

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

NON-TECHNICAL SUMMARY

PROPOSED STRATEGIC HOUSING DEVELOPMENT

AT

**FOSTERSTOWN NORTH, DUBLIN ROAD / R132,
SWORDS, CO. DUBLIN**



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In Association with:

PCOT Architects | Arrow Architects | AWN Consulting | ACS Archaeological Consultancy
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Non-Technical Summary

INTRODUCTION

This Environmental Impact Assessment Report (EIAR) has been prepared on behalf of the applicant, J. Murphy (Developments) Limited, in support of an application for a seven year permission for a proposed Strategic Housing Development on lands at Fosterstown North, Dublin Road / R132, Swords, Co. Dublin. The application site has an area of c. 4.635 ha and is bound by the R132 to the east, the existing Boraimhe residential development to the south and west, and the Gaybrook Stream and a greenfield site to the north. The application site is zoned for residential development and located in the 'Metropolitan Key Town' of Swords, the County Town of Fingal, and adjacent to a high quality public transport corridor.

This document is a summary of the information contained in the EIAR. For detailed information and key mitigation and remedial measures please consult the full EIAR document.

Purpose of the EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development; to describe the means and extent by which they can be reduced or ameliorated; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

The EIAR is the primary element of the Environmental Impact Assessment (EIA) process and is recognised as a key mechanism in promoting sustainable development, identifying environmental issues, and in ensuring that such issues are properly addressed within the capacity of the planning system.

The Requirement for an EIAR

Projects needing environmental impact assessment are listed in Schedule 5 of the Planning and Development Regulations 2001, as amended (Regulations).

Schedule 5 (Part 1) of the Regulations transposes Annex 1 of the EIA Directive directly into Irish land use planning legislation. The EIA Directive prescribes mandatory thresholds in respect to Annex 1 projects.

Annex II of the EIA Directive provides EU Member States discretion in determining the need for an EIA on a case-by-case basis for certain classes of project having regard to the overriding consideration that projects likely to have significant effects on the environment should be subject to EIA.

Schedule 5 (Part 2) of the Planning Regulations sets mandatory thresholds for each project class. Sub-section 10(b) (i) to (iv) addresses '*Infrastructure Projects*' and requires that the following relevant class of project be subject to EIA:

- Category 10(b)(i) Construction of more than 500 dwelling units.

In summary, the development consists a residential development of 645 no. units (all apartments), along with provision of a childcare facility, a community facility, 5 no. commercial units, and all associated development. The proposed residential units comprise 208 no. 1 bedroom units, 410 no. 2 bedroom units, and 27 no. 3 bedroom units, in 10 no. apartment buildings, with heights ranging from 4 no. storeys to 10 no. storeys.

The proposed development comprises more than 500 dwelling units, and therefore mandatory Environmental Impact Assessment is required in respect of the proposed development. The following components are addressed in the EIAR:

Ch.	Title	Content
1	Introduction and Methodology	Sets out the purpose, methodology and scope of the document.
2	Project Description and Alternatives	Sets out the description of the site, design and scale of development, considers all relevant phases from construction through to existence and operation together with a description and evaluation of the reasonable alternatives studied by the developer including alternative locations, designs and processes considered; and a justification for the option chosen taking into account the effects of the project on the environment.
3	Population and Human Health	Describes the demographic and socio-economic profile of the receiving environment and potential impact of the proposed development on population, i.e. human beings, and human health.
4	Archaeology and Cultural Heritage	Provides an assessment of the site and considers the potential impact of the proposed development on the local archaeology and cultural heritage; and recommends mitigation measures.
5	Biodiversity	Describes the existing ecology on site and in the surrounding catchment and assesses the potential impact of the proposed development, mitigation measures incorporated into the design of the scheme, and recommends mitigation measures.
6	Landscape and Visual Impact	Details the likely effects on the landscape and visual environment of the proposed development with reference to the accompanying verified view montages.
7	Land and Soils	Provides an overview of the baseline position, the potential impact of the proposed development on the site's soil and geology and impacts in relation to land take and recommends mitigation measures.
8	Water	Provides an overview of the baseline position, the potential impact of the proposed development on water quality and quantity and recommends mitigation measures.
9	Air Quality and Climate	Provides an overview of the baseline air quality and climatic environment, the potential impact of the proposed development, and recommends mitigation measures.
10	Noise and Vibration	Provides an overview of the baseline noise environment, the potential impact of the proposed development and recommends mitigation measures.
11	Microclimate	This chapter assesses the potential effects of the proposed development on the wind microclimate around the proposed buildings and open spaces, and in the area immediately surrounding the site, and has informed the architectural and landscape design based on the assessment and expertise of the consultant.
12	Material Assets	Describes the existing services and infrastructural service requirements of the proposed development and the likely impact of the proposed development on material assets.
13	Material Assets – Traffic and Transportation	Describes the existing transport services and infrastructural service requirements of the proposed development and the likely impact of the proposed development on these material assets.
14	Interactions of the Foregoing	Describes the potential interactions and interrelationships between the various environmental factors.
15	Principal Mitigation and Monitoring Measures	Sets out the key mitigation and monitoring measures included in the above chapters of the EIAR Document for ease of reference.
Non-Technical Summary		Provides a concise non-technical summary of the information contained in the EIAR

PROJECT DESCRIPTION AND ALTERNATIVES EXAMINED

This chapter provides a detailed description of the proposed development and outlines the reasonable alternatives considered as required under the 2014 EIA Directive and the Regulations. The chapter explains that the consideration of alternative locations was not considered reasonable or appropriate having regard to the nature and location of the subject site, the consideration of patterns of development in the SEA for the County Development Plan, and the land use and planning policy context. Likewise, it was not considered relevant to set out alternative uses on the subject site, as no reasonable alternative uses were identified having regard to the planning policy context. However, details have been provided of considerations of alternative designs for the site. The reasons for the choice of the preferred design proposed have been set out, with mitigation measures provided relating to the selected development proposal.

