Environmental Impact Assessment Report

Non-Technical Summary

Lands at 'St. Teresa's' Temple Hill, Monkstown, Blackrock, Co. Dublin

Oval Target Limited

December 2021

Brock McClure

Planning & Development Consultants

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1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared in support of a planning application for a "residential development at Lands at 'St. Teresa's, Temple Hill, Monkstown, Blackrock, Co. Dublin.

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.

Introduction and Terms of Reference

Brock McClure Planning and Development Consultants, 63 York Road, Dun Laoghaire, Co. Dublin have been commissioned by the applicant, **Oval Target Limited, 1st Floor, 55 Percy Place, Dublin 4, D04 CX38,** to prepare an Environmental Impact Assessment Report (EIAR) in respect of a Strategic Housing Development application for 493 residential units and associated residential amenities of 451 sq.m, a childcare facility of 392sq.m. and café of 67.4sq.m. all located on a site of c. 3.99 ha on lands at **'St. Teresa's', Temple Hill, Monkstown, Blackrock, Co. Dublin.**

The development will consist of a new residential and mixed use scheme of 493 residential units and associated residential amenities, a childcare facility and café in the form of (a) a combination of new apartment buildings (A1-C2 and D1 – E2); (b) the subdivision, conversion and re-use of 'St. Teresa's House' (Block H); and (c) the dismantling, relocation and change of use from residential to café of 'St. Teresa's Lodge' (Block G) within the site development area.

It is also proposed to dismantle and relocate 'St. Teresa's Lodge' (1 storey) from its current location to a new location, 180 m southwest within the development adjacent to Rockfield Park. St. Teresa's Lodge (Block G) will be deconstructed in its original location and reconstructed in a new location using original roof timbers, decorative elements and rubble stonework, with original brickwork cleaned and re-used where appropriate. A non - original extension (approx. 28.5 sq m) is proposed for demolition. The current proposal seeks further extension of this building (approx. 26.8 sq m) and a change of use from residential to café use to deliver a Part M compliant single storey building of approx. 67.4 sq m.

Total Open space (approx. 15,099.7 sq m) is proposed as follows: (a) public open space (approx. 11,572.3 sq m) in the form of a central parkland, garden link, woodland parkland (incorporating an existing folly), a tree belt; and (b) residential communal open space (approx. 3,527.4 sq m) in the form of entrance gardens, plazas, terraces, gardens and roof terraces for Blocks B2 and B3. Provision is also made for new pedestrian connections to Rockfield Park on the southern site boundary and Temple Hill along the northern site boundary.

Basement areas are proposed below Blocks A1, B1 to B4 and D1 (c. 7,295 sq m GFA). A total of 252 resident car parking spaces (161 at basement level and 91 at surface level); 1056 bicycle spaces (656 at basement level and 400 at surface level); and 20 motorcycle spaces at basement level are proposed. 8 no. car parking spaces for creche use are proposed at surface level.

The proposal also provides for further Bin Storage areas, Bike Storage areas, ESB substations and switch rooms with a combined floor area of 356.2 sq m at surface level.

The development also comprises works to the existing entrance to St. Teresa's; the adjoining property at 'Carmond'; and residential development at St. Vincent's Park from Temple Hill (N31/R113). Works include the realignment and upgrade of the existing signalised junction and associated footpaths to provide for improved and safer vehicular access/egress to the site and improved and safer access/egress for vehicular traffic to/from the property at 'Carmond' and the adjoining residential development at St Vincent's Park.

Emergency vehicular access and pedestrian/cyclist access is also proposed via a secondary long established existing access point along Temple Hill. There are no works proposed to the existing gates (Protected Structure) at this location.

The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works including tree protection; green roofs; boundary treatment; internal roads and footpaths; and electrical services including solar panels at roof level above Blocks A1, B1 - B4, C1-C3, D1, E1, E2.

The Guidelines on the Information to be contained in an Environmental Impact Assessment Report, Environmental Protection Agency, 2017, provide the following definition of an Environmental Impact Assessment Report (EIAR):

"A statement of the effects, if any, which proposed development, if carried out, would have on the environment.

The EIAR is prepared by the developer and is submitted to a CA (Competent Authority) as part of a consent process. The CA uses the information provided to assess the environmental effects of the project and, in the context of other considerations, to help determine if consent should be granted. The information in the EIAR is also used by other parties to evaluate the acceptability of the project and its effects and to inform their submissions to the CA.

The EIAR consists of a systematic analysis and assessment of the potential effects of a proposed project on the receiving environment. The amended EIA Directive prescribes a range of environmental factors which are used to organise descriptions of the environment and these factors must be addressed in the EIAR.

The EIAR should be prepared at a stage in the design process where changes can still be made to avoid adverse effects. This often results in the modification of the project to avoid or reduce effects through redesign".

1.1 Requirement for an EIAR EIA Legislation

Directive 2011/92/EU, as amended by Directive 2014/52/EU (the "EIA Directive"), requires Member States to ensure that a competent authority carries out an assessment of the likely significant effects of certain types of projects, as listed in the Directive, prior to development consent being given for the project. The Environmental Impact Assessment (EIA) of the proposed development will be undertaken by An Bord Pleanála as the competent authority, in compliance with the provisions of EU and Irish law and guidance.

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.
- Category 10(b)(iv) Urban development which would involve an area greater than 2 hectares in the case of business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.

In summary, the development consists of a residential development of 493 no. units (all apartments), along with ancillary residential amenities, and provision of a childcare facility, residential tenant amenity space and café. The proposed residential units comprise 18 no. studio units, 220 no. 1-bedroom units, 208 no. 2-bedroom units, and 47 no. 3-bedroom units

The proposed development therefore falls on the threshold set out above for mandatory Environmental Impact Assessment. Therefore, an EIAR has been prepared to accompany the subject strategic housing development application to An Bord Pleanála, having regard to the specific characteristics and features of this site, its size, and the quantum of development proposed. The. Following components are addressed on the EIAR:

No	Title	Content
1	Introduction	Sets out the purpose, methodology and scope of the document.
2	Site Context and Description of the Development	Sets out the site context for the proposed development, sets out the context for the subject site and surrounding are, description of the site, design and scale of development, considers all relevant phases from construction through to existence and operation.
3	Consideration of Alternatives	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.
4	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.
5	Biodiversity	Describes the existing ecology on site and in the surrounding catchment and assesses the potential impact of the proposed development and mitigation measures incorporated into the design of the scheme.
6	Lands, Soils, Geology, Hydrogeology & Utilities	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.
7	Hydrology	Provides an overview of the baseline position, the potential impact of the proposed development on water quality and quantity and recommends mitigation measures.
8	Noise and Vibrations	Provides an overview of the baseline noise environment, the potential impact of the proposed development 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, the vulnerability of the project to climate change, and recommends mitigation measures.
10	Wind and Microclimate	This chapter assesses the potential effects of the proposed development on the pedestrian level wind microclimate around the proposed buildings and open spaces, and in the area immediately surrounding the site, and recommends mitigation measures.
11	Landscape and Visual Impact	Provides an overview of the baseline position, the potential impact of the proposed development on the landscape appearance and character and visual environment and recommends mitigation measures.
12	Material Assets – Traffic and Transport	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.
13	Material Assets – Waste Management	Describes the existing services and infrastructural service requirements of the proposed development and the likely impact of the proposed development on waste management.

14	Archaeological 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.
15	Architectural and Built Heritage	Provides an assessment of the site and considers the potential impact of the proposed development on the local Architectural and built Heritage in the area and recommends mitigation measures.
16	Daylight and Sunlight	This chapter assesses the impact of the proposed development on sunlight and daylight access to lands outside the application site and recommends mitigation measures.
17	Risks of Major Accidents and/or Disasters	This chapter identifies the potential of unplanned but potential events that could occur during construction and operation of the proposed development.
18	Interactions	Describes the potential interactions and interrelationships between the various environmental factors.
19	Summary of Mitigation Measures	Sets out the key mitigation and monitoring measures included in the above chapters of the EIAR Document for ease of reference.

Table 1.1 - Scoping and Chapters of this EIAR

In addition to the above a series of standalone reports have been prepared to accompany the application and which have helped inform the above chapters of the EIAR where relevant. We refer to the covering letter enclosed herewith for full detail on the relevant enclosures.

The scope of this EIAR has also been informed by the following:

- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, August 2018.
- Draft Guidelines on the information to be contained in environmental impact assessment reports, EPA, 2017.
- Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems - Key Issues Consultation Paper, Department of the Environment, Community and Local Government, 2017.
- Circular letter PL 1/2017 – Advice on Administrative provisions in advance of Transposition (2017)
- The requirements of Part X of the Planning and Development Act, 2000, as amended, and Part 10 of the Planning and Development Regulations, 2001 (as amended);
- The requirements of the Dun Laoghaire-Rathdown Development Plan 2016-2022;
- Relevant Regional and National Planning Policy Documents;
- Issues raised during meetings with technical staff of Dun Laoghaire-Rathdown Development Plan 2016-2022 and An Bord Pleanála;
- Consultation process with statutory bodies and local stakeholders as referenced in the individual chapters;
- The receiving environment and any vulnerable or sensitive local features and current uses;
- Previous relevant planning history and applications that have been submitted on the subject and adjoining lands;
- The likely and significant impacts of the proposed development on the environment; and

- Available mitigation measures for reducing or eliminating any potentially significant undesirable impacts.

1.2 Objectives of this EIAR

The primary purpose of this EIAR is to assist in the EIA process, by identifying likely significant environmental impacts resulting from the proposed development, to describe the means and extent by which they can be reduced or mitigated, to interpret and communicate information about the likely impacts and provide an input into the decision-making planning process.

The fundamental principles to be followed when preparing an EIAR are:

- Anticipating, avoiding and reducing significant effects
- Assessing and mitigating effects
- Maintaining objectivity
- Ensuring clarity and quality
- Providing relevant information to decision makers
- Facilitating better consultation.

The EIA process was iterative and progressed in tandem with the project design process. The EIAR document captures this assessment process and describes its outcomes.

The EIAR documents the consideration of the environmental effects and provides transparent, objective and replicable documentary evidence of the EIA evaluation and decision-making processes.

The EIAR document provides information on any identified effects arising as a consequence of the proposed development and which are:

- Environmentally based;
- Likely to occur; and,
- Have significant effects.

It also documents how the selected project design incorporates mitigation measures; including impact avoidance, reduction or amelioration; to explain how significant adverse effects will be avoided.

The key purpose of this EIAR document is to enable the competent/consent authorities to reach a decision on the acceptability of the proposed development in the full knowledge of the project's likely significant impacts on the environment, if any. This EIAR document describes the outcomes of the iterative EIA process which was progressed in parallel with the project design process. This forms the first part of the EIA process which will be completed by the competent authority, which in turn will be required to examine, analyse and evaluate the direct and indirect effects of the development on the various factors listed under Section 171A of the Planning and Development Act 2000, as amended.

The amended EIA Directive prescribes a range of environmental factors which are used to organise descriptions of the environment and the environmental impact assessment should identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the prescribed environmental factors which are:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

This EIAR documents the assessment process of the prescribed environmental factors in relation to the proposed SHD residential development at 'St. Teresa's', Temple Hill, Monkstown, Blackrock, Co. Dublin.

1.3 Format and Structure of an EIAR

The formation of an EIAR necessitates the co-ordination and collation of associated, yet diverse specialised areas of assessment. The EIA approach involves the examination of each environmental factor, describing the existing baseline environment, the subject proposal, its likely impacts and direct and indirect significant effects pertaining to the environmental factor and mitigation measures, where appropriate. The topics examined in this EIAR are categories under the environmental factors prescribed under the 2014 EIA Directive as follows:

- Population and Human Health
- Biodiversity
- Land & Soils
- Water
- Noise & Vibration
- Air Quality & Climate
- Material Assets
- Archaeological & Architectural Cultural Heritage
- Landscape & Visual Assessment

The structure used in this EIAR document is the Grouped Format structure and is summarised below:

No	Proposed Content	Consultant
1	Introduction	Brock McClure
2	Site Context and Description of the Development	Brock McClure
3	Consideration of Alternatives	Brock McClure / OMP
4	Population and Human Health	Brock McClure
5	Biodiversity	Scott Cawley
6	Lands, Soils, Geology, Hydrology & Utilities	JJ Campbells
7	Hydrology	JJ Campbells
8	Noise and Vibrations	AWN
9	Air Quality and Climate	AWN
10	Wind and Microclimate	BFluid
11	Landscape and Visual Impact	ARC
12	Material Assets – Traffic and Transport	NRB
13	Material Assets – Waste Management	AWN
14	Archaeological and Cultural Heritage	Archaeology Built Heritage Company
15	Architectural and Built Heritage	CONA
16	Daylight and Sunlight	IES
17	Risks of Major Accidents and/or Disasters	Brock McClure
18	Interactions	Brock McClure
19	Summary of Mitigation Measures	Brock McClure

Table 1.2 - Format and Structure of the EIAR

1.4 Methodology Employed to Evaluate Each Environmental Topic

An outline of the methodology employed consistently in each chapter of the EIAR to examine each environmental topic is provided below. All inputs received have adhered to this structure as closely as possible:

Introduction	Provides an overview of EIAR and relevant terms of reference.
Study Methodology	The study methodology outlines the method by which the relevant information has been gathered and compiled.
The Existing Receiving Environment (Baseline Situation)	The receiving environment details the baseline condition for the site and references, the context, character, significance and sensitivity of the baseline receiving environment. Any factors for consideration in the immediate area are set out.
Characteristics of the Proposed Development	The characteristics of the development are set out as they relate to each discipline and should include reference to site location, size, design and appearance of the project, use of natural resources, the production of waste, emissions and nuisances.
Potential Impact of the Proposed Development	This section provides a description of the specific, direct and indirect, impacts that the proposed development may have. This is provided with reference to both the Receiving 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. The assessment addresses whether the impacts are direct, indirect, secondary or cumulative in nature, it also looks at the timescale of such impacts e.g., are they short, medium, long-term, and are they of a temporary, permanent, continuous or intermittent nature, and are they positive or negative impacts. The impact interactions are also addressed.
Potential Cumulative Impact	This section allows for a qualitative assessment of the addition of many minor or significant effects, including the effects of other projects, to create larger more significant effects.
Do Nothing Scenario	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
Risks to Human Health	This section will consider human health effects resulting from the construction and operation of a project and will concern the commissioning, operation and decommissioning of the project. The assessment of impacts on population and human health will refer to assessments of those factors under which human health might occur, as addressed elsewhere in the EIAR e.g., under the environmental factors of air, water, soil etc.
Mitigation Measures	Avoidance, remedial and mitigation measures describe any corrective or mitigative measures that are either practicable or reasonable, having regard to the potential impacts of the scheme. 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.
Residual / 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, temporary, permanent, continuous, or intermittent, positive and negative effects as well as impact interactions which the proposed development may have, assuming all mitigation measures are fully and successfully applied

Monitoring	This involves a description of monitoring in a post-development phase, if required. This section addresses the effects that require monitoring, along with the methods and the agencies that are responsible for such monitoring.
Reinstatement	While not applicable to every aspect of the environment considered within the EIAR, certain measures may need to be proposed to ensure that in the event of the proposal being discontinued, there will be minimal impact to the environment
Interactions	This section provides a description of impact interactions together with potential indirect, secondary and cumulative impacts
Difficulties Encountered in Compiling	This section provides an indication of any difficulties encountered by the environmental specialist in compiling the required information.
References	This section will include the list of sources used to complete the assessment.

