

Environmental Impact Assessment Report

Volume I – Non Technical Summary

In respect of:

**Strategic Housing Development
on lands north of Ballyfermot Road on the former De La Salle lands in
Ballyfermot, Dublin 10.**



Prepared by:

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On behalf of the applicant:

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1.0 Introduction

1.1 Introduction & Methodology

This “*Non-Technical Summary*” (hereafter NTS) relates to a strategic housing application to An Bord Pleanála for a proposed residential development of 927 no. apartments & duplex / triplex units comprised of 325 no. one bed, 538 no. two bed, & 64 no. three bed dwellings, 1 no. commercial unit and 1 no. retail / café unit in 8 no. blocks (Blocks A-H) ranging in height from 2 to 13 storeys on a site measuring c. 8.3 hectares located on the grounds of the former De La Salle National School, Ballyfermot Road, Ballyfermot, Dublin 10

The central purpose of the Environmental Impact Assessment Report (EIAR) is to undertake an appraisal of the likely and significant impacts on the environment of the proposed development in parallel with the project design process, and to document this process in the EIAR. This is then submitted to the competent / consent authority to enable it assess the likely significant effects of the project on the environment. This assessment will then inform the decision as to whether the development should be permitted to proceed.

A full description of the proposed development lands together with a description of the proposed development is provided in Chapter 3 of the accompanying EIAR document. The subject site, of 8.3 hectares, is bounded to the south by Ballyfermot Road (R833), to the east by The Steeples residential estate, to the north by the wooded margin of the Chapelizod Bypass (R148), and to the west by Lynch’s Lane and other adjoining institutional lands. The application site contains a Protected Structure (RPS Ref No. 8784).

The Dublin City Development Plan 2016-2022, (hereafter CDP) provides a development strategy for the proper planning and sustainable development of the subject site area.

1.2 Proposed Development

This project relates to a proposed mixed-use / residential development and the development to which this application relates is described as follows:

Dwyer Nolan Developments Ltd. intends to apply to An Bord Pleanála for permission for a strategic housing development on a site of c. 8.3 hectares located at the grounds of the former De La Salle National School, Ballyfermot Road, Ballyfermot, Dublin 10.

The application site is bounded to the south by Ballyfermot Road (R833), to the east by The Steeples residential estate, to the north by the wooded margin of the Chapelizod Bypass (R148), and to the west by Lynch’s Lane and other adjoining institutional lands.

The application site contains a Protected Structure i.e., the De La Salle National School Central Classroom Block, including 2 no. staircase towers, 2 no. flanking single storey loggia and principal paired entrance gate piers only (RPS Ref No. 8784).

The development will consist of the following:

Demolition of: (i) the east and west wings of the former national school (c. 1,250m² & c. 1,244m² respectively); (ii) existing buildings / shelters on site (c. 1,818m²); (iii) the rear return of the Protected Structure (c. 121m²) & 2 no. flanking single storey loggia (c. 100m²); and (iv) the Mount La Salle “Monastery” building (c. 1,700m²).



Renovation and change of use of the 2 storey Protected Structure, forming part of proposed Block A, from previous educational use to (a) proposed childcare use on the ground & first floor (c. 1,005m²), with associated outdoor play space to the rear (c. 256m²), and (b) community use (c. 92m²) on the ground floor. The development also seeks permission for the relocation of the principal paired entrance gate piers on Ballyfermot Road inwards (northwards) to the site.

(Construction of 927 no. apartments & duplex / triplex units comprised of 325 no. one bed, 538 no. two bed, & 64 no. three bed dwellings, 1 no. commercial unit and 1 no. retail / café unit in 8 no. blocks (Blocks A-H) ranging in height from 2 to 13 storeys. The breakdown of individual blocks is as follows:

- Block A consists of: (i) the 2 storey Protected Structure, and (ii) a 2 to 5 storey building located to the rear of the Protected Structure consisting of 69 no. apartments, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 26 no. one bed, 41 no. two bed, & 2 no. three bed dwellings. At ground floor level 2 no. communal amenity rooms (c. 65m² & c. 65m² respectively) are provided, along with bin stores, and bicycle storage areas (Total: 128 no. internal bicycle spaces). Communal open space (c. 857m²) is provided in the centre of Block A. Block A also includes internal stair core access to shared basement level with Block H.

- Block B is a 2 to 8 storey building consisting of 128 no. apartments & duplex units, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 55 no. one bed, 67 no. two bed, & 6 no. three bed dwellings. At ground floor level 1 no. communal amenity room (c. 71m²) is provided, along with bin stores, bicycle storage areas (Total: 235 no. internal bicycle spaces), 1 no. commercial unit (c.107m²), and undercroft parking for 58 no. car parking spaces. Podium level communal open space (c. 827m²) is provided at first floor level with additional communal open space (c.137m²) in the form of a roof garden provided on the fifth floor.

- Block C is a 2 to 7 storey building, over part basement level, consisting of 101 no. apartments & duplex units, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 28 no. one bed, 61 no. two bed, & 12 no. three bed dwellings. At ground floor level 1 no. communal amenity room (c.147m²) is provided, with an associated outdoor terrace. Block C caters for a part basement level (c. 3,049m²) comprised of 93 no. car parking spaces, bin stores, bicycle storage areas (Total: 220 no. bicycle spaces) and plant room. Communal open space (c. 583m²) is provided in the centre of Block C.

- Block D is a 4 to 7 storey building consisting of 189 no. apartments & duplex units, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 68 no. one bed, 106 no. two bed, & 15 no. three bed dwellings. At ground floor level 1 no. communal amenity room (c. 156m²) is provided, along with bin stores, bicycle storage areas (Total: 469 no. internal bicycle spaces), ESB / plant rooms, and undercroft parking for 103 no. car parking spaces. Podium level communal open space (c. 1,867m²) is provided at first floor level.

- Block E consists of 2 no. 2-3 storey buildings catering for 22 no. apartments & duplex / triplex units comprised of: (i) 1 no. 2-3 storey building comprised of 8 no. two bed & 2 no. three bed dwellings, and (ii) 1 no. 2-3 storey building comprised of 10 no. two bed & 2 no. three bed dwellings. Private open space for Block E is provided in the form of rear gardens for lower ground floor / ground floor units and balconies on the first floor.

- Block F is a 2 to 10 storey building, over basement level, consisting of 121 no. apartments & duplex units, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 57 no. one bed, 61 no. two bed, & 3 no. three bed dwellings. At ground floor level 1 no. communal



amenity room (c. 76m²) is provided. Block F caters for a basement level (c. 1,838m²) comprised of 68 no. car parking spaces, bin stores, and bicycle storage areas (Total: 190 no. bicycle spaces). Communal open space (c. 530m²) is provided to the rear (north) of Block F with additional communal open space in the form of roof gardens provided on the sixth and eighth floors (c. 250m² & c. 265m² respectively).

- Block G is a 2 to 10 storey building consisting of 154 no. apartments & duplex units, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 39 no. one bed, 99 no. two bed, & 16 no. three bed dwellings. At ground floor level 1 no. communal amenity room (c. 82m²) is provided, along with bin stores, bicycle storage areas (Total: 320 no. internal bicycle spaces), plant rooms, and undercroft parking for 69 no. car parking spaces. Podium level communal open space (c. 1,597m²) is provided at first floor level with additional communal open space in the form of roof gardens provided on the fifth floor (c. 210 m² & c. 90m² respectively) and eighth floor (c. 170m²).

- Block H is a 3 to 13 storey building, over basement / part undercroft level, consisting of 143 no. apartments & duplex units, including terraces at the ground floor and terraces/balconies at all upper levels, comprised of 52 no. one bed, 85 no. two bed, & 6 no. three bed dwellings. At ground floor level 2 no. communal amenity rooms (c. 170m² & c. 89m² respectively) are provided, with associated outdoor terrace spaces, along with bin stores, bicycle storage areas (Total: 400 no. bicycle spaces), plant room, ESB substation, and 1 no. retail / café unit (c.71m²). Block H caters for a basement level (c. 4,696m²) comprised of 134 no. car parking spaces which provides for internal stair core access to Block A. Podium level communal open space (c. 457m²) is provided at first floor level with additional communal open space in the form of roof gardens provided on the second floor (c. 262m² & c. 237m² respectively).

The development provides for open spaces in the form of: (i) multi-use playing pitches (1.16 hectares) located in the north-west of the development with access off Lynch's Lane, and (ii) public open space (0.91 hectares) located between Blocks B, C, D, G & H, which combined caters for 2.07 hectares of open spaces representing 25% of the site area. In addition, 2 no. public plaza areas are also catered for: (a) to the south of Block A, fronting onto Ballyfermot Road (c. 0.14 hectares), & (b) between Blocks A & H (c. 0.06 hectares), along with a running / fitness trail along the northern / western boundary of the development (c. 0.14 hectares).

The development includes an area of 0.5 hectares reserved for a future school site in the south-west of the development, at the junction of Ballyfermot Road and Lynch's Lane.

Vehicular access to the proposed development is from 2 no. access points as follows: (i) from Lynch's Lane to the west, and (ii) from Ballyfermot Road to the south. The development also includes for a pedestrianised street, accessed from Ballyfermot Road, located between Blocks A & B.

The proposed development also provides for (i) all associated site development works, above and below ground, (ii) hard & soft landscaping, boundary treatments & green roofs, (iii) public lighting, (iv) signage, (v) plant (M&E) & utility services, (vi) undercroft, basement & surface car parking, including EV, disabled & car share spaces (Total: 687 no. car parking spaces), (vii) motorcycle parking (Total: 26 no. motorcycle parking spaces), (viii) undercroft, basement & surface bicycle parking, including for external bicycle stores, cargo bike spaces & visitor spaces (Total: 2,249 no. bicycle parking spaces), and (ix) bin storage areas.

1.3 Requirement for EIA (Screening)

Screening is the term used to describe the process for determining whether a proposed development requires an EIA by reference to mandatory legislative threshold requirements or by reference to the type and scale of the proposed development and the significance or the environmental sensitivity of the receiving baseline environment.



Annex I of the EIA Directive 85/337/EC requires as mandatory the preparation of an EIA for all development projects listed therein.

Schedule 5 (Part 1) of the Planning & Development Regulations 2001 (as amended) transposes Annex 1 of the EIA Directive directly into Irish land use planning legislation. The 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.

The proposed development is above the threshold for a mandatory EIAR. The subject proposal comprises 927 no. dwellings. Therefore, a mandatory EIAR is required.

1.4 Purpose of This EIAR

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

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

1.5 Information to be contained in a non-technical summary

This Non-Technical Summary (NTS) has been prepared in accordance with *inter alia* the requirements of the EU 2014 EIA Directive, Planning and Development Acts 2000-2018 as well as the Planning and Development Regulations, 2001, as amended (in particular by the European Union (Planning & Development) (Environmental Impact Assessment) Regulations 2018).

EIA Process Overview

One of the main purposes of the EIA process is to identify the likely significant impacts on the human environment, the natural environment and on cultural heritage associated with the proposed development, and to determine how to eliminate or minimise these impacts. The EIAR summarises the environmental information collected during the impact assessment of the proposed development.

A new definition of environmental impact assessment is now contained in Section 170A of the Planning and Development Act, 2000, as amended which reflects to the process as described under Article 1(2)(g) 4 of Directive 2014/52/EU and goes on to say that it includes:

(i) *an examination, analysis and evaluation, carried out by the planning authority or the Board, as the case may be, in accordance with this Part and regulations made thereunder, that identifies, describes and assesses, in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of the proposed development on the following:*

(I) *population and human health;*



- (II) *biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive;*
- (III) *land, soil, water, air and climate;*
- (IV) *material assets, cultural heritage and the landscape;*
- (V) *the interaction between the factors mentioned in clauses (I) to (IV), and*
 - (ii) *as regards the factors mentioned in subparagraph (i)(I) to (V), such examination, analysis and evaluation of the expected direct and indirect significant effects on the environment derived from the vulnerability of the proposed development to risks of major accidents or disasters, or both major accidents and disasters, that are relevant to that development;*

Several interacting steps typify are involve in the various stages of the EIA process, which may be referred to in outline as including:

- Screening;
- Scoping;
- Preparation of EIA Report;
- The examination by the Competent Authority (CA) of the information presented in the environmental impact assessment report;

Screening: Screening is the term used to describe the process for determining whether a proposed development requires an EIA.

Scoping: This stage firstly identifies the extent of the proposed development and associated site, which will be assessed as part of the EIA process, and secondly, it identifies the environmental issues likely to be important during the course of completing the EIA process through consultation with statutory and non-statutory stakeholders. Where relevant, scoping requests were issued and the responses received have been considered as part of the compilation of the EIAR. The content of the EIAR has been informed by national guidelines, guidelines issued by the European Commission and other policy documents which are set out at Section 1.4 of the EIAR. In addition, pre-planning meetings with the various departments of Dublin City Council and also with An Bord Pleanála (at SHD pre-application stage) all informed the EIAR.

Preparation of EIAR Report: The main elements in the preparation of an EIA Report relate to the consideration of alternatives, project description, description of the receiving environment, identification and assessment of impacts, monitoring and mitigation proposals.

The examination by the CA of the information presented in the environmental impact assessment report. The planning authority and An Bord Pleanála must consider each application for development consent on its own merits, taking into account all material considerations, including the reasoned conclusion in respect of EIA, before making its decision to grant, with or without conditions, or to refuse consent.

1.6 Format and Structure of The EIAR

1.6.1 EIAR Structure

The structure of the EIAR is laid out in the preface of each part for clarity. It consists of two volumes as follows:



- Volume I: Non-Technical Summary (this document)
- Volume II: Environmental Impact Assessment Report.

Volume II is the main volume of the EIAR. It provides information on the location and scale of the proposed development, details on design and impacts on the environment (both positive and negative) as a result of the proposed development. Each of the environmental aspects as listed below are examined in terms of the existing or baseline environment, identification of potential construction and operational stage impacts and where necessary proposed mitigation measures are identified.

The preparation of an EIAR requires the assimilation, co-ordination and presentation of a wide range of relevant information in order to allow for the overall assessment of a proposed development. For clarity and to allow for ease of presentation and consistency when considering the various elements of the proposed development, a systematic structure is used for the main body of the EIAR document. The structure used in this EIAR document is a “*Grouped Format structure*”. This structure examines each environmental topic in a separate chapter of the EIAR document. The structure of the EIAR Volume II document is set out in Table 1.1 over:

Chapter	Title
1	Introduction
2	Planning Policy Context
3	Description of Project and Alternatives
4	Population and Human Health
5	Biodiversity
6	Land, Soil and Geology
7	Water
8	Air Quality and Climate
9	Noise
10	Material Assets: Built Services
11	Material Assets: Transportation
12	Material Assets: Resource and Waste Management
13	Archaeology and Cultural Heritage
14	The Landscape
15	Identification of Significant Impacts / Interactions
16	Summary of EIA Mitigation and Monitoring Measures

Table 1.1 – Structure of EIAR – Volume II

1.7 Availability of EIAR Doc

A copy of the EIAR document and Non-Technical Summary of the EIAR document is available for purchase at the offices of An Bord Pleanála and Dublin City Council (Planning Authority) at a fee not exceeding the reasonable cost of reproducing the document. It can also be viewed on the SHD website – www.delasalleshd.ie. set up by the applicant.



1.8 Statement of Difficulties Encountered

No particular difficulties, such as technical deficiencies or lack of knowledge, were encountered in compiling any of the specified information contained in this statement, such that the prediction of impacts has not been possible. Where any specific difficulties were encountered these are outlined in the relevant chapter of the EIAR.

1.9 Errors

While every effort has been made to ensure that the content of this EIAR document is error free and consistent there may be instances in this document where typographical errors and/or minor inconsistencies do occur. These typographical errors and/or minor inconsistencies are unlikely to have any material impact on the overall findings and assessment contained in this EIAR.

1.10 EIAR Study team

The EIAR was prepared by a study team led by Delphi Design Planning Consultants who were responsible for the overall management and co-ordination of the document. The EIAR team is set out in Chapter 1, Table 1.2 of Volume II of the EIAR.



2.0 Description of Project and Alternatives

2.1 Information on the site location, design and size of the proposed development

The subject site (i.e. the red line boundaries of application detailed on the drawings accompanying the application) measures approximately 8.3ha in area and is located at the grounds of the former De La Salle National School, Ballyfermot Road, Ballyfermot, Dublin 10. The subject site was formerly under the ownership of the De La Salle Brothers; however, the Brothers signalled their intention to close the De La Salle National School several years ago, and in 2018 the site was sold to the applicant. In the time since, the De La Salle Brothers have vacated the Mount La Salle “*Monastery*” building, which was their residence, and the former school closed in June 2019. The subject site, now in private ownership and under the control of the applicant, has been fenced off since the school closed and is currently vacant. Access to the subject site is currently limited to an existing site entrance off Ballyfermot Road and Lynch’s lane to the west of the subject lands.

Under the existing Dublin City Development Plan 2016-2022 (“*CDP*”), the subject site is zoned “Z15” (Institutional and Community) which has an objective to: “*protect and provide for institutional and community uses.*” The adjacent lands to the west of the site are also zoned Z15 and are comprised of St. Raphael’s National School, St. Dominic’s College, and the Ballyfermot Family Resource Centre. It is important to note that these existing uses are in separate ownership to the subject site and will not be affected by the proposed development.

Vehicular access to the proposed development is from 2 no. access points: (i) off Lynch’s Lane to the west, and (ii) on Ballyfermot Road to the south. Pedestrian only accesses are also catered for at Ballyfermot Road, to the west & east of Block A. The site is bounded to the south by (and fronts onto) Ballyfermot Road (R833), to the east by The Steeples residential estate, to the north by the wooded margin of the Chapelizod Bypass (R148), and to the west by Lynch’s Lane and other adjoining institutional lands.

Immediately to the south-east, on the opposite side of Ballyfermot Road, lies Markievicz Park, a c. 5.25Ha park containing several facilities including a playground, all weather football court, soccer pitches, picnic area and tree trails. To the north of the site, on the opposite side of the Chapelizod Bypass lies the River Liffey and its walkways, which are accessible to the site via St. Laurence’s Road to the north-east. The Phoenix Park, Dublin’s largest park, is located further north of the River Liffey, with several entrance gates being located on Chapelizod Road (R109). The Irish National War Memorial Gardens are located c. 1.6 km to the north-east of the site with Kilmainham Gaol being c. 2 km to the south-east.

The EIAR submitted at this time is deemed appropriate, to review the impact of the proposed scheme given the quantity of units permitted in the permissions listed above.

The Proposed Site Layout Plan (Figure 2.1) prepared by Delphi Design Architects illustrates the proposed development.

A summary of the proposed development includes the following works:

- Residential development (927 no. dwellings);
- Childcare facility;
- Commercial / Retail units;
- Communal Amenity Rooms;
- Communal, Public and private open spaces;
- Landscaping;
- Car / Bicycle parking and bin storage;
- Services infrastructure, utilities and public lighting;

- ESB Substation;
- Building and directional signage and
- All associated infrastructural and site development works.



Figure 2.1 – Proposed Site Layout Plan

2.1.1 Demolition

Permission is sought to demolish: (i) the east and west wings of the former national school (c. 1,244m² & c. 1,250m² respectively); (ii) existing buildings / shelters on site (c. 1,818m²); (iii) the rear return of the Protected Structure (c. 121m²) & 2 no. flanking single storey loggia (c. 100m²); and (iv) the Mount La Salle “Monastery” building (c. 1,700m²).

2.2 Residential Development

In summary, the proposed development comprises the construction of 927 no. dwellings comprised of 325 no. 1 bed, 538 no. 2 bed, & 64 no. 3 bed dwellings, in 8 no. blocks – details of which are set in Table 2.1 over:

Block	Proposed No. of Dwellings	No. of 1 bed	No. of 2 bed	No. of 3 bed
A	69	26	41	2
B	128	55	67	6
C	101	28	61	12
D	189	68	106	15
E	22	0	18	4
F	121	57	61	3
G	154	39	99	16
H	143	52	85	6
Totals	927	325	538	64

Table 2.1 – Overall Residential Development Mix

The design intent is to provide a range of unit typologies of different heights, which include apartment blocks strategically located throughout the site in order to achieve place making. In addition, variety is provided by way of building height and typology dispersed throughout the entire application site. This built form provides variety in the street scape and offers a wide range of housing mix.

A wide variety of apartment typologies have been developed to ensure that the scheme provides for high quality design, based upon the 12 urban design criteria set out in the Urban Design Manual (2009), the details of which are set out in Statement of Consistency and the Architectural Design Statement which accompany the application.