Development Description

The proposed development comprises a Strategic Housing Development of 645 no. residential units (comprising 208 no. 1 bedroom units, 410 no. 2 bedroom units, and 27 no. 3 bedroom units), in 10 no. apartment buildings, with heights ranging from 4 no. storeys to 10 no. storeys, including undercroft / basement levels (for 6 no. of the buildings). The proposals include 1 no. community facility in Block 1, 1 no. childcare facility in Block 3, and 5 no. commercial units (for Class 1-Shop, or Class 2- Office / Professional Services or Class 11- Gym or Restaurant / Café use, including ancillary takeaway use) in Blocks 4 and 8.

The development will consist of the following:

- Block 1 comprises 29 no. residential units, within a four storey building (with a pitched roof), including 8 no. 1 bedroom units and 21 no. 2 bedroom units. A community facility (191.8 sq.m) is provided at ground floor level.
- Block 2 comprises 23 no. residential units, within a four storey building (with a pitched roof), including 8 no. 1 bedroom units and 15 no. 2 bedroom units.
- Block 3 comprises 24 no. residential units, within a four storey building (with a pitched roof), including 6 no. 1 bedroom units and 18 no. 2 bedroom units. A childcare facility (609.7 sq.m) is provided at ground floor level.
- Block 4 comprises 93 no. residential units, within a part seven, part eight, and part nine storey building, with an undercroft level, including 34 no. 1 bedroom units, 54 no. 2 bedroom units, and 5 no. 3 bedroom units. 3 no. commercial units (with a GFA of 632.2 sq.m) are provided at ground floor level.
- Block 5 comprises 91 no. residential units, within a part six, part seven, and part eight storey building, with an undercroft level, including 34 no. 1 bedroom units, 55 no. 2 bedroom units, and 2 no. 3 bedroom units.
- Block 6 comprises 54 units, within a part eight, part nine storey building, with an undercroft level, including 13 no. 1 bedroom units, 38 no. 2 bedroom units, and 3 no. 3 bedroom units.
- Block 7 comprises 117 no. residential units, within a part seven, part eight, and part nine storey building height, over a basement level, including 40 no. 1 bedroom units, 76 no. 2 bedroom units, and 1 no. 3 bedroom unit.
- Block 8 comprises 94 no. residential units, within a part six, part seven, part eight, and part nine storey building, over a basement level, including 33 no. 1 bedroom units, 58 no. 2 bedroom units, and 3 no. 3 bedroom units. A commercial unit (with a GFA of 698.2 sq.m) is provided at ground floor level.
- Block 9 comprises 75 no. residential units, within a part seven, part eight, part nine, and part ten storey building, over a basement level, including 23 no. 1 bedroom units, 48 no. 2 bedroom units, and 4 no. 3 bedroom units.
- Block 10 comprises 45 no. residential units, within a part nine, part ten storey building, including 9 no. 1 bedroom units, 27 no. 2 bedroom units, and 9 no. 3 bedroom units.

The development includes a total of 363 no. car parking spaces (63 at surface level and 300 at undercroft / basement level). 1,519 no. bicycle parking spaces are provided at surface level, undercroft / basement level, and

at ground floor level within the blocks / pavilions structures. Bin stores and plant rooms are located at ground floor level of the blocks and at undercroft / basement level. The proposal includes private amenity space in the form of balconies / terraces for all apartments. The proposal includes hard and soft landscaping, lighting, boundary treatments, the provision of public and communal open space including 2 no. playing pitches, children's play areas, and an ancillary play area for the childcare facility.

The proposed development includes road upgrades, alterations and improvements to the Dublin Road / R132, including construction of a new temporary vehicular access, with provision of a new left in, left out junction to the Dublin Road / R132, and construction of a new signalised pedestrian crossing point, and associated works to facilitate same. The proposed temporary vehicular access will be closed upon the provision of permanent vehicular access as part of development on the lands to the north of the Gaybrook Stream. The proposal includes internal roads, cycle paths, footpaths, vehicular access to the undercroft / basement car park, with proposed infrastructure provided up to the application site boundary to facilitate potential future connections to adjoining lands.

The development includes foul and surface water drainage, green roofs and PV panels at roof level, 5 no. ESB Substations and control rooms (1 no. at basement level and 4 no. at ground floor level within Blocks 2, 4, 7 and 8), services and all associated and ancillary site works and development.

Alternatives Examined

This chapter also includes a summary of reasonable alternatives which were considered for the proposed development of the subject lands. These options were considered as the scheme progressed and the key considerations and amendments to the design having regard to the key environmental issues pertaining to the lands are summarised in this section of the EIAR.