Table 1.3 - Methodology for Evaluation

2 Site Context & Development Description

The site has a mature landscaped setting and is bounded by Temple Hill Road to the north; Rockfield Park to the south; existing residential development to the East (St. Vincent's Park); and existing residential development (St. Louise's Park and Barclay Court) and the Alzheimer's Society of Ireland to the west.

The site is within 1km of Blackrock Village and has high accessibility to public transport. The proposal is located adjacent to a proposed Bus Priority Route at Temple Hill (N31) and is proximate to DART stations at Seapoint (6m walk) and Blackrock (11 min walk) and is therefore well placed in terms of exceptional public transport accessibility.

The subject site is bounded by Temple Hill to the north; Rockfield Park to the south; a residential development known as St. Vincent's Park to the east; the Alzheimer's Society of Ireland and residential developments at St. Louise's Park and Barclay Court to the west.

The lands are within the bounds of Dun Laoghaire-Rathdown County Council and are approximately 1KM from the heart of Blackrock Village. There is a host of public amenities close by including the Frascati Shopping Centre and Blackrock Park along the seafront which are within easy walking distance. The site is intensively serviced by public transport and the N31 is designated as a proposed Quality Bus Corridor (QBC). Blackrock Dart station and Seapoint Dart station are between 550 - 700m distance from the site.

Protected Structures

The portion of the site within the applicant's control extends to c. 3.9 ha (the main site area). This is the main development site, which contains 3 no. Protected Structures as follows:

(a) 'St. Teresa's House' or Centre which is a 3 storey Victorian House (RPS 398);

(b) 'St. Teresa's Lodge' known as *'The Gate Lodge'*, which is a single storey property located at the main entrance to the site off Temple Hill (RPS 1960); and

(c) Entrance Gates along the north of the site (RPS 398).

Other Buildings Associated with St. Teresa's

In addition to the above, there are existing later extensions and ancillary buildings to the side and rear of St. Teresa's and The Gate Lodge, which are not considered of any architectural merit in this case. Again, notwithstanding the fact that permission to demolish these buildings was secured under SHD PL06D.303804-19, the current application seeks authorisation for demolition of these buildings, as a component of the application for permission.

St. Teresa's House

St. Teresa's House is a 2 - storey over basement detached country house, of five bays with central projecting granite porch, and semi-circular end bays.

The proposed development for this building remains as permitted under SHD PL06D.303804-19 and provides for 5 no. 2 bed units and 1 no. 3 bed unit.

St. Teresa's Lodge ('The Gate Lodge')

The existing gate lodge building is a single storey double fronted lodge with a hipped roof.

The dismantling/deconstruction of the existing St. Teresa's Lodge (67.8 sq m) and demolition of a lean to extension (28.5 sq. m) is proposed, together with the reconstruction of St. Teresa's Lodge in a new location (180m south-west) with the further extension of this building and change of use from residential to café.

Zoning

The subject site is located an area zones '*A' which is to 'Protect and / or improve residential amenity'.* Uses permitted in principle under this zoning include:

> *"Assisted Living Accommodation, Open Space, Public Services, Residential, Residential Institution, Travellers Accommodation."*

Tree Preservation

There is also an objective on the site *"To protect and preserve Trees and Woodlands".* The Tree File Arborists have been retained for the purposes of this proposal and they have confirmed that all tree impacts at the subject site can be appropriately managed and mitigated. In addition to the above, we note that the Landscape Plan prepared by Mitchell & Associates fully considers the Tree Preservation Objective and will provide an enhanced landscaped setting for both the existing and proposed development.

Surrounding Area

The site of the proposed St. Teresa's SHD extends to c. 3.9 ha with 3 no. Protected Structures in a mature landscaped setting adjoining Rockfield Park. The site is bounded to the north by Temple Road, with mature residential development to the East and the Alzheimer's Society of Ireland to the West.

The site is within 1km of Blackrock Village and has high accessibility to public transport. The N31 (Temple Road) is designated as a proposed QBC and both Blackrock and Seapoint DART stations are within easy walking distance.

The buildings on site consist of St Teresa's (A Protected Structure), which is a 3 storey Victorian House with associated Gate Lodge (also a Protected Structure) and Gateway-also a Protected Structure) at the main entrance to the site off Temple Road. There are a number of ancillary buildings linked to St Teresa's, which are later additions of no particular architectural character or merit in this case.

The portion of the site within the applicants control extends to c. 3.9 ha (the main site area) is the main development site. The remainder of the lands are controlled by:

- Dun Laoghaire-Rathdown County Council i.e., lands along Temple Hill and at St Vincent's Park.
- Lands at the 'Alzheimer's Society of Ireland' i.e., a building bounding the shared boundary.
- Lands at Carmond, Temple Hill by Dualton Ltd.

The site is identified, in the relevant development planning context as being capable of accommodating residential development of the form and quantum currently proposed, by way of the residential zoning governing the site. The proposed SHD will not have any significant effect on the surrounding land uses in that the proposed development has been designed to integrate with surrounding development. Specifically, residential amenities both within the development and adjacent to the site are protected and maintained.

Planning History

A review of the planning history pertaining to the site confirms that there is 1 significant planning application, which was granted permission by An Bord Pleanála in 2019. Under this permission, 291 residential units were permitted. In addition, a Crèche Facility and a Residential Club House were also permitted under this application.

Development Description

Oval Target Limited intends to apply to An bord Pleanála for permission for a residential development as part of a Strategic Housing Development on lands at St. Teresa's, Temple Hill, Monkstown, BlackRock, Co. Dublin.

The development will consist of a new residential and mixed use scheme of 493 residential units and associated residential amenities, a childcare facility and café in the form of (a) a combination of new

apartment buildings (A1-C2 and D1 – E2); (b) the subdivision, conversion and re-use of 'St. Teresa's House' (Block H); and (c) the dismantling, relocation and change of use from residential to café of 'St. Teresa's Lodge' (Block G) within the site development area. A detailed development description is now set out as follows:

The proposal provides for the demolition (total c. 207 sq m GFA) of (a) a single storey return (approx. 20 sq m) along the boundary with The Alzheimer's Society of Ireland; (b) the ground floor switch room (approx. 24.9sq.m.), (c) ground floor structures northwest of St. Teresa's House (26.8sq.m), (d) basement boiler room northwest of St. Teresa's House (17.0 sq.m), (e) ground floor structures northeast of St. Teresa's house (22.0sq.m.) (f) basement stores northeast of St. Teresa's house (67.8 sq.m.) and (g) a non - original ground floor rear extension (approx. 28.5 sq m) associated with the Gate Lodge.

The new development will provide for the construction of a new mixed use scheme of 487 no. apartment units in the form of 11 no. new residential development blocks (Blocks A1-C2 and D1 – E2) as follows:

- Block A1 (5 storeys) comprising 37 no. apartments (33 no. 1 bed units and 4 no. 2 bed units)
- Block B1 (10 storeys) comprising 55 no. apartments (37 no. 1 bed units, 10 no. 2 bed units, 8 no. 3 bed units)
- Block B2 (8 storeys) comprising 42 no. apartments (28 no. 1 bed units, 9 no. 2 bed units and 5 no. 3 bed units)
- Block B3 (8 storeys) comprising 42 no. apartments (28 no. 1 bed units, 9 no. 2 bed units and 5 no. 3 bed units)
- Block B4 (5 storeys) comprising 41 no. apartments (4 no. studio units, 4 no. 1 bed units, 27 no. 2 bed units and 6 no. 3 bed units)
- Block C1 (3 storeys) comprising 10 no. apartments (1 no. studio units, 3 no. 1 bed units and 6 no. 2 beds)
- Block C2 (3 storeys) comprising 6 no. apartments (2 no. 1 bed units and 4 no. 2 bed units) together with a creche facility of 392 sq m at ground floor level and outdoor play area space of 302 sq m.
- Block C3 (1 storey over basement level) comprising residential amenity space of 451 sq m.
- Block D1 (6 storeys) comprising 134 no. apartments (12 no. studio units, 22 no. 1 bed units, 90 no. 2 bed units and 10 no. 3 bed units).
- Block E1 (6 storeys) comprising 70 no. apartment units (34 no. 1 bed units, 26 no. 2 bed units and 10 no. 3 bed units).
- Block E2 (6 storeys) comprising 50 units (1 no. studio units, 29 no. 1 bed units, 18 no. 2 bed units and 2 no. 3 bed units).

Each new residential unit has associated private open space in the form of a terrace / balcony.

The development also provides for Block H, which relates to the subdivision and conversion of 'St. Teresa's House' (3 storeys) into 6 no. apartments (5 no. 2 bed units and 1 no. 3 bed unit) including the demolition of non-original additions and partitions, removal and relocation of existing doors, re-instatement of blocked up windows, replacement of windows, repair and refurbishment of joinery throughout and the upgrade of roof finishes and rainwater goods where appropriate.

It is also proposed to dismantle and relocate 'St. Teresa's Lodge' (1 storey - gross floor area 69.63sq m) from its current location to a new location, 180 m south west within the development adjacent to Rockfield Park. St. Teresa's Lodge (Block G) will be deconstructed in its original location and reconstructed in a new location using original roof timbers, decorative elements and rubble stonework, with original brickwork cleaned and re-used where appropriate. A non - original extension (approx. 28.5 sq m) is proposed for demolition. The current proposal seeks a new extension of this building (approx. 26.8 sq m) and a change of use from residential to café use to deliver a Part M compliant single storey building of approx. 67.4 sq m

Total Open space (approx. 15,099.7 sq m) is proposed as follows: (a) public open space (approx. 11,572.3 sq m) in the form of a central parkland, garden link, woodland parkland (incorporating an existing folly), a tree belt; and (b) residential communal open space (approx. 3,527.4 sq m) in the form of entrance gardens, plazas, terraces, gardens and roof terraces for Blocks B2 and B3. Provision is also made for new pedestrian connections to Rockfield Park on the southern site boundary and Temple Hill along the northern site boundary.

Basement areas are proposed below Blocks A1, B1 to B4 and D1 (c. 7,295 sq. m GFA). A total of 252 residential car parking spaces (161 at basement level and 91 at surface level); 1056 bicycle spaces (656 at basement level and 400 at surface level); and 20 motorcycle spaces at basement level are proposed. 8 no. car spaces for creche use are proposed at surface level.

The proposal also provides for Bin Storage areas, Bike Storage areas, ESB substations and switch rooms with a combined floor area of 356.2 sq m at surface level.

The development also comprises works to the existing entrance to St. Teresa's; the adjoining property at 'Carmond'; and residential development at St. Vincent's Park from Temple Hill (N31/R113). Works include the realignment and upgrade of the existing signalised junction and associated footpaths to provide for improved and safer vehicular access/egress to the site and improved and safer access/egress for vehicular traffic to/from the property at 'Carmond' and the adjoining residential development at St Vincent's Park.

Emergency vehicular access and pedestrian/cyclist access is also proposed via a secondary long established existing access point along Temple Hill. There are no works proposed to the existing gates (Protected Structure) at this location.

The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works including tree protection; green roofs; boundary treatment; internal roads and footpaths; and electrical services including solar panels at roof level above Blocks A1, B1 - B4, C1-C3, D1, E1, E2.

Visual material submitted with this planning application (prepared by OMP) demonstrates the high-quality design approach. The design of the scheme has ensured that there is appropriate scale and massing alongside adjacent residential development while also maximising the use of this land.

Part V Provision

The proposal provides for 50 no. Part V residential units within the scheme (10% of the total 493 no. units), which meets the social housing requirements of Dun Laoghaire Rathdown County Council. These units are identified in Part V Report enclosed prepared by O'Mahony Pike Architects.

Demolition

In circumstances where those structures have been demolished pursuant to the previous permission granted, the within application seeks permission for the demolition of the following extant structures:

Total Gross Floor space of proposed demolition is 207sq.m as follows:

01	Ground floor lean-to in A.S.O.I. garden	20.0 sq.m.
02	Ground floor switch room	24.9 sq.m.
03	Ground floor structures NW of St Teresa's House	26.8 sq.m.
04	Basement boiler room NW of St Teresa's House	17.0 sq.m.
05	Ground floor structures NE of St Teresa's House	22.0 sq.m.
06	Basement stores NE of St Teresa's House	67.8 sq.m.
07	Ground floor rear extension to gate lodge	28.5 sq.m.

Density

The residential density proposed at this site will be 493 units on a site area of approx. 3.9ha. This equates to approx. 123 units per ha gross figure and 165 units per ha net figure.