The proposed blocks are defined by variations in building type and design, internal road layout and hierarchy and related open spaces.

The varying heights of the proposed buildings break up the mass and volume of the scheme, with only one tall building of 13 storeys proposed, which will act as a landmark located to the centre of the site, set back from neighbouring lands and Ballyfermot Road.

2.3 Non-Residential Development

2.3.1 Proposed Community Use Unit

On the ground floor of the Protected Structure, in the eastern part of the building, the proposed development caters for a new community use area, in the form of a community use room (c.61m²), together with associated kitchen / reception / bathroom area (c. 31m²). The proposed community use area has its own, separate, access door from the east of the building.

The proposed community use is considered to accord with the spirit of the Z15 zoning objective attached to the site. The rationale for locating this proposed community area in the Protected Structure is to provide for new community space available to both future and existing residents of the Ballyfermot which will allow them to use / enjoy the Protected Structure in the years to come. The location of the community use unit within the **Protected Structure** provides a new, long term sustainable use for the building, complementary to its original sue. This proposal ought to seen as a planning gain for the local community by reusing the school building for which there are local ties to within the existing community. The location of the proposed community use fronting onto the new urban plaza at the front of the scheme, addressing Ballyfermot Road will ensure that there will be a consistent level of activity in this part of the development.

It is considered that this community hub, dependant on the tenant, will provide the opportunity to implement a range



of programmes and services to benefit the community, such as community drop ins, community breakfast clubs, and other supportive groups. It is envisaged that the community hub will enable new and established communities in Dublin 10 to engage with each other, fostering a sense of community and increasing the social interaction.

It is considered that the facility has the potential to cater for a number of functions and will offer a focal point within the scheme, as it addresses Ballyfermot Road. The location of the community hub, adjacent to the urban plaza area and the proposed commercial use in Block B, will ensure that there will be a consistent level of activity to the front of the scheme thus catering for an enhanced sense of place and vibrancy at Ballyfermot Road. The proposed community use is considered to be complementary to nearby uses such as the Ballyfermot Family Resource Centre to the west, also on Z15 zoned lands.

The provision of this community unit is put forward in recognition of the Z15 land use zoning objective attached to the site and the nature and scale of the overall proposed development. It is also considered that the community use unit will aid in the creation of a sense of community with the overall scheme, tying individual neighbours together and forming an important meeting point within the scheme. It is envisaged that the management of this facility will be operated by a specified management company, who may liaise with Dublin City Council and / or the Dublin City Local Community Development Committee in terms of what services the unit caters for.

2.3.2 Proposed Commercial Use

On the ground floor of Block B, at the south-west corner of the block, a commercial unit of c. 107 sq.m is proposed. The proposed commercial unit has been strategically located adjacent to the urban plaza area / Protected Structure at the front of the scheme, fronting onto Ballyfermot Road, allowing for both residents of the development and visitors to conveniently access the future facility occupying the unit.

It is considered that this commercial unit, in tandem with the proposed community use unit in Block A, ensures active frontage and a new sense of vibrancy is catered for along the prominent frontage of Ballyfermot Road. It is submitted that the commercial unit in Block B will create a focal point in the neighbourhood capable of providing convenience type services to both the existing and future local population. It is put forward that this commercial unit will serve the local needs of the existing and future community but will also compliment larger existing commercial / retail facilities in the area, i.e. to the west, (beyond the roundabout) along Ballyfermot Road where the main local commercial activity, but will not detract from the vibrancy of existing local commercial activity.

2.3.3 Proposed Retail / Café Use

On the ground floor of Block H, at the south-east corner of the block, a retail / café unit of c. 107 sq.m is proposed. The proposed a retail / café unit has been strategically located adjacent to the proposed central public open space, offering an area for residents and visitors to garner refreshment which will enhance their enjoyment of the public open space areas and allow them to spend additional time in the area.

It is also considered that the proposed retail / café unit will provide a convenient refreshment area for users of the multi-use playing pitches in the north-west of the scheme, and that the location of the retail / café unit will attract a number of users as they make their way through the proposed scheme and onto the adjoining surrounds.

2.4 Car Parking Provision

The proposed development's car parking provision has been developed with reference to the guidance outlined in both:

- Table 16.1 of the 'Dublin City Development Plan (2016-2022)' which sets out the maximum parking guidance for residential developments, and



- Chapter 4 of the ‘Sustainable Urban Housing: Design Standards For New Apartments’ Guidelines For Planning Authorities (December 2020), as published by the Department of Housing, Planning and Local Government (DHPLG).

Considering the site's proximity to the town centre, existing public transportation (bus) options and the proposed CBC along the front of the site at Ballyfermot Road, the proposed development can be identified as being “Central and/or Accessible Urban Location” in reference to the DHPLG guidance i.e. within easy walking distance (400-500m) to/from high frequency urban bus services.

Land Use	No. of Units/ GFA	Proposed Development	DCC Development Plan Requirement	DHPLG Requirement
Apartments	927	639	1391	<i>“...minimised, substantially reduced or wholly eliminated...”</i>
Crèche	1005m ²	-	n/a	n/a
Commercial	107m ²	-	1	n/a
Retail/ Café	71m ²	-	0	n/a
Total		639	1392	-

Table 2.2: Comparison of Vehicle Parking Requirements and Provision

The proposed development layout provides a total of 639 no. residential car parking spaces including dedicated disabled, EV charging, visitor and GoCar spaces.

The 639 no. residential car parking spaces comprise 130 no. residential car parking spaces at surface level, 230 no. residential car parking spaces at undercroft level and 279 no. residential car parking spaces at basement level.

In addition to the above, 19 no. car parking spaces are provided at surface level adjacent to the playing pitches and 13 no. car parking spaces provided along Lynch’s Lane. A further 16 no. car parking spaces are proposed at basement level within Block H for staff at the future school facility. These additional surface level car parking space could perform multi-purpose parking including the following:

- Playing pitches;
- Apartment visitors;
- Creche and future school set-down; and
- Customers to the proposed non-residential land uses.

Block	Land Use	No. of Units / GFA (sqm)	Proposed Development Car Parking								Total	
			Surface Level				Undercroft / Basement Level					
			Visitor Parking	Resident Parking	Disabled	Go Car	Residents (Undercroft) Standard Bays	Residents (Basement) Standard bays	Disabled	EV		Future School
A	Apartment	69	6	-	-	-	-	-	-	-	-	6
	Creche	1005	-	-	-	-	-	-	-	-	-	0
B	Apartment	128	3	-	3	-	49	-	3	6	-	64
	Commercial	107m ²	-	-	-	-	-	-	-	-	-	0
C	Apartment	101	6	-	-	-	-	76	5	12	-	99
D	Apartment	189	20	-	-	5	88	-	4	11	-	128
E	Duplex	22	4	15	-	-	-	-	-	-	-	19
F	Apartment	121	23	-	2	-	-	57	4	7	-	93
G	Apartment	154	26	-	2	-	58	-	4	7	-	97
H	Apartment	143	15	-	-	-	-	96	9	13	-	133
	Retail/Café	71 m ²	-	-	-	-	-	-	-	-	-	0
	Future School Site		-	-	-	-	-	-	1	-	15	16
Pitch			17	-	2	-	-	-	-	-	-	19
Sub Total			120	15	9	5	195	229	30	56	15	674
Total			149				525				674	
Lynch's Lane			13	-	-	-	-	-	-	-	-	13 ¹

Note: these values do not represent car parking assignment but rather the geographical location of spaces around the site. Full assignment is provided in Table 5.4 below.
1. Car Parking spaces at Lynch's Lane not included in totals

Table 2.3: Proposed Car Parking Provision

The subject scheme proposals include for an overall provision of 674 no. car parking spaces (excluding 13 no. spaces along Lynch's Lane) at surface level, undercroft level and basement level. Overall, this quantum equates to a provision of 0.69 (excluding 48 no. car parking spaces located at the pitch, future school and Lynch's Lane) parking spaces per residential unit.

Mobility Impaired Parking

In regard to the provision of dedicated mobility impaired car parking spaces, Section 16.38.5 of the DCC Development Plan states; "At least 5% of the total number of spaces should be designated car-parking spaces, with a minimum provision of at least one such space." The subject proposals include for 32 no. spaces, which is comparable to the development plan standards which requires a 34 no. disabled spaces.

- 9 no. spaces will be located at surface level;
- 11 no spaces will be located at undercroft level (3 no. spaces at Block B, 4 no. spaces at Block D, and 4 no. spaces at Block G).
- 19 no spaces will be located at basement level (5 no. spaces at Block C, 4 no. spaces at Block F, and 10 no. spaces at Block H)."

Electric Vehicle Parking

Whilst Chapter 16 of the CDP does not explicitly raise the requirement for the provision of electric vehicle charge points / bays in private developments, it is suggested that in reference to national guidance, at least 10% of all on-site car parking spaces should be equipped with one functional Electric Vehicle Charging Point which equates to at least 68 no. EV car parking spaces. The scheme proposals include 77 no. EV parking spaces within the development comprising 21 no. at surface level and 56 no. at basement/undercroft level and therefore complies with national policy for the provision of EV charger facilities.



The remaining on-site car parking will benefit from having the EV ducting infrastructure implemented thereby enabling easy retro fitting of charge points in the future as and when they may be required. The list below provides a summary of the EV car parking spaces throughout the proposed development.

- 21 no. at surface level;
- 6 no. spaces will be located at Block B (undercroft level);
- 12 no. spaces will be located at Block C (basement level);
- 11 no. spaces will be located at Block D (undercroft level);
- 7 no. spaces will be located at Block F (basement level);
- 7 no. spaces will be located at Block G (undercroft level); and
- 13 no. spaces will be located at Block H (basement level).

Car Sharing

The subject scheme proposals include 5 no. dedicated car club spaces located between Block C and Block D. A letter of intent has been received from GoCar, Ireland's leading car sharing service, outlining their intention to provide these 5 no. shared car club vehicles for the subject site. The GoCar Letter of Support is included in Appendix E of this report.

All residents will have the option to become members of the car share service. On becoming members, residents can then book cars online or via the app for as little as an hour, then unlock with their phone or GoCAR. The keys are in the car, with fuel, insurance and city parking all included. The benefits of such car sharing services include:

- each GoCar replaces approximately 20 private cars;
- the reduction of the number of cars on the road and therefore traffic congestion, noise and air pollution;
- minimised demand for car parking and frees up land traditionally used for private parking spaces;
- increased use of public transport, walking and cycling as the need for car ownership is reduced; and
- car sharing allows those who cannot afford a car the opportunity to drive, thereby encouraging social inclusivity.

Future School Site

There will be 16 no. car parking spaces dedicated to the future school site which will be located in the basement of Block H.

Figure 5.6 of the enclosed TTA shows the most direct pedestrian access to/from the basement car park to the adjacent future school site. The staff member would exit the basement through the nearest stair core located to the north of the designated car parking spaces. This stair core leads up to the ground floor and out onto the western elevation of Block H. The staff member would then walk south along the pedestrian path for approximately 25m and then take a right turn and continue for approximately 50m to reach the school entrance.

Further details of the proposed car parking and rationale for the proposed quantum are set out in the enclosed TTA prepared by DBFL Consulting Engineers – please refer to same.



2.5 Cycle Parking Provision

In total, the proposed development caters for 2,429 no. bicycle parking spaces which are located at surface level and basement level, and within individual blocks.

The development proposals include for the provision of a total of 2,429 no. cycle spaces (including 18 no. cargo bike spaces) which are being located at both (i) basement / undercroft (long term) and (ii) surface (short term) located facilities. Of this overall provision, 2,296 are dedicated residential spaces (excluding the cargo bike spaces). Accordingly, with 927 residential units being proposed, this equates to approximately 2.5 cycle spaces per unit on average.

Of the 2,429 cycle parking spaces, 2,411 no. are standard cycle parking spaces whilst 18 no. are cargo bike spaces. The 2411 no. standard cycle spaces comprise a mix of Sheffield stands, two-tiered bike racks and two-tiered staggered bike racks which include a total of 715 no. short term and 1,696 no. long term bicycle parking stands / opportunities on site within the proposed development.

Land Use	No. of Units/GFA	Proposed Development		DCC Requirement		DHPLG Requirement	
		Long Term	Short Term	Long Term	Short Term	Long Term	Short Term
Apartments	927 Units	1696	600	927	Decided on a case by case	1593	464
Total Residential Cycle Parking		2296		927+		2057	
Crèche	1005m ²	56		52 ¹		n/a	
Commercial	107m ²	5		1		1 ²	
Retail/Café	71m ²	10		0		0 ²	
Pitches		44		n/a ³		n/a ²	
Cargo Bike Space		18		n/a		n/a	
Total Cycle Parking		2429		978+		2095	

Notes:

- 1) DCC did not have a standard for the land use "creche", therefore we have adopted DCC standard for the Land Use "Primary School" requirements – 1 cycle space per 3.55 pupils (185/3 = 54)
- 2) Not applicable for DHPLG, adopting from DCC requirements
- 3) No standard provided for playing pitches

Table 2.4 – Comparison of Cycle Parking Requirements and Provision

Block	Type	No. of Units	GFA (sqm)	Proposed Cycle Parking												
				Long Term				Short Term				Subtotal (LT)	Subtotal (LT)	Subtotal (ST)	Total (L&S)	Total (L&S)
				Standard Cycle Space		Cargo Bike Space		Standard Cycle Space		Standard Space	Cargo Bike Space					
				Internal (standard cycle space)	Basement	Undercroft	Basement	Undercroft	External			Undercroft / Internal				
A	Apartment	69		128						36		128	0	36	164	164
	Creche		1005							56		0	0	56	56	56
B	Apartment	128				235		2		69		235	2	69	304	306
	Commercial/Retail		107							5		0	0	5	5	5
C	Apartment	101				220		3		50		220	3	50	270	273
D	Apartment	189				391		3		21	78	391	3	99	490	493
E	Duplex	22		22						38		22	0	38	60	60
F	Apartment	121				190		3		60		190	3	60	250	253
G	Apartment	154				270		4		28	50	270	4	78	348	352
	Apartment	143				240		3		10	160	240	3	170	410	413
H	Retail/ Café		71							10		0	0	10	10	10
Pitch	Pitch									44		0	0	44	44	44
				150	410	1136	9	9	427	288	1696	18	715	2411	2429	

Table 2.5 – Proposed Bicycle Parking provision and Assignment



The 'long term' bicycle parking spaces located in the basement area will be in the form of a two-tier bike rack with gas strut manufactured by Turvec. The manufacturer's brochure has been included in the enclosed Traffic & Transport Assessment prepared on behalf of the Applicant by DBFL Consulting Engineers of this report which demonstrates that the scheme design provides sufficient area for the positioning of bicycle into / from the racks. The specification of the gas strut rack will ensure all users will be able to conveniently use the top tier of the two-tier rack. The height (2.6m clearance) and aisle width provision in the basement bike store have been designed around the specification detailed by the manufacturer Turvec.

The proposed cycle parking spaces are conveniently located in close proximity to each block access locations and are well within the recommended distances of 25m for short stay cycle parking spaces and 50m for long stay cycle parking spaces as per best practise recommendations.

Resident cycle parking will be located at ground floor level and basement level. Access to these cycle parking areas will be controlled by a key/fob to ensure safety and security. The specific locations of the proposed bicycle parking facilities can be found in the enclosed Traffic & Transport Assessment prepared on behalf of the Applicant by DBFL Consulting Engineers.

Further details of the proposed bicycle parking and rationale for the proposed quantum are set out in the enclosed TTA prepared by DBFL Consulting Engineers – please refer to same.

2.5 Access

The proposed development will also deliver a new access to the development via 2 no. vehicular access points located (i) off Lynch's Lane to the west, and (ii) from Ballyfermot Road to the south.

The proposed development provides for pedestrian and cyclist access from Ballyfermot Road in line with Greater Dublin Area Cycle Network Plan, 2013 and the Transport Strategy for the Greater Dublin Area 2016 – 2035. The layout put forward also facilitates future/possible vehicular access to adjoining lands to the west, with the internal roads directly abutting the site boundary.

2.6 Construction Management Strategy

A Construction & Demolition Waste Management Plan (C&DWMP) has been prepared for the proposed development and accompanies the planning application. Certain assumptions are made in the C&DWMP based on the information available at this time and, for the avoidance of doubt, it is not proposed or intended that the applicant / contractor(s) are bound by these proposals which may change depending on the timing and circumstances pertaining at the time of construction.

On receipt of a grant of planning and prior to the commencement of works, a detailed final Construction Management Plan (CMP) will be prepared. The contractor will be required to comply with and implement the requirements and mitigation measures as set out in this EIAR and any conditions imposed as part of planning permission. An Outline CMP has been prepared for the proposed project and is included with the planning application documentation. In addition, a Mobility Management Plan (MMP) has also been prepared and is also included as part of this application. Certain assumptions are made in both the Outline CMP and MMP based on the information available at this time and, for the avoidance of doubt, it is not proposed or intended that the applicant / contractor(s) are bound by these proposals which may change depending on the timing and circumstances pertaining at the time of construction.

A Construction and Environmental Management Plan has been prepared by DBFL Consulting Engineers which addresses noise and vibration, traffic management, working hours, pollution control, dust control,



road cleaning, compound/public health facilities and staff parking associated with the construction works, and is submitted as part of this SHD planning application.

All of the aforementioned plans include further information on the construction programme and construction related activities. The plans also address issues relating to site access, compounds, site security, waste management contractors' responsibilities etc.

2.6.1 Construction Programme / Phasing

It is estimated that construction of the development will take approximately five years to complete. The applicant has provided an indicative construction programme in the Outline CMP & C&DWMP (submitted with the Planning Application documentation) which depicts the sub-areas only for development. A phasing plan also accompanies the planning application – refer to Delphi drawing no. D1808-13 which illustrates the indicative construction staging sequence. The intended sequence of development may change post grant of planning permission, as a detailed construction programme is dependent on contractor appointment, market and other considerations.

Phase 1: will commence with the construction of Block B (128 no. units) and Block C (101 no. units). In addition, the multi-purpose playing pitches in the north-west corner and access route will be delivered as part of Phase 1.

Phase 2: will consist of the development of Block D (189 no. units) and Block E (22 no. units).

Phase 3: will see the delivery of Block F (121 no. units).

Phase 4: the final phase will deliver Block G (154 no. units).

Phase 5: the final phase will deliver Block A (69 no. units) and Block H (143 no. units).

Open spaces, accesses and parking will be delivered in tandem with each relevant, associated building.