POPULATION AND HUMAN HEALTH

The 2014 EIA Directive (2014/52/EU) has updated the list of topics to be addressed in an EIAR and has replaced 'Human Beings' with 'Population and Human Health'.

Population (human beings) and Human Health is a broad ranging topic and addresses the existence, activities and wellbeing of people as groups or 'populations'. While most developments by people will affect other people, this EIAR document concentrates on those topics which are manifested in the environment, such as new land uses, more buildings or greater emissions.

- Economic Activity;
- Social Patterns;
- Land-Use & Settlement Patterns;
- Housing;
- Employment; and
- Health & Safety.

The proposed development is not likely to result in any significant adverse effects on population and human health, and will result in several positive impacts. These include *inter alia* a positive economic impact during both the construction and operational phases of the proposed development, along with positive impacts on the land use and settlement patterns, housing, employment, and social patterns.

The implementation of the range of remedial and mitigation measures included throughout this EIAR document will have the impact of limiting any likely adverse environmental impacts of the construction and operational phase of the proposed development on population and human health.

ARCHAEOLOGY AND CULTURAL HERITAGE

Archaeological Consultancy Services Unit (ACSU Ltd.) has prepared this chapter in relation to the proposed Fosterstown North Strategic Housing Development (SHD). This chapter was prepared by Donald Murphy and Magda Lyne of ACSU Ltd..

An Archaeology and Cultural Heritage assessment, which comprised an Archaeological Impact Assessment (desktop study), fieldwork (site inspection), geophysical survey (19R011) test trenching (19E0034), was undertaken in order to identify and describe known and potential archaeological and cultural heritage constraints within the proposed development area and its environs and to offer recommendations for the mitigation of such potential impacts.

The proposed development site contains no Recorded Monuments listed within the Record of Monuments and Places for County Dublin. The nearest two recorded monuments to the site comprise structure DU011-154 and pit DU011-153---- located 32m and 100m, east of the site; these have no surface expression and will not be visually impacted.

The site contains no Protected Structures listed in the Fingal County Development Plan 2017-2023. Furthermore, there are no structures listed within the National Inventory of Architectural Heritage (NIAH). The closest Protected Structure is Milestone (RPS No. 866), located c. 200m south of the site, while the nearest NIAH site is 1880-1900 water pump (NIAH Reg. 11343015) located c. 0.7km north of the site, and these will not be impacted in any way.

The site was subject to a number of archaeological assessments carried out in relation to the development in question, both invasive and non-invasive. These included Geophysical Survey (19R0011), Archaeological Assessment (Desktop) and test trenching (19E0034). The investigations carried out did not identify any features or deposits of archaeological significance.

The site was subject to cartographical examination. The site's northeast and east boundaries are depicted as a townland boundary between Cremona and Miltonsfields townlands, respectively. It appears that these boundaries have remained largely unchanged since the time of the 1777 map; this is due to the Gaybrook Stream forming the north boundary and the road between Dublin and Swords running adjacent to the site, there is no archaeological significance attached to the later as this road was significantly widened in recent years.

The other boundary, with Cremona townland, runs northeast-southwest and forms the site's northern boundary. It is defined by Gaybrook Stream with mature trees and appears it was depicted as a field boundary since Rocque 1760 map and is shown as a townland boundary on all the Ordnance Survey mapping. The stream will be retained, landscaping, greenbelt and footpath are proposed along this section of the boundary.

There will be no impacts on known archaeological and cultural heritage and no direct impact on the existing townland boundary between Fosterstown North and Cremona townlands. The boundary forms the north boundary of the proposed development site and is defined by a stream known as the Gaybrook Stream, with mature trees and hedges along it. The stream will be retained, landscaping, greenbelt and footpath are proposed along this section of the boundary. However, should the townland boundary be altered in any way, in order to mitigate the impact of the proposed works, a survey of the boundary to include a written, drawn, and a photographic record will be required.

BIODIVERSITY

This chapter details an ecological impact assessment of the Proposed Development at a site at Fosterstown North, Dublin Road / R132, Swords, Co. Dublin. It provides a description of the existing ecology of the Site in terms of the habitats, flora and fauna that are, or may be, present at the Site, informed by a series of surveys

including bird surveys; mammal surveys, bats surveys, amphibian survey and habitat and flora surveys. The potential for the Proposed Development to impact on nearby designated sites is also considered.

The existing habitats at the Site are largely of low ecological value e.g., arable stubble field. Habitats are limited to this agricultural field and the hedgerows and treelines running along its boundaries. An overgrown drainage ditch containing a small stream, the Gaybrook Stream, is located along the Site's northern boundary. No rare flora were recorded at the Site. Non-native and invasive Butterfly-bush and Himalayan Honeysuckle were recorded in places along these hedgerows. Impacts to habitats of ecological value will be minimal, with sections of the eastern hedgerow to be removed and some reprofiling of the Gaybrook Stream bank proposed. The majority of hedgerow at the Site is being retained and the works to the stream bank and its dense vegetation will open up the Gaybrook Stream and increase its biodiversity value.