The residential density is calculated as follows:

- Site area = 39917.1 m2
- Residential Density (site area) = 493/39917.1 = 123 units / HA
- Residential density (site area – Tree belt 1 and Tree belt Avenue and Tree belt St Teresa's & gatelodge) = 493 / 29823.1 = 165 units / Ha

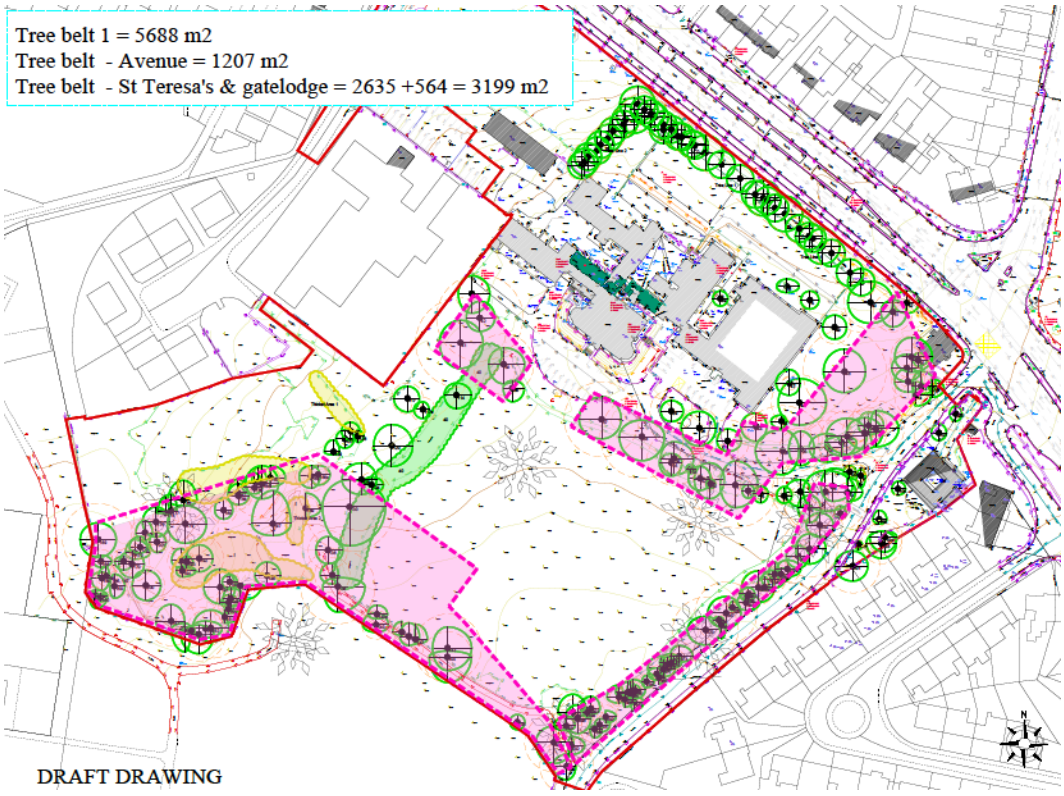

Figure X: Site Map of Tree Belts for calculation of Residential Density

This residential density is supported by national policy which is aiming to deliver increased height and densities at appropriate locations. The site can accommodate this density given its proximity to public transport, e.g., DART Stations and bus services.

Height

The proposed building heights will range from 2 to a maximum of 10 storeys high particularly along the south of the site and along Temple Hill

Block	2019 Permission Height	Proposed Height	Change
Block A1	4 storeys	5 storeys	+1 storey
Block B1	8 storeys	10 storeys	+2 storeys
Block B2	6 storeys	8 storeys	+2 storeys
Block B3	6 storeys	8 storeys	+2 storeys
Block B4	5 storeys	5 storeys	No change
Block C1	3 storeys	3 storeys	No change
Block C2	3 storeys	3 storeys	No change
Block C3	3 storeys	1 storey over basement	-2 storeys
Block D1	5 storeys	6 storeys	+1 storey
Block E1	2-5 storeys	6 storeys	+1 storey
Block E2	2-5 storeys	6 storeys	+1 storey
Block E3	2-5 storeys	Omitted	Omitted
Block E4	4 storeys	Omitted	Omitted
Block E5	4 storeys	Omitted	Omitted
Block G (Gate Lodge)	1 storey	1 storey	No change
Block H (St. Teresa's)	3 storeys	3 storeys	No change

Proposed Heights Figure 3.4 –

Land Use Requirements

A total of 493 residential units are proposed. The residential mix of the 493 no. apartments (6 permitted units and 487 new build units) is as follows:

- 18 no. studio units (4%)
- 220 no. 1 bed units (44%)
- 39 no. 2. bed units (3P) (9%)
- 169 no. 2. bed units (4P) (34%)
- 47 no. 3 bed units (9%)

The site is identified by the relevant statutory context as being capable of accommodating residential development of the form and quantum currently proposed, by way of the residential zoning governing the site. We are of the opinion that the proposal will not have any significant effect on the surrounding uses and that the proposed development has been well designed internally to ensure that residential amenities within the development are protected

Access

Vehicle Access – St. Vincent's Park

Access to the development is proposed by means of works to the existing entrance to the overall site to deliver the realignment and upgrade of the existing signalised junction and associated footpaths to provide for improved and safer vehicular access/egress to the site and to/from St. Vincent's Park. The application seeks permission for a minor alteration to the geometry at the vehicular access to St. Vincent's Park to provide for an improved alignment. Emergency vehicular access and pedestrian/cycle access is proposed via a secondary and long-established existing access point along Temple Hill. There are no works proposed to the existing gates (Protected Structure) at this location.

Pedestrian and Cycle Access

There are pedestrian and cycle links through the proposed development site to Blackrock village through Temple Road and to Rockfield park. This includes footpaths, landscaping and planting, connectivity and generally improved permeability.

The permeability of Rockfield park is enhanced by the proposed development due to the additional routes and "trim trail" which provide access from the main route through the development and as well as from Dunardagh Avenue.

Within the Courtyard, there is a combination of terraced lawns, specimen tree planting and stepped access is used to address the level change down to Temple Hill and to focus views into the scheme. This is combined with direct pedestrian access from Temple Hill to increase permeability through what is currently a closed vista

Open space and Landscaping

Total Public Open Space Provision is identified as 15,099.7sq m across the entire site.

In summary, the provision is broken down as follows:

- Public Open Space – 11,572 sq m (29% of the site area)
- Communal Open Space – 3,572 sq m (8.8% of the site area)
- **Total Provision – 15,099.7 sq m 38 % of the site area**

The population equivalent figure is identified as 3.5 persons for units with 3 or more bedrooms and 1.5 persons for units with 2 or fewer bedrooms. The requirements for open space per person are 15-20 sqm. There is a total population equivalent of 833.5 persons (based on a mix of 18 x studios, 220 x 1 beds, 208 x 2 beds and 47 x 3 beds).

The open space offering is significant in this case with large open space areas, tree trails, play areas and permeable access to the adjoining Rockfield Park, which in itself is a significant open space offering.

Car / Motorcycle and Bicycle Parking

Proposals for car parking generally comprise the following:

252 car parking spaces (161 proposed at basement level and 91 proposed at surface level).

Of the 91 spaces proposed at surface level, 8 spaces are designated for use by the crèche facility.

Basement car parking is divided into 3 parking areas as follows:

- Area A (Level -1) – 44spaces
- Area B (Level 0) – 36 spaces
- Area D (Level -1) – 81 spaces

Accessible parking is provided at a rate of 5% of spaces, which is 13 spaces across the scheme proposal. A car parking ratio of 0.51 is proposed.

A total of 1056 bicycle parking spaces are proposed within the development (656 at basement level and 400 at surface level).

Basement cycle parking is divided in 3 parking areas as follows:

- Area A (Level -1) – 100 spaces
- Area B (Level 0) – 226 spaces
- Area D (Level -1) – 246 spaces

These are provided in a combination of Sheffield stands and double stacked bays. All cycle spaces are conveniently located for ease of access for residents and close to lift/ stair cores.

In addition, provision is made for 20 motorcycle spaces (10 at basement level and 10 at surface level).

Construction Phase

The construction works associated with the development will be undertaken in 3 no. phases. There will also be demolition and excavation phases associated with removing demolition material. The construction and demolition programme a 48-month programme

3 Consideration of Alternatives

Chapter 3 of the EIAR sets out why the final layout was selected and provides summary details of alternative layouts considered throughout the design and consultation process. This serves to indicate the main reasons for choosing the layout as proposed.

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the amended EIA Directive (2014/52/EU) which states;

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

The Schedule 6, para. 2 (b) of the Planning and Development Regulations 2001 as amended implement this requirement by requiring the following information –

(b) a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects;

Reasonable alternatives may include project design proposals, location, size and scale, which are relevant to the proposed development and its specific characteristics. The Regulations require that an indication of the main reasons for selecting the preferred option, including a comparison of the environmental effects to be presented in the EIAR.

The subject proposal has evolved during the design phase of the project in response to input from the appointed EIAR team; advice received at the pre-planning stage of the process with Dun Laoghaire Rathdown County Council; advice received during pre-planning discussions with An Bord Pleanála; and the formal opinion that issued from An Bord Pleanála under Ref. ABP-307355-20.

This process highlighted matters that informed the consideration of alternative layouts and designs including set back distances, open space provision, permeability and connections, height of the proposed blocks etc. 5 no alternative schemes were considered before confirming the final Masterplan. The evolution of the design and various layouts and design considered are summarised below.

Alternative Layout & Designs

The design approach for the proposed development is presented in the Design Statement prepared by O'Mahony Pike Architects.

The subject proposal has evolved during the design phase of the project in response to input from the appointed EIAR team, advice received at the pre-planning stage of the process with Dun Laoghaire Rathdown County Council, advice received during pre-planning discussions with An Bord Pleanála, and the formal opinion that issued from An Bord Pleanála under Ref. ABP.PL06D.303804-19.

The process highlighted matters that informed the consideration of alternative layouts and designs including set back distances, open space provision, permeability and connections hight of the proposed blocks etc.

The evolution of the design and various layouts and design considered are summarised below.

The design of the proposed development began with consideration of the previously permitted scheme and an examination of the potential for increased densities and heights across the site. The overall site masterplan of the approved scheme presented what, in our opinion, was an optimum layout for this site with emphasis placed on creating a careful composition of new residential buildings placed around St. Teresa's House and the existing natural landscape. The approach taken in the design of the original scheme led to a site layout that remains St. Teresa's House as a focal point in the development with ample open space immediately in front of the house and with visual and physical connections through to Rockfield Park and distant landscape beyond.

It was considered that there was potential to increase residential densities and heights booth by modification to the permitted buildings and by the inclusion of the new buildings. An entirely new

masterplan was not considered in this instance because the permitted scheme had successfully evolved throughout its own design process into a site masterplan that is appropriate and fitting tor this development site and its unique context. The existing natural landscape and the proposed new landscaped areas around the buildings offer a sensitive and attractive new setting for the residential development and it was considered that none of the quality open spaces should be significantly imposed upon or sacrificed for greater site coverage.

Each area of the approved site and buildings was examined, and potential modifications were appraised. The appraisal involved further examination of site sections extending beyond the site into surrounding residential area and 3 dimensional modelling of the development. In order to appraise whether ot not the proposed modifications impacted upon residential amenity of properties in surrounding areas or within the development, I.E.S were appointed to carry out detailed studies and have produced a report (enclosed with this application) entitled Daylight, Sunlight and Overshadowing Study.

The following studies were undertaken:

Sunlight to the Existing Neighbouring and Proposed Amenity Spaces – via sunlight hours submission on the 21st of March

Daylight Analysis of Existing Buildings – via consideration of Vertical Sky Component (VSC).

Annual Probable Sunlight Hours – via consideration of sunlight received to existing properties (where required).

Shadow Analysis – A visual representation analysing any potential changes that may arise from the proposed development on the neighbouring existing developments.

Average Daylight Factors – via consideration of the Average Daylight Factor (ADF) for the proposed development.

The report focuses on measuring the daylight impact to the surrounding dwellings when compared to the existing situation. The proposed modifications to building in the scheme were informed by the results of these studies.

It was concluded that additional height was appropriate at certain locations and the newly designed buildings should be located in the site in manner that was relatively similar to the footprints of the approved development.

Site Masterplan

The approved site masterplan was broadly adhered to with a proposal for several new buildings to be integrated into the site without requiring significant change to the site layout.

The layout was further modified to retain a separation between Blocks B3 and B4, to remove a proposed pavilion block from within the central open space and to improve efficiencies of blocks that followed the line of the tree belt and the woodland.

Temple Hill Road frontage.

It is proposed to increase the heights of buildings along the Temple Hill Road frontage and to otherwise retain the building layouts. Separation distances between the buildings and the existing houses are considered to be sufficient. A single storey is proposed to be added to Block A1 and 2 storeys are proposed to be added to Blocks B1,B2 and B3. A revised building is proposed for B4 addressing both the road frontage and the site entrance road.

Blocks D1, E1 and E2.

Located in the southern part of the site between Rockfield Park and the central open space at the front of St Teresa's House, it was considered that there was potential to propose new building designs in this area in order to intensify the development and make better use of this extensive development site. The 294-unit scheme's building footprints were slightly smaller and were more numerous. Some floor plans were not particularly efficient e.g. 3 per core in E blocks and therefore improvements could be made to extend the development using more efficient building floor plates. Additional height is also considered to be appropriate as the presence of the existing mature tree belts assists in providing

partial screening from the public park and from adjoining residential properties. Sunlight, daylight and overshadowing analysis demonstrate that increased footprint buildings and additional height does not have a significant negative impact on any existing residential amenities.

The proposed new building footprints include a number of apartments that were orientated towards the northwest and therefore towards St. Louise's Park , a small enclave of houses adjacent to the subject site. Floor plans and elevations were studied and modified to mitigate against direct overlooking of these properties.

St. Teresa's House.

There is no proposed change to St. Teresa's House or its immediate surrounds in the current scheme.

The current proposal, however, does seeks to locate the resident amenity uses in a newly designed building (Block C3) located to the north of St Teresa's House. A number of alternative locations within the site and types of resident amenity were considered but none provided what was deemed to be required to successfully and satisfactorily serve the future residents. It was decided to locate the resident amenity facilities in one centrally located building. The function of the amenity building is to provide additional facilities to residents and in doing so to provide a social space where residents will encounter others and over time a sense of community can be developed. The proposed Block C3 design emerged after several options were considered.

Initially an option was considered that utilised St. Teresa's House as resident amenity together with a modified (2 storey) Block C3 addressing the plaza.

Alternative Locations for Gate lodge.