- Phase 1 – 229 no. dwellings (25%);
- Phase 2 – 211 no. dwellings (23%);
- Phase 3 – 121 no. dwellings (13%);
- Phase 4 – 154 no. dwellings (16%);
- Phase 5 – 212 no. dwellings (23%);

Phase (Reference Architects Phasing Plan Drawing)	Residential Block	Accumulative Units Delivered in Total (Number per year)	Year Completed	Basement Construction Activity
Phase 1	Block B & Block C	128	2023	Yes
		229 (101)	2024	No
Phase 2	Block D & Block E	440 (211=189+22)	2025	No
Phase 3	Block F	561 (121)	2026	Yes
Phase 4	Block G	715 (154)	2027	No
Phase 5	Block H & Block A	927 (212=69+143)	2028	Yes

Table 2.6 - Summary of phasing proposals

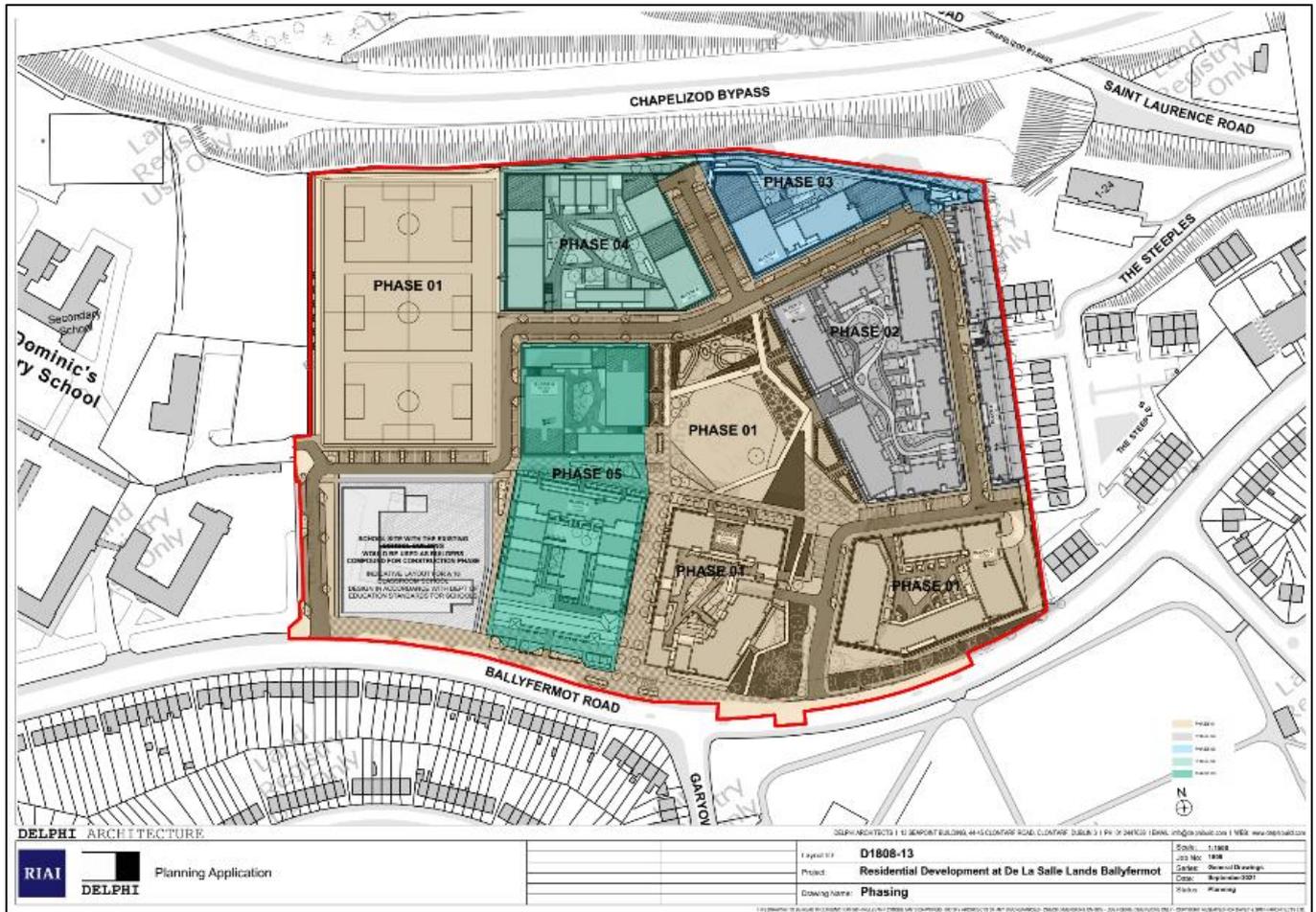


Figure 2.2– Proposed Phasing Plan

2.6.2 Construction Activities

The construction works associated with the project will be contained within the application site boundary. These works will include excavation, earthworks, etc.

Some construction activity may take place off-site within the control of the developer. These activities may include access and haul routes, site compound(s), storage of materials and soil/excavated material, screening and processing of existing materials for re-use within the development works, construction parking, staff welfare facilities etc. These areas will be identified in the detailed CMP.

Typically, construction will commence at 07.00 to 19.00 Mondays to Fridays inclusive, between 08.00 to 14.00 on Saturdays and not at all on Sundays and public holidays. During the construction period, due to exceptional circumstances, construction work may be necessary outside these standard hours. If necessary, this will be agreed in advance with DCC.

The contractor will be guided by the Construction & Demolition Waste Management Plan which accompanies the application with regard to re-use, recovery, recycle and disposal of waste produced during construction. Chapter 12 of the EIAR, Material Assets: Resource and Waste Management, also considered the re-use recovery, recycle and disposal of waste arising from the development.



2.7 Direct and Indirect Effects Resulting from Use of Natural Resources

Details of significant direct and indirect effects arising from the proposed development are outlined in Chapters 4-15 which deal with 'Aspects of the Environment Considered'. No significant adverse impact is predicted to arise from the use of natural resources.

2.8 Direct and Indirect Effects Resulting from Emission of Pollutants, Creation of Nuisances and Elimination of Waste

Details of emissions arising from the development together with any direct and indirect effects resulting from same have been comprehensively assessed and are outlined, where relevant, in the relevant in Chapters 4-15 which deal with 'Aspects of the Environment Considered'. There will be no significant direct or indirect effects arising from these sources.

2.9 Forecasting Methods Used for Environmental Effects

The methods employed to forecast and the evidence used to identify the significant effects on the various aspects of the environment are standard techniques used by each of the particular individual disciplines. The general format followed was to identify the receiving environment, to add to that a projection of the "loading" placed on the various aspects of the environment by the development, to put forward amelioration measures, to lessen or remove an impact and thereby arrive at net predicted impact.

Where specific methodologies are employed for various sections they are referred to in the Receiving Environment (Baseline Scenario) sections in the EIAR. Some of the more detailed/specialised information sources and methodologies for a number of the environmental assessments are outlined hereunder.

2.10 Transboundary Impacts

Large-scale transboundary projects¹ are defined as projects which are implemented in at least two Member States or having at least two Parties of Origin, and which are likely to cause significant effects on the environment or significant adverse transboundary impact.

Having regard to the nature and extent of the proposed development, which comprises a residential development, located in Ballyfermot, within the administrative area of County Dublin, transboundary impacts on the environment are not considered relevant, in this regard.

2.11 Alternatives Examined

Chapter 3 of the EIAR (Volume II) also includes a summary of alternatives which were considered for the proposed development of the subject lands. These options were considered as the scheme progressed and the key considerations and amendments to the design having regard to the key environmental issues pertaining to the lands are summarised in this section of the EIAR.

2.11.1 Do Nothing Alternative

The "Do Nothing" Scenario describes the impacts of the proposed development, if it were not carried out.

The positive benefits to the national, regional and local community arising from the development of this site would not materialise in the "Do Nothing" scenario. In addition, the "Do Nothing" scenario would result

¹ The definition is based on Articles 2(1) and 4 of the EIA Directive and Article 2(3) and (5) of the Espoo Convention, respectively. <http://ec.europa.eu/environment/eia/pdf/Transboundry%20EIA%20Guide.pdf>



in non-compliance with the NPF which contains the following relevant objectives:

- **National Policy Objective 3a** - Deliver at least 40% of all new homes nationally, within the built-up footprint of existing settlements;
- **National Policy Objective 32** - To target the delivery of 550,000 additional households to 2040.

This alternative is therefore not attractive with the site remaining unoccupied with existing buildings falling into disrepair.

2.11.2 Alternative Site Layouts

The proposed residential development has been prepared in accordance with the requirements of the National Planning Framework, the Regional Spatial and Economic Strategy for the Mid-East area as well as the relevant Section 28 Guidelines including those relating to Urban Development and Urban Heights 2018, the Apartment Guidelines 2018 and the Sustainable Residential Development in Urban Areas (2009) as well as, where relevant, the Dublin City Development Plan 2016-2022 and has been the subject of pre-application meetings with the Planning Authority prior to lodgement of the SHD application with An Bord Pleanála.

Insofar as the EIA is concerned, a number of iterations of the site layout and alternative designs were prepared and considered for the project. This involved taking into account the various technical and environmental considerations which are addressed in the EIA and which informed the design of the proposed development.

The design process, having taken into consideration the discussions held with the DCC, individual consultants who inform the chapters of this EIAR, and the feedback received from An Bord Pleanála at the Pre-Application Consultations, has resulted in the layout now put forward for permission, which is illustrated in Figure 2.2. It is considered that this layout represents the best utilization of these zoned lands, complies with the objectives for the lands contained in the CDP and mitigates against significant environmental impacts.

In summary, the development proposal will, *inter alia*:

- Comply with the land-use zoning designation for the subject site
- Provide appropriate accommodation which can cater for different life stages by delivering apartments and duplex units in a mix of 1, 2 & 3 bedroom units
- Provide an appropriate density of development, which will develop a new urban quarter in Ballyfermot
- Comply with the Planning Authority's detailed quantitative standards for residential development as set out in the existing Dublin CDP and, where appropriate, Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (2018)
- Provide a level of social housing (94 no. units) with equates to circa 10% of the overall quantum of proposed dwellings
- Support sustainable transport modes via the creation of pedestrian and cycle connections



- Provide for 1 no. creche, a community use unit, residential amenity space.
- The proposed development caters for open spaces / community uses in the form of: (i) multi-use playing pitches (c. 1.16 ha) located in the north-west of the development and accessed off Lynch's Lane, and (ii) public open space (c. 0.90 ha) located between Blocks B, C, D, & H. In total, the development caters for 2.06 ha of open spaces / community uses representing c. 25% of the site area. In addition, new public plaza areas are also catered for to the south of Block A, fronting onto Ballyfermot Road, & between Blocks A & H.
- Protect the existing residential amenity enjoyed by the residents of neighbouring developments
- Preserve, where feasible, the natural amenity characteristics of the site, and provide for new features where necessary in order to ensure that the visual impact of the development is minimised. This has been achieved by allocating areas of open space for recreation, all of which will be developed in accordance with the overall Landscape Plan for this proposed development.

2.11.3 Final Layout Alternative

With regard to the layout put forward for permission, the iterative process included alternative site layouts that were considered with the objective of submitting an overall high-quality designed scheme which has undergone a robust consideration of relevant alternatives in reference to the comparison of environmental effects and meets the requirements of the EIA Directive, based on the multidisciplinary review across all environmental topics.

The final design now put forward for permission presents the most effective utilization of this significant site whilst also fulfilling the objectives of the Planning Authority and providing for long term, sustainable housing for which there is a considerable demand at present and providing for a use of material, architectural form and colour to create a high level of visual amenity.

An Bord Pleanála Opinion

During the course of the pre-application tripartite meeting with the Board, and within the Opinion of the Board, which was issued thereafter, a number of issues were raised which required further consideration and amendment to constitute a reasonable basis for an application for SHD.

The Board requested the Applicant address matters of development strategy, scale and massing of the proposed scheme and give further consideration to the residential amenity from the proposed development.

The proposed design consideration for the subject lands were the subject of a series of informal meetings, 1 no. formal pre-application meeting with Dublin City Council as well as one formal SHD meeting with An Bord Pleanála (which Dublin City Council attended).

Following the receipt of detailed feedback from An Bord Pleanála during the course of the pre-application meeting, and following receipt of the opinion of the Board (as well as Dublin City Council), which advised on further consideration relating to aspects of the proposed development, the applicant and design team have undertaken a number of significant changes to the development proposal which is reflected within the final development proposal submitted for permission as part of a SHD planning application.

As noted within the development description sections of this chapter, the scheme now comprises a quantum of residential development consisting of 927 no. dwellings, which has been varied from 929 no.



initially and then increased to 933 no. submitted at pre-application stage.

The key changes proposed related to:

- Decrease in overall number of dwellings from an initial 933 to 927;
- Changes to the mix of dwelling types;
- Careful design changes to the minimise the impact the scale and massing has on neighbouring dwellings;
- Changes to the layout, distribution and function of open spaces;
- Alternative car parking arrangements/strategy.

Responses to each of these items have been provided as part of the SHD planning application pack, and the scheme has been updated and improved where necessary as a result.

The overall Masterplan of the proposed development takes into account all environmental effects raised with respect to the pre-application design submitted to An Bord Pleanála, and within the Board's Opinion, and provides for a sustainable development that has been optimised to emphasise positive environmental effects whilst reducing negative environmental impacts wherever possible.

The main environmental considerations have been to achieve a design solution for the preferred layout which would enable all of the functional and operational requirements of the scheme to be met, whilst also ensuring the sensitive siting of new elements within the site. Having established the quantum, type and mix of residential units, a series of alternatives were considered by the design team. This process has enabled the final proposal to evolve.

The primary elements determining siting included the Protected Structure on site, the natural site topography, the proximity of the site to the Chapelizod Bypass and Ballyfermot Road in terms of noise and visual impact considerations.

Alternative locations for the various built elements of the development were considered and examined at the design stage.



3.0 Non-Technical Summary of EIAR Chapters

3.1 Population and Human Health

This Chapter, prepared by Delphi Design Planning Consultants, relates primarily to ‘*Human Beings*’- the potential impacts of the development proposal on human beings, population, and human health within the vicinity of the application site and an assessment of these issues.

One of the principle concerns in the development process is that people, as individuals or communities, should experience no diminution in their quality of life from the direct or indirect impacts arising from the construction and operation of a development. Ultimately, all the impacts of a development impinge on human beings, directly and indirectly, positively and negatively.

3.1.1 Potential Construction and Operational Phase Impacts

The construction phase of the proposed development is likely to result in a positive net improvement in economic activity in the area of the proposed development site, particularly in the construction sector and in associated and secondary building services industries. The sector has grown strongly in recent years and this development will help to further enhance growth and reduce the increasing pressure on the housing market.

The construction phase of the proposed development will primarily consist of site clearance, excavation and construction works, which are likely to take place over 4 no. main phases, which will be largely confined to the proposed development site. Notwithstanding the implementation of remedial and mitigation measures, there will be some minor temporary residual impacts on population (human beings) and human health most likely with respect to nuisance caused by construction activities. It is anticipated that subject to the careful implementation of the remedial and mitigation measures proposed throughout this EIAR document any adverse likely and significant environmental impacts will be avoided. Positive impacts are likely to arise out of an increase in employment and economic activity. The overall predicted likely and significant impact of the construction phase will be short-term, temporary and likely to be neutral.

The proposed development will result in a generally positive alteration to the site in terms of the provision of residential units to serve the growing residential population of the city in accordance with the objectives of Dublin City Council’s Development Plan. Positive impacts on population and human health will include health benefits associated with the provision of a significant quantity of open space, pedestrian and cyclist accessibility to the site, including the provisions of connections from the development to Markievicz Park, a highly permeable layout which connects the site to Ballyfermot Road to the south and delivers the objectives of the CDP. The provision of community use space, a retail / café unit and residential amenity spaces, enhances the quality of the development and helps to create sustainable communities.

3.1.2 Mitigation

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

Overall, subject to adherence to best practice and implementation of appropriate mitigation measures detailed in this EIAR, the overall temporary impacts associated with the construction phase (noise, dust, visual, traffic disruption) are considered to represent a slight / moderate negative impact for the population. In order to avoid and / or reduce impacts on the adjoining residents, a CMP will be put in place prior to



the commencement of development.

3.2 Biodiversity

This chapter was prepared by Dr Bryan Thompson, Ecologist; of Enviroguide Consulting. A separate stand-alone Appropriate Assessment (AA) Screening Report and Natura Impact Statement are also included as part of the planning application documentation. Under Article 6(3) of the Habitats Directive a screening for 'appropriate assessment' of projects must be carried out to determine if significant effects are likely to arise to Natura 2000 sites. This assessment is carried out by the competent authority, in this case An Bord Pleanála.

Chapter 5 of the EIAR (Volume II) assesses potential impacts that may arise from the proposed development on biodiversity within the receiving environment; in accordance with the following guidance documents:

- Wildlife Act 1976
- EU Habitats Directive 1992 and EC (Birds and Natural Habitats) Regulations 2011
- Flora (Protection) Order, 1999
- S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011
- EU Birds Directive
- EU Habitats Directive
- Bern and Bonn Convention

It aims to discuss the existing ecological environment, the potential impacts of the scheme and avoidance and mitigation measures in relation to habitats, flora and fauna in the zone of influence (ZOI) of the proposed development.

3.2.1 Consultation

Consultation has been undertaken with Dwyer Nolan Developments Ltd / Dublin City Council with regard to the scope of works within the proposed project.

3.2.2 Methodology

A desktop study was carried out to collate and review available information, datasets and documentation sources pertaining to the site's natural environment. The desk study, completed in March 2022, relied on the following sources:

- Information on species records² and distributions, obtained from the National Biodiversity Data Centre (NBDC) at www.maps.biodiversityireland.ie
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at www.gis.epa.ie
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at www.gsi.ie
- Information on the network designated conservation sites, site boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at www.npws.ie

² The Site of the Proposed Development lies within the 10km grid square O13 and the 2km grid square O13B. Records from the last 30 years from available datasets are given in the relevant sections of this report.



- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland.
- Information on the existence of permitted development, or developments awaiting decision, in the vicinity of the Proposed Development from the National Planning Application Database available at <https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de>
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and/or its design team.
- Information on the proposed works to be undertaken as part of the Proposed Development, taken from the Final Project description provided by the Applicant along with survey data with respect to the Proposed Development extracted from a draft EIAR biodiversity chapter prepared in 2021 (Mary Tubridy Consultants, 2021).

3.2.3 Field Survey Work

Habitat surveys were completed by Mary Tubridy between July 2019 and March 2021 with an updated habitat survey for the Proposed Development completed by Enviroguide Consulting on the 28th of January 2022. Habitats were categorised according to the Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000) to level 3. The habitat mapping exercise had regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2010) published by the Heritage Council. Habitat categories, characteristic plant species and other ecological features and resources were recorded on field sheets.

Enviroguide Consulting carried out winter bird surveys and vantage point surveys on site between January and March 2022. The objective of these surveys was to determine the composition, number, frequency, and transit height of species in passage over the Site of the Proposed Development, if any, to inform decisions on potential disturbance to flight lines of birds commuting to/from roost sites and/or between feeding sites as a result of the construction of the Proposed Development. Each survey day commenced at either dawn or 6 hours prior to dusk. Common bird surveys for the Proposed Development was carried out by Dr Mary Tubridy on several dates between February 2019 to February 2021 and by Dr Bryan Thompson from Enviroguide Consulting on the 28th of January 2022. The survey methodology followed the British Trust for Ornithology's (BTO) Common Bird Census (CBS) technique (2nd edn) (Bibby et al., 2000), and the equipment used was Opticron Natura BGA 8 x 42 Binoculars. A pre-determined transect was walked and all bird species encountered were recorded on field sheets as well as location (on 1:500 field maps), behaviour and numbers. Bird identifications were confirmed where necessary using 'The Complete Guide to Ireland's Birds' by Dempsey E. & O' Cleary (2002).

Mammal surveys for the Proposed Development were carried out in conjunction with other field surveys. The site was searched for tracks and signs of mammals. The habitat types recorded throughout the survey area were used to assist in identifying the fauna considered likely to utilise the area. During this survey, the site was searched for tracks and signs of mammals as per Bang and Dahlstrom (2001).

A series of bat surveys of the Site were carried out by Bat Eco Services between the 27th of May and 14th of June 2020. Refer to the Bat Survey Report for full details.

During the habitat surveys at the Site of the Proposed Development, other species of fauna were noted, and these are included in the report where applicable.

The results are as follows:



Rare and Protected Flora

The Site of the Proposed Development is located within the Ordnance Survey National Grid 10km Square O13, 2km square (O13B) and 1km square (O1033). Species records from the National Biodiversity Data Centre (NBDC) online database for these areas were studied for the presence of rare or protected flora species. This database contained no records of rare and protected flora within the last 30 years. The FPO Bryophytes database was also checked for rare and protected flora within the vicinity of the quarry. No rare or protected bryophyte records exist within the vicinity of the Proposed Development.

Invasive Species

There are records for 34 species of flora considered to be invasive within the 10km square O13 and 2km grid square O13B within which the Proposed Development site is located.

Two invasive plant species were recorded on the site during site surveys in 2022. These were Butterfly-bush (*Buddleja davidii*) and Sycamore (*Acer pseudoplatanus*).

Fauna

Mammals (excl. bats)

Records for terrestrial mammals were obtained from the NBDC online database, along with records obtained from the NPWS. Table 5.10 of the EIAR Volume II lists these species, their date of last record and summarises their protected status/designation.

No rare or protected mammal species were directly recorded during site surveys in 2022 or in previous surveys conducted by Dr Mary Tubridy.

The habitats within the Site of the Proposed Development are of variable value to mammals. The section of hedgerows habitat in the former monastery garden may provide habitat for smaller mammals such as Hedgehog, Pygmy shrew. No Badger setts or signs of Badger activity were recorded during the site survey in 2022. However, should a suspected badger sett be discovered during the proposed works it is recommended a professional ecologist be consulted regarding how best to proceed. No signs of Otter were recorded at the Proposed Site nor does the site provide suitable habitat for this species. Similarly, no signs of Irish Stoat or Irish Hare were recorded on site. Generally, Irish stoat is found in open woodlands and rocky scrub covered areas or if found on agricultural lands they will be located near any stone walls, ditches or hedgerows. Although there is a small hedgerow present on site, this hedgerow is not suitable for stoat as there is no clay bank beneath the hedgerow in which stoats would construct dens. Irish Hare is typically found on coastal grasslands and salt marshes to upland moors and is most abundant on lowland pastures and areas that provide short grass, herbs and heather. Unlike rabbits they do not burrow underground but occupy ground surface dens known as forms which are sheltered areas of flattened vegetation under heather and long grass. As these habitats are not present on site these species are not considered further. The site may be of value to red squirrels given the mixed conifer woodland and scattered trees present on site. Red squirrel is widespread through Ireland but are rare in Dublin (Lawton et al., 2020). No sign of red squirrel activity or dreys were recorded during site visits.