The Site was considered of low/moderate value for bats due to the presence of agricultural field boundaries i.e., hedgerows/treelines. A dusk bat activity survey recorded low bat activity at the Site and low roosting opportunities; due to a lack of mature trees and buildings onsite. Potential impacts to bats due to the Proposed Development are associated with increased night-time lighting at the Site, and the loss of some sections of commuting/foraging habitat (i.e., hedgerow). Bat friendly lighting has been incorporated into the design, and 3 bat boxes are to be erected as additional roosting habitat at the Site. The majority of boundary vegetation is being retained in the landscaping of the Site and so habitat loss for bat will be minimal.

Breeding bird activity was moderate at the Site with all species recorded fairly common in nature. Two red-listed species Yellowhammer and Meadow Pipit were recorded at the Site. Winter waterfowl and shorebird surveys were conducted over the site during the 2020/21 winter, with three visits over the 2022 winter also conducted. No target species were recorded during the surveys and the Site is not considered suitable as an *ex-situ* feeding/roosting ground for any species listed for nearby designated sites. Potential bird-related impacts are associated with vegetation removal during the nesting season, loss of habitat and noise disturbance. Bird collisions with the proposed buildings are not likely to occur, due to the height of the buildings and the dispersed nature of their glazed components. Vegetation clearance will be carried out outside of the nesting season and noise mitigation will be adhered to during construction works. Low intervention hedgerow management will be carried out at the Site during the lifetime of the Proposed Development; to maximise the ecological value of the hedgerows at the Site for wildlife and bird species such as Yellowhammer.

Mammal surveys recorded little to no signs of mammal usage at the Site (mammal trails). No signs of badger or otter were recorded at the Site. Fox and small mammals such as hedgehog and pygmy shrew may utilise the site. No amphibians were recorded during surveys of the site and little to no suitable breeding habitat (pool, ponds etc.) were present at the Site (transient rain puddles present). A set of mitigation measures have been recommended as best-practice to avoid any impacts to mammals.

Three designated sites have indirect links to the Proposed Development i.e., via the Gaybrook Stream that runs along the Sites northern boundary, and through waste water to be treated at Swords WWTP. These sites are the Malahide Estuary proposed Natural Heritage Area (pNHA), the Malahide Estuary Special Protection Area (SPA) and the Malahide Estuary Special Area of Conservation (SAC).

These hydrological connections provide a potential impact pathway from the Site to these designated sites. Potential impact sources include sediment/pollutants generated during the construction phase and the spread of invasive plant species (See the Appropriate Assessment Screening Report and Natura Impact Statement for more detail). No impacts as a result of foul waters treated at Swords WwTP will occur as this facility has been recently upgraded, is operating effectively and has additional treatment capacity. To prevent any impacts to designated Sites and the receiving aquatic environment, measures will be put in place to prevent any pollution of the Gaybrook Stream during the construction works, and surface water produced at the Site once the development is operational will be treated via Sustainable Urban Drainage Systems (SUDS) before being discharged to the stream during the operational phase. Invasive plant species will be removed and disposed of as per best practice.

No potential cumulative impacts involving the Proposed Development and other developments have been identified. Provided all mitigation measures are implemented in full and remain effective throughout the lifetime of the Development, no significant negative impacts on the local ecology or on any designated nature conservation sites are expected from the Proposed Development.

LANDSCAPE AND VISUAL IMPACT

EXISTING RECEIVING ENVIRONMENT

The proposed development site is a greenfield site with hedgerows, shrubs and trees occupying lands on the southern fringes of Swords, approx. 1km distant from the existing town centre. The site is currently open, marginal agricultural grassland. It is essentially one field which slopes down gently, northwards towards the Gaybrook stream which forms the northern site boundary. The edges of the site are lined by hedgerows and vegetation of varying density and height, which partially screens the site from the R132 road running along the eastern boundary and the Boromhe housing areas to the south and west.

The character of the area surrounding the site is primarily 2-storey residential, with the housing estates of Boromhe, Ridgewood and River Valley lying to the south, west and north-west of the site. A small number of commercial outlets are integrated within these housing areas. The major commercial outlets of the Airside Retail Park are located to the east of the site.

PLANNING POLICY CONTEXT

The Fingal Development Plan 2017-2023 sets out the broad planning objectives for the County and within this, for the subject site and its environs. It indicates the objective/zoning for the site as RA – Residential Area. The objective is to *“Provide for new residential communities subject to the provision of the necessary social and physical infrastructure”*. Just north of the site across the stream, the existing fields are similarly zoned, with the lands beyond this zoned ‘MT – Major Town Centre’. West and south of the site lie existing residential areas with open space/recreational amenities. To the east, beyond the proposed MetroLink route and the R132 road, the lands are zoned HT – High Technology and Retail Warehousing. The subject site occupies the southern part of the lands which form the Fosterstown Masterplan Area (MP 8.I), the main objectives of which are outlined in the Development Plan. The Fosterstown Masterplan was adopted in May 2019.

In addition, Section 3.2 of the Urban Development and Building Height Guidelines sets out a series of guiding principles (‘Development Management Criteria’) for good urban design and architectural standards where increased building height is proposed.

CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The proposed development comprises a Strategic Housing Development of 645 no. residential units in 10 no. apartment buildings, with heights ranging from 4 no. storeys to 10 no. storeys, including undercroft/basement levels (for 6 no. buildings). The proposals include 1 no. community facility in Block 1, 1 no. childcare facility in Block 3, and 5 no. commercial units in Blocks 4 and 8. The proposal includes all associated and ancillary development as appropriate to contemporary design and current best practice.