St Teresa's Lodge, the gatehouse building that under the extant permission would be dismantled, relocated and reconstructed at a new location within the site, was given further consideration in the course of the design process. Alternative locations for the reconstruction of the gatelodge were considered and appraised in conjunction with the conservation architect. A significant change from approved scheme is the proposal to change the use of the gatelodge from residential to café use.

The location as previously proposed was in an area that was located along the main access road into the development. It was considered that with a proposed new public use, a better location could be found where both residents and public could more easily access the building and benefit from an improved setting away from traffic. A number of locations were proposed, and it was concluded that a location along the southern boundary with Rockfield Park would be suitable.

Conservation Alternatives Layouts

Cathal O'Neill Architects sets out the conservation alternatives considered:

- Retain gate-lodge in-situ and repair and restore it.
- Demolish the lodge and dispose of the fabric off-site.
- Dismantle the gate-lodge and move it to a position in Rockfield Park which would bear the original relationship to the monumental gateway, when those are eventually relocated to the position specified in the Local Area Plan, as it had before the construction of the Blackrock by-pass in 1988. However, it should be noted that it is an objective of the Local Area Plan that only the gateway is relocated to the park.
- Dismantle and relocate the lodge to a position relating to the public access point to Rockfield Park from St Teresa's lands at the south corner of the site.

Conclusion

The proposed layout was carefully developed, taking into consideration the existing neighboring properties, the conditions along Temple Hill Road, as well as local environmental conditions such as orientation, wind, noise and overshadowing.

The scheme aims to maximize the efficiency and quality of the proposed apartments blocks while minimizing the impact on existing properties, improve the landscaping of the main Temple Hill Road and provide a coherent, pleasant and fully accessible permeable public realm.

4 Population and Human Health

Chapter 4 of the EIAR document focuses primarily on the potential likely and significant impact on Population, which includes Human Beings as required under the Schedule 6 of the Regulations, and Human Health in relation to health effects/issues and environmental hazards arising from the other environmental factors. The following key factors are considered, population trends, population profile, land use, housing, employment, commuter factors, economy, social service provision, and childcare audit.

The site is located in Blackrock which is an area that can be characterised as a well-planned and settled mature residential area. The area, which was formerly a village, is now a suburban area of Dublin. Blackrock is located within the Dun Laoghaire Rathdown county boundaries and contains many housing developments, shops and other facilities, with the old village centre still present.

The site has a mature landscaped setting and is bounded by Temple Hill road to the north; Rockfield Park to the south; existing residential development to the East (St. Vincent's Park) and existing residential development (St. Louise's Park and Barclay Court) and the Alzheimer's Society of Ireland to the west.

Within the electoral division of Blackrock-Temple Hill, of a total 1,336 people were recorded as being within employment in the Census 2016. The industries people are working in are illustrated on the Figure below. Commerce and Trade represents the largest sector, followed by Professional Services.

The proposed development will generate economic activity in the locality during the construction period. It is anticipated that apartment building management and other associated jobs will be generated, with spin-off economic activity created for local retail and service providers together with wider benefits in the aggregate extraction (quarry) sector, building supply services, professional and technical professions etc. during the construction phase. These beneficial impacts on economic activity during the construction phase will be largely temporary in nature.

The construction phase of the project may have some short-term negative impacts on local businesses/residents during the construction phase. Such impacts are likely to be associated with construction traffic and possible nuisances associated with construction activity. Such impacts will be short term and in the longer term, the completed scheme will have long-term beneficial impacts for local businesses, residents and the wider community. The construction methods employed, and the hours of construction proposed have been designed to minimise potential impacts.

While this proposal is providing a childcare facility, a childcare facilities assessment was carried out in order to determine the capacity of existing childcare operators in the area., which has been limited to a 2km radius of the subject site. It is recognised that there is also the option for families to avail of childcare facilities outside of this 2km radius due to a preferred location near workplaces, or schools that older children in the family may be attending.

This section provides a description of the potential direct and indirect impacts that may arise in both the 'do nothing scenario' and during the construction and operational phases of the proposed development

Impact Assessment

Where the proposed development does not proceed, it is likely that the permitted development of 294 no. residential unit (ABP303804-19), would be implemented with the permission within 10 years. The subject site has been zoned to fulfil a specific housing need by 2023. As such, a do-nothing scenario would mean that this objective of the Development Plan would not be met, and some 493 no. households would remain uncatered for. As such, the impact of the development not proceeding on population profile and trends in the area would be negative. Furthermore, the positive nature of the development in terms of its close proximity to a number of centres of employment, and therefore the associated increase in sustainable commuter trips in the area, would be lost.

The proposed development complies with the statutory land-use zoning. Development of the subject site is in accordance with the objective to achieve compact growth contained with the National Planning Framework and will realise the efficient use of currently underutilised land and higher housing density that is well served by public transport.

In light of national policy, it is likely that that the impact of this development would have a significant positive effect that will achieve local and wider county, regional and national objectives

The construction phase will provide employment for a large workforce at various stages during the life of the c. 48-month project. These construction workers will likely be recruited from the Greater Dublin Area. The multiplier effect arising from these additional construction jobs will also lead to an increase in employment in local businesses providing services to construction workers. As a result, the project will have a positive impact on employment numbers in the area during the construction phase.

During the construction phase the site will be accessed Temple Road. A Construction Management Plan is required in accordance with the *County Development Plan 2016-2022.* The Plan includes a section which comprises a Construction Traffic Management Plan. Further information on this is outlined in Chapter 12 of this EIAR – *Material Assets, Traffic and Transportation.*

There is a risk to Human Health should the ground water or the existing water supply become contaminated during the construction or operational stages, and the water is consumed. In order to mitigate these risks, the measures outlined below will be adopted.

Dust emissions from the construction phase of the proposed development have the potential in the absence of mitigation to impact human health through the release of PM_{10} and $PM_{2.5}$ emissions. As the surrounding area is of low sensitivity to dust-related human health impacts, it si predicted that there is an overall low risk of dust related human health impacts as a result of the construction phase of the proposed development. Therefore, in the absence of mitigation there is the potential for imperceptible, negative, short-term impacts to human health as a result of the proposed development. However, with the effective implementation of construction phase mitigation measures, the predicted residual impacts are.

There is the potential for construction operations to cause an unreasonable or excessive impact on the operational performance of the road network, resulting in a traffic safety or capacity issue arising.

The effect of construction operations and traffic are also addressed in the Construction and Environmental Management Plan which is included as a separate appendix to this EIAR. The CEMP includes a description of the proposed works and how these works will be managed for the duration of the demolition and construction works on site

During the construction phase of the development there will be a neutral impact on the population trends and profile for the area as no additional persons will be housed on site.

The proposed development will consist of 493 no. residential units/households. Using the local average household size indicators from Census 2016 for surrounding electoral divisions (2.54), this is predicted to result in providing accommodation for approximately 1,236.98 no. persons. Using the average household figures for the state (2.7), this may result in a projected population of approximately 1,314.9 no persons. Either figure will result in a sizeable addition to the emerging Blackrock-Temple Hill district. This is considered significant and positive, particularly in the context of current housing demand, while also taking account of the location's access to places of employment.

The addition of these proposed units will contribute to the housing unit target outlined in the *Dún Laoghaire-Rathdown County Development Plan 2016 - 2022*, which states that a net requirement of approximately 30,800 no. new units is required over the lifetime of the plan. This equates to an average requirement of approximately 3,080 no. new residential units per annum to 2022.

In light of the existing housing crisis, it is considered that a high-density development at this location would result in a likely significant positive impact as it would realise the objective of compact urban growth through the efficient and effective use of zoned and services landbank to provide much needed housing for future populations.

The proposed development will provide housing for a potential number of approximately 493 no. persons, when using average household figures for the State. Given the multitude of large employment centers within close proximity to the site, the existence of significant transport infrastructure providing access to other centers it is likely that future residents of the scheme would work within close proximity to nearby employment centers. The multiplier effect arising from these additional residents using local

services and purchasing goods at local businesses will also lead to an increase in employment in those businesses, which meet this demand.

- There is a risk to Human Health should the ground water or the existing water supply become contaminated during the construction or operational stages, and the water is consumed. In order to mitigate these risks, the measures outlined below will be adopted.
- During the operational phase, plant selections designed to achieve the relevant noise criteria will result in a residual impact that is long-term, imperceptible and neutral to people in nearby noise sensitive locations.
- Traffic-related air emissions have the potential to impact air quality which can affect human health. However, the change in traffic associated with the proposed development is not of the magnitude to require detailed air dispersion modelling as there is no potential for significant impacts.
- The character of the impact of changes to the visual environment on human health (positive, negative or neutral) will depend on subjective opinion of members of the public, and on the general contribution of the development to the built environment.
- The character of a visual effects, and even the duration of a visual effect, is very dependent on the attitude of the viewer. However, objectively, the visual impact of the proposed development is predicted to be.
- There is the potential for the operation and occupation of the development itself to have an adverse impact upon the safety, capacity & operation of the adjacent road network. In these terms, the assessment undertaken was to determine whether there was likely to be an adverse or significant impact, with the assessment of impact during a selected opening year and an assessment during the associated design year 15 years following opening.

A bespoke site Construction Management Plan (CMP) will be prepared by the selected contractor prior to work commencing on site. The main purpose of a CMP is to provide a mechanism for implementation of the various mitigation measures which are described in this EIAR and contained within the Construction and Demolition Waste Management Plan that accompanies this application.

Measures to avoid negative impacts on Population and Human Health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development. Monitoring will be undertaken by the Building Regulations certification process and by the requirements of specific conditions of a planning permission. Monitoring of compliance with Health & Safety requirements will be undertaken by the Project Supervisor for the Construction Process.

As noted above, there are numerous inter-related environmental topics described in detail throughout this EIAR document which are of relevance to human health. This chapter of the EIAR has been instructed by updated guidance documents reflecting the changes within the EIA Directive. These documents are the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) and the Draft Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA in August 2017. Therefore, in line with the guidance documents referred to, this chapter of the EIAR focuses primarily on the potential likely and significant impact on Population and Human Health in relation to health effects/issues and environmental hazards from the other environmental factors and interactions that potentially may occur.

Where there are identified associated and inter-related potential likely and significant impacts which are more comprehensively addressed elsewhere in this EIAR document, these are referred to. However, the reader is directed to the relevant environmental topic chapter of this EIAR document for a more detailed assessment.

5 Biodiversity

The assessment considered the potential direct, indirect and cumulative impacts on biodiversity within the zone of influence of the proposed development. The assessment was undertaken in line with a number of guidance documents including the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018 as updated September 2019).

Baseline ecological surveys were undertaken at the proposed development site in March and June 2018, September and December 2020 and February, May, June and November 2021 and included habitat and flora surveys, mammal surveys, breeding bird surveys and bat surveys. The following key ecological receptors were identified within or occurring within the zone of influence of the proposed development; hedgerows, treelines, scrub, scattered trees and parkland, dry meadows and grassy verges, badger, small mammals, birds, bats.

In addition, European and nationally designated sites were identified as key ecological receptors. The proposed development lies upstream of the South Dublin Bay SAC/pNHA and South Dublin Bay and River Tolka Estuary SPA and at its closest point the redline boundary is *c.* 300m west of these SAC, pNHA and SPA boundaries. The surface and foul waters from the site ultimately discharge into Dublin Bay. Other designated sites located downstream of the proposed development include North Dublin Bay SAC/pNHA, North Bull Island SPA and Booterstown Marsh pNHA.

Potential impacts of the proposed development are considered to be; habitat loss, an accidental pollution event affecting surface water in the receiving environment during construction or operation, spread of invasive non-native species resulting in habitat degradation, and disturbance, displacement and/or mortality on badgers and other fauna during construction and/or operation.

A comprehensive suite of mitigation measures are proposed, in addition to the extensive and stringent environmental control measures that have been incorporated into the design of the proposed development. All of the mitigation measures will be implemented in full, follow best practice, and are tried and tested and effective control measures to protect biodiversity and the receiving environment.

There will be a local residual effect due to habitat loss, however, the proposed compensatory planting will reduce the overall residual impact scale to insignificant. Considering the elements included within the design of the proposed development and the implementation of the mitigation measures, to avoid or minimise the effects of the proposed development on the receiving environment, no likely significant residual effects on biodiversity are predicted.

6 Land, Soils, Geology, Hydrogeology and Utilities

Ch 6 Land, Soils, Geology, Hydrogeology, Utilities has been prepared by Marcus Wallace, NCEA Dip Eng BE, MIEI, of JJ Campbell and Associates Consulting Engineers.

This section of the EIAR assesses the impacts that the proposed development at St Teresa's Lands Temple Hill, Monkstown, Blackrock, Co Dublin, may have on the Land, Soils, Geology, Hydrogeology and Utilities on the surrounding area during the construction and operational phases. This report also addresses earthworks proposed on site including any cut and fill works required.

Methodology:

This section was prepared in accordance with the Guidelines on the Information to be Contained in Environmental Impact Statements (EPA 2015 (draft)) and Advice Notes for Preparing Environmental Impact Statements (EPA 2015 (draft)). A detailed geotechnical and contamination site investigation of the site has been carried out by Site Investigations Ltd.

Guidelines / Sources

The following documents were reviewed in the preparation of this chapter:

- Site investigation Reports including results from trial pits, bore holes undertaken by Ground Investigations Ireland Ltd.
- Geological Survey of Ireland (GSI) interactive mapping, borehole information and geo-hazard database
- Environmental Protection Agency (EPA) interactive mapping
- Teagasc soil sub-soil database
- Ordnance Survey Ireland (OSI) mapping
- Topographical survey
- Dublin City Development Plan – SDRA 12 – Development Framework For St. Theresa's Gardens and Environs. March 2017 – DRAFT
- Greater Dublin Area Regional Code of Practice for Drainage Works
- Greater Dublin Strategic Drainage Study (GDSDS)
- Site Visit (OCSC)
- Geological Survey of Ireland (GSI) online maps and databases
- Correspondence and meetings with Dublin City Council.
- Irish Water Code of Practice for Wastewater Infrastructure
- Irish Water Code of Practice for Water Infrastructure
- Utility Network Maps as follows:
- Public Water Mains (Irish Water)
- Public Stormwater Drainage (Dublin City Council)
- Public Foul Drainage (Irish Water)
- Electricity Supply Networks (ESB Networks)
- Gas Supply (Gas Networks Ireland)
- Telecommunications (eir)

Potential Impacts of the Proposed Development

Construction Stage:

The development works and related excavations, especially those required to provide the development's basement, will not be deep enough to impact the underlying bedrock. Construction activities will therefore impact the soils/sub-soils but not bedrock within the site.