The Site of the Proposed Development has the potential to support non-native/invasive species such as Brown Rat and European Rabbit. No signs of Fallow Deer, Greater White-toothed Shrew, House Mouse, Feral Ferret American Mink or Eastern Grey Squirrel were observed at the Site of the Proposed Development. As these species are non-native/invasive they are not considered further in this report. A red fox was observed towards the treeline on the northern site boundary however there were no visible



signs of fox dens on site. Although not afforded the same level of protection as the other mammal species mentioned above; wilful harming of the animal should be avoided. Fox is protected from a variety of hunting/extermination techniques as per the Wildlife Acts 1976 to 2012; and from acts of cruelty as per the Animal Health and Welfare Act 2013. Should a suspected fox den be discovered during the proposed works it is recommended a professional ecologist be consulted regarding how best to proceed.

Bats

Three species of bat were recorded foraging and commuting within the Proposed Development area. The three bat species recorded were common pipistrelle (*Pipistrellus pipistrellus*), Leisler's bat (*Nyctalus leisleri*) and soprano pipistrelle (*Pipistrellus pygmaeus*) which are the three most common bat species in Ireland (Roche et al., 2014). No bat roosts were recorded within any of the buildings on site with each of these buildings being characterised as having low-medium bat roost potential. Nineteen trees on site were identified as having bat roost potential but no bat roosts were observed.

The Proposed Development Site is used as a foraging and commuting habitat for local bat populations. The level of bat activity and the number of bat encounters do not indicate that the Proposed Development Site is of significant importance to local bat populations.

Birds

Results from the bird surveys and vantage point surveys conducted by Enviroguide Consulting at the Site of the Proposed Development in 2022 are shown in Table 5.12:2 of the EIAR Volume II. A total of 29 species were identified within the Site of the Proposed Development. This list includes records from surveys conducted by Mary Tubridy between 2019 and 2021.

Vantage point surveys conducted by Enviroguide Consulting between January and March 2022 recorded several flocks of Light-bellied Brent Geese with up to 120 individuals per flock flying over the Site in the direction of known ex-situ foraging sites (Le Fanu Park, Liffey Gaels and the 15 Acres). The height of these flocks above ground level ranged from 25-40m which lies within the collision risk zone for the Proposed Development (2-13 storeys). Several Black-headed Gulls were also observed soaring over the Site during these surveys.

Fish

The Atlantic salmon is listed as an Annex II species under the Habitat Directive. There is no record of this species in the 10km national grid square O13 or 2km grid square O13B in which the Site of the Proposed Development is located. Salmon stock surveys of 31 catchments or sub-catchments by Inland Fisheries Ireland in 2021 (Gargan et al., 2022) covered sections of the upper and lower River Liffey to the North of the Site, which will receive surface drainage from the Proposed Development. These surveys recorded the presence of Salmon in both the upper and lower Liffey. Therefore, as the River Liffey will receive surface water from the Proposed Development, potential impacts on Atlantic salmon will be further assessed.

Lamprey (*Lampetra* sp. & *Petromyzon marinus*)

All three lamprey species recorded in Ireland are listed on Annex II of the EU Habitats Directive. Lamprey larval burrows are characteristically found at eddies or backwaters, on the inside of bends or behind obstructions, where current velocity is below that of the main stream and where organic material tends to accumulate (Kelly & King, 2001). There are no records for any species of lamprey within either the 10km (O13), 2km (O13B) grid squares associated with the Site of the Proposed Development.



It is commonly accepted that the distributions of the Lamprey species in Ireland are not yet fully known and that it is likely they occur in most catchments throughout the country (Igoe et al. 2004). For example, river lamprey (*Lampetra fluviatilis*) was recorded in the upper Liffey estuary during surveys conducted by Inland Fisheries Ireland (IFI) in 2010 (IFI 2010). As such these species will be assessed further as 'Lamprey'.

European eel (*Anguilla anguilla*)

European eel is a red listed species and is currently considered to be the most threatened fish species in Ireland (King et al. 2011). European Eel can inhabit a range of waterway types including lakes, small streams and rivers; migrating from where they live in freshwater habitats to breed at sea, before returning as young eel to their freshwater habitats (King et al. 2011). Eel was recorded in the River Liffey downstream of the Proposed Development during IFI surveys in 2010 (IFI, 2010). Given the hydrological connection between the Proposed Development and the River Liffey, European eel is assessed further in this report.

Other Vertebrates

Common frog (*Rana temporaria*)

There is no potential breeding habitat for common frog (*Rana temporaria*) within the Proposed site. There are records of Common frog within the 10km grid square O13. Given the hydrological connection between the site and the River Liffey via surface water drainage this species is assessed further in this report.

Smooth newt (*Lissotriton vulgaris*)

There are records for smooth newt within the 10km grid square O13 which encompasses the Site. Given the hydrological connection between the Site and the River Liffey via surface water drainage this species is assessed further in this report.

Common Lizard (*Zootoca vivipara*)

There are no records of Common Lizard (*Zootoca vivipara*, formerly *Lacerta vivipara*) within the 10km grid square O13. However, there is potential suitable habitat for this species (woodland, grassy tussocks, scrub) within the Site of the Proposed Development. As such this species is assessed further.

Invertebrates

White-clawed crayfish (*Austroptamobius pallipes*)

In Ireland, the white-clawed crayfish most commonly occur in small and medium-sized lakes, large rivers, streams and drains; wherever there is sufficient lime (Reynolds, 2007). Freshwater crayfish require relatively hard water with high calcium levels, due to their requirement for sufficient calcium to harden their exoskeletons following moulting (Gallagher et al., 2006 in Reynolds et al. 2010a). The overall conservation status of the white-clawed crayfish in Ireland is inadequate, due to the reduction in its range and the continuing pressures that it faces (NPWS, 2013).

There are no records for this species within the grid square O13 which encompasses the Site of the Proposed Development. It is noted that this species is widely distributed in midlands of Ireland. In the Liffey Catchment, white-clawed crayfish are restricted to headwater streams and are not found



downstream, likely due to poor water quality (Demers and Reynolds, 2002; Reynolds et al. 2010a). Despite a hydrological connection between the Site and the lower River Liffey via surface water discharges this species is not further assessed due to lack of suitable habitat.

Marsh Fritillary (*Euphydryas aurinia*)

Marsh Fritillary butterfly is listed under Annex II of the EU Habitats Directive. There are records for this species within the 10km grid square 013.

Neither Marsh Fritillary, nor its associated food plant; devil's bit scabious (*Succisa pratensis*), were recorded during site surveys. Therefore, this species is not assessed further.

3.2.4 Potential Impacts

Taking the baseline ecological data, the extent, the scale and the characteristics of the proposed development into account, the following potential impacts have been identified and are discussed in the following paragraphs.

Potential Impact of the Proposed Development

The Potential impacts from the Proposed Development on habitats, flora and fauna associated with Site of the Proposed Development is assessed in the following sections.

Construction Phase

Construction will lead to the removal of almost all habitats present on site. The following habitats will be completely removed:

- Dry meadows and grassy verges (GS2)
- Ornamental non-native shrubs (WS3)
- Scrub (WS1)
- Hedgerows (WL1)
- Treelines (WL2)
- Mixed coniferous woodland (MD5)

As such, the removal of these habitats will result in the loss or disturbance of all species associated with them.

Most of the habitat BL3 will be removed apart from the original primary school) which will be converted to community (92m²) and creche (1,005m²) uses. The majority of scattered trees and parkland (WD5) habitat will be removed. However, as part of the landscape plan, trees at the south eastern corner of the site, closest to Markiewicz Park will be retained.

Operational Phase

During the Operational phase there may be increased disturbance to biodiversity, increased landscaping activities which may increase the risk of introducing invasive species. In addition, the occupation of housing will increase night-time noise and lighting disturbance in the environs of the site.

Proposed Foul and Surface Water Networks

The Proposed Development will be served by the existing surface water network via a new connection to



the existing 450mm surface water drain (ID:121365) on Ballyfermot Road which runs east and joins a separate 450mm storm water drain (ID: 34997) which in turn discharges into the River Liffey. A suite of SUDS measures has been incorporated into the project design as per the requirements of DCC policy (SI18) and the Greater Dublin Strategic Drainage Strategy (GDSDS). The Site will be served by a public foul sewer via a newly constructed connection which flows to Ringsend WwTP. The increase of a maximum load of 2503 Population Equivalent (PE) at the facility as a result of the Proposed Development, assuming each PE unit was not previously supported by the WwTP, is considered to be an insignificant increase in terms of the overall scale of the facility

Impacts to Designated Sites

An Appropriate Assessment (AA) Screening report has been carried out in relation to the Proposed Development and accompanies this application. The AA Screening concludes as follows:

The Proposed Strategic Housing Development at Ballyfermot, Co. Dublin, has been assessed taking into account:

the nature, size and location of the Proposed works and possible impacts arising from the construction works.

*the qualifying interests and conservation objectives of the European Sites
the potential for in-combination effects arising from other plans and projects.*

*In conclusion, upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of this report that, on the basis of objective information; the possibility **may be excluded** that the Proposed Development will have a significant effect on any of the European Sites listed below:*

*Glenasmole Valley SAC (001209)
Rye Water Valley/Cartron SAC (001398)
Wicklow Mountains SAC (002122)
Wicklow Mountains SPA (004040)
Baldoyle Bay SAC (000199)*

However, upon examination of the relevant information including in particular the nature of the Proposed Development and the likelihood of significant effects on European Sites, the possibility may not be excluded that the Proposed Development will have a likely significant effect on any of the European Sites listed below:

*South Dublin Bay SAC (000210)
North Dublin Bay SAC (000206)
South Dublin Bay and River Tolka Estuary SPA (004024)
North Bull Island SPA (004006)*

Accordingly, a Natura Impact Statement has been prepared for the Proposed Development and is included under separate cover.

The following conclusion is extracted from the Natura Impact Statement:

This Natura Impact Statement details the findings of the Stage 2 Appropriate Assessment conducted to further examine the potential direct and indirect impacts of the Proposed Development planning application at Ballyfermot, Co. Dublin on the following European sites:



South Dublin Bay SAC (000210)
North Dublin Bay SAC (000206)
South Dublin Bay and River Tolka Estuary SPA (004024)
North Bull Island SPA (004006)

The above sites were identified by a screening exercise that assessed likely significant effects of a range of impacts that have the potential to arise from the Proposed Development. The Appropriate Assessment investigated the potential direct and indirect impacts of the proposed works, both during construction and operation, on the integrity and qualifying interests of the above European sites, alone and in combination with other plans and projects, taking into account the site's structure, function and conservation objectives.

Where potentially significant adverse effects were identified, mitigation and avoidance measures have been proposed to negate them. Therefore, as a result of the complete, precise and definitive findings of this Appropriate Assessment; it has been concluded beyond any reasonable scientific doubt, that once the mitigation measures recommended in this report are implemented correctly and in full, the Proposed Development at Ballyfermot, Co. Dublin will not result in any significant adverse effects on the above European sites.

As a result of the complete, precise and definitive findings in of this NIS, it has been concluded, beyond reasonable scientific doubt, that the Proposed Development will have no adverse effects on the qualifying interests, special conservation interests and on the integrity and extent of South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA. Accordingly, the Proposed Development will not adversely affect the integrity of any relevant European site."

As the NIS contains a full assessment of potential impacts on European sites as well as a series of mitigation measures to protect them, they are not considered further in this Biodiversity Chapter.

The closest Proposed Natural Heritage Area to the Site of the Proposed Development is Grand Canal ca. 1 km to the south of the Site. Although this site has no formal qualifying interests the NPWS site synopsis states that *"the ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods"*. In particular, this site contains a diverse range of hedgerow and riparian flora. There is no potential for any significant impacts to occur at this site due to the intervening distance between the site and the Proposed Development, and the lack of any pathway or connectivity between the sites. However, it should be noted that as North Dublin Bay pNHA overlaps with North Dublin Bay SAC and South Dublin Bay pNHA overlaps with South Dublin Bay, the assessment of potential impacts and the mitigation measures outlined below to protect these pNHA's are similar to those outlined in the NIS. These measures will also apply to Dolphins, Dublin Docks pNHA at the mouth of the River Liffey.

Loss of Habitat

Construction Phase

KER Habitats

The Proposed Development will result in the complete or partial loss of several habitats assessed as local importance (higher value) as per the NRA (2009b) scheme. The impact of the Proposed Development due to the removal of these habitats is not considered significant and is considered to be **negative, permanent, moderate** at a local scale.



Birds

Although local birds are likely adapted to a certain degree of urban ambient noise, the Construction Phase of the Proposed Development will likely involve elevated noise levels associated with construction activity at the Site. As a result, there is a potential risk of noise disturbance to birds in the vicinity of the Site, representing a **negative, local, short-term, slight** impact.

The Proposed Development will result in the partial or complete loss of several habitats during the construction phase which may be of nesting and foraging value to birds, particularly treelines and hedgerows. In addition, the majority of scattered trees and parkland and mixed coniferous woodland habitats will be removed as part of the proposed works with some sections being retained towards the southern boundary. Therefore, the loss or prevention of usage of these habitats in the context of the surrounding environment represents a **negative, local, long-term, significant** impact to birds should they be prevented from nesting or foraging at the Site

Should vegetation be cleared or buildings demolished as part of the Construction Phase during the breeding bird season (March 1st to August 31st); there is the potential for nesting birds to be harmed and nests to be destroyed. This would be in contravention of the Wildlife Acts and Amendments (2000) which provides protection to breeding bird species and their nests and young. Therefore, in the absence of any mitigation or precaution, this risk represents a potential **negative, local, permanent, significant** impact to breeding birds.

As the site is not suitable *ex-situ* foraging habitat for Light-bellied Brent Geese or Black-headed Gulls, the loss of any habitat on site will not impact these species.

Bats

Fieldwork and the tree surveys by Dr Tina Aughney concludes that the site has a particularly good diversity of native trees which were planted when the school was established. There is potential for a **negative, local, short-term, slight** impact through the loss of potential bat habitats for foraging and commuting and increased lighting associated with the Construction Phase of the Proposed Development. High levels of luminance can impair bats' vision resulting in disorientation. Artificial lighting can impact on bat's roosting sites, commuting routes, and foraging areas especially along waterways. It is essential that lighting plans for a development site and around known roosts take into consideration the exit points, flight paths and foraging areas for bats and ensure these areas are not illuminated (BCI, 2014).

Aquatic Species

There is potential for negative impacts on aquatic species within the River Liffey and Dublin Bay adjacent to the Site due to potential contaminated surface water run-off arising from the Proposed Development Site. This constitutes a **negative, local, short-term, significant** impact in the absence of suitable mitigation.

Mammals

The negative impacts to terrestrial mammals will be largely a result of habitat loss and disturbance. No mammals of conservation concern were recorded within the Site of the Proposed Development although common and widespread species such as Pygmy Shrew and Hedgehog are likely to use it. Similarly, given the presence of mixed coniferous woodland habitat on site and the records of red squirrel in the surrounding tetrads, red squirrel may utilise this site. These species are listed as of least concern on the



Red List of Mammals in Ireland. Due to the limited size of the Proposed Development Site, if present, the population of these species on the Site is anticipated to be small. The loss of semi-natural habitat and displacement of these species from the Site is not anticipated to have a significant impact on the conservation status of the local population of hedgehog, red squirrel or pygmy shrew.

Small mammal species such as Pygmy Shrew, Red squirrel and in particular Hedgehog, have the potential to become entangled in construction materials such as netting and plastic sheeting, as well as other waste materials, causing entrapment and injury or death. This constitutes a **negative, local, short-term, moderate** risk at a local level associated with the Construction Phase of the Proposed Development.

Noise and dust generated during the Construction Phase has the potential to cause **negative, local, short-term, moderate** effects in the form of disturbance to mammals at a local level. Increased lighting at the Site also has the potential to cause **negative, local, temporary, slight** disturbance to mammals in the locality.

A Fox was observed on site however, no signs of fox dens were evident on site. If a suspected fox den were to be found, an ecologist should be consulted on how best to proceed. Care should be taken when disturbing the den and the area around it. Removal of the den in the absence of mitigation could result in mortality of the occupant(s) resulting in a **negative, local, permanent, moderate** impact locally.

Common lizard

The impact on common lizard, should this species occur at the Site, will be as a result of habitat loss, disturbance, or direct mortality due to earthworks and vegetation clearance. Common lizards are listed as Least concern on the Red List (King et al., 2011). Considering the above, the removal of scrub and dry meadows and grassy verges habitat is anticipated to have a **negative, local permanent, slight** effect on common lizard. Mortality of individuals could have a **negative, local, long-term, moderate** impact on local populations as it would result in a reduction of the local lizard population rather than a displacement of a population due to habitat loss.

Invasive flora

As two invasive species (Buddleia and Sycamore) were present on site, removal of topsoil from the site may facilitate the spread of these non-natives. In addition, transport of construction materials to the site by numerous construction vehicles raises the risk of introducing invasive species particularly during landscaping activities. This negative impact is potentially of significance and should be managed.

Operational Phase

Birds

Vantage point surveys conducted by Enviroguide Consulting between January and March 2022 recorded flocks of Light-bellied Brent Geese with up to 120 individuals per flock flying over the Site in the direction of known ex-situ foraging sites (Le Fanu Park, Liffey Gaels and the 15 Acres). The height of these flocks above ground level ranged from 25-40m which is within the collision risk zone for the Proposed Development (2-13 storeys). Several Black-headed Gulls were also observed soaring over the Site during these surveys. Therefore, although highly unlikely, the Proposed Development may present a collision risk for Light-bellied Brent Geese and Black-headed Gulls. Mortality of individuals could have a **negative, local, permanent, significant** impact on local populations.



Bats

There is potential for a ***negative, local, permanent, moderate*** impact through the increased lighting and noise associated with the Operational Phase of the Proposed Development.

Aquatic Species

There is potential for ***negative, local, permanent, slight*** effects as a result of the Operational Phase of the Proposed Development on species within the River Liffey and Dublin Bay due to the surface discharges from the Site.

Mammals

There is potential for a ***negative, local, permanent, slight*** local impact to mammals through the increased lighting associated with the Operational Phase of the Proposed Development.

Common Lizard

No effects on common lizard are anticipated during the Operational Phase.

Invasive species

There is potential for a negative impacts on the surrounding environment through the introduction of invasive species during operational phase landscaping and maintenance activities.

3.2.5 Mitigation

Mitigation by Design

Landscape Plan

The Proposed Development will require the majority (186/199) of existing trees to be removed on site. While their loss will have an initial impact on canopy cover, visual appearance and biodiversity value, the landscaping strategy for the development proposal has taken into consideration loss of existing trees and includes new high-quality tree planting to be carried out which will help to mitigate the initial loss and have a positive impact on the visual appearance, amenity and biodiversity value of the Proposed Development.

For example, the landscape plan includes a strong biodiversity axis through the site to mitigate for the loss of the wooded area to the east of the site. On the south eastern site boundary, the two separate areas of scattered trees and parkland (WD5) habitat are to be retained. Reinforcement planting is proposed at these areas to help mitigate tree loss and to create a green entrance to the development and a green connection between Markievicz Park and the proposed new park in the centre of the Development. This green entrance is further developed into a strong biodiversity axis through the site, until the northern boundary with existing trees. This will help establish a new commuting and foraging route for birds and bats through the site. However, it is recommended that there is greater landscape planting on the eastern boundary than what is currently proposed in the landscape masterplan. The eastern portion of the site currently provides foraging and commuting habitat for birds and bats. A greater level of landscape planting will enable continued use of this existing biodiversity corridor by birds and bats.

Sustainable Urban Drainage Systems

The Proposed Development will be designed to incorporate best drainage practice. Surface water from the Proposed Development will be collected by the proposed surface water sewer network prior to discharge to a newly proposed attenuation facility (Pluvial Cube or similar) located underneath the open space area approximately at the



centre of the Site. The attenuation has been designed so that any storm water run-off from any storm event under 1 in 100 years will be contained in the pluvial cube underground attenuation system. It is proposed to discharge surface water from the site by gravity to the existing surface water pipeline located within the Ballyfermot Road to the south to the site.

Lighting Plan

To protect bats from lighting associated with the Construction and Operational phase of the Proposed Development, the following will be incorporated when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018). Any Construction or Operational Phase external lighting will strictly follow the above guidelines.