DESIGN AND MITIGATION

Whilst issues of scale present considerable visual contrasts between the existing local landscape and the proposed scheme, the designed scheme seeks to harmonise and integrate the development within the existing landscape, particularly in terms of integration of social functions at ground level and other design related measures

outlined in the bullet points below. The design rationale and details employed seek to mitigate negative effects on the landscape character and upon visual amenity of the area.

During the construction stage, negative effects are largely mitigated through the implementation of appropriate site management procedures during the construction works. People living in the existing housing estates to the west and south of the site will be impacted negatively to a slight extent by the construction of the proposed development. Impacts are likely to vary from slight and neutral to moderate and negative, depending on the stage of construction, and the intensity of site activity. The construction impacts will be of short-term duration.

During the operational phase, the design rationale and details employed seek to mitigate negative effects on the landscape character and upon visual amenity of the area by:

- Incorporating the smaller scaled blocks closer to the existing adjacent residential developments to the south and west, whilst introducing density, height and landmark qualities in appropriate locations, closer to the town centre;
- Employing variation of tone, colour and texture across the facades, particularly where the buildings can be seen from a greater distance and the use of use of appropriate and harmonising colour, tones and materials throughout the development;
- Retaining existing vegetation where possible and introducing appropriate planting to further screen and absorb the buildings over time;
- Rationalisation of all services elements and any other potential visual clutter and its incorporation internally within building envelopes (as far as practically possible);
- The provision, maintenance and management of a sensitively considered soft landscape design for the development, which assists in the integration and screening of the buildings within the existing landscape, particularly at the lower levels;
- Including public open spaces within the design which link with and relate appropriately to existing adjacent and planned open spaces.

PREDICTED LANDSCAPE AND VISUAL EFFECTS

Landscape Impacts:

The impacts will typically be felt by people who live nearby, who may no longer enjoy a prospect of the green fields beside them, rather a view (albeit filtered by retained hedgerows and new plantings) of a new residential scheme as provided for under the land use zoning. The loss of hedgerow habitat along the R132 And its connectivity to the few other similar features in the locality is offset by the retention and enhancement of hedgerows along the south, west and north, and proposed soft landscape proposals included within the proposed development, particularly those related to the Gaybrook River.

The existing site with limited access into it, offers little in the way of an amenity resource for the local populace. The proposed development will not greatly alter that but will provide open space amenities which don't currently exist locally and additional commercial and community uses.

The inclusion of a number of taller residential blocks does however introduce a changed characteristic within this local landscape which will be visible particularly from the busy R132 road but also from further afield.

Visual Impacts:

The insertion of any proposed development into this existing open area will alter the landscape and visual context of the area, however for this particular site, existing full clear views into the site are somewhat limited and rather localised - this will limit associated visual impacts.

In 11 of the 13 views provided, the proposed development is visible and registers a visual impact. Of these, 3 views are positive and the remainder neutral (i.e. the proposed development improves or does not affect the quality of the view). From the perspective of visual impact on surrounding views, the proposed scheme is well considered, designed and detailed, and this is instrumental in eliminating negative impacts and indeed providing a degree of positive impact – this is particularly so for views along the R132.

CONCLUSIONS

The proposed residential development is consistent with the landscape policy context as set out in the Urban Design and Building Heights Guidelines for Planning Authorities Dec. 2018, the Fingal County Development Plan 2017-2023, and the Fosterstown Masterplan 2019 (Area MP 8.1).

The Landscape and Visual Impact Assessment satisfies the relevant criteria of Section 3.2 and the Specific Planning Policy Requirement SPPR3 of the Urban Design and Building Heights Guidelines relating to assessment of landscape and visual impacts.

The proposed development is considered appropriate to the area and its existing and planned context. It includes both design and mitigation measures that successfully address localised potential adverse impacts.

LAND AND SOILS

This chapter was prepared by Awn Consulting and assesses and evaluates the potential impacts of the development on the land, soil, geological and hydrogeological aspects of the site and surrounding area.

Inspection of available GSI data shows that the bedrock geology underlying the site and surrounding area is dominated by rocks of Carboniferous Age. The site and local area is underlain by argillaceous bioclastic limestone, shale of the Malahide Formation. Site investigations and GSI information indicate that bedrock can be located at depths > 15 mbgl. The GSI categorise the bedrock aquifer underlying the site as having a 'Low' vulnerability (>10 m of overburden thickness).

The GSI/Teagasc subsoil mapping database of the quaternary sediments in the area of the subject site indicates that the majority of the site and surrounding area is underlain limestone Tills which is made up of glacial clay which are less permeable than alluvium subsoils. Gravels derived from Limestone are also seen to the north east of the site; and Alluvium deposits to the north of the site associated with the Gaybrook Stream. This has been confirmed by the site specific investigations.

The Groundwater Body (GWB) underlying the site is the Swords GWB. Currently, this GWB is classified under the WFD Risk Score system (EPA, 2021) as 'not at risk' of not achieving Good status. The Swords GWB was given a classification of 'Good' for the last WFD cycle (2013-2018).

Based on the TII criteria (refer to Appendix 7.1) for rating the importance of geological features, the importance of the bedrock and soil features at this site is rated as Low Importance with low quality, significance or value on a local scale.

