ENVIROMENTAL IMPACT ASSESSMENT REPORT

FOR

Proposed Residential Development on Lands

AT

St Paul's College

Raheny

Dublin 5

ON BEHALF OF

Crekav Trading GP Limited

Volume 1 Non-Technical Summary

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1 INTRODUCTION

Crekav Trading GP Limited is applying for planning permission for a Strategic Housing Development (**SHD**) located on lands ajacent to St Paul's College, Sybil Hill Road, Raheny, Dublin 5.

An Environmental Impact Assessment Report (**EIAR**) is an assessment and analysis of potential impacts on the receiving environment that may arise as a result of the Proposed Development. A project of this scale requires an EIAR. This EIAR has been prepared for Crekav Trading GP Limited and supports the planning application made directly to An Bord Pleanála (the Board) under the provisions of Planning and Development (Housing) and Residential Tenancies Act 2016.

This Non-Technical Summary (**NTS**) describes the Proposed Development, the Environmental Impact Assessment (**EIA**) process and summarises the key environmental impacts arising from each of the environmental assessments carried out by a panel of experts in accordance with best practice. The environmental assessments involved desktop studies, site visits, surveys and site-specific investigations. The NTS also outlines the mitigation and monitoring measures proposed along with a list of any residual impacts that may occur.

1.1 Overview of the Proposed Development

The Proposed Development will consist of the construction of a residential development set out in 9 no. blocks, ranging in height from 5 to 9 storeys accommodating 657no. apartments, residential tenant amenity spaces and a crèche. At basement level the Site will accommodate car parking spaces, bicycle parking, storage, services and plant areas. Landscaping will include extensive communal amenity areas and a proposed significant area of public open space.

The Proposed Development also includes for the widening and realignment of an existing vehicular access onto Sybil Hill Road and the demolition of an existing pre-fab building to facilitate the construction of an access road from Sybil Hill Road between Sybil Hill House (a Protected Structure) and St Paul's College. This will incorporate upgraded access to Sybil Hill House and St Paul's College and a proposed pedestrian crossing on Sybil Hill Road.

The Proposed Development also includes for the laying of a foul water sewer in Sybil Hill Road and the routing of surface water discharge from the Site via St Anne's Park to the Naniken River and the demolition and reconstruction of existing pedestrian stream crossing in St Anne's Park..

1.2 Site Description

The site location must be considered with regard to the planning and environmental context. In this section, an overview is provided for illustrative purposes, of the major environmental designations and planning classification of the site location.

Later in this document, each specialist considers the existing environment in more detail, as required from their particular expert viewpoint, and identifies potential environmental impacts arising from the proposed development.

The Proposed Development is located in the northern suburbs of Dublin City, c. 5km from the city centre, in an established residential area. The Site of the Proposed Development is located east of the R808 Sybil Hill Road, immediately east of St Paul's College (Secondary School) and Sybil Hill House (a protected structure), in Raheny, Dublin 5; see Figure 2.1 below. The R808 Sybil Hill Road runs north-south connecting the R105 Howth Road (north of the Proposed Development) with the R807 Clontarf Road (to the south).

The Site of the Proposed Development is enclosed:

(i) by the grounds of St Anne's Park to the north, east and south;

(ii) by the sports grounds of St Paul's College to the south; and

(iii) to the west by residential development at The Meadows, Sybil Hill House and St Paul's College.

The 4-storey Convent building / grounds of the Little Sisters of the Poor is located to the immediate west of Sybil Hill Road.

Figure 1 shows the location of the development.

Figure 1: Location of Proposed Development

1.3 Planning Process and the EIAR

The EIAR has been prepared in accordance with Article 1(2)(g) of the Directive 2014/52/EU (the EIA Directive). The EIAR has been prepared by a team of environmental and engineering specialists, each an expert in their own discipline. The assessments have been conducted in

accordance with relevant guidelines and advice notes for each environmental topic and in accordance with the EPA Draft Guidelines (2017) and EU Guidelines (2017).

This EIAR will be submitted as part of the overall planning application directly to An Bord Pleanála. The EIAR is presented to assist An Bord Pleanála carry out an Environmental Impact Assessment of the Proposed Development.

1.3.1 *The Planning Process*

This Proposed Development is being submitted in accordance with Section 4 of the Planning and Development (Housing) and Residential Tenancies Act 2000, (as amended), which enables planning applications for Strategic Housing Developments to be submitted directly to An Bord Pleanála.

Public notices must be published in advance of the planning application, which state the times and places at which the application and the EIAR may be inspected. There is a specified a 5-week consultation period which invites the making of submissions and observations to An Bord Pleanála in relation to the:

- implications of the Proposed Development for proper planning and sustainable development; and,

- likely effects on the environment of the Proposed Development, if carried out.

Submissions can be made on these matters to An Bord Pleanála over a 5-week period after the applicant formally submits the planning application. An Bord Pleanála will examine the EIAR and consider any submissions or observations made on the planning file and may hold an Oral Hearing on the application. Following consideration of all relevant information, An Bord Pleanála may then decide to grant permission (in whole or in part), to grant permission for a modified development, or to refuse permission.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT AND CONSIDERATION OF ALTERNATIVES

2.1 Description of the Proposed Development

This section provides a description of the Proposed Development together with details of the existing environment. This description sets the basis against which the specialist assessments presented in this EIAR have been undertaken.

The Proposed Development comprises the construction of residential development to accommodate apartments, amenity spaces and a creche, located on lands east of St Paul's College, Sybil Hill Road, Raheny, Dublin 5. The total application area of the Proposed Development is c. 6.7 hectares (**ha**) and the development site itself is c. 6.4ha. The Proposed Development comprises:

a) Nine (9) no. residential apartment blocks, ranging in height from 5 storeys to 9 storeys, accommodating 657 no. apartments consisting of:

(i) 224 no. 1 bed units

(ii) 378 no. 2 bed units

(iii) 55 no. 3 bed units

b) Residential tenant amenity spaces

c) A crèche

d) Public open space provided to the south of the residential development

e) Balconies and terraces to be provided at all elevations at all levels for each residential apartment block

f) 465 no. basement car parking spaces

g) 34 no. surface visitor/ creche drop-off car parking spaces (including 2 no. GoCar, 2 no. electric car and 2 no. disabled parking spaces)

h) 1646 no. bicycle parking spaces

i) Refuse storage, services, plant areas

j) All associated Site development works necessary to facilitate the Proposed Development, which includes widening and realignment of the existing vehicular access onto Sybil Hill Road, to facilitate the construction of an access road with footpaths and on-road cycle tracks

k) A proposed pedestrian crossing on Sybil Hill Road.