Protection of Designated Sites

Surface water mitigation

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor will cooperate fully with the Environment Section of Dublin City Council in this regard.

Personnel working on the Site will be trained in the implementation of environmental control and emergency procedures. Procedures and relevant documents produced will be formulated in consideration of standard best international practice

Dust Minimisation Plan

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors, including *ex-situ* sites at Liffey Gaels, Le Fanu park and the 15 acres associated with Light-bellied Brent Geese. In addition, the following dust control measures will mitigate against disturbance to flora and fauna and reduction in habitat quality in the vicinity of the site. In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK (BRE 2003), (The Scottish Office 1996) (UK Office of Deputy Prime Minister 2002) and the USA (USEPA 1997), (USEPA 1986).

Communications

Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.

Display the name and contact details of person accountable for air quality and dust issues on the site boundary.

Display the head or regional office contact information.

Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM₁₀ continuous monitoring and/or visual inspections.

Site Management

Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged.



Monitoring

Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.

Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

Preparing and Maintaining the Site

Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.

Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.

Avoid site runoff of water or mud.

Keep site fencing, barriers and scaffolding clean using wet methods.

Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.

Covered stockpiles to prevent wind whipping.

Operating Vehicles / Machinery and Sustainable Travel

Ensure all vehicles switch off engines when stationary - no idling vehicles.

Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.

Impose and signpost a maximum-speed-limit of 20 kmph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).

Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.

Implement a Travel Plan that supports and encourages sustainable travel (e.g., cycling, walking)

Operations

Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems.

Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.

Use enclosed chutes and conveyors and covered skips.



Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.

Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Measures Specific to Demolition

Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust)

Ensure effective water suppression is used during demolition operations. Hand-held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.

Avoid explosive blasting, using appropriate manual or mechanical alternatives.

Bag and remove any biological debris or damp down such material before demolition.

Measures Specific to Earthworks

Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian or mulches where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.

Only remove the cover in small areas during work and not all at once.

During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

Measures Specific to Construction

Avoid scabbling (roughening of concrete surfaces) if possible.

Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.

For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Measures Specific to Track out

Site roads (particularly unpaved) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80%.

Dust Control – Public Roads

Spillage and blow-off of debris, aggregates and fine material onto public roads should be reduced to a minimum by employing the following measures.

Vehicles delivering material with potential for dust emissions to an off-site location will be enclosed or covered with tarpaulin always to restrict the escape of dust;



Public roads outside the site will be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.

If practicable, a wheel wash facility will be employed at the exit of the site so that traffic leaving the site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain.

Noise management

Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.

A potential impact on SCI species from the relevant SPAs utilising *ex-situ* feeding sites in the vicinity of the Proposed Development was identified due to noise generated during the Construction Phase of the Proposed Development.

Noise generated during the Construction Phase of the Proposed Development could cause temporary disturbance to a number of faunal species in the vicinity of the Site of the Proposed Development. To mitigate this temporary disturbance, the Contractor undertaking the construction works will be obliged to take specific noise abatement measures and comply with the recommendations of BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Noise and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001.

Protection of Fox

Fox is protected from a variety of hunting/extermination techniques as per the **Wildlife Acts 1976 to 2012**; and from acts of cruelty as per the **Animal Health and Welfare Act 2013**.

If dens are uncovered on site they should not be disturbed during the breeding/rearing season, which typically lasts from **March to June**. If destroying the den at other times, care should be taken to allow the occupant to escape.

Protection of Hedgehog, Red Squirrel and Pygmy Shrew

As noted in the British Hedgehog Preservation Society's publication *Hedgehogs and development*, during the Construction Phase of the Proposed Development Hedgehogs have the potential to be impacted through the loss of suitable hibernation and nest sites in the form of piles of dead wood, vegetation and leaves. This can be mitigated through the careful removal of dead wood/leaves to another part of the Site where they will not be affected. Woody debris from the proposed clearance of vegetative areas on site can also be left in this out-of-the way location as compensatory Hedgehog habitat during the Construction Phase.

Vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., Hedgehog).

Hedgehog also frequent long grass for foraging and daytime nesting sites so caution when strimming/ mowing these areas of the Site is advised.

As best-practice, all construction-related rubbish on site e.g., plastic sheeting, netting etc. should be kept in a designated area on site and kept off ground level so as to protect Hedgehogs from entrapment and death. The above measures will also act to mitigate potential negative impacts on other small mammal species potentially found on site e.g., Pygmy Shrew.

Work likely to cause disturbance during hibernation – for example removal of hibernation habitats such as log piles and dense scrub – **will not take place during November to March**.

Red Squirrel reproduces from January to March with the young being fully weaned by the end of April. As such vegetation removal **will not take place during January-April** if found to be reproducing on site.



Protection of Bats

In order to reduce the potential negative impact of the Proposed Development on local bat populations, the following mitigation measures are recommended to be fully implemented.

Phase 2 Tree Survey & Tree Felling

Minimise the removal of mature trees, where possible. Approximately 19 trees, deemed as PBRs, are proposed to be removed. If the trees are to be removed, planting will be undertaken to mitigate for tree removal and landscaping plans will be planted “like for like” in relation to tree and shrub species removed. Consideration will be given towards hawthorn, blackthorn mix with individual ash, alder and birch to form a native tree hedge along the boundaries of the Proposed Development) and deciduous trees (native tree species include ash, oak, alder, birch)

A 2nd assessment of the trees proposed to be removed will be undertaken prior to tree removal to determine total number of trees to be felled and the tree felling procedure to be undertaken. This will be undertaken in consultation with the tree surgeons. If bats are encountered during this assessment the NPWS will be consulted.

Where possible, trees, which are to be removed, should be felled on mild days during the autumn months of September, October or November or Spring months of February and March (felling during the spring or autumn months avoids the periods when the bats are most active).

Bat Box Scheme

The total number of bat boxes required to mitigate for the tree felling (n=19 PBRs) and for general conservation of local bat populations:

Schwegler Woodcrete 1FF bat box x4
Schwegler Woodcrete 1F bat boxes x4

Bat boxes will be sited carefully by a bat specialist. Bat boxes will be erected prior to construction works. The bat specialist will erect the bat boxes with assistance from the contractor. Some general points that will be follow include:

Straight limb trees (or telegraph poles) with no crowding branches or other obstructions for at least 1 metre above and below position of bat box should be used.

Diameter of tree should be wide and strong enough to hold the required number of boxes.

Locate bat boxes in areas where bats are known to forage or adjacent to suitable foraging areas. Locations should be sheltered from prevailing winds.

Bat boxes should be erected at a height of 4-5 metres to reduce the potential of vandalism and predation of resident bats. • Locations for bat boxes should be selected to ensure that the lighting plan for the proposed site does not impact on the bat boxes.

External Lighting

To protect bats, all lighting on site during the construction and operational phase will follow the guidelines in section 5.6.1.3 above.

Protection of Birds

Any clearance of vegetation or demolition of buildings should be carried out outside the main breeding season, i.e. 1st of March to 31st of August, in compliance with the Wildlife Act 2000. Should any vegetation removal or demolition be required during this period, this vegetation should be checked for birds, and if any are noted during this evaluation



prior to removal, a derogation licence is required from the NPWS. This would note the section of habitat that is a nest site, the precise location within the hedgerow/trees/buildings, the species of bird present; and also elaborate the means by which the birds would be protected prior to nest removal. If eggs have been laid, the nest should be protected until the young have fledged after which time the nest could be destroyed (under licence from the NPWS only). This would also require further compensatory measures including nesting sites for birds if practicable.

Bird Collision Risk

The physical location of buildings and structures can influence the likelihood of bird collisions, with structures placed on or near areas regularly used by large numbers of feeding, breeding, or roosting birds, or on local flight path, such as those located between important foraging and roosting areas, can present a higher risk of collision. The Proposed Development Site is located 140 m south of the River Liffey which may be utilised by waterfowl species for foraging or to commute inland. During vantage point surveys, several flocks of Light-bellied Brent Geese with up to 120 individuals per flock were observed flying over the site, in the direction of known ex-situ foraging sites (Le Fanu Park, Liffey Gaels and the 15 Acres). The height of these flocks above ground level ranged from 25-40m which is within the collision risk zone for the Proposed Development (2-13 storeys). Several Black-headed Gulls were also observed soaring over the site during these surveys. However, in the case of the Proposed Development it is highly unlikely that a collision event would occur due to the reasons outlined below.

Avoidance capabilities of birds

Coastal birds exhibit a high level of spatial awareness and hazard avoidance. For example, collision risk modelling for coastal gulls and Light-bellied Brent Geese displays avoidance rates of 99.5% - 99.8% for moving objects such as wind turbines (SNH, 2018; Furness, 2019). Given that the Proposed Development consists of series of static buildings, the risk of collision is likely further reduced. In addition, migratory bird species tend to commute far above the proposed building heights, with Swans and Geese flying up to 2500ft (ca.750m) during migration along Irish Coasts (Irish Aviation Authority, 2020).

Building Appearance

The building envelope of the Proposed Development consists of a diverse range of façades which vary in terms of material composition, uniformity and size. In addition, the individual apartment blocks vary in height from 2-13 storeys and include balconies and overhangs as part of the overall design. These architectural design features provide important visible cues as to the presence and extent of the proposed structures to any commuting/foraging bird species should they be in the vicinity of the Site and help to break up reflective surfaces which may disorientate birds (City of Toronto, 2016). Given that the likelihood of collision is already low due to the avoidance capabilities of coastal birds, the overall heterogeneity and design features of the building envelope are likely to further reduce the risk of collision. The above building features are not considered to represent specific mitigation measures to prevent collisions, however, they will contribute to the overall effect in this regard. As such, the risk of collision is deemed negligible.

Protection of Common Lizard

In order to minimise the risk of site clearance and construction works disturbing, or causing the mortality of Common lizard, the following mitigation will be undertaken at the Site:

A site-specific survey for common lizard will be undertaken prior to the construction phase commencing. Appropriate mitigation measures will be recommended by the surveyor, however, they are likely to include the following, extracted from NRA (n.d.):

Any habitats identified as potentially suitable for lizard (e.g., meadow or scrub habitat) will be removed during the winter period, where possible, avoiding potential Common lizard hibernacula sites (dry sites which provide frost-free conditions e.g. underground small mammal burrows, piles of dead wood or rubble) where this is not possible and clearance must be undertaken during the active season (March through to September, inclusive), vegetation will be cut first to approximately 15cm, and then to the ground, under supervision of an ecologist. This will allow the opportunity for lizards to be displaced by the disturbance and leave the affected



area

potential hibernacula sites identified by the surveyor will be removed during the active season (March through to September, inclusive) under the supervision of an ecologist, when they are less likely to be in use by torpid lizards

Protection of aquatic species

The mitigation measures outlined in section 5.6.2.1 above will serve to protect aquatic species.

Invasive Species

To prevent the spread of Butterfly Bush within and outside the Site boundary management options for its removal are provided below:

The Butterfly Bush is a member of the Buddlejaceae family. It is very fast growing and can reach 2m in its first year, producing flowers and setting seed. As Butterfly Bush tolerates very poor soils, it can grow on walls, rock outcrops or sub-soils (NRA, 2010). The following is based on NRA (2010) guidelines:

Management methods such as digging it out are applicable only to minor infestations at the initial stage of invasion. Hand-picking of young plants is feasible but should be undertaken with care to avoid soil disturbance which can give rise to a flush of new seedling. Grubbing of mature stands as a sole attempt at control is not recommended for the same reason. After uprooting, it is essential to plant the ground in order to prevent a flush of new seedling growth. When it is cut, Buddleia grows back from the stump very vigorously. Mowing of young plants does not provide control as they re-sprout with vigour. Where removal of mature plants is not feasible in the short term, the flower heads should be cut off in June before seed set. Chemical control recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix (Starr et al, 2003). Foliar application of approved herbicides may be adequate for limited infestations of younger plants but should be followed up at 6 monthly intervals. At this point it must be stressed that all Plant Protection Products must be used in accordance with the product label and with Good Plant Protection Practice as prescribed in the European Communities (Authorisation, Placing on the Market, Use and Control of Plant Protection Products) Regulations, 2003 (S.I. No. 83 of 2003). Again, it should be noted that it is an offence to use Plant Protection Products in a manner other than that specified on the label. The methods outlined are not in accordance with the product label and so it will be necessary to discuss the use of such methods with the Pesticides Control Service with a view to seeking approval under the derogation procedures provided under the Plant Protection Regulations.

Manual removal of sycamore seedlings and saplings is recommended, i.e. hand pulling and digging up, but the roots must be completely removed, or cut stumps must be treated with a herbicide in order to prevent regeneration, however this should be a last resort (Weber, 2003; Cross & Collins, 2017).

3.3 Land, Soil and Geology

This chapter was prepared by Pieter Martinson (B.Tech, AEng, MIEI) of DBFL Consulting Engineers of DBFL Consulting Engineers and comprises of an assessment of the likely impact of the proposed development on the soils and the geological environment, as well as identifying proposed mitigation measures required to minimise any impacts.

3.3.1 Potential Construction and Operational Phase Impacts

It is anticipated that the main construction activity impacting soils and geology will comprise the following:

Excavation of existing subsoil layers will be required in order to allow for basement excavation, drainage and utility installation and provision of underground attenuation of surface water. Underlying subsoil layers



are generally loose, light brown, slightly sandy clay with angular gravels and occasional rounded cobbles and are expected to be generally suitable for reuse as non-structural fill (e.g. build-up of back gardens areas or build-up of open spaces).

In the context of materials imported to site, these will be natural stones sourced from locally available quarries in accordance with the appropriate statutory guidelines, greenfield/inert soil imported under a Waste Permit issued by the local authority; or materials that have been approved as by-products by the EPA in accordance with the EPA's criteria for determining a material is a by-product, per the provisions of article 27(1) of the European Communities (Waste Directive) Regulations, 2011.

Imported materials will be granular in nature and used in the construction of road pavement foundations, drainage and utility bedding and surrounds. Imported fill may be required to raise the development to the required level to facilitate gravity drainage systems.

Materials will be brought to site and placed in their final position in the shortest possible time. Any imported material will be kept separate from the indigenous arisings from the site. All excavation to accommodate imported material will be precisely co-ordinated to ensure no surplus material is brought to site beyond the engineering requirement. *Please note a detailed site investigation will be conducted to confirm the suitability and quantity of material for reuse and imported fill.*

During the construction phase there is a risk of accidental pollution from the sources noted below. Accidental spills and leaks may result in contamination of the soils underlying the site.

- Storage of oils and fuels on site
- Oils and fuels leaking from construction machinery
- Spillage during refuelling and maintenance of construction machinery
- Use of cement and concrete during construction works

Groundwater vulnerability is mapped as 'high' to 'extreme' by the GSI at the proposed site. This vulnerability will likely be temporarily increased due to the removal of soils, subsoils and made ground cover during construction. Therefore, accidental spillages may impact on the 'locally important' aquifer.

Any excavations associated with development of the site are expected to be moderate with the deepest excavations associated with construction of apartment block basements (approx. 5m). Drainage infrastructure will require excavations of approximately 2.0m with 3.5m in the deepest sections. Current site investigation trial pits were excavated down to 3.5-4.0m BGL before halting due to stiff clay. It is possible that underlying geology may be disturbed in areas of deep excavation, this will be verified by further site investigation works following the receipt of planning permission. Any potential impacts to underlying geology as a result of these excavations will be further assessed following more detailed site investigation works prior to any construction work.

Once the construction stage is complete and the development is in-situ and operational, the geology beneath the proposed site will remain unchanged. Subsoil will either be covered by surface hardstanding, building footprint or landscaped areas.

There will be no direct discharges to soil or groundwater during the operational phase of the proposed development. Foul effluent and surface water will be discharged to the Irish Water sewer and DCC surface water drainage network following the required treatment measures.



There will be no significant storage or use of hazardous materials during the operational phase that could adversely impact subsoil, groundwater or surface water in the vicinity of the site. Accidental losses of oil, petrol or diesel on roadways or in car parks could cause contamination if these elements entered the underlying soil and groundwater. However, the presence of surface hardstanding throughout these areas would render this unlikely. In addition, all surface water will be routed through a suitably sized petrol interceptor before entering the public surface water network.

In the absence of mitigation measures, should accidental losses of oil, diesel, or petrol to ground occur, they would be considered direct, negative impacts of temporary duration, given that they would be confined to one-off releases. This would be considered a medium impact to a medium-extreme sensitivity environment, and the significance of the impact would be moderate.

3.3.2 Mitigation Measures

During demolition of existing structures any hazardous material identified on site will be removed by specialist contractors.

Excavation of existing subsoil layers has been minimised as far as reasonably practicable. Cut type earthwork operations will be required to achieve designed site levels. Cut material is considered likely to be suitable to be reused as non-structural fill elsewhere on site. Confirmation of general suitability will be determined when a detailed site investigation is undertaken, and individual loads will undergo sporadic testing to confirm uncontaminated status prior to widespread use on site. Dependent on the results of the detailed site investigation, any subsoil proposed for structural fill will undergo soil improvement work required at the direction of an appointed geologist.

Disturbed subsoil layers will be stabilized as soon as practicable (e.g. backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping). The duration that subsoil layers are exposed is to be minimised in order to mitigate against weather effects.

Similar to comments regarding stripped topsoil, stockpiles of excavated subsoil material will be protected for the duration of the works. Stockpiles of subsoil material will be located separately from topsoil stockpiles.

Measures will be implemented to capture and treat sediment laden surface water runoff (e.g. sediment retention ponds, surface water inlet protection and earth bunding adjacent to open drainage ditches).

With regards to the importation of fill to site the source of aggregate, fill material and topsoil imported to site will be carefully selected and vetted in order to ensure that it is of a reputable origin and that it is “clean” (i.e. will not contaminate the environment). Project contract and procurement procedures will be developed to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance.

No large or long-term stockpiles of fill material will be held on the site. At any time, the extent of fill material held on site will be limited to that needed in the immediate vicinity of the active work area.

Smaller stockpiles of fill, where required, will be suitably protected to ensure no sediment laden runoff enters existing surface water drains. Such stockpiles are to be located in order to avoid double handling.



A construction traffic management plan will be developed and implemented in order to minimise the disturbance caused by large vehicles. This management plan shall include and detail:

- Predetermined haul routes for earthworks plant and vehicles delivering construction materials to site.
- Vehicle wheel wash facilities in the vicinity of any site entrances and road sweeping to maintain the road network in the immediate vicinity of the site.
- Dust suppression measures (e.g. dampening down).

Due to the presence of a locally important aquifer beneath the site and the extreme groundwater vulnerability, it will be necessary to employ mitigation measures at the construction site in order to prevent spillages to ground of fuels, and to prevent consequent soil or groundwater quality impacts. These measures are outlined in the Construction & Environmental Management Plan (CEMP) and are listed here as follows:

- Over Ground Oil / Diesel Storage – Only approved storage system for oil / diesel within the site will be permitted, (i.e. all oil / diesel storage to be located within a designated area placed furthest away from adjacent watercourses and contained within constructed bunded areas e.g. placed on 150mm concrete slab with the perimeter constructed with 225mm solid blockwork rendered internally);
- The bunded area will accommodate the relevant oil / diesel storage capacity in case of accidental spillage. Any accidental spillages will be dealt with immediately on site, however minor, by containment /removal from site;
- All hazardous substances on-site shall be controlled within enclosed storage compounds that shall be fenced-off and locked when not in use to prevent theft and vandalism;
- Fixed plant shall be self-bunded; mobile plant must be in good working order, kept clean, fitted with drip trays where appropriate and subject to regular inspection; water runoff from designated refuelling areas shall be channelled to an oil-water separator, or an alternative treatment system, prior to discharge; and,
- Spill kits and oil absorbent material shall be carried with mobile plant and located at vulnerable locations around the site to reduce risk of spillages entering the sub-surface or groundwater environment; booms shall be held on-site for works near drains or dewatering points.

No mitigation measures are proposed in relation to the geological environment.

Upon completion of the construction phase all temporary construction compounds are to be removed. Such areas are to be reinstated in accordance with the landscape architects plan and engineer's drawings. All construction waste and/or scrapped building materials are to be removed from site on completion of the construction phase.

Oil, fuel etc. storage areas are to be decommissioned on completion of the construction phase. Any remaining liquids are to be removed from site and disposed of at an appropriate licenced facility. All sediment control measures (e.g. sediment retention ponds) are to be decommissioned on completion of the construction phase. Such areas are to be reinstated in accordance with the landscape architects plan and engineer's drawings.