Removal of trees, as identified, will follow along with stripping off the existing topsoil from the site at the proposed building and road locations but excluding existing green-field and open space areas. This would involve removing approximately the upper 600mm of natural top-soil locally. The majority of this top-soil will be removed off site: however, the proposed development's landscaped and grassed areas will require a quantum of topsoil to be re-used.

It is not envisaged that anticipated groundwater qualities would require significant dewatering during construction over above normal levels, as waterproof interlocking secant piling, and concrete trench fill will be used to allow excavation of the basements, but some dewatering will be required after a storm event.

The previous use of the site does not present a risk of contaminated soil/water. But if localised contaminates are identified, they shall be monitored during exaction phase to ensure that the extents of contamination are identified and removed separately and under license as required.

The main access road, footpath/cycle-path links etc are limited in size and depth such that they would be confined to the upper 0.6 metres of the soil layer.

There is a risk that earthworks and the removal of topsoil could expose some remaining subsoil layers and may result in local erosion of soil, particularly in times of adverse weather conditions during the construction phase. However, the excavations will be blinded immediately after excavation to protect the sub soil under. Also, the depth of overburden is quite shallow which will reduce the area of soil at risk.

Increased traffic associated with the construction works and the removal of the large volumes of material would have the effect of compacting existing subsoil layers in places within the site. The regular movement of heavy machinery and plant to and from the site would also result in an increased risk to the integrity of the surrounding access routes.

During construction, in the absence of mitigation, there is increased risk of accidental pollution and contamination of soils and groundwater from spills relating to re-fuelling, oils from construction machinery/vehicles and construction materials e.g., concrete/cement.

High voltage underground cables running through the site have been identified on ESB maps, the underground cables will have to be relocated by the ESB without disruption to its users.

A 150Ø foul sewer was identified coming from the Rockfield direction, the pipe will have to be investigated further and diverted if required.

Services within the site boundary were serving building which are now vacant and not in use, there will be no disturbance to services. When the high voltage cables are to be relocated, a new cable and chambers will be installed first which will minimise disturbance if any during changeover.

Operational Stage:

Electricity

The Proposed Development will require electricity supplies during the operational phase of the scheme, and these will be provided by the installation of new sub-stations within the development and the decommissioning of the existing two sub-station based on its current location all in agreement with ESB Networks and the new cable services will be located underground.

Gas

The Proposed Development will require gas supplies during the operational phase of the scheme, and these will be provided by the installation of new connections to the development site. As the new services will be located underground this will result in a permanent but imperceptible effect.

The additional demand on the gas network will have an imperceptible impact of long term and neutral effect on the surrounding area as there is sufficient capacity in the gas network system to manage the additional demand created by the development. It should be noted that the apartments will utilise exhaust air heat pumps for heating (i.e., gas not required in apartments). The gas load for the development is primarily for the retail units.

Telecommunications

The Proposed Development will require telecommunication connections during the operational phase of the scheme and given the number of telecommunication providers with infrastructure available within the area, this will provide the building users with a greater choice of service and will result in a positive effect for the end users. As the new services will be located underground this will result in an imperceptible impact of long term and positive effect.

The additional demand on the telecoms network is not deemed to have any material impact on the surrounding area as there is sufficient capacity in the telecoms network system to manage the additional demand created by the development. The likely impact from the operational phase on the telecoms network is likely to be imperceptible impact of long term and neutral effects.

Potential Cumulative Impacts

Hydrogeology:

Storm water from the development incorporates a number of SuDS measure including green roofs, permeable paving and swales. Storm water discharge for the whole site is limited to 8.17 l/s and the 1:100 year storm event is attenuated.

Overall, the impact on hydrogeology environment as a result of the wider developments in the area are considered to be long term and imperceptible. Provided mitigation measures are in place at each of the development, the overall impact is expected to be neutral.

Land, Soils and Geology:

Existing buildings have already been demolished. The Construction Environmental Management Plan (CEMP) will be implemented for the construction phase.

Any potential impacts on the soil environment will be within the confines of the site boundary and with the implementation of the measures highlighted this chapter and, in the CEMP, the cumulative effect on the land, soils, geology and local environment with any adjacent developments is deemed to be imperceptible and neutral.

Mitigation Measures

Construction Stage:

In order to minimise the impact of construction on the site's soils, geology and hydrogeology the following mitigation measures will be implemented:

- Contractor to implement best practice construction methods and practices complying with Building Control Act 1990 – 2017, building regulations 1997 - 2017, Safety Health and Welfare at Work Regulations 2019.
- Existing topsoil and sub-soil shall be retained on site to be used for the future development to reduce the volumes removed, to reduce the construction phase trip generation, to retain the existing natural type of topsoil from the site for the future development.
- Topsoil shall be stored in an appropriate manner on site for the duration of the constructions works and protected for re-use on completion of the main site works.
- Top-soiling and landscaping shall take place as soon as finished levels are achieved in order to reduce weathering and erosion and to retain soil properties;
- Wheel wash facilities shall be provided close to the site entrance to reduce the deposition of mud, soils and other substances on the surrounding road network;

- The construction phase shall be monitored, in particular in relation to the following:
    - Protection of topsoil stockpiled for re-use and to prevent degradation;

  - Adequate protection from contamination of soils for removal;
  - Cleanliness of adjoining road network
  - Prevention of oil and petrol spillages; and
  - Dust control
- Extent of excavation works and depths for basement and roads shall be limited through design to minimise disturbance of the original soil and subsoil formations and to retain soil structure also to reduce bulk volume excavation which is just above the rock;
- Construction traffic shall be excluded from areas of soil to be retained to reduce its degradation;
- Extent of excavation works and depths for basement and roads shall be limited through design to minimize disturbance of the original soil and subsoil formations and to retain soil structure also to reduce bulk volume excavation. This will also help to reduce the volumes of material off-site and backfill material;
- Reusable excavated gravels, sands or rock shall be retained on-site for backfilling or use in landscaped areas or drainage purposes to reduce the total volume of imported material;
- Any soil/subsoil that is deemed to be contaminated will be stored separately to the clean and inert soil/subsoil. The material will be appropriately tested and classified as either non-hazardous or hazardous in accordance with the EPA publication 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous' using the HazWasteOnline application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the EC Council Decision 2003/33/EC.
- The appointed waste contractor will collect and transfer the unsuitable material and waste material as receptacles are filled. Any waste removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2008, the Waste Management (Collection Permit) Regulations 2007(as amended) and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended).
- Oil and fuel stored on site for construction shall be stored in designated areas within the site compound which shall be located in the open space immediately to the southwest of St Catherine's House. The oil and fuel storage tanks shall be proprietary self-bunded tanks.
- Refuelling of construction machinery shall be undertaken in designated areas located away from surface water drainage in order to minimise potential contamination impacts on remaining soils, geology and hydrogeology. Spill kits shall be kept in these areas in the event of spillages;
- Pouring of concrete including wash down and washout of concrete from delivery vehicles to shall be controlled in an appropriate facility located within the site compound which will be located in the open space immediately southwest of St Catherine's House.
- Surface water runoff during the construction works that may become contaminated with silt or other materials shall be treated/separated in a silt trap before disposal: and
- Surplus subsoil from excavations shall be properly stockpiled when being re-used or else taken off-site.

- Water Supply
  Appropriate construction methodology as outlined in Irish Water – Code of Practice for Water Infrastructure (IW-CDS-5020-03) which is available to download at www.water.ie/iw-documents/connections/Water-Code-of-Practice.pdf will be employed to ensure against contamination risk of the local water supply and all watermain connection works shall be carried out by the Irish Water accredited regional contractor.

  To avoid contamination of the local water supply and leaks in the system, all watermains shall be tested in accordance with Irish Water Code of Practice for Water Infrastructure.

- Wastewater Drainage
  To prevent the potential ingress of ground water, all new sewers shall be tested and surveyed and, where necessary, repaired in accordance with Irish Water Code of Practice for Wastewater prior to connection to the public system.

Any leakage from foul sewers shall be cordoned off and contaminated effluent and soil collect and disposed of by a licenced contractor.

The connection of the new foul sewer to the public combined sewer network shall be carried out by the Irish Water Regional Contractor.

- Surface Water Drainage
  Temporary dewatering measures shall only be employed where necessary and shall discharge to the surface sewer network only, to prevent untreated ground water discharge to the surface sewer system during construction of the basement, an on-site treatment system / silt trap shall be used to treat ground water as necessary to meet Irish Water or Dublin City Council temporary discharge licence

  To prevent the potential ingress of ground water, all new sewers shall be tested and surveyed and, where necessary, repaired in accordance with the Greater Dublin Area Regional Code of Practice for Drainage Works prior to connection to the public surface water system

  Road sweeping facilities shall be provided during the construction phase on a daily basis or more frequently if required.

  All oils/diesel stored on site for construction equipment shall be located within the site compound which will be located in the green area immediately southwest of St Catherine's House. The oil and fuel storage tanks shall be proprietary self-bunded tanks.

- Gas Supply
  The locations of the gas network infrastructure is shown on JJ Campbell and Associates Existing Site Plan Drawing C1, location for the Gas infrastructure within the site was taken from Gas Networks records and a GPR survey by Murphy Surveys, to help mitigate the risk of a gas main hit before construction starts. Prior to excavation, additional site investigations, including slit trenches, shall be carried out as a mitigation, in order to determine the exact location of the gas network in close proximity to the works area. This will ensure that the underground gas network will not be damaged during the construction phase.

  The following measures will be put in place to ensure that there are no interruptions to existing services and all services and utilities are maintained, unless agreed in advance with Gas Networks Ireland (GNI).

  All works in the vicinity of GNI infrastructure will be carried out in ongoing consultation with GNI and will be in compliance with all requirements GNI has, including procedures to ensure safe working practices are implemented when working near live gas mains.

- Telecommunication
  The locations of the telecommunication network infrastructure is shown on JJ Campbell and Associates Existing Services Drawing C1, location of the telecommunication infrastructure within the site was taken from the by Murphy Surveys Utility Survey drawings which will help mitigate the risk of a telecommunications cable hit before construction starts. Prior to excavation additional site investigations, including slit trenches, shall be carried out in order to determine the exact location of the telecommunications network in close proximity to the works area. This will ensure that the underground telecommunications network will not be damaged during the construction phase.

  The following measures will be put in place to ensure that there are no interruptions to existing services and all services and utilities are maintained unless agreed in advance with the relevant telecommunication provider.

All works in the vicinity of the telecommunications providers' infrastructure will be carried out in ongoing consultation with the relevant provider and will be in compliance with all relevant requirements or guidelines.

Where new services are required, application shall be made to the relevant provider for a connection permit where appropriate and will adhere to their requirements to ensure safety of installation.

It is considered that any likely impacts to overhead cables in the vicinity will be mitigated by.

- Electricity
  The locations of the high and low voltage ESB infrastructure is shown on JJ Campbell and Associates Existing Services Drawing C1, location of the telecommunication infrastructure within the site was taken from the by Murphy Surveys Utility Survey drawings which will mitigate the risk of damage to the electricity infrastructure before construction starts. Prior to excavation the Contractor will carry out additional site investigation, including slit trenches, in order to determine the exact location of the electricity network in close proximity to the works area. This will ensure that the underground electricity network will not be damaged during the construction phase

  The Contractor will be obliged to put measures in place to ensure that there are no interruptions to existing services and all services and utilities are maintained unless this has been agreed in advance with ESB Networks.

  All works in the vicinity of ESB Networks infrastructure will be carried out in ongoing consultation with ESB Networks and will be in compliance with any requirements or guidelines they may have including procedures to ensure safe working practices are implemented when working near live overhead/underground electrical lines.

Operational Stage:

In order to minimise the impact of the development's operational phase on the site's soils, geology and hydrogeology, the following mitigation measures should be implemented:

All waste generated by the everyday operation of the development should be securely stored within designated collection areas with positive drainage collection systems to collect potential run off. Operational waste should be removed from site using licensed waste management contractors; A project specific OWMP has been prepared and is included in Chapter 13, Waste Management.

The Operator / Buildings Manager of the Site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of the OWMP, ensuring a high level of recycling, reuse, and recovery at the Site of the proposed Development.

In addition, the following mitigation measures will be implemented:

The Operator / Buildings Manager will ensure on-Site segregation of all waste materials into appropriate categories, including (but not limited to):

Organic waste;

Dry Mixed Recyclables;

Mixed Non-Recyclable Waste;

Glass;

Waste electrical and electronic equipment (WEEE);

Batteries (non-hazardous and hazardous);

Cooking oil;

Light bulbs;

Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.);

Furniture (and from time-to-time other bulky waste); and

Abandoned bicycles.

The Operator / Buildings Manager will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials;

The Operator / Buildings Manager will ensure that all waste collected from the Site of the proposed Development will be reused, recycled, or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available; and

The Operator / Buildings Manager will ensure that all waste leaving the Site will be transported by suitable permitted contractors and taken to suitably registered, permitted, or licensed facilities.

The effective implementation of these mitigation measures will ensure the waste arising from the proposed development during the operational phase is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, and Regulations made thereunder, the Litter Pollution Act 1997, the EMR Waste Management Plan 2015 – 2021 and the DLRCC waste bye-laws. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

- Fuel storage areas, if required, should be within secured, self-bunded designated areas.

- Water Supply
  A water audit will be carried out by Irish Water to ensure the construction is fully in compliance with Irish Water Code of Practice and standard details prior to taking in charge. The site watermain system will be metered as directed by Irish Water to facilitate detection of leakage and prevent ongoing water loss.

- Wastewater Drainage
  A wastewater audit will be carried out by Irish Water to ensure the construction is fully in compliance with Irish Water Code of Practice and standard details prior to taking in charge. Areas to remain in the charge of the applicant (private side drainage) will be maintained on a scheduled basis as part of the building management plan.