3 CONSIDERATION OF ALTERNATIVES

This Section of the EIAR describes the reasonable alternatives considered for the Proposed Development and provides the main reasons for the final scheme choice, taking into account

the effects on the environment and feedback from the public, An Bord Pleanála and Stake-holders. Consideration of Alternatives is an EIA requirement.

Alternatives may be described at four levels:

- alternative locations;
- alternative designs;
- alternative layouts;
- alternative processes;

The location of the Proposed Development lies within Zone Z15 of the Dublin City Development Plan, which zoning includes residential development as '*Open for Consideration Uses'*. Therefore, it was not necessary to consider an alternative location for the Proposed Development.

Three alternative designs, including the Proposed Development, were considered in detail prior to the final design. A number of consultation meetings were held to inform the final scheme design such as pre-application discussions and proposed design options review with the Dublin City Council and An Bord Pleanála pre-applications meetings.

These consultations informed the consideration of alternative layouts and designs, for example, the open space provision, addressing the issues of population and human health in a city environment, biodiversity, archaeology and traffic and access arrangements. The three alternative designs were as follows:

1. This design was a spread of houses across the site, with apartments located outside the zone where the height would be allowed. This design was not high density as required by the planning policy for the area and did not allow for 25% open space;

2. This design was less density than design 1, with a mixture of houses and apartments, the houses were located next to the Avenue through St Anne's Park, there was a split of 25% public open space across the site. The vehicles access and parking was across the southern half of the site; and

3. This design was of all apartments in nine blocks ranging in height from five to nine-story over basements. The design included tenant amenity rooms, gym facility, crèche facility, and a single large public open space.

The chosen designs for the Proposed Development that distinguishes it from the other options are as follows

- visitor and crèche drop-off parking at ground level;
- public open space in one large area with easy access from St Anne's Park;
- a full 25% of the site is public open space;

- public and semi-private open space provides appropriate buffers between the Proposed Development and St Anne's Park / 'The Meadows' residential estate;

- a set back from St Anne's Park to the southern boundary of the Proposed Development to respect the setting of The Avenue;

- c. 30m separation between taller blocks 1 – 6 (5-9 storey) to minimise shading and maximise daylight in units; and

- c. 23m separation between shorter blocks 7 – 9 (5-6 storey) will ensure minimal shading and maximise daylight in units.

The chosen design, as revised and updated, reconsidered the issues raised with the previous alternatives and designs. Along with incorporating the concerns of Dublin City Council, the final scheme provides for a development which has been optimised to reduce the negative environmental impacts, as far as possible. The final scheme is well served by community infrastructure including schools, village neighbourhood centres, shops and crèches.

A do-nothing scenario would result in the subject lands remaining undeveloped and remaining unmanaged grassland.

4 POPULATION AND HUMAN HEALTH

4.1 Introduction

The 'Population and Human Health' Chapter of the EIAR assesses at the potential effects of the Proposed Development on human beings, living, working and visiting in the vicinity of St. Paul's Residential Development application Site. This assessment focuses on the socio-economic impacts and is focused in particular on relevant issues such as residential amenity, economic activity, tourism, population levels, and agriculture.

One of the principal concerns in any Proposed Development is that the local population experiences no reduction in the quality of life as a result of the development on either a permanent or temporary basis.

4.2 Methodology

A desk-based study was undertaken in August and September 2019. Data from the Central Statistics Office (**CSO**) was reviewed in-depth to assess information regarding population, age structure, economic activity, employment and unemployment within the vicinity of the Proposed Development. Relevant legislation and published documents were also assessed. The aim of the study was to assess the positive and negative impacts of the Proposed Development on the socio-economic environment.

4.3 Potential Impacts

The study found that the Proposed Development will have a positive effect on economic activity. The Proposed Development will generate economic activity in the locality during the construction period, which is anticipated to extend over a period of approximately 48 months. It is likely that 300 construction personnel, 24 permanent crèche staff members, 1-2 permanent apartment building management jobs and other ancillary jobs will be generated, with spin-off economic activity created for local retail and service providers.

The Construction Phase of the development has the potential to create some additional noise, increase mobility of heavy vehicles locally, increase dust generation and with the arrival and departure of construction workers into the area, have the potential to have a direct impact on the surrounding population. Construction Phase impacts will only last for the duration of the construction works. Construction Phase mitigation measures will be put in place to ensure that any negative impacts identified be reduced or to prevented. A Construction Environment Management Plan (**CEMP**) is submitted separately as part of this planning application.

The Operational Phase of the Proposed Development will have a positive impact on population and human health. The development will accommodate an additional 1,314 people in the area (based on an average occupancy of 2 no. persons, per housing unit based CSO 2016 Census data). The increased population of the area is a positive and long-term impact and it will ensure the continued viability of the public transport services, provision of services, support for local businesses such as shops, restaurants, services (e.g hairdressing), hostelries retail. It will also support parks and schools. The Operational Phase will also have a positive impact on employment with direct employment being created by the inclusion of a creche and gym within the Proposed Development and for site works such as gardening and window cleaning.

The Proposed Development is well-screened by trees within St. Anne's Park and overlooked by a limited number of properties (St. Paul's College, Sybil Hill House and 'The Meadows' residential development). Therefore, during the Operational Phase, it is considered that the Proposed Development will not have any significant landscape or visual impacts.

4.4 Mitigation Measures

During the Construction Phase a number of mitigation measures will be implemented to ensure that any potentially negative impacts are either reduced or eliminated. The mitigation measures are as follows:

- set working hours from 07:00 to 18:00 Monday to Friday and 08:00 to 14:00 on Saturday and no operations on Sundays.;
- maintain a Traffic Management Plan (**TMP**) in effect for the duration of works;
- schedule arrivals and departures so that they do not coincide with times when children are entering and leaving the school;
- restrict Heavy Goods Vehicle (**HGV**) movements to outside the period where school children are entering or leaving the school and their environs where possible;
- CEMP will be agreed with by the Planning Authority upon receipt of planning permission. The construction of the Proposed Development shall adhere to the relevant provisions of this Plan, with particular emphasis on construction waste and traffic.
- maintain a Dust and Noise abatement plan as part of the CEMP..