The operational phase of the development is unlikely to have any significant adverse impacts on the local geological/hydrogeological environment due to the environmental considerations incorporated into the design. These measures will seek to avoid or minimise potential effects, in the main, through the implementation of best practice construction methods and adherence to all relevant legislation.

3.4 Water

Chapter 7 the EIAR was drafted by Ben Mong, Civil Engineer, B.Eng, C.Eng. and reviewed by Sarah Curran, Associate Director Civils, BAI, BA, C.Eng of DBFL Consulting Engineers and comprises of an assessment of the likely impact of the proposed development on the surrounding hydrogeological environments (including flood risk, surface water drainage, foul drainage and water supply), as well as identifying proposed mitigation measures to minimize any impacts.

The Geological Survey Ireland (GSI) Online Data Services classifies the aquifer at the subject site as *“Locally Important Aquifer – Bedrock which is Generally Moderately Productive in Local Zones”*. The GSI classifies the site’s groundwater vulnerability as moderate – extreme/exposed rock across the site.

A Site-Specific Flood Risk Assessment of the proposed development has been carried out by DBFL Consulting Engineers and is submitted as a separate document to the EIAR, however, it confirms that it was determined that the site is within Flood Zone C as defined by the Guidelines and based on the ECFRAMS mapping. Therefore, the development of housing on the subject site is appropriate for the site’s flood zone category and a justification test as outlined in the Guidelines is not required and that it is considered that the flood risk mitigation measures once fully implemented are sufficient to provide a suitable level of protection to the proposed development and will not cause an increased risk of flooding to external properties.

3.4.1 Potential Construction and Operational Phase Impacts

Potential impacts that may arise during the construction phase are noted below:

- Surface water runoff during the construction phase may contain increased silt levels (e.g. runoff across areas stripped of hardstanding) or become polluted by construction activities.
- Discharge of rainwater pumped from excavations may also contain increased silt levels (potential impact on existing hydrology e.g. discharge to existing open drain).
- Accidental spills and leaks associated with storage of oils and fuels, leaks from construction machinery and spillage during refuelling and maintenance contaminating the surrounding surface water and hydrogeological environments.
- Concrete runoff, particularly discharge of wash water from concrete trucks (potential impact on existing hydrology e.g. infiltration to ground).
- Discharge of vehicle wheel wash water (potential impact on existing hydrology e.g. discharge to existing surface water drainage infrastructure).
- Improper discharge of foul drainage from contractor’s compound (impact on existing hydrology e.g. cross-contamination of existing surface water drainage.).
- Cross contamination of potable water supply to construction compound.

Potential operational phase impacts are noted below:

- Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g. along roads and in driveway areas).



- Increased impermeable surface area will reduce local ground water recharge and potentially increase surface water runoff (if not attenuated to greenfield runoff rate).
- Increased discharge to foul drainage network (Daily Foul Discharge Volume = approx. 415m³)
- Increased potable water consumption (Average Daily Domestic Demand = approx. 375m³)
- Implementation of the mitigation measures described under section 7.6.2 of the EIAR Volume II will prevent and minimize the potential impacts of this interaction.

Implementation of the mitigation measures described will prevent and minimize the potential impacts of this interaction.

3.4.2 Mitigation Measures

The following measures are proposed during the construction phase to mitigate against risks to the surrounding hydrological environment.

- A site-specific Construction Management Plan will be developed and implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the Construction Management Plan.
- Rainwater pumped from excavations is to be directed to on-site settlement ponds.
- Surface water runoff from areas stripped of hardstanding and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- Weather conditions and seasonal weather variations will also be taken account of when planning of stripping the site and excavations, with an objective of minimizing soil erosion.
- In order to mitigate against spillages contaminating the surrounding surface water and hydrogeological environments, all oils, fuels, paints and other chemicals shall be stored in a secure bunded hardstanding area. Refuelling and servicing of construction machinery will take place in a designated hardstanding area which will also be remote from any surface water inlets (where not possible to carry out such activities off site).
- Concrete batching will take place off site and wash out of concrete trucks will take place off site (at authorized concrete batching plant in full compliance with relevant planning and environmental consents).
- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.
- Any groundwater pumped from excavations is to be directed to on-site settlement ponds.
- It is proposed to implement a programme for monitoring water quality at the outfall as part of the construction of this development, in agreement with the Planning Authority.
- The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be tankered off-site to a licensed facility until a connection to the public foul drainage network has been established.
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.

For the operational phase of the proposed development, (roads, open spaces, finished floor levels etc.) has been carried out in such a way as to replicate existing surface contours, break lines etc. as closely as reasonably practicable and avoid concentrating additional surface water flow in any particular location.



Following the Site Specific Flood Risk Assessment, it has been determined that the entire site / zoned developable area is located in Flood Zone C as defined by the Guidelines (i.e. proposed development is considered to have the required level of flood protection up to and including the 1% AEP flood event + 20% increase for climate change.)

Surface water runoff from the site will be attenuated (sized to cater for a 1% AEP event +20% allowance for climate change) and discharged at a rate of 2l/s per hectare agreed with Dublin City Council. Surface water discharge rates will be controlled by Hydro brake (or similar agreed) vortex flow control device in conjunction with attenuation storage.

Attenuation for the 100 year return period event and below (+ 20% allowance for climate change) will be contained in an underground attenuation system located in the open space area towards the centre of the site.

A contract will be entered into with a suitably qualified contractor for maintenance of the attenuation system, Hydro brake and by-pass fuel / oil separator noted above.

No specific mitigation measures are proposed in relation to foul drainage however, all new foul drainage lines will be air or water tested and be subject to a CCTV survey in order to identify any possible defects prior to being made operational.

No specific mitigation measures are proposed in relation to water supply.

The potential impact of climate change has been allowed for as follows;

- Pluvial flood risk - attenuation storage design allows for a 20% increase in rainfall intensities, as recommended by the GSDSDS.
- Pluvial flood risk - drainage system design allows for a 20% increase in flows, as recommended by the GSDSDS.
- Provision of min. freeboard (500mm) from 1% AEP +20% CC as required by GSDSDS/DCC (mitigation against impact of climate change).

3.5 Air Quality & Climate

Chapter 8 of the EIAR was prepared by AWN Consulting Ltd. This chapter was completed by Ciara Nolan, an environmental consultant in the air quality section of AWN Consulting Ltd. She holds a MSc. (First Class) in Environmental Science from University College Dublin and has also completed a BSc. in Energy Systems Engineering).

The assessment includes a description of the existing air quality in the vicinity of the subject site, a description and assessment of how construction activities and the operation of the development may impact existing air quality, the mitigation measures that will be implemented to control and minimise the impact that the development may have on local ambient air quality and finally to demonstrate how the development shall be constructed and operated in an environmentally sustainable manner.

3.5.1 Potential Construction and Operational Phase Impacts

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



standards.

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland is predicted to have total GHG emissions of 59.9 Mt CO₂eq in 2019. This is 6.98 Mt CO₂eq 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 in the local areas associated with the proposed development.

There are a number of sensitive receptors in close proximity to the site, directly north and east of the site boundary. In addition, a school is located to the direct west of the site. Provided the dust mitigation measures outlined in Appendix 8.3 of Chapter 8 are implemented, dust emissions are predicted to be short-term, negative and imperceptible and will not cause a nuisance at nearby sensitive receptors.

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

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

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

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

3.5.2 Mitigation Measures

A detailed dust minimisation plan associated with a high level of dust control is outlined in Appendix 8.3. This plan draws on best practice mitigation measures from Ireland, the UK and the USA in order to ensure the highest level of mitigation possible. Care has specifically been paid to the requirements and recommendations within the Dublin City Council's guidance entitled "*Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition*".



In summary the measures which will be implemented will include: -

- Prior to demolition blocks should be soft striped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- During the demolition process, water suppression should be used, preferably with a hand-held spray. Only the use of cutting, grinding or sawing equipment fitted or used in conjunction with a suitable dust suppression technique such as water sprays/local extraction should be used.
- Drop heights from conveyors, loading shovels, hoppers and other loading equipment should be minimised, if necessary fine water sprays should be employed.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads.
- Vehicles using site roads will have their speed restricted, and this speed restriction will be enforced rigidly. On any un-surfaced site road, this will be 20 kph, and on hard surfaced roads as site management dictates.
- Public roads and footpaths outside the site will be regularly inspected for cleanliness and cleaned as necessary. If sweeping using a road sweeper is not possible due to the nature of the surrounding area then a suitable smaller scale street cleaning vacuum will be used.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.
- Hoarding or screens shall be erected around works areas to reduce visual impact. This will also have an added benefit of preventing larger particles of dust from travelling off-site and impacting receptors.

At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

No mitigation is proposed for the operation phase of the proposed development as it is predicted to have an imperceptible impact on air quality and climate.

The proposed mitigation measures in relation to Climate are:

Construction stage traffic and embodied energy of construction materials are expected to be the dominant source of greenhouse gas emissions as a result of the construction phase of the development. Construction vehicles, generators etc., may give rise to some CO₂ and N₂O emissions. However, due to short-term nature of these works, the impact on climate will not be significant.

Nevertheless, some site-specific mitigation measures can be implemented during the construction phase of the proposed development to ensure emissions are reduced further. In particular the prevention of on-site or delivery vehicles from leaving engines idling, even over short periods. Minimising waste of materials



due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.

3.6 Noise

Chapter 8 of the EIAR has been prepared by AWN Consulting Ltd. (AWN) to assess the potential noise and vibration effects of the proposed development. This chapter includes a description of the receiving ambient noise climate in the vicinity of the subject site and an assessment of the potential noise and vibration impact on the surrounding environment associated with the proposed development, during both the short-term construction phase and the permanent operational phase. The assessment of direct, indirect and cumulative noise and vibration effects on the surrounding environment have also been considered in this chapter.

This assessment has been prepared by Leo Williams ^{BAI MAI PgDip AMIOA}, Acoustic Consultant at AWN, and was undertaken using the following methodology:

- Detailed baseline noise monitoring has been undertaken across the development site to determine the range of noise levels at varying locations across the site;
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development, this is summarised in the following sections;
- Predictive calculations have been performed to estimate the likely noise emissions during the construction phase of the project at the nearest sensitive locations (NSLs) to the site;
- Predictive calculations have been performed to assess the potential impacts associated with the operation of the development at the most sensitive locations surrounding the development site;
- An assessment of inward noise impact from the existing road noise sources on the proposed development; and,
- A schedule of mitigation measures has been proposed, where relevant, to control the noise and vibration emissions associated with both the construction and operational phases of the proposed development.

3.6.1 Potential & Predicted Impacts of the Proposed Development

The assessment has been undertaken with reference to the most appropriate guidance documents relating to environmental noise and vibration which are set out in the following sections. In addition to specific noise and vibration guidance documents, the following Environmental Protection Agency (EPA) guidelines were considered and consulted in the preparation of this Chapter:

- Draft Advice Notes for Preparing Environmental Impact Statements (EPA 2015); and
- Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2017).

There are no statutory standards in Ireland relating to noise and vibration limit values for construction works or for environmental noise relating to the operational phase of the proposed development. In the absence of specific statutory Irish guidelines, the assessment has made reference to non-statutory national guidelines, where available, in addition to international standards and guidelines relating to noise and / or vibration impact for environmental sources.



Vibration Criteria

Construction Phase

Vibration standards address two aspects: those dealing with cosmetic or structural damage to buildings and those with human comfort. For the purpose of this scheme, the range of relevant criteria used for surface construction works for both building protection and human comfort are expressed in terms of Peak Particle Velocity (PPV) in mm/s.

It is considered that the proposed development will not give rise to any significant levels of vibration in the receiving environment. Vibration criteria are therefore not deemed to be necessary for the operational phase of this development and therefore not been addressed further in this chapter.

Construction Phase Noise Impacts

It is predicted that the construction programme will create typical construction activity related noise on site. During the construction phase of the proposed development, a variety of items of plant will be in use, such as excavators, rock breakers, lifting equipment, dumper trucks, compressors, and generators.

Due to the nature of daytime activities undertaken on a construction site of this nature, there is potential for generation of significant levels of noise. The potential for vibration at neighbouring sensitive locations during construction is typically limited to excavation works and lorry movements on uneven road surfaces. Due to the nature of the construction works on site there is little likelihood of structural or even cosmetic damage to existing neighbouring dwellings as a result of vibration.

Construction predictions indicate that a significant impact may temporarily occur when works are on-going at the boundaries to the dwellings bounding the site, this is when works will be at 10m distance to the noise sensitive receptors. However, the vast majority of the construction works will take place at distances from the receptors where no significant impacts are predicted.

It should be noted that where significant impacts are predicted, these are worst case scenarios that assume all plant for an activity will operate along the boundary line opposite a sensitive receptor, under real world conditions this is unlikely to occur. Construction noise levels will be lower than these levels for the majority of the time at the majority of properties in the vicinity of the proposed development. It should also be noted that blasting is not proposed at any stage of the project and rock will be extracted via mechanical means. Where necessary on the site, the duration of rock breaking activity will be measured in weeks rather than months with the exact duration dependant on ground conditions and the contractor's approach.

Operational Phase Noise Impacts

Due consideration must be given to the nature of the primary noise sources when setting criteria. Potential noise impacts during the operational phase include the following:

- Vehicular traffic accessing and moving around the site;
- Building and mechanical services plant; and
- Creche playground noise breakout.

In summary, the predicted increase in noise levels associated with vehicles at road junctions in the vicinity of the proposed development is of long-term not significant impact.



3.6.2 Mitigation Measures

Construction Phase - Noise

With regard to construction activities, best practice control measures for noise and vibration from construction sites are found within BS 5228 (2009 +A1 2014) *Code of Practice for Noise and Vibration Control on Construction and Open Sites* Parts 1 and 2. Whilst construction noise and vibration impacts are expected to vary during the construction phase depending on the distance between the activities and noise sensitive buildings, the contractor will ensure that all best practice noise and vibration control methods will be used, as necessary in order to ensure impacts at off-site noise sensitive locations are minimised.

The best practice measures set out in BS 5228 (2009) Parts 1 and 2 includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- selection of quiet plant;
- noise control at source;
- screening;
- liaison with the public, and;
- monitoring.

Detailed comment is offered on these items in the following paragraphs. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise and vibration monitoring, where required.

Selection of Quiet Plant

This practice is recommended in relation to static plant such as compressors and generators. It is recommended that these units be supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item should be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action should be to identify whether or not said item can be replaced with a quieter alternative.

Noise Control at Source

If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control "at source". This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact.

Referring to the potential noise generating sources for the works under consideration, the following best practice mitigation measures should be considered:

- Site compounds will be located in excess of 30m from noise sensitive receptors within the site constraints. The use lifting bulky items, dropping and loading of materials within these areas should be restricted to normal working hours.
- For mobile plant items such as dump trucks, excavators and loaders, the installation of an acoustic exhaust and or maintaining enclosure panels closed during operation can reduce noise levels by up to 10dB. Mobile plant should be switched off when not in use and not left idling.
- For piling plant, noise reduction can be achieved by enclosing the driving system in an acoustic shroud. For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover.
- For concrete mixers, control measures should be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum.



- For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.
- For compressors, generators and pumps, these can be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.
- Demountable enclosures can also be used to screen operatives using hand tools and will be moved around site as necessary.
- All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

Screening

Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Construction site hoarding will be constructed around the site boundaries as standard. The hoarding will be constructed of a material with a mass per unit of surface area greater than 7 kg/m² to provide adequate sound attenuation.

In addition, careful planning of the site layout will also be considered. The placement of site buildings such as offices and stores will be used, where feasible, to provide noise screening when placed between the source and the receiver.

Liaison with the Public

A designated environmental liaison officer will be appointed to site during construction works. Any noise complaints should be logged and followed up in a prompt fashion by the liaison officer. In addition, where a particularly noisy construction activity is planned or other works with the potential to generate high levels of noise, or where noisy works are expected to operate outside of normal working hours etc., the liaison officer will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.

Operational Phase

Additional Traffic on Adjacent Roads

During the operational phase of the development, noise mitigation measures with respect to the outward impact of traffic from the development are not deemed necessary.

Mechanical Services Plant

Taking into account that sensitive receivers within the development are much closer than off-site sensitive receivers, once the relevant noise criteria are achieved within the development it is expected that there will be no negative impact at sensitive receivers off site, and therefore no further mitigation required.

Inward Noise

As is the case in most buildings, the glazed elements and ventilation paths of the building envelope are typically the weakest element from a sound insulation perspective. In general, all wall constructions (i.e. block work or concrete and spandrel elements) offer a high degree of sound insulation, much greater than that offered by the glazing systems. Therefore, noise intrusion via the wall construction will be minimal.

The assessment has demonstrated that the recommended internal noise criteria can be achieved through consideration of the proposed façade elements at the design stage. The calculated glazing and ventilation specifications are preliminary and are intended to form the basis for noise mitigation at the detailed design stage. Consequently, these may be subject to change as the project progresses.



3.7 Material Assets: Built Services

This chapter of the EIAR was prepared by Pieter Martinson (B.Tech, AEng, MIEI) of DBFL Consulting Engineers and assesses and evaluates the likely impact of the proposed development on existing surface water and foul drainage, and utility services in the vicinity of the site during both the construction and operational phases, as well as identifying the nature of any impacts and provide the necessary mitigation measures arising from the proposed development. The material assets considered in this chapter include Surface Water Drainage, Foul Drainage, Water Supply, Power, Gas and Telecommunications.

3.7.1 Potential Construction and Operational Phase Impacts

Construction Phase

Power and water will be required during construction activities and servicing of the temporary site compound. The development site will be connected to the local electricity grid network system and mains water supply. Given the scale and transient nature of construction works, the power and water demand on the local electricity and mains water systems would not be considered significant and would not be anticipated to impact upon local power or water supply.

Telecommunications requirements during the construction phase will be provided using mobile phones / broadband. There will be no anticipated impacts to the local telecommunications system.

Foul water from staff welfare facilities generated during the construction phase will be collected on site in designated waste holding containers / port-a-loo units and emptied on a regular basis by a licenced waste contractor.

The construction works contractor will liaise with the relevant utility providers prior to works commencing, with ongoing consultation throughout the proposed works. Where new services are required, the construction works contractor will apply to the relevant utility provider and adhere to the requirements outlined in the connection permit / licence.

The installation of the utilities for the proposed development will be conducted in parallel with the other services. This will mainly involve excavation of trenches to lay ducting, construction/installation of access chambers and backfilling of trenching. The trenching and backfilling works will be carried out in conjunction with the construction of the roads and footpaths throughout the scheme.

There is the potential for loss of connection to the telecommunications ESB infrastructure while carrying out works to provide service connections. This likely adverse impact may be characterised as a temporary, regionally short term, moderate impact.

It is not proposed to provide gas infrastructure within the development as such there will be no impact on existing Gas Networks Ireland infrastructure as a result of the proposed works.

The site compound will require a power and telecommunications connection. This will be unlikely to cause an adverse impact.

Again, there may be potential loss of connection to the telecommunications infrastructure while carrying out works to provide service connections. This likely adverse impact may be characterised as a temporary, regionally short term, moderate impact. The site compound will require a power and telecommunications connection. This likely adverse impact will be temporary and negligible.



Operational Phase

Potential operational phase impacts on the water infrastructure are noted below:

- Accidental hydrocarbon leaks and subsequent discharge into piped surface water drainage network (e.g. along roads and in driveway areas);
- Increased impermeable surface area will reduce local ground water recharge and potentially increase surface water runoff (if not attenuated to greenfield runoff rate);
- Increased discharge to foul drainage network (Daily Foul Discharge Volume = approx. 413m³);
- Increased potable water consumption (Average Daily Domestic Demand = approx. 375m³).

Implementation of the mitigation measures described in this report will prevent and minimize the potential impacts of this interaction.

3.7.2 Mitigation Measures

Mitigation measures proposed in relation to the drainage and water infrastructure include the following:

A detailed “*Construction Management Plan*” will be developed and implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the “*Construction Management Plan*”.

The construction works contractor shall liaise with the relevant utilities provider prior to works commencing, with on-going consultation throughout the proposed development. Where new services are required, the construction works contractor shall apply to the relevant utility provider and adhere to the requirements outlined in the connection permit / licence.

The contractor will be obliged to put measures in place to ensure that there are no interruptions to existing services unless this has been agreed in advance with the relevant service provider.

All works in the vicinity of utilities apparatus will be carried out in ongoing consultation with the relevant utility company or local authority and will be in compliance with any requirements or guidelines they may have.

Where new services or diversions to existing services are proposed, the contractor will apply to the relevant utility company for a connection permit, where appropriate, and will adhere to their requirements.