- Surface Water Drainage
  The development has been designed in accordance with Dublin City Council Drainage Department's guidelines for planning applications, the recommendations of the Greater Dublin Regional Drainage Study (GDSDS) and Ciria Guide C753 – The SUDS Manual, to incorporate best practice Sustainable Drainage Systems. Sustainable Drainage Systems are a collection of water management practices that aim to align modern drainage systems with natural water processes. Integration of SuDS make urban drainage systems more compatible with components of the natural water cycle such as storm surge overflows, soil percolation, and bio-filtration, mitigating the effect human development may have on the natural water cycle, particularly surface runoff and water pollution trends.
  In the context of this site, the provision of the sustainable drainage systems including, green and blue roofs to intercept, filter and attenuate surface water at roof level, tree pits to intercept, filter and attenuate surface water at grade and attenuation storage devices to limit peak discharge rates to the public surface water sewer to pre-development flows, as well as eliminate surface water discharge to the combined sewer network, will result in a significant improvement on the public drainage system, from existing conditions. This will constitute a positive, imperceptible and permanent impact.

  All sustainable drainage systems will be either maintained by the applicant or, where taken in charge, by the local authority. Regular maintenance of the SuDS systems will maintain their function of treating surface water prior to discharge. This will prevent silt build-up and other contaminant discharge to the surface water network. Regular maintenance of the

attenuation storage and flow control device will maintain controlled discharge of stormwater in rainfall events and prevent inundation of the surface water system.

- Gas Supply
  The gas demands during the operational phase on the existing gas network are considered to be low due to the NZEB energy efficient design, thermal performance of the buildings and the use of renewable technology to reduce the heating demand. The apartment heating system is proposed to be exhaust air heat pump which does not require gas. The gas demand will be in the form of the ground floor retail units, and it is predicted that this gas demand will be small.

- Telecommunication
  The design and construction of the required Telecommunication services infrastructure in accordance with the relevant guidelines and codes of practice will mitigate any potential service outage impacts during the operational phase of the development, with the exception of any routine maintenance of the site services.

- Electricity
  The power demands during the operational phase on the existing electricity network are considered to be imperceptible due to the energy efficient design including LED lighting, high performance heating equipment.

  The design and construction of the required electrical services infrastructure in accordance with the relevant guidelines and codes of practice will mitigate any potential impacts during the operational phase of the development, with the exception of any routine maintenance of the site services.

  The likely impact from the operational phase on the electricity supply network is likely, of long term and positive effect as key infrastructure is provided to the neighbourhood.

  The indirect impact will allow ESB Networks to provide additional resilience in their network through the provision of new Sub-Stations (Assuming agreement with ESB Networks) which in turn should have a slight permanent impact of positive effect on the wider area's electrical infrastructure.

7. Hydrology

Ch 7 Hydrology has been prepared by Marcus Wallace, NCEA Dip Eng BE, MIEI, of JJ Campbell and Associates Consulting Engineers.

Chapter 7 of the EIAR considers & assesses the potential impacts Hydrology with regard to the proposed scheme. Measures to mitigate any likely significant adverse impacts of the proposed scheme are reviewed and analysed.

Methodology:

The methodology followed for this section is in accordance with the EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports (Draft) 2017, Advice Notes for Preparing Environmental Impact Statements (Draft) 2015 and 2018 DHPLG Guidelines on Environmental Impact Assessment for Planning Authorities and An Bord Pleanála. The following section outlines the legislation and guidelines considered, and the adopted methodology for preparing this chapter.

The following documents were reviewed in the preparation of this chapter.

- Environmental Impact Assessment Directive, i.e., Directive 2011/92/EU of the European Parliament and of the Council of 13 December 20113 on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
- Planning and Development Act, 2000, as amended;
- Planning and Development Regulations 2001, as amended;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2001 - 2018
- S.I. No. 293 of 1988: Quality of Salmon Water Regulations, resulting from EU Directive 78/659/EEC on the Quality of Fresh Waters Needing Protection or Improvement in order to Support Fish Life;
- S.I. No. 272 of 2009: European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended and S.I. No. 722 of 2003 European Communities (Water Policy) Regulations 2003, as amended – which implement EU Water Framework Directive (2000/60/EC) and provide for implementation of Groundwater Directive (2006/118/EC).
- S.I. No. 272 of 2009: European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended;
- S.I. No. 9 of 2010: European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended; and
- S.I. No. 296 of 2009: European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009, as amended.

- European Commission (2017), Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report.
- Circular Letter PL 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive);
- Environmental Protection Agency (2017): Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018) PPG1 - General Guide to Prevention of Pollution (UK Guidance Note);
- PPG5 – Works or Maintenance in or Near Watercourses (UK Guidance Note);

- CIRIA (Construction Industry Research and Information Association) 2006: Guidance on 'Control of Water Pollution from Linear Construction Projects' (CIRIA Report No. C648, 2006); and,
- CIRIA 2006: Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors. CIRIA C532. London, 2006.

Desktop Study:

- Dun Laoghaire-Rathdown County Council 2014 water quality test results for Carysfort/Maretimo Stream
- Irish Water record drawings of surface water, foul sewers and water mains

- Environmental Protection Agency database (www.epa.ie);
- Environmental Protection Agency River Catchment Mapper (www.catchments.ie);
- Geological Survey of Ireland - National Draft Bedrock Aquifer map;
- Geological Survey of Ireland - Groundwater Database (www.gsi.ie);
- Met Eireann Meteorological Databases (www.met.ie);
- National Parks & Wildlife Services Public Map Viewer (www.npws.ie);
- Water Framework Directive Map Viewer (www.catchments.ie);
- Geological Survey of Ireland - Groundwater Body Characterisation Reports;
- OPW Indicative Flood Maps (www.floodinfo.ie);
- Environmental Protection Agency – "Hydrotool" Map Viewer (www.epa.ie);
- CFRAM Preliminary Flood Risk Assessment (PFRA) maps (www.cfram.ie);
- Department of Environment, Community and Local Government on-line mapping viewer (www.myplan.ie).
- Hydrological survey data associated with historical projects on the site
- Site Specific Flood Risk Assessment Report by JBA Consulting
- Main Drainage Report by JJ Campbell and Associates

Potential Impact of the Proposed Development

Construction Stage:

Phase 1 of the development will involve demolition of remaining existing buildings and removal of impermeable hardstanding areas and all existing surface water and foul drains serving the existing buildings. This phase will have an initial temporary benefit to the environment by reducing impermeable areas and surface after run-off flows as the previous building and car-park was not attenuated.

Removal of trees, as identified in consulting arborists "The Tree File" report and drawings, will follow along with stripping of the existing topsoil from the site, including existing green-field and open space areas. Excavation of the made ground/fill and lower soil/subsoil layers will then follow for depths up to 5 metres at buildings A1 and B1 to construct the basements and attenuation tanks. The removal of the overburden and replacement with an impermeable basement will remove the ability of the lands to recharge and infiltrate surface water run-off from basements car parks under the footprint of building A1 to B4 and D1. Storm water will be collected on the green roofs of these blocks, attenuated and then discharged positively to the culverted section of the Carysfort/Maretimo stream.

The development will require new surface water drainage and foul drains to serve the development. These will all be gravity sewers laid in the road network and will be slung drains within the basements serving the buildings and podium areas. The development will also provide a number of surface water storage tanks to meet the attenuation requirements of the GDSDS to protect existing flooding

regimes. Due to the type of tank and depth into the clay and low infiltration rates, it will not be possible to design them to infiltrate to the ground. The majority of surface water collected on the site will, therefore, be positively discharged from the site to the Carysfort/Maretimo Stream via attenuated outlets.

The development will require a new metered water supply connection to the Irish Water water-main network to replace the existing. Impact on the water supply and existing water-main network will be imperceptible. All old and possibly leaking water pipework will be replaced with fully welded and tested pipework.

The development's construction workers will generate additional foul effluent which will be discharged to the local foul sewer network. This will place minimal additional loading (assume 100 workers @ 0.0007l/s = 0.07l/s) on the network and downstream Irish Water treatment facility. This is off-set by the previous school buildings and accommodation buildings which are to be demolished.

The existing 900Ø and 1200Ø Irish Water combined sewers on the north west corner of the site will be diverted to allow construction of the basement under blocks A1 and B1. Diversion will have no impact on the water environment.

During construction there is increased risk of accidental pollution and contamination of the Carysfort/Maretimo Stream from spills relating to re-fuelling, oils from construction machinery/vehicles and construction materials/silted run-off and concrete/cement.

Operational Stage:

Once the development is completed the operational impacts on the hydrology aspects of the site would be minimal. The biggest risk item is cross contamination of surface water from the operational phase of the development from accidental oil spillages, refer to the mitigation section below for proposed remedial issues.

During the operational phase of the development the following potential risks to surface water have been identified:

- Increased impermeable surface area will reduce local groundwater recharge and potentially increase surface water runoff (if not attenuated to greenfield runoff rate).
- Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g., along roads and in driveway areas).
- Foul waste and surface water discharging to ground through leakage in the drainage systems.
- Contamination risks arising from development use / leaking pipes / contaminated surface water runoff.

Potential Cumulative Impacts

Surface Water:

The site proposals to treat surface water will aim to replicate greenfield flow rates via a suite of SuDS measures and therefore the impact on hydrology environment as a result of the wider developments in the area are considered to be long term and imperceptible. Provided the mitigation measures identified in this chapter of the EIAR are effectively implemented, then the cumulative impact of the proposed St. Teresa's SHD with other projects in the vicinity is predicted to be neutral.

Foul Water Drainage:

The existing usage for the site was a school and on site sleeping quarters for the clergy, there is little additional cumulative effects on the Foul Water Network in the surrounding area, other than this proposed development.

Mitigation Measures

Construction Stage:

To minimise the impact of the construction phase on the water environment, mitigation measures will be effectively implemented. These construction phase mitigation measures include the following:

- Good construction practices – such as using wheel washes and dust suppression on site roads, and regular plant maintenance – will ensure minimal risk to the water environment. The Construction Industry Research and Information Association (CIRIA) provides guidance on the control and management of water from construction sites (Control of Water Pollution from Construction Sites, guidance for consultants and contractors, CIRIA 2001). This will ensure that surface water arising during the course of construction activities will contain minimum sediment.

- The construction phase shall be monitored, in particular in relation to the following:

    - Management of run-off from the site including pumping/dewatering
    - Adequate protection measures implemented to prevent contamination of run-off prior to discharge as listed below;
    - Prevention of oil and petrol spillages

- Oil and fuel stored on site for construction will be stored within the site compound. The location of the site compound and the tanks are set out in the Construction and Environmental Management Plan [CEMP] which is appended to this EIAR. The tanks shall be proprietary self-bunded twin wall tanks.

- Only designated trained and competent operatives will be authorised to refuel plant on site.

- Mobile measures such as drip trays, spill kits and fuel absorbent mats will be used during all refuelling operations.

- Refuelling of construction machinery shall be undertaken in designated areas within the site compound (which is located away from surface water drainage in order to minimise potential contamination impacts on the water environment).

- Spill kits shall be kept in these areas in the event of spillages.

- No washing out of any plant used in concrete transport or concreting operations will be allowed on site.

- Where concrete is delivered on site, only the chute is to be cleaned, using the smallest volume of water possible. No discharge of cement-contaminated waters to the construction phase drainage systems or directly to any artificial drain or watercourse will be allowed. Wash down of chute shall be at the bunded area in the site compound.

- No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements will take place.

- Surface water runoff during the construction works that may become contaminated with silt or other materials shall be treated/separated before disposal by discharging into proprietary silt traps.

- Dewatering measures shall only be employed where necessary.

- Basement excavations shall be kept to a minimum to reduce impacts to the groundwater. To allow the excavation of the basements, watertight secant piles or trench fill construction shall be used which will prevent the ingress of ground water into the excavations.

- In the unlikely event of groundwater being encountered during the construction phase, mitigation measures will include dewatering by pumping to silt trap prior to discharge.

- Other measures will include excluding contaminating materials such as fuels and hydrocarbons from vulnerable groundwater areas.

- No pumped construction wastewater / storm water will be discharged directly into any local watercourse.

- A discharge monitoring inspection programme shall be put in place, which will safeguard water quality.

- Surface water collecting in excavations shall be pumped to proprietary silt traps, where silt removal will be facilitated prior to discharge to further reduce the possibility of contaminants entering the local water system. Periodic testing of the surface water of contaminants entering the local water system.

- Any hazardous construction materials shall be stored appropriately in the site compound to prevent contaminating run-off or groundwater.

- The extent of sub-soil and top-soil stripping shall be minimised to reduce the rate and volume of the run-off during construction until the topsoil and vegetation are replaced

- Removal of existing long-term flood storage above ground and part replacement with managed storage in tanks and tank sewers to provide the same quantum of flood storage volume at 30 year and 100 year return events.

Operational Stage:

To minimise the impact of the development's operational phase on the water environment, the following mitigation measures should be implemented:

- Surface water system shall incorporate SuDS and designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) to reduce impact of the development on the existing environment.

- Surface water discharge rates shall be limited to existing Green-field run-off rates (i.e., Qbar Net, 8.17l/s) to prevent increased flood risk.

- Water conservation methods, such as the use of low flush toilets and low flow shower heads, shall be incorporated into the development to reduce water resource volumes and related treatment.

- A regular maintenance and inspection programme of the flow control devices, attenuation storage facilities, gullies and petrol interceptor will be implemented during the Operational Phase, so as to ensure the proper working of the development's networks and discharges.

- All waste generated by the operation of the development shall be securely stored within designated collection areas with positive drainage collection systems to collect potential run off.

- Operational waste shall be removed from site using licensed waste management contractors. A project specific OWMP has been prepared and is included as an appendix to Chapter 13, Waste Management.

- The Operator / Buildings Manager of the Site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – the ongoing implementation of the OWMP, ensuring a high level of recycling, reuse, and recovery at the Site of the proposed Development.

In addition, the following mitigation measures will be implemented:

Site segregation of all waste materials into appropriate categories, including (but not limited to):
Organic waste;
Dry Mixed Recyclables;
Mixed Non-Recyclable Waste;
Glass;
Waste electrical and electronic equipment (WEEE);
Batteries (non-hazardous and hazardous);
Cooking oil;
Light bulbs;
Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.);

All waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials;
All waste collected from the site of the proposed development will be reused, recycled, or recovered, where possible, with the exception of those waste streams where appropriate facilities are currently not available.
All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted, or licensed facilities.