The importance of the hydrogeological features at this site is rated as Low Importance based on the assessment that the attribute has a low quality significance or value on a local scale. The aquifer is a Locally Important but is not widely used for public water supply or generally for potable use.

The activities required for the construction phase of the proposed development represents the greatest risk of potential impact on the hydrogeological environment. These activities primarily pertain to the site preparation, excavation, levelling, and infilling activities required to facilitate construction of the proposed development.

During the construction phase of the project, soil will be excavated from the site as part of the enabling earthworks and in order to facilitate the levelling of the site and the laying down of foundations for the new structures. The removal of localised overburden material will be required during preparation of the foundations and platform for the proposed structures. The planned earthworks foresee shallow excavations with the removal of topsoil and subsoil (cohesive deposits). Bedrock excavation is not anticipated.

The potential impacts of construction and operation and mitigation measures proposed have been identified and included in the Construction Environmental Management Plan (CEMP) for the Proposed Development.

Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment and the material will be stored away from any open surface water drains. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of possible contaminants in order 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 disposed of by a licensed waste disposal contractor.

All fuel tanks shall be stored in designated areas, and bunded to a volume of 110% of the capacity of the tank within the bund (plus an allowance of 30 mm for rainwater ingress). 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 gully's or drains.

Following implementation of mitigation measures detailed in Chapter 7 of the EIA Report, the predicted impact during construction of the Proposed Development will be short-term, imperceptible and neutral.

During the Operational phase, there are limited activities that could potentially impact on the land soils, geological and hydrogeological environment. There are no discharges to ground included in the design and no abstractions from the aquifer.

The predicted impact during operation of the Proposed Development, following implementation of mitigation measures detailed in Chapter 7 of the EIA Report will be long-term, imperceptible and neutral.

WATER

This chapter was prepared by AWN Consulting **and** assesses and evaluates the potential impacts of the development on the hydrological aspects of the site and surrounding area.

There is an existing watercourse to the north of the subject site, the Gaybrook Stream. The site currently drains unrestricted to this watercourse. The Gaybrook Stream discharges into the Broadmeadows Transitional Waterbody or Malahide Estuary c. 3.7 km to the northeast of the subject site. This waterbody hosts Natura 2000 sites (Malahide Estuary SAC/SPA). The Broadmeadow transitional waterbody is the nearest water receptor and is located c. 2.3 Km northeast of the proposed development.

The local hydrological network (Gaybrook Stream) is associated with the WFD surface waterbody Gaybrook_010. The most recent published status (www.epa.ie – River Waterbody WFD Status 2013-2018) of this waterbody is 'Poor' and its environmental risk is currently 'Under Review' by the WFD. The nearby Sluice and Ward rivers have

been classified as having 'Moderately Polluted' and 'Slightly polluted' pollution status, respectively. It would be expected a similar condition for the Gaybrook Stream based on the similar existing environment during its pathway.

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.

The importance of the hydrological features at this site is rated as 'Low Importance'. based on the assessment that the attribute has a low quality significance or value on a local scale. However, it should be considered that there would be an indirect hydrological connection between the site and Malahide Estuary protected sites (SAC, SPA, NHA). With the implementation of the mitigation measures detailed in this Chapter, the Proposed Development will not adversely affect the integrity of the above European Sites (or any other).

The potential impacts of construction and mitigation measures proposed have been identified and are included in the CEMP for the proposed development. The implementation of mitigation measures detailed in Chapter 8 of the EIA Report will ensure that the potential impacts on the surface water environment do not occur during the construction phase and that the residual impact will be short-term, imperceptible and neutral.

During the Operational phase, there are limited activities that could potentially impact on the hydrological environment. There are no discharges to any open water courses included in the design. The proposed 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. Discharge flow is restricted to the greenfield equivalent runoff for the catchment area. There will be an increase in hardstanding area associated with the entire development area; however, this will have a minor effect on local recharge to ground; however, the impact on the overall groundwater regime will be insignificant.

The predicted impact during operation of the Proposed Development, following implementation of mitigation measures detailed in Chapter 8 of the EIA Report will be long-term, imperceptible and neutral.

AIR QUALITY AND CLIMATE

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on air quality and climate associated with the proposed strategic housing development at Fosterstown North, Swords, Co. Dublin.

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

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 57.7 Mt CO₂eq in 2020. This is 6.73 Mt CO₂eq higher than Ireland's annual target for emissions in 2020. The EPA predict that Ireland can comply with the GHG targets for 2021 – 2030 provided full implementation of the measures outlined within the Climate Action Plan and the use of the flexibilities available.

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

There are a number of sensitive receptors in close proximity to the site, directly west and south of the site boundary. Provided the dust mitigation measures outlined in Appendix 9.2 of Chapter 9 are implemented, dust emissions are predicted to be short-term, negative and imperceptible and will not cause a nuisance at nearby sensitive receptors.

The best practice dust mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development will be short-term, localised, negative and imperceptible with respect to human health.

Potential impacts to air quality and climate during the operational phase of the proposed development are as a result of a change in traffic flows and volumes on the local road network. The changes in traffic flows were assessed against the UK Design Manual for Roads and Bridges (DMRB) screening criteria for an air quality and climate assessment. The operational phase air quality and climate modelling assessments determined that there is no potential for significant impacts as a result of traffic related to the proposed development. It can therefore be determined that the impact to air quality and climate as a result of altered traffic volumes during the operational phase of the proposed development is localised, neutral, imperceptible and long-term in relation to air quality and negative, imperceptible and long-term in relation to climate. In addition, the proposed development has been designed to reduce the impact to climate where possible during operation.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants in the operational stage of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible, negative and long term.