For the Operational Phase, no significant impacts have been identified for population, or land use, and, accordingly, no mitigation measures are required.

4.5 Residual Impacts

The Proposed Development will provide residential accommodation which will be a positive effect for the local area and will provide a significant positive impact to the overall economy of the local area through indirect socio-economic benefits to local services including local shops, service stations, cafes and restaurants.

5 BIODIVERSITY

5.1 Introduction

The Biodiversity Chapter of the EIAR describes the ecology of the Site of the Proposed Development, with emphasis on habitats and flora and fauna and outlines the methodology of assessment.

It also provides an assessment of the impacts of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance, and proposes measures, where appropriate, for the mitigation of potential impacts that are identified.

5.2 Methodology

A number of specialist surveys was carried out to describe the baseline biodiversity of the Site, including:

- desk-top study of protected sites (Natura 2000) within 15km of then Proposed Development;
- desk-top study of all species recorded with the 10km, 2km and 1km grid squares;
- habitat Surveys;
- bat surveys (2015 and 2019);
- breeding bird surveys (2017 and 2019);
- wintering bird surveys (2015/2016, 2016/2017, 2018/2019);
- mammal survey; and
- amphibian survey.

There are 16 no. European Sites located within 15km of the Proposed Development. The closest of which are North Dublin Bay Special Areaa of Conservation (SAC) and North Bull Island Special Protection Area (SPA), which are located *c.* 1.1km south-east of the Proposed Development Site.

The following habitats were identified within the Proposed Development Site and immediate surrounding area:

- Amenity Grassland (Improved);
- Dry Meadows and Grassy Verges;
- Buildings and Artificial Surfaces;
- Scattered Trees and Parkland;
- Scrub;

- Treelines;
- (Mixed) Broadleaved Woodland;
- Drainage Ditch;
- Stone Walls and Other Stonework; and
- Spoil and Bare Ground.

The following is a brief summary of the survey results:

- there are no records of rare or protected plant species within the Site or environs;
- six different bat species were recorded foraging within and commuting across the study area;
- no evidence of roosting bats was found at any of the buildings located within the Site of the Proposed Development during the roost inspection surveys undertaken between 2015 and 2019;
- some trees located within the Site of the Proposed Development were identified as having features with the potential to support roosting bats;
- Breeding Bird Surveys were undertaken on three days between March and May 2019. A total of 30 species was recorded on the three survey days. While many species were holding territory (males in song), and birds with nesting material/food were recorded, no nests were located on Site;
- a total of 17 no. species was recorded during the breeding bird surveys in 2017 and a total of 12 no. species were recorded during the survey undertaken in 2016;
- no nests were identified in any of the buildings within the Proposed Development during surveys undertaken between 2015 and 2017;
- a total of 5 no. Special Conservation Interest (SCI) species were recorded at the Proposed Development Site over the three years of wintering bird surveys.

5.3 Potential Impacts

Without the implementation of mitigation measures, the Proposed Development could result in potential significant impacts, which include:

- construction-related surface water discharges could result in a reduction in water quality at the European Sites;
- impacts on bats as a consequence of lighting and the removal of potential bat roost trees and other vegetation
- impacts to breeding birds due to noise, physical disturbance or direct habitat loss of suitable breeding habitat;

- localised disturbance to feeding wintering birds.

5.4 Mitigation Measures

Mitigation measures that will be implemented include:

- specific measures to ensure no impact on downstream Natura 2000 Sites as a consequence of construction-related surface water discharges;
- removal of potential bat roost trees under the supervision of an experienced ecologist;
- provision of bat nesting boxes within the Proposed Development;
- lighting during Construction and Operation Phases to follow relevant current guidance in order to minimise impacts on bats. Final lighting plan to be reviewed by a qualified bat ecologist; and,
- timing of works outside the breeding bird season or a check for active nests during immediately prior to any Site clearance.

5.5 Residual Impacts

Following the implementation of mitigation measures, the Proposed Development will result in no significant residual impacts.

6 LAND, SOILS AND GEOLOGY

6.1 Introduction

An assessment of the Proposed Development on the existing land, soils and geological environments was carried out.

6.2 Methodology

The assessment was carried out using data collected from a detailed desk study and Site-specific ground investigations and assessments. These investigations included drilling of boreholes, examination of the geology, sampling, laboratory analysis, groundwater monitoring and soil chemical analysis assessments. These works provided information on the baseline soils and groundwater conditions within the Site of the Proposed Development and provided geotechnical input to the proposed design.

6.3 Existing Environment

The geology encountered at the Site comprised the following:

- made ground – reworked native brown bolder clay which had been levelled to allow for suitable playing pitch surfaces which cover the majority of the project Site;

- glacial deposits – glacial till, Dublin Boulder Clay which was proven to a depth of 8m (total depth of boreholes).

The upper made ground is believed to have originated on Site and there was no evidence of any contamination observed in the field or reported in the laboratory analysis which suggests that no material was imported on to the Site. The Dublin Boulder Clay has been well studied and is known for its stiffness, strength and very low permeability.

Bedrock was not encountered during the Site investigation which finished at 8m below ground level (c.14mOD). The Site is underlain by Carboniferous Limestone (Calp) from the Lucan Formation. The bedrock has been classified as Locally Important aquifer which is moderately productive in local zones only. The rock is essentially impremabile with groundwater flow dependant on fractures within the rock which are generally more frequent within the upper 50m. There are no recorded groundwater users within 1.5km of the Site.

The geological environment of the Site is an area of thick low permeability subsoil underlain by limestone. The Dublin region is the most extensively investigated, characterised and understood geological areas of the country and there are numerous examples and case histories of excavations, retaining walls and basements in the area which are similar or larger to the Proposed Development.

6.4 Potential Impacts

The potential impacts of the Proposed Development on the land, soils and geological environment include:

- the excavation of topsoil and subsoil and its reuse/recovery/disposal off Site;.

- accidental spills or leaks of construction related material;
- imported fill and aggregates.