The effective implementation of these mitigation measures will ensure the waste arising from the proposed development during the operational phase is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, and Regulations made thereunder, the Litter Pollution Act 1997, the EMR Waste Management Plan 2015 – 2021 and the DLRCC waste bye-laws. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

- Foul effluent to be collected and discharged from the site via properly constructed sewers to the public foul sewer system.

  A wastewater audit will be carried out by Irish Water to ensure the construction is fully in compliance with Irish Water Code of Practice and standard details prior to taking in charge.
  Areas to remain in the charge of the applicant (private side drainage) will be maintained on a scheduled basis as part of the building management plan.

- The development has been designed in accordance with Dublin City Council Drainage Department's guidelines for planning applications, the recommendations of the Greater Dublin Regional Drainage Study (GDSDS) and Ciria Guide C753 – The SUDS Manual, to incorporate best practice Sustainable Drainage Systems.

- Sustainable Drainage Systems are a collection of water management practices that aim to align modern drainage systems with natural water processes. Integration of SuDS make urban drainage systems more compatible with components of the natural water cycle such as storm surge overflows, soil percolation, and bio-filtration, mitigating the effect human development may have on the natural water cycle, particularly surface runoff and water pollution trends.

In the context of this site, the provision of the sustainable drainage systems including, green and blue roofs to intercept, filter and attenuate surface water at roof level, tree pits to intercept, filter and attenuate surface water at grade and attenuation storage devices to limit peak discharge rates to the public surface water sewer to pre-development flows, as well as eliminate surface water discharge to the combined sewer network, will result in a significant improvement on the public drainage system, from existing conditions.

- All sustainable drainage systems will be regularly maintained. Regular maintenance of the SuDS systems will ensure the effective operation of their function of treating surface water prior to discharge. This will prevent silt build-up and other contaminant discharge to the surface water network. Regular maintenance of the attenuation storage and flow control device will maintain controlled discharge of stormwater in rainfall events and prevent inundation of the surface water system.

- Surface water run-off from the development to be collected by an appropriately designed system with contaminants removed prior to discharge e.g., via a light liquids separator.

- Collection networks shall be regularly monitored, maintained, and serviced.

8. 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 St Theresa's, Temple Hill, Monkstown, Blackrock, Co. Dublin.

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are primarily due to local road traffic.

The noise impact assessment has focused on the potential outward impacts associated with the construction and operational phases of the proposed development on its surrounding environment.

During the main construction phase involving site clearance, demolition and building construction works, the assessment has determined that, while there is potential for temporary significant to very significant impacts while works are ongoing near the closest sensitive receivers adjacent to the site, the construction noise criteria can be complied with during the majority of the programme. A schedule of good practice measures including noise limits and screening will all be employed to reduce any noise and vibration impacts during this phase.

During the operational phase, the outward noise impact to the surrounding environment will include additional traffic on surrounding roads and plant noise from plant items serving the development. The impact assessment has concluded that additional traffic from the proposed development will have an imperceptible impact on the surrounding noise environment and that plant items will be designed to ensure any noise and vibration impacts during this phase will not exceed the recommended limit values. The resulting impact is of neutral, long-term and imperceptible.

Inward noise from the surrounding environment has been assessed and mitigation measures proposed where necessary to ensure internal noise targets are achieved.

9. Air Quality and Climate

AWN Consulting Ltd has assessed the likely air quality and climate impacts associated with the construction and operational phases of the proposed development at Temple Hill, Monkstown, Blackrock, Co. Dublin.

In terms of the existing air quality environment, data available from similar environments indicates that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns and particulate matter less than 2.5 microns (PM_{10}/$PM_{2.5}$) are, generally, well within 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 estimate that Ireland had total GHG emissions of 59.90 Mt CO_2eq in 2019 with 45.71 MtCO_2eq of emissions associated with the ESD sectors for which compliance with the EU targets must be met. This is 6.98 Mt CO_2eq higher than Ireland's annual target for emissions in 2019. Emissions are predicted to continue to exceed the targets in future years.

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 on the local roads associated with the proposed development.

The surrounding area was found to have a medium sensitivity to dust soiling and low sensitivity to dust related human health impacts. There is an overall medium risk of potential dust soiling impacts and low risk of human health impacts as a result of the proposed construction works. Any potential dust impacts can be mitigated through the use of best practice and minimisation measures which are outlined in Chapter 9. Therefore, dust impacts will be short-term and imperceptible at all nearby sensitive receptors. It is not predicted that significant impacts to climate will occur during the construction stage due to the nature and scale of the development. Construction stage impacts to climate are predicted to be short-term, neutral and imperceptible.

The changes in traffic volumes associated with the operational phase of the development were not substantial enough the meet the assessment criteria requiring a detailed air quality and climate modelling assessment. It can therefore be concluded that levels of traffic-derived air pollutants resulting from the development will not exceed the ambient air quality standards and the impact of the development in terms of NO_2 and PM_{10} emissions is long-term, neutral and imperceptible. The proposed development is not predicted to significantly impact climate during the operational stage and will not contribute significantly to Ireland's obligations under the EU Targets and emissions ceilings set out by Directive (EU) 2016/2284 "*On the Reduction of National Emissions of Certain Atmospheric Pollutants and Amending Directive 2003/35/EC and Repealing Directive 2001/81/EC*". Impacts to climate are deemed neutral, imperceptible and long-term with regard to CO_2 emissions.

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 is likely to be short-term, localised, negative and imperceptible with respect to human health. Operational phase predicted concentrations of pollutants are predicted to be significantly below the EU standards, the impact to human health is predicted to be imperceptible, neutral and long term.

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

10. Wind and Microclimate

Introduction

Wind and Micro-climate assessment have been carried out to identify the possible wind patterns around the proposed development Lands at 'St. Teresa's' Temple Hill, Monkstown, Blackrock, Co. Dublin considering mean and peak wind conditions typically occurring in Dublin. The criteria of Lawson's Wind Comfort and Distress have been adopted to define if a specific area of the development could be comfortable and safe to pedestrians for its designated activity (i.e., standing/walking/strolling).

Results of the wind analysis have been discussed with the design team so as to configure the optimal layout for proposed Development for the objective of achieving a high-quality environment for the scope of use intended of each areas/building (i.e., comfortable and pleasant for potential pedestrian) and without compromising the wind impact on the surrounding areas and on the existing buildings.

Methodology

The wind modelling study has been performed through an Advanced Computational Fluid Dynamics (CFD) analysis; this numerical methodology simulates the movement of wind within the prescribed area. The simulations have been carried out using the concept of Large Eddy Simulation (LES) and Reynolds Average Navier-Stokes (RANS).

A total of 18 different wind scenarios have been studied considering variation of wind magnitude and directions in line with their frequency of occurrence based on 30 years of historical weather data. An exceedance of occurrence of 5% of the duration was considered in line with the Comfort and Distress criteria. Through the wind assessment it has been possible to highlight, at design stage, areas of concern in terms of downwash/funnelling/downdraft/ and to identify critical flow accelerations that could potentially occur.

The assessment has been carried out considering the impact of wind on the following configurations:

- The "Existing Receiving Environment (Baseline)": in this case the assessment has considered the impact of the local wind on the existing area / buildings prior to construction of the proposed development. For this assessment, a statistical analysis of 30 years of historical weather wind data has been carried out to find the most critical wind speeds and directions and the frequency of occurrence of the same.

- The "Potential Impact": in this case the assessment has considered impacts of wind on the existing environment area, the proposed Development, and its immediate vicinity, with the aim to identify potential impacts on future nearby buildings. For this scenario, The Development will introduce no negative wind effect on adjacent or nearby developments within its vicinity. Wind modelling of future phases around this development will need to be performed for all future phase developments.

Potential and Cumulative Impacts

The Potential and Cumulative Impacts of the Proposed Development have considered the impact of wind on the existing area including the proposed Development. For these scenarios, the analysis has been used to identify the critical areas of the proposed development that requires implementation of mitigation measures.

CFD modelled results of the development scheme showed that:

- The Proposed development has been designed in order to produce a high-quality environment that is attractive and comfortable for pedestrians of all categories. To achieve this objective, throughout the design process, the impact of wind has been considered and analysed, in the areas where critical patterns were found, the appropriate mitigation measures were introduced in the form of landscaping.

- As a result, wind flow speeds at ground floor are shown to be within tenable conditions. Some higher velocity indicating minor funnelling effects are found near the South-West side of the development. However, as shown in the Lawson map, the area can be utilised for the intended use (walking).

- Regarding the balconies, higher velocities can be found for some directions, only on some of the balconies. However, these velocities are below the threshold values defined by the acceptance criteria and therefore are not critical for safety.

- Tree planting is present all around the development including the corners of the Blocks and this has a positively mitigating effect for any critical wind impact. Thus, it can be concluded that at ground floor good shielding is achieved everywhere.

- The proposed development does not impact or give rise to negative or critical wind speed profiles at the nearby adjacent roads, or nearby buildings. Moreover, in terms of distress, no critical conditions were found for "Frail persons or cyclists" and for members of the" General Public" in the surrounding of the development.

- The proposed development does not impact or give rise to negative or critical wind speed profiles at the nearby adjacent roads, or nearby buildings.

- During Proposed development construction phase the predicted impacts are classified as negligible

Mitigation Measures

The proposed mitigation measures for the ground floor of this development are provided by the landscaping which surround the development and that creates a reduction in the wind vorticity, making it possible to reduce incoming velocities and to mitigate some funnelling and recirculation effects.

Residual Impacts

The impacts of implementing mitigation measures such as tree planting will result in further shielding of public spaces and pedestrian footpaths from wind. This impact is a positive effect.

11. Landscape and Visual Impact Assessment

Article 1 of the *European Landscape Convention* defines landscape as *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*. The purpose of the Landscape and Visual Impact Assessment is to assess how the existence of a proposed development might change how a surrounding area might be 'perceived by people' visually.

Assessment of visual effects, has three main parts:

1. Analysis of the likely extent of visibility of a proposed development
2. Description of the visual sensitivity of the receiving environment and its consequent capacity to absorb development

3 Assessment of the objective extent of change in the visual character of the receiving environment likely to arise from the existence of the proposed development, and of the likely response of observers to that change.

The site of the proposed development is bounded by Temple Road to the northeast, St Vincent's Park to the southeast, Rockfield Park to the southwest, and St Louise's Park, the Alzheimer Society of Ireland and Barclay Court to the northwest. The site of the proposed development also includes parts of the road junction between Temple Road, Temple Hill, Temple Park Avenue, Newtown Avenue and St Vincent's Park.

The process of development has been changing the urban landscape of Blackrock and its surroundings for the last 300 years and continues to do so. Each new development brings change. Development on the lands of St Teresa's is part of this continuous process.

While the application site is in an area which includes developments of modest scale at St Vincent's Park, Craigmore Gardens and Newtown Villas, the visual environment of Blackrock and the N31 road corridor includes development of a variety of different scales, with many of the buildings in the area, both recent and historic, being quite substantial in scale. It is in the context of a surrounding built environment and open spaces of different scales that the likely visual impact of the proposed development is assessed.

The existence of the proposed development will result in 'significant' changes in the visual character of the existing baseline receiving environment. However, given that:

- the lands of St Teresa's are zoned for residential development; and
- the new development will form part of a sequence of large scale modern development in existence, under construction and envisaged to extend along the N31 road corridor;

the landscape and visual impact of the proposed development of buildings rising to ten storeys along the N31 road corridor may be considered to be consistent with existing and emerging trends in the area. Given this, although the changes that will be brought about by the existence of the proposed will be significant, some observers may regard the landscape and visual impact of the proposed development from many locations in the area to be 'moderate' in extent.

12. Material Assets - Traffic and Transport

NRB Consulting Engineers Ltd were appointed to address the Traffic/Transportation issues associated with a planning application by Oval Target Ltd for a Residential Apartment Development on LAP-Zoned Lands at Temple Hill, Monkstown, Blackrock, Co Dublin.

Being located adjacent a busy Bus Corridor, with high quality pedestrian and cyclist provision, and within a short walking distance of both Seapoint and Blackrock Dart Stations, the site is very well placed to take advantage of non-car modes of travel to support the increased scale of development.

The Transportation Assessment Report (TA) prepared by NRB assesses the impact of 493 Apartment units on the same site, supported by an ancillary Creche and small Café. The Report addresses the Traffic and Transportation issues associated with the revised proposal, the capacity of the existing road network and the impact of the increased scale of development locally. It has been prepared in accordance with TII's Traffic & Transportation Assessment Guidelines and addresses the worst case traffic impact of the proposal.

The TA addresses the adequacy of the existing road network to safely and appropriately accommodate the worst case vehicular demands with the development fully occupied, taking account of the existing traffic demands locally and the proposed new access.

Comprehensive classified turning movement surveys of the existing affected roads and junctions were originally carried out during the weekday AM and PM Peak Hours in 2017. These surveys were supplemented by additional validation traffic surveys undertaken in October 2020, due to DLRCC implemented changes at the adjacent traffic signal controlled junction. These traffic surveys together formed the basis of the study. The analysis includes the effects of the existing traffic on the local roads and assesses the impact during the traditional peak commuter peaks periods. The assessment also takes account of the committed development locally.

A separate assessment was undertaken and included to determine and prove the ability of the proposed traffic signal controlled junction to accommodate the development of the entire St Catherines LAP lands to the south.

The Transportation Assessment confirms that the road network and the amended vehicular access junction are more than adequate to accommodate the worst case traffic associated with the increased scale of development. The assessment also confirms that the construction and full occupation of the scheme will have a negligible and unnoticeable impact upon the operation of the adjacent road network.

Detailed analysis also confirms that there is adequate capacity in the proposed access junction to accommodate the additional demands associated with the development of the entire St Catherines LAP lands including those to the south of the subject site.

A comprehensive assessment of cycle and car parking provided, in terms of the requirements of the National Apartment Guidelines, has been undertaken and concludes that the quantum provided is entirely adequate.

The assessment includes a Preliminary Travel Plan for the site which is included within the TA as a separate report as ***Appendix H***.