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

NOISE AND VIBRATION

AWN Consulting Limited has been commissioned to conduct an assessment of the likely noise and vibration impacts associated with the proposed residential development at the proposed development at Fosterstown North, Swords, Co. Dublin. The proposed development comprises a Strategic Housing Development consisting of 645 residential units, a community facility, a childcare facility, 5 commercial units, car and cycle parking, landscaping, public and communal open space, road upgrades and vehicular access and associated internal roads, pedestrian and cycle paths and all associated site and infrastructural works.

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are primarily attributed to road and air traffic. Additionally, the location of the development is within the Dublin Airport noise zones which accounts for future air traffic as a result of the operation of the under construction northern runway, the Dublin Airport noise contours have been utilised for the purpose of controlling inward impacts to the development.

The noise impact assessment has focused on both the outward impacts associated with the construction and operational phases of the proposed development on its surrounding environment as well as the inward noise impact from road and air traffic onto the development itself.

During the main construction phase the assessment has predicted that construction noise emissions will temporarily exceed the threshold of potentially significant effect when works are undertaken within 50m of nearby dwellings. The resulting impact during these periods is predicted to be negative, significant and temporary. At distances greater than 50m (for which the majority of construction works will be undertaken) the resulting impact will be negative, moderate and short term.

In terms of construction vibration, it is expected that emissions may be perceptible at the closest receptors, but that vibration levels are expected to be below those that would cause cosmetic building damage. The predicted impact is expected to be negative, not significant and temporary.

During the operational phase, the outward noise impact to the surrounding environment will be due to additional traffic on surrounding roads and plant noise. Calculations for future traffic volumes on the surrounding public roads indicate that impacts will be negative, negligible to not significant and long term.

Suitable criteria, derived from measured background noise levels, have been selected for plant noise emissions and will be adhered to at the design stage. The resulting outward noise impact due to plant noise will be neutral, imperceptible and long term.

For inward noise impacting on the development itself mitigation measures have been provided to ensure that the internal noise levels are good and that the impact will be neutral, not significant and permanent.

MICROCLIMATE AND WIND

The Microclimate and Wind chapter was prepared by AWN Consulting and studies the impact of the proposed development on the environment with respect to microclimate and also assesses the effects of the proposed buildings on ground-level windspeeds within the development boundary. The assessment includes a specific focus on wind-speed, using a qualitative assessment methodology to undertake a risk assessment of the potential risks of elevated wind-speed associated with the proposed Fosterstown North SHD development.

The aim of the assessment was to determine if there was considered to be a risk of elevated wind-speeds occurring at ground level as a result of the proposed residential development. None of the buildings meet the criteria of “tall building” as defined under the relevant guidelines as referenced in the Chapter, i.e. they are 10 storeys or lower. The two 10 storey buildings are on the down-wind side of the development. From a microclimate point of view the development is considered relatively low-rise. Thus, based on the assessment of the baseline and the detailed assessment of the nature of the proposed development a full Computational Fluid Dynamics (CFD) Model was not executed for the development and is not required to meet the requirements of the Guidelines consulted.

Design related mitigation measures have been incorporated into the scheme design to mitigate against adverse wind impacts. Primary features have included orientation and spacing of the buildings to minimise acceleration of wind-speeds and to minimise the deflection of wind-flow down to ground level between buildings. Tree planting and vegetation is also proposed in the landscape scheme to slow down the wind through the site. Other design related mitigation measures have been incorporated into the scheme design, primarily as part of the landscaping proposals and through the architectural design, such as the inseting of balconies in appropriate locations, and are reflected in the application drawings / proposals submitted for approval. No additional construction or operational related mitigation measures are recommended.

The open spaces within and external to the development were assessed and it was concluded that the development will not lead to elevated wind-speeds at ground level and that the proposed open spaces will be suitable for their designated use, and that no off-site elevated windspeed effects are predicted.

Overall, the mitigation features incorporated into the design have helped to ensure wind comfort on the site.

MATERIAL ASSETS

Material Assets considers physical resources in the environment which may be of human or natural origin. 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.

In accordance with the 2017 Draft EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, "*Material assets can now be taken to mean built services and infrastructure*". Material assets of a natural origin are dealt with comprehensively within the other chapters of the Environmental Impact Assessment Report.

The Material Assets chapter as a whole describes existing services to the application site and describes the predicted impacts which the development may have on these services and finds that there is adequate capacity for the proposed development.

This chapter considers the key aspects relating to material assets of a human origin of the proposed development site and the surrounding area, namely waste, potable water supply, wastewater discharge, electricity and gas supply and telecoms. Traffic and transportation are dealt with separately in the subsequent chapter of the EIAR.

The Material Assets chapter sets out that no significant residual impacts are expected to occur during the construction phase, subject to the implementation of mitigation measures.

During the operational phase of the development, a positive impact on urban settlements is predicted via the development of an underutilised site, and the provision of high quality housing to meet existing demand. The development is not expected to precipitate any significant residual impact on other material assets examined in this chapter. Transportation is dealt with in the subsequent chapter of the EIAR as set out below.