6.5 Mitigation Measures

The impacts are limited to the Construction Phase and are primarily related to the excavation of soil which is unavoidable. Proposed mitigation measures include:

- a CEMP will be implemented to ensure good construction management practices are employed and shall be adhered to by all contractors;
- controlled excavation of soil and appropriate management of this soil under the Waste Management Act (1996 as amended);
- reuse of subsoil on Site or for other projects where possible;
- good housekeeping on the project to mitigate against the risk of any spills and reduce impacts associated with dust and nuisance dirt;
- a detailed CEMP will be put in place and will outline how spills or environmental incidents will be dealt with should they occur;

6.6 Residual Impacts

The potential residual impacts on land, soils and geology from the Proposed Development is the excavation of soil for basement and other associated services (attenuation tanks, lift pits etc.) which are permanent impacts that cannot be avoided due to the nature of the Proposed Development.

The significance of the impact has been reduced through minimising the land required for the development. The significance of the excavation impact can be reduced through reuse of material on Site, followed by reuse off-site with disposal of material being the least favourable option. The residual impacts are classified as not significant.

7 HYDROLOGY, WATER AND HYDROGEOLOGY

7.1 Introduction

An assessment of the Proposed Development on the Hydrology, Water and Hydrogeology environments was carried out.

7.2 Methodology

The assessment followed a phased approach. A Conceptual Site Model (CSM) was developed in order to identify any likely Source-Pathway-Receptor linkages relating to the Site and the Proposed Development. The Source-Pathway-Receptor approach identifies the location and characteristics of potential sources for environmental impact (Source) followed by the identification of any potential receptors which could be harmed by exposure to the source impact (Receptor) and finally, identifies any connecting pathways which might allow source to receptor connectivity (Pathway). The phases of assessment are:

- **Phase 1**: Initial Assessment – this defined the project in terms of location, type and scale; established the baseline conditions; established the type of hydrological environment; established the activities associated with the project and; undertook initial assessment and impact determination. The CSM was updated with Site-specific data obtained through site investigations and studies. These included ground investigations, arried out in 2015 and water sampling on the Naniken River upstream and downstream of the outfall in 2019. Groundwater was monitored in boreholes for seven days in October 2015 and for three days in February 2018. An assessment and the opinion of the Hydrogeologist are presented as baseline for the receiving watercourse water quality.

- **Phase 2**: A Detailed Assessment and Impact Determination was carried out which incorporates the full range of Site investigations and studies, the refined CSM and a full assessment of any potential impacts.

- **Phase 3**: Builds on the outcome of the initial assessment and detailed Site assessments, by identifying mitigation measures to address the identified impacts. These have been built into the project design have been considered in this process.

The Final Impact Assessment incorporates the outputs from the Detailed Assessment and Impact Determination, Mitigation Measures and Residual Impact Assessment.

7.3 Existing Environment

The receiving environment in terms of hydrology and hydrogeology is an important consideration due to the close proximity of the Site to both Dublin Bay and the River Tolka Estuary . It is proposed to discharge the attenuated and treated surface water from the Site to the Naniken Stream which discharges to Dublin Bay and the Tolka Estuary..

7.4 Potential Impacts

The EIAR assesses the potential impacts, if any, of the Proposed Development on the hydrology, water and hydrogeology. There is a specific focus on sources of pollution, which

are normally found in an urban environment such as contaminated surface water run-off from leaks and spillages to land, soils, geology, groundwater or surface water.

The risk to human health and flooding is also considered, due to changes in the hydrological and hydrogeological environment, resulting from this project.

The likely impact of the Proposed Development in the interactions and mitigations Chapter details the expected effects with an additional point discharge pipe of surface water to the Naniken Stream and a potential to increase baseline on the local and regional hydrological and hydrogeological receptors.

The potential effects of the Proposed Development on the hydrology, water and hydrogeology include:

- altering of the groundwater / surface water regime by drainage,
- increasing hard standing area and basement construction which could cause disturbance to the hydrological and geological environment.
- there may be some small sources of potential contamination present on Site during the Construction Phase from machinery oils, fuel and cement.

7.5 Mitigation Measures

Proposed mitigation measures include:

- management of Storm-water runoff during and post construction with the use of full retention separators and Sustainable Drainage Systems (SuDS) features.
- a CEMP will be implemented to ensure good construction management practices are employed and shall be adhered to by the contractors.

7.6 Residual Impacts

The mitigation measures will ensure that there will be no significant impacts or negative effects on hydrology, water and hydrogeology, during the Construction and Operational Phase.

8 AIR QUALITY AND CLIMATE

8.1 Air Quality and Climate

8.1.1 *Introduction*

Chapter 8 of the EIAR details an assessment of the likely impact on air quality and climate associated with the Proposed Development. The EIAR outlines the methodology to be used to assess the air quality and climate impacts of the Proposed Development.

8.1.2 *Methodology*

A quantitative appraisal has been carried out to assess the risk to sensitive receptors of dust deposition and health impacts due to the Construction Phase.

The operational impact of the development was assessed based on emissions of the pollutants nitrogen dioxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, carbon monoxide and benzene using the UK Design Manual for Roads and Bridges screening model which is a recommended screening model for assessing the impact of traffic on air quality. The inputs to the air dispersion model consist of information on road layouts, receptor locations, annual average daily traffic movement's, annual average traffic speeds and background concentrations. The climatic impact based on greenhouse gas emissions of CO_2 was also assessed using the Design Manual for Roads and Bridges screening model.

8.1.3 *Existing Environment*

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

8.1.4 *Potential Impacts*

The greatest potential impact on air quality during the Construction Phase is predicted to be from construction dust emissions and the potential for nuisance dust. In order to minimise dust emissions during construction, a series of mitigation measures were prepared in the form of a Dust Minimisation Plan. When the dust minimisation measures set out in the plan are implemented, fugitive emissions of dust from the Site will be insignificant and pose no nuisance at nearby receptors.

The greatest Operational Phase impact is due to additional road vehicle emissions. The results of the vehicle emissions air dispersion modelling study indicate that the impacts of the proposed development on air quality and climate is predicted to be imperceptible with respect to the Operational Phase both in the long and short term.

8.1.5 *Mitigation Measures*

In order to sufficiently ameliorate the likely air quality impact, a schedule of air control measures has been formulated for the Construction Phase associated with the Proposed Development.

Construction Phase dust monitoring will be put in place to ensure dust mitigation measures are controlling emissions.