We have prepared a Statement of Consistency with DMURS and confirm that the internal layout is compliant with the requirements, included as a separate report within the TA as ***Appendix I***.

An independent Quality Audit, including a Stage 1 Quality & Road Safety Audit, together with the Designer Feedback form, has been undertaken and is included within the TA as ***Appendix J***.

Based on our studies, we conclude that there are no adverse traffic/transportation capacity or operational issues associated with the construction and occupation of the proposed 493 Unit

Residential apartment development, with ancillary creche and café, that would prevent planning permission being granted by An Bord Pleanála**.**

13. Material Assets - Waste Management

AWN Consulting Ltd. carried out an assessment of the potential impacts associated with waste management during the construction and operational phases of the proposed development. The receiving environment is largely defined by Dun Laoghaire Rathdown County Council as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

During the construction phase, typical C&D waste materials will be generated which will be source segregated on-site into appropriate skips/containers, where practical and removed from site by suitably permitted waste contractors to authorised waste facilities. Where possible, materials will be reused on-site to minimise raw material consumption. Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site. Excavation of the basements and construction of new foundations along with the installation of underground services will require the excavation of topsoil, made ground, fill, sub-soil and clay (45,000m^3). It is currently envisaged that there will be limited chances for reuse of material onsite. While there we be some material retained and reused onsite for landscaping (1,500m^3), the majority of excavated material, will need to be removed offsite. Excavated material which is to be taken offsite will be taken for offsite reuse, recovery, recycling and/or disposal.

A carefully planned approach to waste management and adherence to the site-specific Construction and Demolition Waste Management Plan (Appendix 13.1) during the construction phase will ensure that the effect on the environment will be **short-term, neutral** and **imperceptible**.

During the operation phase, waste will be generated from the residents as well as the commercial tenants. Dedicated communal waste storage areas have been allocated throughout the development for residents. The residential waste storage areas have been appropriately sized to accommodate the estimated waste arisings in both apartments and shared residential areas. The commercial tenants have been allocated their own individual waste storage areas. The waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

An Operational Waste Management Plan has been prepared which provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, mixed non-recyclable waste and glass as well as providing a strategy for management of waste batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil and furniture (Appendix 13.2). The Plan complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Provided the mitigation measures outlined in Chapter 13 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be **long-term, neutral** and **imperceptible**.

14. Archaeological and Cultural Heritage

Introduction

This chapter of the EIAR aims to articulate the potential significance and sensitivity of the existing archaeological environment and to evaluate the likely impacts of the proposed development on this environment.

Methodology

The production of this chapter was informed by a desk-based assessment of the known archaeological and settlement history of the immediate area, and two walk-over site inspections. The scheme was then examined in terms of its physical impact on the ground.

Potential Impacts

There are no known archaeological monuments within the boundary of the proposed development site, where prior to the development of *Craigmore* (later *St. Teresa's*), the site would probably have accommodated open grazing.

Mitigation Measures

Established mitigatory measures involve the excavation under licence of a series of test trenches across the site. Should archaeological deposits be encountered, with the agreement of the statutory authorities an area surrounding the material will be opened and the material excavated by hand.

Should there be no archaeological material recorded over the programme of test trenching, a monitoring brief conditioned over the course of development may establish the presence of archaeological deposits on the site. Where archaeological material is found to be present, development work will cease across the area identified and any deposits will be excavated by hand, subject to agreement with the statutory authorities. In either case the archaeological report will be lodged with the planning authority for compliance.

Residual Impacts

There are no specific residual impacts following the implementation of the archaeological mitigation measures outlined above.

15. Architectural and Built Heritage

This chapter assesses the impact of the proposed development on the Architectural Heritage of the site and of the surrounding Architectural Heritage, specifically Protected Structures, Architectural Conservation Areas, and candidate Architectural Conservation Areas.

The Chapter describes the Receiving Environment and the History of the Area. It describes the three Protected Structures on site and the many attached and detached outbuildings of the main house. Most have these have been recently demolished, but they are described for record purposes. The current extent of the current buildings is illustrated.

The main house and the lodge are described in some detail.

The nature and extent of the proposed development is described

The potential Impact on the Architectural Heritage is described, and mitigation measures detailed. A detailed Method Statement for the deconstruction and relocation of the lodge is given.

Predicted impacts on the Protected Structures are described and monitoring methodologies for Construction Phase and post-completion noted.

16. Daylight and Sunlight

Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) assesses the Sunlight and daylight impact of the proposed residential proposed St. Teresa's, Temple Hill, Monkstown, Blackrock, Co. Dublin development. Integrate Environmental Solutions LTD (IES) Consulting have been appointed to assess this impact and have undertaken the analysis.

The aim of the analysis is to record and analyse the following impacts:

- **Shadow Analysis** - A visual representation analysing any potential changes that may arise from the proposed development on to the neighbouring existing developments.
- **Daylight Analysis of Existing Buildings** - via consideration of Vertical Sky Component (VSC).
- **Annual Probable Sunlight Hours** - via consideration of sunlight received to existing properties (where required) – and the proposed development
- **Sunlight to the Existing Neighbouring & Proposed Amenity Spaces** – via sunlight hours simulation on the 21st of March.
- **Average Daylight Factors**: via consideration of the Average Daylight Factor (ADF) for the proposed development.

Methodology

In considering the development potential and the quality of amenity for the surrounding properties as well as for the new development once the scheme has been implemented, the assessment methodology has been based on recommendations outlined in the BRE 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" by Paul Littlefair, 2011 sometimes referred to as BRE Digest 209 and the "BS 8206-2:2008: Lighting for Buildings - Part 2: Code of Practice for Daylighting". The analysis was completed using IES VE software.

These guidelines provide the criteria and methodology for calculations pertaining to daylight and sunlight and is the primary reference for this matter. The guide gives simple rules for analysing sites where the geometry of the surroundings is straightforward, supplementing them with graphical methods for complex sites.

However, it is important to note that the performance targets which are included should be used with a degree of flexibility as per the extract below from the BRE Guide:

"*The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numeral guidelines these should be interpreted flexibly because natural lighting [and sunlight] is only one of the many factors in site layout design.*"

The assessment of impacts on daylight and sunlight access referred to the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* prepared by the Environmental Protection Agency (2017). The list of definitions given below is taken from Table 3.3 in this document. Some commentary is also added below on what these definitions might imply in the case of impact on sunlight access.

Imperceptible Impact: An effect capable of measurement but without noticeable consequences.

Not significant: An effect which causes noticeable changes in the character of the environment but without significant consequences.

Slight Impact: An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.

Moderate Impact: An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

Significant Impact: An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.

Very Significant: An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.

Profound Impact: An effect which obliterates sensitive characteristics.

The range of possible impacts listed above are referred to when discussing the results of the sunlight analysis.

Potential Impacts

In relation to daylight and sunlight access to the proposed development, the longer-term cumulative impacts are considered not significant as the daylight and sunlight assessment has shown that the vast majority of rooms provided as part of the development comply with the BRE/ BS 8206-2:20 Guidelines for daylight within the proposed development.

In relation to daylight and sunlight access to the existing properties, the longer-term cumulative impacts are considered not significant as the daylight and sunlight assessment has shown that the vast majority of properties comply with the BRE/ BS 8206-2:20 Guidelines for daylight within the proposed development.

Mitigation Measures

Imperceptible impact with neutral, long-term effect is expected in relation to the daylight and sunlight levels experienced by the future inhabitants of the proposed site and to the existing inhabitants of the adjoining sites, therefore no remedial or reductive measures are considered to be required.

Residual Impacts

Imperceptible impact is expected in relation to daylight and sunlight access experienced by the future inhabitants of the proposed development and to the existing inhabitants of the adjacent buildings. No remedial or mitigation measures are considered to be required, therefore, there will be no residual impacts during the operational stage in respect of daylight and sunlight.

17. Risks of Major Accidents and/or Disasters

Chapter 17 of the EIAR will identify the types of major accidents / natural disasters that the project is vulnerable to; whether major accidents or natural disasters and the responses to these give rise to significant adverse environmental impacts; the nature of these impacts and the measures needed to prevent or mitigate the likely adverse impact of such events on the environment.

The proposed development has been designed and will be constructed in line with best practice. Major accidents and / or natural disasters are therefore very unlikely. The identification, control and management of risk is an integral part of the design. The following section set outs a risk analysis, which addressed the identification, likelihood and consequence of major accidents and / or natural disasters.

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

Table 17.1 - Classification of Likelihood (Extracted from DoELG – A framework for major emergency management guidance document 1: A guide to Risk Assessment in Major Emergency Management 2010

The site is not in an area prone to natural disasters. Risks were reviewed through the identification of plausible risks in consideration with relevant specialists. The risks set out below are considered the most relevant potential risks.

Category	Risk Factor Type	Likelihood
Weather	Storms/Snow	3
Hydrological	Risk from Flooding	1
Geological	Made ground	3
Road	Traffic Accident	3
Industrial Accident	Seveso Site	1
Explosion	Natural Gas	1

Fire	Construction and Operation	3
Building Collapse	Structural Failure	1
Hazardous Substance Escape	Construction	2
Pollution	Construction	3

The likely significant effects are set out below.

Do Nothing Scenario

Where the proposed development does not proceed, it is likely that the permitted development of 294 no. residential unit (ABP303804-19), would be implemented with the permission within 10 years. The subject site has been zoned to fulfil a specific housing need by 2023. As such, a do-nothing scenario would mean that this objective of the Development Plan would not be met, and some 493 no. households would remain uncatered for. As such, the impact of the development not proceeding on population profile and trends in the area would be negative.

Furthermore, the positive nature of the development in terms of its close proximity to a number of centres of employment, and therefore the associated increase in sustainable commuter trips in the area, would be lost.

Construction Phase

The proposal will involve the management of invasive species on site; the excavation of a basement level; traffic management; use of equipment and machinery on site; and scaffolding.

Hazardous materials used during construction will be appropriate stored so as not to give rise to a risk of pollution.

In the event of storms or snow, construction activity shall be halted, and the site secured in accordance with any site risk assessments prepared for adverse weather conditions.

Operational Phase

The proposal provides for a residential development consisting of 493 units, a residential tenant amenity space, a creche and a café/restaurant.

The main risk associated with operational stage is fire. The proposed uses are considered normal hazard fire risks. The uses do not include any hazards, which would be regarded as presenting an increased fire risk. The risk for fire will be that all fire safety measures shall comply with the requirements of Part B (Fire) Of the Second Schedule of the Building Regulations 1997-2017.

The cleaning of windows in the buildings will be undertaken by a specialist contractor and risks of accidents will be minimised as a result.

There are no exceptional risks associated with technology.

The Flood Risk Assessment enclosed herewith sets out the following flood risk analysis for operational stage:

Source	Pathway	Receptor	Likelihood	Consequence	Risk	Mitigation Measure	Residual Risk
Fluvial	Carysfort-Maretimo which runs adjacent to the sites Northern Boundary.	Proposed development	Low	Moderate. water ingress into the building and basements	Low	None	Low
Coastal	Site is located 300m from the Coastline	Proposed development	Moderate	Low	Low	None	Low
Surface Water (Pluvial)	Private and Public Drainage Network	Proposed development	Moderate	Low	Low	Appropriate drainage design, over land flood routing and setting of appropriate floor levels	Low
Human Mechanical Error (Pluvial)	Failure of SuDS measures (e.g., Hydrobrake failure)	Proposed development	Moderate	Medium	Medium	Additional SuDs measures have been incorporated into the design.	Low
Ground Water	Rising groundwater levels within the site	Proposed development	Moderate	Moderate. Ground water Ingress into Basement	Medium	To minimise the risk to the development, all finish floor levels, thresholds or basement entrances should be raised by 100mm from the surrounding hardstanding areas to risk of inundation.	Medium

As the flood risk from all sources can be mitigated, reducing the flood risk to low or very low, the proposed development is considered acceptable in terms of flood risk.

Risk No.	Risk Event	Possible Cause
Construction Stage		
1.	Accidents during construction	Traffic Working at Height Fire Ground Water Pollution
2.	Adverse Weather	Snow/Storms/Poor Weather System
Operational Stage		
3.	Fire Following Occupation	Inappropriate Use of Electrical Appliances
4.	Falls	Falling from Roof Gardens Window Cleaning
5.	Flooding	Tidal Fluvial Pluvial Ground Water Human/Mechanical Error

18. Interactions

Consideration of impact interactions has been addressed during the preparation of the environmental assessment in each of the individual impact chapters. A detailed analysis of how each environmental factor is impacted holistically is addressed herein.

Interaction	Population & Human Health		Biodiversity		Land, Soils, Geology, Hydrogeology and Utilities		Noise & Vibration		Air Quality & Climate		Wind & Microclimate		Landscape & Visual Impact Assessment		Material Assets - Traffic & Transport		Material Assets - Waste Management		Archeological & Cultural Heritage		Architectural & Built Heritage		Daylight & Sunlight	
	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational	Construction	Opeational
Population & Human Health					✔				✔								✔		✔					
Biodiversity																								
Land, Soils, Geology, Hydrogeology and Utilities									✔						✔		✔							
Noise & Vibration															✔									
Air Quality & Climate															✔									
Wind & Microclimate																								
Landscape & Visual Impact Assessment																			✔					
Material Assets - Traffic & Transport																								
Material Assets - Waste Management																								
Archeological & Cultural Heritage																								
Architectural & Built Heritage																								
Daylight & Sunlight																								

19. Summary of Mitigation Measures

Chapter 19 of the EIAR provides a summary of the construction and operational phase mitigation measures proposed for each discipline throughout the EIAR document.

These are reflective of those measures identified in the Construction Environmental Management Plan (CEMP) which sets out construction phase mitigation measures for the proposed development. It will be a requirement that all personnel will understand and implement the final agreed CEMP.

A Construction and Demolition Waste Management Plan (CWMP) has also been prepared. Some disciplines have proposed monitoring following their assessment of impacts and implementation of proposed mitigation measures. Monitoring will take place after consent is granted in order to demonstrate that the project in practice conforms to the predictions made during the EIA process.

Monitoring provides assurance that proposed systems are operating as intended. This allows adjustments of operations to be made to ensure continued compliance with consent conditions such as emission limit values, conditions of operation, performance criteria/ indicators and detection of unexpected mitigation failures.