MATERIAL ASSETS – TRAFFIC AND TRANSPORTATION

Waterman Moylan Consulting Engineers have been commissioned to prepare the Material Assets – Traffic and Transportation Section of the Environmental Impact Assessment Report to assess the likely impact of the proposed development in terms of vehicular, pedestrian and cycle access during the construction and operational phases of the proposed development.

The proposed development comprises a Strategic Housing Development of 645[±] residential units (comprising of 208[±] 1 bedroom units, 410[±] 2 bedroom units, and 27[±] 3 bedroom units), in 10[±] blocks, with heights ranging from 4[±] storeys to 11[±] storeys over an undercroft / basement level. The proposals include 1[±] community facility in Block 1, 1[±] childcare facility in Block 3, and 5[±] commercial units (for Class 1-Shop, or Class 2- Office / Professional Services or Class 11 Gym or Restaurant / Café use, including ancillary takeaway use) in Blocks 4 and 8.

The proposal contains a total of 363[±] car parking spaces, 63 at surface level and 300 at undercroft / basement level, and 1,519[±] bicycle parking spaces. Bin stores, plant rooms and block cores are located at undercroft / basement level. The proposed development includes private amenity space in the form of balconies / terraces for all apartments. The proposed development will also include the provision of public and communal open space, including 2[±] playing pitches, children's play areas and an ancillary play area for the childcare facility.

The proposed development includes road upgrades, alterations and improvements to the Dublin Road / R132, including construction of a new vehicular access which comprises a temporary left in, left out junction to the Dublin Road / R132, and construction of a new signalised pedestrian crossing point, and associated works to facilitate same. The proposal includes internal roads, cycle paths and footpaths, vehicular access to the undercroft /

basement car park, with all infrastructure provided up to the application site boundary to facilitate potential future connections to adjoining lands.

The subject site, which is located within the Fosterstown Masterplan area, will be accessed via a new left in/left out junction onto the R132. This left in/left out junction will be provided as a temporary access arrangement pending the development of the lands to the immediate north which provides for road linkage to the public road north of the masterplan area.

A Traffic Impact Assessment (TIA) was undertaken by OCSC Consulting Engineers which assessed the impact of the proposed development on 6 no. nearby junctions. The junctions which were assessed are as follows:-

- Junction 1: Dublin Road/Forest Road/Main Street;
- Junction 2: R132/R125/R132/R836;
- Junction 3: R132/L2305 Nevinstown Lane/L2300;
- Junction 4: Forest Road/L2300/Rathingle Road;
- Junction 5: Forest Road/Hawthorn Road;
- Junction 6: Forest Road/River Valley Road.

The TIA determined the peak traffic that would be generated by the proposed development to be as follows:-

	AM Peak Hour (08:00-09:00)	PM Peak Hour (17:15-18:15)
Arrivals	25	107
Departures	114	40
TOTAL	139	147

In addition, the TIA includes a cumulative assessment of the traffic that will be generated by the proposed development (outlined in the table above) together with the permitted development under ABP Ref.: 308366-20 for 278 no. residential units, a childcare facility, a retail unit, a section of the Fosterstown Link Road and associated site works, on the adjoining lands to the north of the subject site.

The results of the overall traffic impact assessment showed that the proposed development, at operational stage, will have a low impact on the operation of the links and junctions in the local network which are set out above, with relatively minor impacts on RFC values. Junction 3 is the exception to this but has been shown to experience capacity issues irrespective of the proposed development. The TIA concluded that the local transport network has been shown to experience no notable negative impact as a result of a development of the type planned.

The TIA also concluded that the construction stage traffic will have a lesser impact than the operational stage traffic.

The TIA assessed pedestrian and cycle infrastructure and concluded that the pedestrian and cycle infrastructure will be improved with the provision of a signal controlled pedestrian crossing on the R132 and dedicated cycle lanes within the development which will connect to the dedicated cycle lane on the R132. Furthermore, the TIA considers that the safety of pedestrians and cyclists will be improved as a result of the proposed development.

On 01 March 2022, Waterman Moylan undertook a survey of the capacity in the Bus Network which would directly serve the subject site. The capacity study was undertaken during the peak morning hours. The study found that the subject site is well served by public transport with a high capacity, frequent service. It was established that all busses were operating at approximately 50% capacity or less with the demand for bus transport determined to be

7% of total capacity. The existing bus network in the area was therefore confirmed to have sufficient capacity to accommodate passenger trips generated by the proposed development.

INTERACTIONS BETWEEN ENVIRONMENTAL FACTORS

The purpose of this chapter of the EIAR is to draw attention to significant interaction and interdependencies in the existing environment. John Spain Associates in preparing and co-ordinating this EIAR ensured that each of the specialist consultants liaised with each other and dealt with the likely interactions between effects predicted as a result of the proposed development during the preparation of the proposals for the subject site and this ensures that mitigation measures are incorporated into the design process. This approach is considered to meet with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001-2021. The detail in relation to interactions between environmental factors is covered in each chapter of the EIAR and is reiterated within the interactions chapter, along with a table of interactions which visually represents the various interactions identified between environmental factors.

SUMMARY OF EIA MITIGATION AND MONITORING MEASURES

This chapter provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document for ease of reference for the consent authority and all other interested parties.