There is no proposed monitoring for the Operational Phase of the development with respect to air quality or climate.

8.1.6 *Residual Impacts*

8.1.6.1 *Construction Phase*

When the dust minimisation measures are implemented, fugitive emissions of dust from the Site will be short-term, localised, not significant and pose no nuisance at nearby receptors.

Due to the size and nature of the construction activities with appropriate mitigation measures, CO_2 and N_2O emissions during construction will be short-term, localised and imperceptible impact on climate, and therefore not significant.

8.1.6.2 *Operational Phase*

The results of the air dispersion modelling study indicate that the residual impacts of the Proposed Development on air quality and climate are predicted to be imperceptible and localised with respect to the Operational Phase for the long term and therefore not significant.

8.2 Wind and Microclimate

8.2.1 *Introduction*

Wind and Micro-climate assessments were carried out to identify the possible wind patterns around the Proposed Development considering mean and peak wind conditions typically occurring in Dublin.

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

8.2.2 *Methodology*

The wind modelling study simulates the movement of wind within the prescribed area.

A total of 18 no. different wind scenarios have been studied considering variation of wind magnitude and directions in line with their frequency of occurrence based on 30 years of historical weather data. Through the wind assessment it has been possible to highlight, at

design stage, areas of concern in terms of downwash/funnelling/downdraft/ and to identify critical flow accelerations that could potentially occur.

8.2.3 *Potential Impacts*

Modelled results of the Proposed Development scheme showed that:

- the Proposed Development will produce a high-quality environment that is attractive and comfortable for pedestrians of all categories;
- the surrounding environment and development properly shield all paths/walkways around and within the development. Pedestrian footpaths are always successfully shielded and comfortable;
- the development's communal open spaces are generally suitable for long term sitting, short term sitting, standing, walking and strolling activities;
- shielding conditions in the South-West, South-East, North-East and North-West areas are always acceptable;
- balconies within the development are comfortable for pedestrian sitting, standing, walking and strolling;
- the Proposed Development does not impact or give rise to negative or critical wind speed profiles at the nearby adjacent roads, or nearby buildings;
- pedestrian comfort assessment identified the areas that are suitable for different pedestrian activities in order to guarantee pedestrian comfort. In terms of distress, no critical conditions were found for "Frail persons or cyclists" in the surrounding of the development. No critical conditions have been found for members of the" General Public".
- during the Proposed Development Construction Phase the predicted impacts are classified as negligible.

8.2.4 *Mitigation Measures*

The proposed mitigation for this development is landscaping using tree plantings, which creates a further reduced vorticity, making it possible to reduce incoming velocities, thus further reducing wind impacts on the buildings, public spaces or pedestrian paths.

This proposed tree planting mitigation measures will be implemented within the development, particularly at the south, south-west, and west corners of the development, and to mitigate some funnelling effects.

8.2.5 *Residual Impacts*

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

8.3 Microclimate – Daylight

8.3.1 *Introduction*

The EIAR assesses the daylight impact of the Proposed Development. The aim of the analysis is to record and analyse the following impacts:

- impact of the Proposed Development in relation to daylight within the Proposed Development and any likely significant effects on the environment;

- impact to the existing adjacent buildings external to the development daylight, due to the Proposed Development and any likely significant effects on the environment.

8.3.2 *Methodology*

A site visit took place on 21 August 2019 in order to obtain information relevant to the assessment.

In considering the development potential and the quality of amenity for the surrounding properties as well as for the new development once the scheme has been implemented, the analysis has been based on the Building Research Establishment (BRE) guidelines on Site Layout Planning for Daylight and Sunlight (the BRE Guide).

8.3.3 *Potential Impacts*

The result of the analysis confirms that across the entire development excellent levels of internal daylight are achieved. Of the 1802 no. rooms that comprise the development, only 42 no. fall slightly under the BRE requirements, therefore a 97% compliance ratio is achieved.

These results also demonstrate that the proposed buildings will have an imperceptible daylight impact to any of the surrounding properties.

8.3.4 *Mitigation Measures*

An imperceptible impact with neutral, long-term effect is expected in relation to the daylight levels experienced by the future inhabitants of the Proposed Development and to the existing inhabitants of the adjoining sites, and therefore no mitigation measures are required.

8.3.5 *Residual Impacts*

An imperceptible impact with neutral, long-term effects, if any, is expected in relation to the daylight levels experienced by the future inhabitants of the Proposed Development and to the existing inhabitants of the adjoining sites. No remedial or reductive measures are required, therefore, there will be no residual impacts during the Operational Phase in respect of daylight.

8.4 Microclimate – Sunlight

8.4.1 *Introduction*

The EIAR assesses the daylight impact of the Proposed Development.

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

- sunlight impact to proposed amenity spaces within the Proposed Development and any likely significant effects on the environment;

- sunlight impact to any amenity spaces adjacent to the development, due to the Proposed Development and any likely significant effects on the environment.

8.4.2 *Methodology*

A Site visit took place on 21 August 2019 in order to obtain information relevant to the assessment.

In considering the development potential and the quality of amenity for the surrounding properties as well as for the new development once the scheme has been implemented, the assessment methodology has been based on the Building Research Establishment (BRE) guidelines on Site Layout Planning for Daylight and Sunlight (the BRE Guide).

8.4.3 *Potential Impacts*

The result of the analysis confirms that across the entire development excellent levels of sunlight are achieved. Achieving 2 hours of sunlight on 21 March on the majority of the provided amenity space is in compliance with BRE requirements “Site Layout Planning for Daylight and Sunlight”.

These results also demonstrate that the proposed buildings will have imperceptible overshadowing impact to any of the surrounding properties.

8.4.4 *Mitigation Measures*

An imperceptible impact with neutral, long-term effect is expected in relation to the sunlight levels experienced by the future inhabitants of the Proposed Development and to the existing inhabitants of the adjoining sites, therefore no mitigation measures are required.

8.4.5 *Residual Impacts*

An imperceptible impact with neutral long-term effects, if any, is expected in relation to the sunlight levels experienced by the future inhabitants of the Proposed Development and to the existing inhabitants of the adjoining sites. No remedial or reductive measures are required; therefore, it is considered there will be no residual impacts from the Construction Phase in respect of sunlight.