Where possible, backup network supply to any services will be provided should the need for relocation or diversion to existing services be required otherwise relocation or diversion works will be planned to incur minimal impact, with users notified in advance of any works.

Connections to the utility networks will be coordinated with the relevant utility provider and carried out by approved contractors.

Surface (Storm) Water Infrastructure

In accordance with the Greater Dublin Regional Code of Practice for Drainage Works, all sites are required to develop a drainage system which separates storm & foul water on site.

In addition to improving overall storm water quality following Dublin County Council sustainable urban drainage systems, SuDs protocols, there is also a requirement to reduce storm water runoff rates to pre-



development levels.

Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.

In the event of groundwater being encountered during the construction phase, mitigation measures will include dewatering by pumping to an appropriate treatment facility prior to discharge. Other measures would include excluding contaminating materials such as fuels and hydrocarbons from sensitive parts of the site i.e. highly vulnerable groundwater areas.

In order to mitigate against spillages contaminating the surrounding surface water and hydrogeological environments, all oils, fuels, paints and other chemicals shall be stored in a secure bunded hardstanding area. Refuelling and servicing of construction machinery will take place in a designated hardstanding area which is also remote from any surface water inlets (where not possible to carry out such activities off site).

Please refer to Chapter 7 of this EIAR “Water” for further mitigation measures associated with the surface water during the construction stage.

Foul Infrastructure

All foul water infrastructure is under the control of Irish Water. The proposed development will be serviced by a new separate internal foul network. The proposed development will discharge to the existing 375mm diameter sewer located at the Eastern corner of the proposed development.

The construction compound will include adequate staff welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the construction compound will be removed off site to a licensed facility until a connection to the public foul drainage network has been established.

Diversion of the existing foul sewer traversing the site will be fully coordinated with Irish Water to ensure interruption to the existing foul network is minimised. The foul sewer along the proposed diverted route will be constructed and operational in advance of decommissioning and removal of existing foul sewer.

In order to reduce the risk of defective or leaking sewers, all new sewers should be laid in accordance with Irish Water standards, pressure tested and CCTV surveyed to ascertain any possible defects.

It is envisaged that the development construction will take place and be occupied over a reasonable time period, and therefore the downstream foul sewerage system (foul sewer network and wastewater treatment facility) will be gradually loaded.

As required by the SHD process, Irish Water are required to review the schemes foul drainage proposal and to issue a letter of Design Acceptance. This has been received by the design team and is included as an appendix in the DBFL Consulting Engineering Services Report accompanying this submission.

Potable Water Infrastructure

All potable water infrastructure is under the control of Irish Water. It is proposed to provide a 200mm diameter connection off the existing 225mm cast iron public watermain located in the Ballyfermot Road. A 200mm spine watermain will be provided along the development’s arterial roads with a series of 150mm looped branch mains off this spine to service the wider development.



The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.

Where possible, backup network supply to any services will be provided should the need for relocation or diversion or existing services be required. Otherwise relocation or diversion works will be planned to incur minimal impact, with users notified in advance of any works.

As required by the SHD process Irish Water are required to review the schemes potable water proposal and to issue a letter of Design Acceptance, this has been received by the design team and is included as an appendix in the DBFL Consulting Engineering Services Report accompanying this submission.

Electrical Supply

Contractor to prepare Method Statement detailing proposals for works in the vicinity of existing utilities (method statement to be agreed with PSDP).

Contractor to locate and record all services on site prior to commencement of excavations (including but not limited to a GPR utility survey along the Ballyfermot Road and slit trench investigation to confirm the location of electrical infrastructure).

Connections to the existing electrical networks will be coordinated with the relevant utility provider and carried out by approved contractors.

Contractor to comply with HSA Code of Practice for Avoiding Danger from Underground Services. Relocation of existing overhead ESB lines will be fully coordinated with ESB Networks to ensure interruption to the existing electricity network is minimized (e.g. agreeing electricity outage to facilitate relocation of cables).

Ducting and / or poles along the proposed relocated route will be constructed and ready for rerouting of cables in advance of decommissioning of existing overhead electricity lines.

Gas Supply

No gas infrastructure is proposed for the development. Therefore, no connections to the existing gas networks will be required.

Telecommunications

Contractor to prepare Method Statement detailing proposals for works in the vicinity of existing utilities (method statement to be agreed with PSDP).

Contractor to locate and record all services on site prior to commencement of excavations (including but not limited to a GPR utility survey along the Ballyfermot Road and slit trench investigation to confirm the location of existing telecommunications infrastructure).

Connections to the existing telecoms networks will be coordinated with the relevant utility provider (e.g. agreeing outage to facilitate connection) and carried out by approved contractors.

Contractor to comply with HSA Code of Practice for Avoiding Danger from Underground Services.



Operational Mitigation

Please refer to Chapter 7 of this EIAR “*Water*” for mitigation measures associated with the surface water treatment. All new drainage lines (foul and surface water) will be pressure tested and will be subject to a CCTV survey to identify any possible defects prior to being made operational.

Chapter 7 includes the mitigation measures associated with the surface water system for the development.

Water conservation methods such as the use of low flush toilets and low flow taps should be incorporated into dwellings to reduce water volumes and related treatment and abstraction costs of the development.

Similarly, water conservation methods would reduce the loading on the foul sewer network. As part of the development, a number of different SuDS measures are proposed to minimise the impact on water quality and quantity of the runoff and maximise the amenity and biodiversity opportunities within the site.

The SuDS measures have been designed to take account of potential percolation but have not been incorporated into any storage calculations. This will result in additional storage being available in extreme events.

The proposed SuDS measures will include a combination of Source Control, Site Control and Regional Control measures as part of a Management Train whereby the surface water is managed locally in small sub-catchments rather than being conveyed to and managed in large systems further down the catchment. The combination of the SuDS measures will maximise the potential for surface water infiltration to the subsoil, reducing the impact on the existing surface water drainage network. The proposed techniques will offer a high level of treatment processes and nutrient removal of the runoff, particularly during the “*first flush*”.

The proposed development is located within an area designated for the type of development proposed. As such the services pertaining to the development are required to facilitate the proposed scheme. It is not possible to not provide the services required. Notwithstanding this, the potable water, foul and stormwater services have all been designed in accordance with the requirements of the various stake holders, notably, Irish Water for the foul and potable water utilities and Dublin County Council for the surface water services.

ESB Infrastructure

ESB will be engaged at an early stage to ensure any potential issues with utility connections are reviewed and mitigated as early in the process as possible. ESB will not engage with the design process until such time as planning has been approved and scheme name and numbering is approved.

The proposed development has been designed in accordance with the ESB Networks requirements.

ESB sub-stations shall be centrally located to the surrounding areas to limit ESB runs. An ESB cabinet shall be provided at each apartment block to include ESB cut-out point. Services shall be ducted from the cabinet to a centralised meter location within each apartment block.

Provision will also be made for the installation of e-car charging points within the development.



3.8 Material Assets: Transportation

This chapter of the EIAR has been prepared by Thomas Jennings BEng (Hons) ^{MSc MIEI CMILT MIHT} and Sarah Heung ^{BSc (Hons) MIEI} of DBFL Consulting Engineers and assesses and evaluates the likely impact of the proposed development on the existing transportation system in the vicinity of the site, as well as identifying proposed mitigation measures to minimise any identified impacts arising from the mixed-use development at Ballyfermot, Dublin 10.

3.8.1 Receiving Environment

The former De La Salle development site is located adjoining Ballyfermot District Centre and lies approximately only 5.0km west of Dublin City Centre. The site lies between Ballyfermot Road (R833) to the south and Chapelizod Bypass (R148) to the north. The development site is located in close proximity to existing residential settlements along Ballyfermot Rd, including Thomond Rd, Garryowen Rd and The Steeples as well as the open green space Markiewicz Park to the south. The River Liffey is situated to north of the site and runs parallel to the R148 Chapelizod Bypass which forms the site's northern boundary. Phoenix Park is located a short distance to the north and is approximately 2km walking distance from the subject site.

The main arterial road within the subject site's immediate study area is Ballyfermot Road (R833) which is situated directly south of the proposed development site and aligned in an east-west orientation. The short cul-de-sac Lynch's Lane which runs northwards off Ballyfermot Road currently borders the development site on the west and gives access to the car park serving the Ballyfermot Family Resource Centre. Travelling eastwards along R833 leads towards Kilmainham while continuing onto the Chapelizod Bypass (R148) leads towards Dublin City Centre.

Garryowen Road, south of the development site and west of Markievicz Park, gives residents access to homes on Thomond Rd, Muskerry Rd and Decies Rd. Kylemore Road (R112) corridor lies to the west of the subject site and is aligned north-south through the R833/R112 Roundabout. The northern arm of the roundabout leads towards Lucan to the west via the N4, the south arm heads towards Ballymount while the west arm continues onto Ballyfermot Road (R833).

The Chapelizod Bypass (R148) is a dual lane carriageway that runs east-west and lies immediately to the north of the site. It runs parallel to the River Liffey and there are currently no access points to the bypass directly from Ballyfermot. Gaining access onto Chapelizod Bypass from the subject site can be made northbound via Kylemore Road (R112), north west of the subject site. A second access point to the Chapelizod Bypass is located to the east at the Con Colbert Rd/Chapelizod Bypass (R148) Junction. The Bypass terminates at the M50 Junction 7 interchange to the west where strategic routes towards Sligo (N5) and Galway (N6) can be accessed via the N4. Drivers travelling towards Chapelizod from the subject site location, as located north of the Chapelizod Bypass, can use either St. Laurence's Rd to the east of the development site or Chapelizod Hill Road to the north west in order to gain access.

The De La Salle site therefore benefits from very good accessibility towards Dublin City Centre. The site is also bounded by favourable local and regional road networks as well as good connectivity onwards to the strategic M50 C-ring.

The subject De La Salle site benefits from very good accessibility with destinations across the Greater Dublin area including Dublin City Centre. The site is also bounded by a local and regional road networks as well as good connectivity onwards to the strategic M50 Motorway.

In the immediate vicinity of the proposed development site, pedestrians benefit from facilities such as



footways along both sides of Ballyfermot Road (R833). Street lighting is also provided only on the southern side of the R833 Ballyfermot Road. The R833 also contains a number of refuge islands across the frontage of the subject site as well as delineating bollards along the cycle lane located on the northern side of the Ballyfermot Road corridor. There are currently two signal controlled pedestrian crossings on the R833 Ballyfermot Road in close proximity to the subject site, one of which is located at the existing gated entrance of the former De La Salle Ballyfermot National School and the second being located approximately 50m east of the R833/R112 Roundabout. Kylemore Road (R112) contains footways along both sides of the road on both north and southbound routes. Street lighting on R112 when heading north is intermittent on some sections while R112 southbound benefits from street lighting on both sides of the corridor. The R112 heading southbound also contains two minor parallel roads on either side of Kylemore Rd corridor that only serve the local Kylemore residential dwellings.

In terms of existing cycling facilities surrounding the site, cyclists benefit from cycle lanes on both sides of the R833 carriageway. The cycle lanes vary in nature as there is an advisory westbound cycle lane leading towards Ballyfermot Roundabout while the eastbound cycle lane leading towards Kilmainham is mandatory with protective flexible bollards in place. Cyclists travelling west on the advisory lane currently have to share a bus lane over the last 120m on the approach to the roundabout junction.

The site is highly accessible by bus with a range of services operated by Dublin Bus, Go Ahead and Express Bus passing the subject site. There are eight bus services that pass the subject site, with the closest bus stop located 150m away on Ballyfermot Rd (R833) at the Markievicz Park. This stop is served by Dublin Bus 40 and links from Liffey Valley Shopping Centre in Clondalkin to Charlestown Shopping Centre in Finglas.

The development site is situated within walking distance of Luas Red Line services, with the closest RED LINE stop (Kylemore) being located 2km from the subject site (approx. 23-25 minute walking distance). The Luas Red Line provides excellent connectivity to the southwest of the city including the areas of Saggart and Tallaght in addition to Dublin City Centre to the northeast. In addition to serving the City Centre and Heuston Station, the service continues eastwards providing access to Busáras central bus station, Heuston and Connolly Railway Station and the Docklands area including The Point.

The closest railway station to the development site is Park West & Cherry Orchard Station, located approximately 3.4km south-west of the subject site while Heuston Station is located approximately 3.5km east of the proposed development accessible by both bus and Luas services. In addition to Regional rail (Commuter) services along the Kildare mainline (accessing destinations such as Parkwest, Adamstown and Sallins), Intercity train services are available from Heuston including destinations of Galway, Cork, Waterford, Ballina, Westport, Limerick and Tralee as well as intermediate stations along these strategic routes.

The development site is well positioned in regard to accessing the car-sharing service GoCar. The three closest on-street GoCar Bases located within the vicinity of the site. Include:

1. Decies Rd – Kilmainham, (approx. 600m from site, 7 min walking distance)
2. Chapelizod Rd (R109) north of the subject site (approx. 1.6km from site, 19 min walking distance) and,
3. Ballyfermot Rd (R833) west of the subject site (approx. 1.1km from site, 15 min walking distance).

3.8.2 Potential / Proposed / Committed Infrastructural Works



There are several potential new infrastructure schemes in the vicinity of the proposed development site. Consideration has been given to the impact that these infrastructure schemes may have on the development. This will ensure that provision is allowed for these schemes to be delivered in the future. A summary of the potential road infrastructure schemes is outlined below.

BusConnects is a strategic transport plan transforming and revamping the current bus system by building the “*next generation*” of bus corridors on the busiest routes and redesigning routes with the aim to offer fast, predictable and reliable bus journeys.

The development site will benefit from the proposed ‘*G Spine*’ with its branches G1 and G2, Orbital Route S4 and Radial Route 95. These routes will run along Ballyfermot Road and Kylemore Rd and will aim to provide interchange opportunities with the following routes:-

- Route G1: Spencer Dock to Red Cow Luas station via Clondalkin, Ballyfermot and Cherry Orchard-Park West,
- Route G2: Spencer Dock to Liffey Valley Shopping Centre via Neilstown and Fonthill Road,
- Route S4: Liffey Valley Shopping Centre to UCD via Ballyfermot and
- Route 95: Cherry Orchard to City Centre.

The subject site will benefit from enhanced levels of accessibility and mobility offered by the BusConnects initiatives along with improvements to walking and cycling facilities surrounding the site in addition to the efficient and high frequency bus service and connectivity.

The Transport Strategy for the Greater Dublin Area 2016-2035, states that it is intended to develop the light rail network in the GDA with the implementation of the Luas Lucan Line, to provide a high capacity link into the centre of Lucan’s large residential area to the south of the N4 national road connecting to the city centre. The new LUAS Lucan line is proposed to run through Ballyfermot and Kylemore which will benefit the subject development site.

Whilst exact route details have not yet been confirmed, it is anticipated that if built, the new Lucan Line would run through Ballyfermot and Kylemore with stops at Ballyfermot Village and Kylemore Park, the closest proposed stops to the subject site. The line would then connect with the RED Line at the existing Blackhorse, Drimnagh and Rialto stops west of Inchicore, before either (i) continuing along the RED Line to James Interchange or (ii) diverging north via Inchicore and running along Emmet St before connecting with the James interchanges and continuing eastwards along Thomas St towards to Christchurch and onwards to Dame St and College Green.

Therefore, the location of the subject development site means that if the site were to be served by a new LUAS Line within Ballyfermot, it would further enhance accessibility towards Dublin City Centre and Lucan to the west.

3.8.3 Potential Construction and Operational Phase Impacts

Construction Phase

All construction activities will be governed by a comprehensive Construction Traffic Management Plan (CTMP), the details of which will be (i) agreed with Dublin City Council prior to the commencement of construction activities on site and (ii) subject to any planning conditions applied by the planning authorities. The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction phase upon the public (off-site), visitors to the subject site (on-site) and internal (on-site) workers environments, are fully considered and proactively managed/programmed thereby ensuring that safety is maintained at all times, disruption is minimised and undertaken within a controlled hazard free/minimised environment.

In general, the impact of the construction period will be temporary in nature and less significant than the



operational stage. During the construction of the proposed development, all excavated suitable material will be used for construction and fill activities where possible and appropriate. All unsuitable material will be disposed of at an approved tip, location to be agreed with the local authority.

In addition to the traffic generated by the disposal of surplus subsoil from the site, there will be traffic generated from deliveries of construction materials and equipment. It should be pointed out that construction traffic generated during the development works tends to be predominately off-peak. Such trips, particularly HGV trips would generally be spread out over the full working day and are unlikely to be higher than the peak hour predicted for the operational stage.

Construction traffic will consist of private vehicles owned and driven by site construction and supervisory staff in addition to excavation plant and dumper trucks involved in site development works and materials delivery vehicles. On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic. These employees will generally depart after 18:00. It should be noted that a large proportion of construction workers would arrive in shared transport.

The Construction Traffic Management Plan will be prepared prior to the commencement of construction work which will include details of haul routes, dedicated construction site access / egress on Ballyfermot Rd, working times, contractors' compound and staff parking arrangements, and offsite disposal sites. This plan will be prepared in consultation with Dublin City Council in order to reach full agreement upon the traffic management mitigation measures and monitoring measures to be adopted during the entire programme of construction activities on-site.

Operational Phase

In response to the proposed development's and neighbouring lands specific land uses, the impact generated during the operational phase of the proposed development will be focussed upon the local road network's weekday peak hour periods. Weekday traffic surveys established that the existing peak hour periods occur between 08.00-09.00 and 16.15-17.15 during the AM and PM respectively. The analysis established that the greatest level of potential impact will be generated at the following two junctions:

- 1) Ballyfermot Road / Site Access (Mount La Salle) Junction
- 2) Ballyfermot Road / Lynch's Lane Junction

3.8.4. Mitigation Measures

Construction Phase

The Construction Management Plan will be prepared as part of the planning application with an associated Construction Traffic Management Plan (CTMP) which will incorporate a range of integrated control measures and associated management activities with the objective of minimising the construction activities associated with the development. The following initiatives will be implemented to avoid, minimise and/or mitigate against the anticipated construction period impacts:



- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths and roads;
- Appropriate on-site parking and compound area will be provided to prevent overflow onto the local network;
- It is likely that some numbers of the construction team will be brought to/from the site in vans/minibuses, which will serve to reduce the trip generation potential;
- Delivery vehicles to and from the site will be spread across the course of the working day, therefore, the number of HGVs travelling during the peak hours will be relatively low;
- Truck wheel washes will be installed at construction entrances and any specific recommendations with regard to construction traffic management made by Dublin City Council will be adhered to;
- Potential localised traffic disruptions during the construction phase will be mitigated through the implementation of industry standard traffic management measures. These traffic management measures shall be designed and implemented in accordance with the Department of Transport's Traffic Signs Manual "*Chapter 8 Temporary Traffic Measures and Signs for Roadworks*" and "*Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition*" (2010); and
- Site entrance point/s from the public highway will be constructed with a bound, durable surface capable of withstanding heavy loads and with a sealed joint between the access and public highway. This durable bound surface will be constructed for a distance of 10m from the public highway.
- Material storage zone will be established in the compound area and will include material recycling areas and facilities;
- 'Way finding' signage will be provided to route staff / deliveries into the site and to designated compound / construction areas;
- Dedicated construction haul routes will be identified and agreed with Dublin City Council prior to commencement of activities on-site; and
- On completion of the works, all construction materials, debris, temporary hardstands etc. from the site compound will be removed off-site and the site compound area reinstated in full on completion of the works.

During the construction stage, the following monitoring exercises are proposed:

- Compliance with construction vehicle routing practices;
- Compliance with construction vehicle parking practices;
- Internal and external road conditions; and
- Timing of construction activities

Operational Phase

A package of integrated mitigation measures has been identified to off-set the additional local demand that the proposed residential development at the subject site could potentially generate as a result of the forecast increase in vehicle movements by residents of the scheme. The identified measures and associated timescale for their implementation are summarised below.



Management – A Mobility Management (MMP) has been compiled by DBFL with the aim of guiding the delivery and management of coordinated initiatives by the scheme promotor to be implemented upon occupation of the site. The MMP will ultimately seek to encourage sustainable travel practices for all journeys to and from the proposed development.

As part of the MMP process, bi-annual post occupancy surveys are to be carried out in order to determine the success of the measures and initiatives as set out in the proposed MMP document. The information obtained from the monitoring surveys will be used to identify ways in which the MMP measures and initiatives should be taken forward in order to maintain and further encourage sustainable travel characteristics.

