measures, impact avoidance measures have also been built in to the EIAR and project design processes through the assessment of alternatives described in Chapter 2 of this EIAR document.

Construction Phase

In the absence of mitigation, potential impacts associated with the construction phase of the proposed development would be expected to include potential disruption to local natural and human material assets resulting in both short-term and long-term impacts. The implementation of the mitigation measures set out in this Chapter and other Chapters of the EIAR document will ensure that there will not be any significant residual impact during the construction phase. Therefore, impacts are likely to be temporary and neutral.

Operational Phase

The proposed development will have a positive impact on the existing urban environment by creating high quality residential units to cater for the needs of a growing population and responding to a significant housing need and demand in the locality and the region, while occupying a presently underutilised site at an appropriate location for sustainable development. Traffic movements associated with the proposed development are addressed in the next chapter of this EIAR.

The predicted waste water generation of the proposed development will be adequately accommodated in the local foul sewer network as confirmed in the Confirmation of Feasibility from Irish Water.

The proposed development is designed to comply with the provision of SUDS and is therefore unlikely to have any residual impacts in terms of the impact on surface water drainage. While water supply is proposed from an existing water main along Golf Lane. The calculations demonstrating the operational water use and waste water production are included as part of the standalone Infrastructure Design Report which is submitted as part of this application.

The proposed development is unlikely to have any significant impact on the local water or electricity supply and the overall impact with respect to these utilities can be described as long-term and neutral.

'Worst Case' Impacts

The European Commission EIAR Guidelines (2017) suggest that different future scenarios including a worst-case scenario should be described. However, systematic risk assessments are only employed only where the "worst case" impacts pose significant threats to the environment and/or human health. It is important to note that this is not applicable in the case of the proposed development and the likelihood of such a scenario occurring in respect of the proposed development is negligible.

12.10 MONITORING

Monitoring measures will be in accordance with provisions outlined elsewhere in this EIAR document.

12.11 REINSTATEMENT

N/A

12.12 INTERACTIONS

Interactions between Material Assets and other environmental topics are outlined throughout this EIAR document. The likely interactions between Material Assets and other environmental factors include interactions between the proposed drainage and wastewater arrangements and the water chapter of the EIAR. There is an interaction between Municipal Waste and Land and Soils in terms of the quantity of material to be removed from the site. There is also an interaction between Urban Settlements and Ownership and Access and Transportation.

12.13 DIFFICULTIES ENCOUNTERED IN COMPILING

No significant difficulties were encountered in completing this section.

12.14 REFERENCES

N/A