9 NOISE AND VIBRATION

9.1 Introduction

Chapter 9 of the EIAR assesses the potential for noise and vibration impacts associated with the Proposed Development during both the short-term Construction Phase and the long-term Operational Phase on its surrounding environment.

9.2 Methodology

The assessment was undertaken using the following methodology:

- baseline noise monitoring was undertaken outside noise sensitive buildings adjacent to the Site of the Proposed Development in order to assess the existing noise environment;
- a review of the most applicable standards and guidelines was been carried out in order to set a range of acceptable noise and vibration criteria for the Construction and Operational Phases of the Proposed Development;
- predictive calculations relating to Construction Phase noise impacts were undertaken at the nearest noise sensitive locations to the Site of the Proposed Development in accordance with best practice standards and guidelines relating to environmental noise;
- predictive calculations were performed to assess the potential impacts associated with the operation of the development at the most sensitive locations surrounding the Proposed Development in accordance with best practice standards and guidelines relating to environmental noise;
- a schedule of mitigation measures and monitoring proposals are included, where required, to reduce, where necessary, any identified potential significant noise and vibration impacts from the Proposed Development

9.3 Potential Impacts

During the Construction Phase a variety of items of plant will be in use for the purposes of site clearance and construction. The type and number of equipment will vary between the varying Construction Phase stages, depending on the phasing of the works. There will be vehicular movements to and from the Site that will make use of existing roads. Due to the nature of these activities, there is potential for the generation of elevated levels of noise. The overall Construction Phase will take approximately 48 months.

The assessment indicates that during the main Construction Phase, activities can operate within the relevant noise criteria. The potential impact during this phase will be moderate, with negative short-term effects on a small number of noise sensitive locations.

The assessment has noted that there is potential for the recommended noise criteria to be exceeded when specific demolition works are taking place immediately adjacent to St. Pauls College. This phase of the construction works will be undertaken during the enabling works phase which will take place over a period of approximately 5 months. In the event that demolition works are scheduled during normal school terms and school during hours, there

are potential for significant impacts of short-term, intermittent and negative effect in the absence of mitigation measures.

Potential noise impacts associated with construction traffic along the surrounding road network has been assessed. Taking into account the expected construction traffic volumes added to the existing road network, the assessment has determined that any change in noise levels is negligible and therefore not significant, with short-term and neutral effect.

Once the development is completed, the potential noise impacts to the surrounding environment are minimal. Given the nature of the Proposed Development the range of potential noise sources associated with the Operational Phase are similar to those which form part of the existing environment at neighbouring residential areas (estate vehicle movements, children playing etc.) and hence no significant impacts are expected from this area of the Site of the Proposed Development.

The main potential noise impact associated with the Proposed Development will relate to the generation of additional traffic to and from the Site.. On review of traffic flows associated with the development and existing flows along the surrounding road network, noise levels associated with development is determined to be of imperceptible impact of long-term, neutral effect.

Potential additional noise impacts also relate to operational plant serving the apartment buildings. Due to the enclosed nature of the plant room areas below ground level, there will be no potential noise impact to the external environment. During the detailed design stage of the apartment buildings, the key noise control considerations from this area of the building will relate to controlling airborne and structure borne noise transfer within the residential apartments from plant areas. This will be undertaken as part of the building design.

Three substations are proposed within the Site of the Proposed Development; two located to the south west of Block 1 apartment building and one along the western boundary of Block 7. The closest noise sensitive locations to these structures are the proposed residential units within the Site. Operational noise levels from small residential sub stations are low and are well controlled through the sub-station structure. Once the structure is well sealed and designed to control tonal noise emissions (e.g. sources associated with low hummin sounds), operational noise levels from these structures are low and do not give rise to any significant noise levels beyond their immediate structure. Given the distance to the nearest noise sensitive properties and assuming the structures are well sealed, noise levels at the nearest noise sensitive locations will be well controlled.

The residential tenant amenity spaces will be located within the apartment buildings at ground floor level. There is no expected noise impact associated with these areas to noise sensitive locations outside the development boundary given these areas are internally located within the buildings and the low noise sources associated with these spaces.

9.4 Mitigation Measures

Best practice noise and vibration control measures will be employed by the contractor during the Construction Phase in order to avoid significant noise and vibration impacts at the nearest sensitive buildings. The CEMP will set out the key control measures for noise and vibration during this phase.

During the Operational Phase of the development, noise mitigation measures with respect to the outward impact of the development are not deemed necessary.

9.5 Residual Impacts

During the Construction Phase of the project there is the potential for some minor to moderate impact on nearby noise sensitive properties due to noise emissions from Site activities. The application of binding noise limits and hours of operation, along with the implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum.

The residual likely impact of the Proposed Development during the Construction Phase will be of short-term minor to moderate impact.

The predicted noise level associated with additional traffic is predicted to be of insignificant impact along with the existing road network. In the context of the existing noise environment, the overall contribution of traffic is not considered to pose any significant impact to nearby residential locations. It can be concluded that once operational, noise levels associated with the Proposed Development will not contribute any significant noise impact to its surrounding environment.

The resulting likely impact of traffic additional along the surrounding road network is not significant with long-term neutral effects.

The likely impact from mechanical and electrical services serving the Proposed Development will be not significant with long-term neutral effects.

The likely impact residential amenity areas serving the Proposed Development will be imperceptible with long term neutral effects.

10 LANDSCAPE AND VISUAL ASSESSMENT

10.1 Introduction

This Chapter of the EIAR provides an assessment of the likely significant landscape and visual effects of a Proposed Development.

10.2 Study Methodology

10.2.1 *Introduction*

The assessment involved:

- A review of plans, sections, elevations of the Proposed Development;
- An analysis of survey mapping and aerial photography;
- Visits to the Site and surrounding areas to determine views to and from the Site;
- A review of landscape planning policies and objectives and other relevant documentation in order to ascertain the landscape and visual significance and sensitivity of the Site; and
- A review of other Chapters of the EIAR, including Photomontages.

10.3 The Existing Receiving Environment (Baseline Situation)

10.3.1 *Site Context*

The Proposed Development is located east of Sybil Hill Road, immediately east of St Paul's College (Secondary School), Sybil Hill House (a protected structure), and 'The Meadows' residential estate in Raheny, Dublin 5 (see Figure 10.1).