Car Parking Management Strategy - A management regime will be implemented by the development's management company to control and actively manage the availability of on-site car parking for residents. Infrastructure – Infrastructure measures identified to reduce reliance of private vehicles include the provision of ample secure short term and long-term (residents) cycle parking on site and ensuring a design which promotes permeability for pedestrians and cyclists to, through and from the development. The level of parking provision for the development will also act as a powerful mobility management measure, ensuring against an overprovision of parking and a resultant over reliance on the private vehicle.

Infrastructure – Development proposed provision of dedicated pedestrian footpaths and cycle paths throughout the development site whilst the two access junctions on Ballyfermot Road corridor (Junction 1 & Junction 2) have been designed and enhanced to ensure sufficient capacity at these two key junctions is being provided to service the scheme proposals.

Infrastructure – The accessibility benefits being afforded to the local area including the subject site by the emerging NTA Core Bus Corridor infrastructure proposals along the Ballyfermot Road as part of the Bus Connects initiative have been accommodated by the proposed developments design with all apartment blocks (and associated infrastructure) purposively being set back into the site and preserving the necessary on-site lands to safeguard the opportunity to implement the NTA's Bus Connects infrastructure works.

Car Sharing – Notwithstanding the existing availability locally, the provision of 5 no. new dedicated car share (GoCar) spaces on-site at surface level for the use of the proposed residential development and the neighbouring residential areas. The availability of these on-site provide a viable alternative to residents owning private vehicles whilst still having access to a car when required.

Please refer to chapter 11 of the EIAR Volume II for full details and the Traffic and transport Assessment Report prepared by DBFL Consulting Engineers for full details.

3.9 Material Assets: Resource and Waste Management

This Chapter of the EIAR comprises an assessment of the likely impact of the proposed development on the waste generated from the development as well as identifying proposed mitigation measures to minimise any associated impacts, and was prepared by Chonaill Bradley of AWN Consulting.

A site-specific Construction and Demolition Waste Management Plan (C&DWMP) has been prepared by AWN Consulting Ltd to deal with waste generation during the demolition, excavation and construction phases of the proposed Development and has been included as Appendix 11.1 (Volume II of the EIAR). The C&D WMP was prepared in accordance with the 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' document produced by the National Construction and Demolition Waste Council (NCDWC) in conjunction with the Department of the



Environment, Heritage and Local Government in July 2006.

A separate Operational Waste Management Plan (OWMP) has also been prepared for the operational phase of the proposed Development and is included as Appendix 11.2 (Volume II of the EIAR).

The Chapter has been prepared in accordance with EPA Guidelines on the Information to be contained in EIAR (2017, Draft). These documents will ensure the sustainable management of wastes arising at the Development Site in accordance with legislative requirements and best practice standards.

3.9.1 Predicted Impacts of the Proposed Development

12.5.1. Construction Phase

The proposed development will generate a range of non-hazardous and hazardous waste materials during site demolition, excavation and construction. General housekeeping and packaging will also generate waste materials, as well as typical municipal wastes generated by construction employees, including food waste. Waste materials will be required to be temporarily stored on-site pending collection by a waste contractor. If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development site and in adjacent areas. The indirect effect of litter issues is the presence of vermin in areas affected. In the absence of mitigation, the effect on the local and regional environment is likely to be **short-term, significant** and **negative**.

The use of non-permitted waste contractors or unauthorised waste facilities could give rise to inappropriate management of waste, resulting in indirect negative environmental impacts, including pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices. In the absence of mitigation, the effect on the local and regional environment is likely to be **Long-term, significant** and **negative**.

Wastes arising will need to be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate. There are numerous licensed waste facilities in the EMR which can accept hazardous and non-hazardous waste materials, and acceptance of waste from the development site would be in line with daily activities at these facilities. At present, there is sufficient capacity for the acceptance of the likely C&D waste arisings at facilities in the region. The majority of construction materials are either recyclable or recoverable. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **short-term, significant** and **negative**.

There is a quantity of excavated material which will need to be excavated to facilitate the proposed development. A detailed review of the existing ground conditions on a regional, local site-specific scale are presented in Chapter 6. It is anticipated that c. 77,646 m³ of excavated material will need to be removed off-site, however there is potential to reuse c. 15,873 m³ of excavated. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **short-term, significant** and **negative**.



Operational Phase

The potential impacts on the environment of improper, or a lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy which would lead to small volumes of waste being sent unnecessarily to landfill. In the absence of mitigation, the effect on the local and regional environment is likely to be **Long-term, significant** and **negative**.

The nature of the development means the generation of waste materials during the operational phase is unavoidable. Networks of waste collection, treatment, recovery and disposal infrastructure are in place in the region to manage waste efficiently from this type of development. Waste which is not suitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables which is typically exported for conversion in recycled products (e.g. paper mills and glass recycling).

If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development site and in adjacent areas. The knock-on effect of litter issues is the presence of vermin in affected areas. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **short-term, significant** and **negative**.

Waste contractors will be required to service the proposed development on a regular basis to remove waste. The use of non-permitted waste contractors or unauthorised facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices. However, in the absence of mitigation, the effect on the local and regional environment is likely to be **Long-term, significant** and **negative**.

Mitigation

This section outlines the measures that will be employed in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle the waste in such a manner as to minimise the effects on the environment.

Construction Phase

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

As previously stated, a project specific C&D WMP has been prepared in line with the requirements of the requirements of the *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* (DoEHLG, 2006), and is included as Appendix 12.1. Adherence to the high-level strategy presented in this C&D WMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the demolition, excavation and construction phases of the proposed Development.



- Prior to commencement, the appointed Contractor(s) will be required to refine / update the C&D WMP (Appendix 12.1) in agreement with DCC, or submit an addendum to the C&D WMP to DCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream.
- The Contractor will be required to fully implement the C&D WMP throughout the duration of the proposed construction and demolition phases.

A quantity of topsoil, sub soil, clay and made ground which will need to be excavated to facilitate the proposed Development. Project Engineers have estimated that c. 77,646 m³ of excavated material will need to be removed off-site, however there is potential to reuse c. 15,873 m³ of excavated material on-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.

In addition, the following mitigation measures will be implemented:

- Building materials will be chosen with an aim to '*design out waste*';
- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated:
 - Concrete rubble (including ceramics, tiles and bricks);
 - Plasterboard;
 - Metals;
 - Glass; and
 - Timber.
- Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible;
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
- A Waste Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the demolition, excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal;
- All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.
- Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Article 27 of the EC (Waste Directive) Regulations (2011). EPA approval will be obtained prior to moving material as a by-product. However, it is not currently anticipated that Article 27 will be used.



These mitigation measures will ensure that the waste arising from the construction phase of the proposed Development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations and the Litter Pollution Act 1997, and the *EMR Waste Management Plan 2015 – 2021*. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will promote more sustainable consumption of resources.

Operational Phase

As previously stated, a project specific OWMP has been prepared and is included as Appendix 12.2.

- 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 this 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.

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, associated Regulations, *the Litter Pollution Act 1997*, *the EMR Waste Management Plan 2015 – 2021* and the DCC Waste Management (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws 2018. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.



3.10 Archaeology and Cultural Heritage

This chapter of the EIAR was undertaken by Antoine Giacommetti of Archaeology Plan Heritage Solutions and assesses the impact of the development on the Cultural Heritage of the site and its environs. The report includes a desktop study and a site inspection. The desktop section of the report was compiled using: The Records of Monuments and Places; buildings of Ireland, historic maps; aerial photographs; place names and historic books and journals.

Field walking and archaeological testing was undertaken on January 30th 2020.

3.10.1 Potential Construction and Operational Phase Impacts

The proposed site area contains a Protected Structure since February 2020. It does not however contain any Recorded Monuments, nor does it lie within the Zone of Archaeological Potential of Dublin city. It also does not lie within any Architectural Conservation Area or Local Area Plan area. The Topographical Files of the National Museum of Ireland did not contain any references to any artefacts recovered from the proposed site area.

It is also noted, however, that the Mount la Salle monastery building is listed in the National Inventory of Architectural Heritage (NIAH) and has been given the NIAH Reg. No. 50080372.

3.10.2 Mitigation

The analysis of cartographic, historic and aerial imagery sources identified potential features which merited further inspection, which were reviewed during the site inspection undertaken in January 2020.

It is recommended that a geophysical survey be conducted across the GAA pitches, western field and north-eastern field/garden. This will clarify the origins of twelve of the thirteen potential archaeological features identified in the desktop assessment.

Following the geophysical survey, a targeted test-trenching programme should take place directed at any features identified by the geophysical survey and desktop analysis.

3.11 The Landscape

This Landscape and Visual Impact Assessment (hereafter LVIA), prepared by Feargus McGarvey BA(Hons) Dip LA, of Mitchell + Associates Landscape Architects. This chapter summarises the impact of the proposed development on the landscape character and visual amenity of the site and on the contiguous urban landscape and its environs. It describes the landscape character of the subject site and its hinterland, together with the visibility of the site from significant viewpoints in the locality. It includes an outline of the methodology utilised to assess the impacts, descriptions of the receiving environment (baseline) and of the potential impacts of the development. Mitigation measures introduced to ameliorate or offset impacts are outlined and the resultant predicted (residual) impacts are assessed. This report should be read with reference to the photomontages produced by 3D Design, which are included with the planning application. It should also be read in conjunction with the Architectural Design Statement prepared by Delphi Architects which also accompanies the planning application.

3.11.1 Potential Construction and Operational Phase Impacts

Construction Phase



The building site including a site compound with site offices, site security fencing, scaffolding and temporary works will be visible during the construction phase. The provision of site hoarding along the property boundaries will substantially address many potential effects of construction operations at ground level during the delivery stage. Construction cranes (and of course, the emerging buildings) will become visible from neighbouring properties and also from a number of more distant vantage points as the development proceeds. The cranes and site facilities are generally viewed as a temporary and unavoidable feature of construction, particularly in urban settings. Mitigation measures proposed during the construction stage of the development, revolve primarily around the implementation of appropriate site management procedures during the construction works – such as the control of lighting, storage of materials, placement of compounds, control of vehicular access, and effective dust and dirt control measures, etc. The Construction Environmental Management Plan for the project which accompanies this submission, sets out the technical measures to be employed in order to mitigate potential negative effects during construction. This is a working document which is refined and added to as the project proceeds.

Potential visual impacts during the construction phase are related to temporary works, site activity, and vehicular movement within and around the subject site. Vehicular movement may increase in the immediate area, and temporary vertical elements such as cranes, scaffolding, site fencing/hoarding, gates, plant and machinery etc., will be required and put in place. The project is currently at planning stage and subject to approval and detailed design. All construction impacts would be temporary to short-term. Impacts may include the following:

- Site preparation works and operations
- Site excavations and earthworks
- Site infrastructure and vehicular access
- Construction traffic, dust and other emissions
- Temporary fencing/hoardings
- Temporary site lighting
- Temporary site buildings (including office accommodation)
- Cranes, crash deck and scaffolding

Operational Phase

The designed scheme seeks to harmonise and integrate the development within the existing landscape and the broader urban environment, in line with the Dublin City Development Plan 2016- 2022 and associated policies and objectives. It must do this whilst adhering to national planning policy which seeks the densification and the provision of increased height on appropriate urban sites. The design rationale and detail employed seeks to mitigate potential negative effects on the landscape character and visual amenity of the area by:

- Establishing an integrated relationship between the proposed development and surrounding buildings and the broader urban landscape beyond, incorporating aspects of current and emerging trends in built-form, scale, texturing, colour and materials;
- The insertion, positioning and detailed modelling of the buildings, in order to assist in the appropriate visual assimilation of their mass
- Appropriate architectural detailing to assist in the integration of the external building facades – including the modulation of openings and fenestration;
- Rationalisation of all services elements and any other potential visual clutter and its



- incorporation internally within building envelopes (as far as practically possible);
- Simplification and rationalisation of the proposed roof lines with integrated communal gardens on the roofs. Use of appropriate materials in the architectural expression of the buildings. In this instance, brick is used in the facades across the scheme, with variation in colour and tone occurring in the individual character areas. This approach reinforces the articulation of the massing of the blocks.
 - The provision of communal uses within the development, including internal amenity spaces and courtyards.
 - Sustainable approach to drainage and biodiversity
 - Detailing in the architectural and landscape design to mitigate wind and shadow effects to create good microclimates.

Potential Visual Impact

The assessment of visual effects likely to be created by the proposed development is determined through the comparison of 'before' and 'after' photomontages – this is therefore, perhaps, a little less subjective than the assessment of effects on landscape character. This too is inevitably influenced to some extent by the standpoint of the viewer (the receptor). A total of 23 photomontages have been prepared that illustrate the visual effects of the proposed development on the surrounding visual environment. They are all set out in Chapter 14 of the EIAR Volume II and in a separate A3 document with the planning application, prepared by 3D Design Bureau.

The existing view from each viewpoint is shown together with the proposed development as seen from the same viewpoint. The red line that appears on some of the proposed photomontages indicates the location and profile of the new development in the view, which in such cases is largely screened from view, generally in this case by intervening buildings or dense vegetation.

Because the design life of the proposed development is up to 60 years, the duration of predicted visual effects is assessed as long term, as is the case for predicted landscape character impacts.

The assessment of visual impacts through the use of comparative photomontages serves to identify impacts upon the visual environment. The photomontages are important in illustrating the impact of the proposed scheme from the selected viewpoints. In this instance, they also serve to support and illustrate an aspect of the landscape character impact assessment. As previously outlined, it is quite difficult to distil purely visual effects from landscape character effects, therefore the assessment text invariably links landscape character to the visual environment/amenity and vice versa and seeks to explain the effect of one upon the other.

3.11.2 Mitigation

Demolition and Construction Phase Mitigation

The building site including a site compound with site offices, site security fencing, scaffolding and temporary works will be visible during the construction phase. The provision of site hoarding along the property boundaries will substantially address many potential effects of construction operations at ground level during the delivery stage. Construction cranes (and of course, the emerging buildings) will become visible from neighbouring properties and also from a number of more distant vantage points as the development proceeds. The cranes and site facilities are generally viewed as a temporary and unavoidable feature of construction, particularly in urban settings. Mitigation measures proposed during the construction stage of the development, revolve primarily around the implementation of appropriate site management procedures during the construction works – such as the control of lighting, storage of materials, placement of compounds, control of vehicular access, and effective dust and dirt control measures, etc. The Construction Environmental Management Plan for the project which accompanies this submission, sets out the technical measures to be employed in order to mitigate potential negative effects during construction. This is a working document which is refined and added to as the project



proceeds.

Operational Phase Mitigation

The success of the proposed development is dependent on the proposals being properly executed as approved and on an appropriate set of management plans which will set out procedures and responses to potential systems failures. In addition, the positive management of the communal spaces to ensure on-going social patronage and viability (including event programming) is essential.

Detailed agreement on finishes and materials to be employed needs to be ensured through the provision of, and on-going adherence to, reference samples provided on site for the duration of the construction works and defects period. The proposed soft landscape works will need to be maintained and managed especially over the initial period after planting, in order to ensure their successful establishment and the intended integration with the built development.

4.0 Identification of Significant Impacts / Interactions

Chapter 15 of the EIAR (Volume II) provides detail on the interaction and interdependencies in the existing environment. Armstrong Fenton Associates Planning and Development Consultants, in preparing and co-ordinating this EIAR, ensured that each of the specialist consultants liaised with each other and dealt with the likely interactions between effects predicted as a result of the proposed development during the preparation of the proposals for the subject site and this ensures that mitigation measures are incorporated into the design process.

This approach is considered to meet with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001-2018. The detail in relation to interactions between environmental factors is covered in each chapter of the EIAR.

All environmental factors are interlinked to a degree such that interrelationships exist on numerous levels. Interactions within the study area can be one-way interactions, two-way interactions and multiple-phase interactions which can be influenced by the proposed development. As this EIAR document has been



prepared by a number of specialist consultants, an important aspect of the EIA process is to ensure that interactions between the various disciplines have been taken into consideration. This chapter of the EIAR was prepared by Bryan Meredith, BA, MRUP, MIPI, MRTPI, Planning Consultant of Armstrong Fenton Associates Planning and Development Consultants.

All of the potential significant effects of the proposed development and the measures proposed to mitigate them have been outlined in the preceding chapters of this EIAR. However, for any development with the potential for significant environmental effects, there is also the potential for interaction amongst these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them, or have a neutral effect.

The purpose of this requirement of an EIAR is to draw attention to significant interaction and interrelationships in the existing environment. Armstrong Fenton Associates Planning and Development Consultants, in preparing and co-ordinating this EIAR ensured that each of the specialist consultants liaised with each other and dealt with the likely interactions between effects predicted as a result of the proposed development during the preparation of the proposals for the subject and ensuring that appropriate mitigation measures are incorporated into the design process.

Having regard to the approach taken, the aspects of the environment likely to be significantly affected by the proposed development, during both the construction and operational phases, have been considered in detail in the relevant Chapters of this EIAR document. In addition, likely interactions between one topic and another have been discussed, where relevant, by the relevant specialist consultant(s).

The primary interactions can be summarised as follows:

- Noise, air, waste, water and traffic with population and human health;
- Land and soils with transportation, water & hydrology, resource management, noise, air and biodiversity;
- Water & hydrology with biodiversity and;
- Air quality and climate and traffic.

The relevant consultants liaised with each other and the project architects, engineers and landscape architects where necessary to review the proposed scheme and incorporate suitable mitigation measures where necessary. As demonstrated throughout this EIAR, most inter-relationships are neutral in impact when the mitigation measures proposed are incorporated into the design, construction or operation of the proposed development.

4.1 Other Impacts

4.1.1 Direct and Indirect Effects Resulting from the Use of Natural Resources

Schedule 6 Item 2 (c) of the Planning and Development Regulations, 2001 - 2015 requires that an EIAR contains a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative) of the proposed development on the environment resulting from the use of natural resources. No likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative) of the proposed development on the environment are expected to arise from the use of natural resources.

4.1.2 Direct and Indirect Effects Resulting from Emission of Pollutants, Creation of Nuisances and Elimination of Waste



Schedule 6 Item 2 (c) of the Planning and Development Regulations, 2001 - 2015 requires that an EIAR contains a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative) of the proposed development on the environment resulting from the emission of pollutants, the creation of nuisances and the elimination of waste. No likely significant effects on the environment are expected to arise from the emission of pollutants, the creation of nuisances or the elimination of waste.

4.2 Residual Impacts and Cumulative Impacts

Residual impacts can be defined as the final impacts that occur after proposed mitigation measures have taken effect. Many of the findings of the EIA have been incorporated into the design of the development and have contributed to the reduction or amelioration of potential impacts. Where residual impacts arise, they are detailed in the relevant chapters and further mitigation measures detailed where necessary.

Cumulative impacts are defined as: *“The addition of many small impacts to create one larger, more significant, impact”* (EPA 2002). Cumulatively, these impacts may be significant if they occur close together in terms of location and time. The cumulative impact of the proposed development is categorised as neutral and moderate.

As outlined in Chapter 3 this EIAR, where relevant, the EIAR also takes account of other development(s) within the area. These impacts have been addressed in the relevant chapters of the EIAR.

To determine traffic impacts in Chapter 11, the traffic generated by the proposed development is combined with the baseline traffic generated by the traffic on the road network in the area. The potential traffic impacts from other developments were also considered in the assessment (e.g. residential developments - adjacent to the site to the south and east).

Each of the relevant specialists has considered the potential for cumulative impact in preparing their assessments. While there is the potential for negative impacts to occur during the construction stage of the scheme, with the implementation of the appropriate mitigation outlined in the EIAR, the residual cumulative impact is not considered to be significant.

4.3 Environmental Commitments and Mitigation Measures

Mitigation measures to be adopted during the construction and operational phases of the proposed development are detailed within each chapter. These measures should be implemented through planning conditions imposed by the planning authority / An Bord Pleanála.

Mitigation measures will be managed by the contractor(s) as part of the Construction Management Plan and by the developer/ landowners thereafter.

4.4 Conclusion

The EIAR (Volume II) has regard to and builds on the Strategic Environmental Assessment prepared with the Dublin City Development Plan 2016-2022.

The EIAR has considered the likely, significant, adverse effects of the proposed project on the receiving environment.



Mitigation measures are included, to avoid and / or reduce impacts on the environment where considered necessary. This includes mitigation measures incorporated into the design of the proposed development.

The EIAR concludes that there are no material or significant environmental issues arising which were not anticipated by the Dublin City Development Plan 2016-2022 and considered in its Strategic Environmental Assessments.

5.0 Summary of EIA Mitigation and Monitoring Measures

Chapter 16 of the EIAR (Volume II) provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document for ease of reference for the Board and all other interested parties.