10.3.2 *Site Description*

The Site comprises an open rough grassland field located to the north and east of the sportsground at St Paul's College (see Figure 10.1 below). While the area appears relatively flat, there is a slight fall of around 4m from north-west to southeast.

The Site of the Proposed Development is enclosed by the grounds of St Anne's Park to the north and east; and by the Avenue in St Anne's Park and the sportsgrounds of St Paul's College to the south. The western boundary of the Site is enclosed in part by St Paul's College, and in part by the eastern rear boundary wall of Sybil Hill House and in part by the rear boundary wall of properties 9 to 16 at 'The Meadows' residential estate.

The part 6 storey Ardilaun Court residential development is located west of 'The Meadows' residential estate and the part 4 and 5 storey Convent building / grounds of the Little Sisters of the Poor is located to the immediate west of Sybil Hill Road.

A line of mature trees is located on the Site close to the boundary wall with The Meadows residential estate.

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Figure 10.1 - Site Context (Source: annotated Google Map)

10.4 Potential Impact of the Proposed Development

Potential landscape and visual impacts will arise from:

- landscape disturbance and visual unfamiliarity and effects associated with initial Site establishment, including provision of Site compound, provision of hoarding, construction access roads, *etc*.;
- visual effects associated with general construction activity and traffic movements on Site;
- landscape and visual effects from demolition works and from removal of trees;
- landscape effects from the loss of existing open landscape / visual character;
- landscape and visual effects from provision of new entrance and access road;
- visual effects from provision of services and infrastructure, including roads, sewers and surface water measures;
- landscape and visual effects from phased emergence of new apartment development;
- visual effects from provision of lighting, footpaths and cycleways *etc*.;
- landscape and visual effects from provision of landscape measures and planting; and
- landscape and visual effects from completion and occupation of the new residential development on a progressive phased basis.

10.4.1 *Construction Phase*

While the Site of the Proposed Development is well-screened, construction effects will have the potential to give rise to landscape and visual impacts for immediately adjoining areas, including St Anne's Park, Sybil Hill House, St Paul's College, The Meadows residential estate and Sybil Hill Road.

Otherwise potential for landscape and visual impacts are limited, mainly to upper floors of Ardilaun Court and The Convent of the Little Sisters of the Poor, and to a short section of All Saints Road, where construction of upper aspects of the development will be visible over intervening trees and development. Any such impacts will be slight negative and temporary or short-term.

10.4.1.1 *St Anne's Park & Avenue*

Potential impacts will arise in glimpse view between and under trees on the Avenue; in views through proposed openings with the Park; in the provision of a surface water pipe through the Park to a new outfall provided in reconstruction of an existing pedestrian bridge over the Naniken River; and where the construction of upper aspects of the development, and the use of cranes, is visible over existing belts of trees.

Therefore, notwithstanding the significance and sensitivity of St Anne's Park, the maturity, density and evergreen nature of existing planting on the Park boundary will ensure that the likely impact on the landscape and visual character of the Park will be slight, with short-term negative and localised effects. There is potential for significant landscape and visual impacts of a negative and temporary effect where limited open views allow.

10.4.1.2 *Sybil Hill House, St Paul's College & 'The Meadows'*

Widening of the existing entrance, construction of the access road; removal of trees; provision of new boundary and railings have the potential to result in moderate, landscape and visual impact of temporary and localised negative effect for Sybil Hill House and St Paul's College.

The new entrance and access road will be used for construction access to the main development area and activity and traffic associated with the Construction Phase will result in moderate visual impact of short-term and localised negative effect on Sybil Hill House and St Paul's College.

Site development and establishment works, earthworks, building works, including scaffolding and the use of cranes, installation of services, and general construction activity, and provision of a construction compound, will have a significant disruptive effect on the landscape and visual setting of the Site and views to the Site during the Construction Phase. Therefore, the Construction Phase of the main development area has the potential to result in significant, landscape and visual impact with short-term negative effect on Sybil Hill House, St Paul's College and sportsground and 'The Meadows' residential development.

10.4.1.3 *Sybil Hill Road*

Widening of the existing entrance, tree removal, construction of the new access and works along Sybil Hill Road (*i.e*. provision of pedestrian crossing and service connections) has the potential to result visual impact of localised negative temporary effect along Sybil Hill Road.

The new entrance and access road will also be used for construction access to the main development area and activity and traffic associated with the Construction Phase will result in slight visual impact of localised negative short-term effect in the vicinity of the entrance on Sybil Hill Road.

10.4.2 *Operational Phase*

The site of the Proposed Development is well-screened by mature plantings within St Anne's Park with limited potential for significant impact. The Site is overlooked by St Paul's College; Sybil Hill House; and 'The Meadows' residential estate and there is potential for significant impact from these areas with permanent effects accentuated at night.

Otherwise potential for landscape and visual impacts are limited to upper aspects of the development wich may be visible over intervening trees and development. Any such impacts will be slight negative and temporary or short-term.

10.4.2.1 *St Anne's Park & Avenue*

The Proposed Development will not be visible from the vast majority of St Anne's Park, however, limited views will be available from the Park at the proposed new entrances to the Park from the north-east and south-east corners of the Site.

There is also potential for views of some parts of upper floors of the Proposed Development from limited areas to the north, north-east of the Park, however, these restricted views of the Proposed Development will not detract from the primary views of a 'landscape parkland'.

The likely landscape and visual impact of the Proposed Development on St Anne's Park will be slight to moderate negative effects in the short-term with slight, negative permanent effects.

10.4.2.2 *Sybil Hill House, St Paul's College & 'The Meadows'*

The Proposed Development will be partly screened from Sybil Hill House, however, it will be openly visible from St Paul's College and sportsground and from the rear of properties No. 9 to 16 of the 'The Meadows' residential estate. While the Proposed Development will be setback from these properties, the existing views of open landscape will be permanently altered and the changed context will be prominent at night.

The likely landscape and visual impacts will be moderate to significant with negative effects in the short-term and likely neutral effects in the long-term.

10.4.2.3 *Sybil Hill Road*

With a widened entrance and new pedestrian crossing, the likely operational landscape and visual impact for Sybil Hill Road is imperceptible with neutral effects.

10.5 Avoidance, Remedial & Mitigation Measures

Significant consideration has been given to avoiding significant landscape and visual effects in the design and layout of the scheme as a whole, including in the approach to the architectural, engineering and landscape layout of the Proposed Development. In this way the scheme includes for:

- location of the taller apartment blocks at the centre of the Site, with step down to the west, south and east;
- provision of a large area of public open space as setback along the Avenue in St Anne's Park;
- provision of evergreen hedgerow planting along the boundary fence with the Avenue in St Anne's Park;
- provision of a large area of communal open space to the west of the apartment layout to provide 32 to 42m setback between Block 1 and the rear garden boundary wall of the properties at The Meadows;
- retention of existing mature trees (other than those recommended for removal) in the

open space at the rear of The Meadows;

- planting of a line new semi-mature trees in the open space at the rear of The Meadows to enhance the screening provided by existing retained trees;

In overall terms mitigation in the design and layout of the Proposed Development includes for allocating c.4.2ha (or c.63% of the Site) to provision of public and communal open space.

Landscape proposals include for the provision of a single large area of c.1.6ha of public open space, which is located adjacent to the avenue of St Anne's Park and will be offered to DCC for taking-in-charge.

A further c.2.6ha of the Site is laid out as semi-private communal open spaces, which provide for formal playgrounds and natural play opportunities, for a kick-about area (over surface water attenuation) for landscape gardens, for seating, walks and visitor cycle parking *etc*. The scheme also includes for a significant extent of new tree, hedgerow and shrub planting.

10.5.1 *Construction Phase*

The avoidance, remedial and mitigation measures during the Construction Phase include for protection of existing trees to be retained; for provision of Site hoarding for screening along the proposed access road and along the boundary with the Avenue in St Anne's Park; for protection of other Site boundaries and the 'Ha-Ha' feature at Sybil Hill House; for setback of construction works from the rear of 'The Meadows' residential development; for securing-off any works within St Anne's Park, which shall be co-ordinated with the Parks Department of the local authority.

10.5.2 *Operational Phase*

Operational Phase landscape and visual mitigation measures provides for a high-quality landscape setting for the Proposed Development including: provision of c.1.6 hectares of public open space to be offered for taking-in-charge to Dublin City Council; provision of c.2.6 hectares of semi-private communal open space incorporating retained trees, new amenities and play opportunities; planting of an evergreen hedgerow along the existing boundary fence with the Avenue in St Anne's Park; and incorporation of the 'Ha-Ha' style feature within the retained grounds of Sybil Hill House.

10.6 Residual Impacts

The Proposed Development will be well-screened, particuaurly from St Anne's Park, and therefore residual effects will be limited to the Site and to immediately adjoining areas of St Paul's College and 'The Meadows' residential estate. Such residual effects will be appropriately mitigated and significant residual effects will be limited to views from the rear of 'The Meadows' residential estate where the change in the landscape and visual context will be most apparent.

10.6.1 *Photomontages*

Thirteen Photomontages (which illustrate the Proposed Development in a photograpgh of the existing environment) are provided in Appendix 10.1 of the Environmental Impact Assessment

Report. The location of where the Photomontages were prepared from is shown in Figure 10.2.

Figure 10.2 – Location of Photomontages (Source: annotated Google Map)

A representative selection of the Photomontages are reproduced in the following Plates. For each view the 'Existing View' and the 'Proposed View' is shown. Where the Proposed Development will not be visible in the view, an outline of the development is shown in a red line for ease of reference.

The selected views are:

- **View 1:** Sybil Hill Road at proposed new site entrance;
- **View 3:** Southern boundary of St Anne's Park at boundary with Mount Prospect Lawns;
- **View 5:** South eastern corner of flood-lit playing fields adjoining Mount Prospect Avenue;
- **View 7:** Playing fields adjacent to St Anne's Tennis Club and along the Naniken River;
- **View 8:** Public road at No. 40 All Saints Road;
- **View 10:** St Anne's Park Avenue looking north-west towards the Proposed Development;
- **View 11:** Open space at 'The Meadows'
- **View 13**: Grounds of Sybil Hill House.

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Photomontage 1: View of Site Entrance off Sybil Hill Road

Existing View (Summer time)

Proposed View (Summer time)

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Photomontage 3: View from southern end of St Anne's Park adjoining Mount Prospect Lawns

Existing View (Winter time)

Proposed View (Winter time): Proposed Development screened by tree belt. (Location of Proposed Development outlined in red line)

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Photomontage 5: View from southeast end of playing fields in St Anne's Park adjoining Mount Prospect Avenue

Existing View (Winter time)

Proposed View (Winter time): Proposed Development screened by tree belt. (Location of Proposed Development outlined in red line)

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Photomontage 7: View from playing fields adjacent to St Anne's Tennis Club

Existing View (Winter time)

Proposed View (Winter time): Majority of Proposed Development screened by tree belt. (Location of Proposed Development outlined in red line)

NTS

Photomontage 8: View All Saints Road

Existing View (Winter time)

Proposed View (Winter time): Majority of Proposed Development screened by tree planting. (Location of Proposed Development outlined in red line)

NTS

Photomontage 10: View from more open section of Avenue in St. Anne's Park

Existing View (Winter time)

Proposed View (Winter time): Majority of Proposed Development screened by existing trees and proposed boundary hedgerow. (Location of Proposed Development outlined in red line)

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Photomontage 11: View from The Meadows residential estate

Existing View

Proposed View

NTS

Photomontage 13: View from west of Sybil Hill House (with Ardilaun Court to north (left))

Existing View

Proposed View

11 ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE

11.1 Architectural heritage

11.1.1 *Introduction*

Chapter 11 of the EIAR assesses the likely impact of the Proposed Development on architectural heritage.

11.1.2 *Methodology*

An understanding of the location of those buildings and other structures that may be of architectural heritage significance was compiled from historic maps, the Dublin City Development Plan and an examination of the application Site and its surrounding area. The maps included eighteenth- and nineteenth-century maps from before the Ordnance Survey and Ordnance Survey maps from the nineteenth and twentieth centuries.

The Record of Protected Structures lists Sybil Hill House as a protected structure. This lies to the west of the main section of the application Site and to the north of the proposed access road. There is no architectural conservation area within the vicinity of the application Site. St Anne's Park, which runs around three sides of the application Site, is a conservation area, though not an architectural conservation area.

A historical background to the application Site and the adjoining lands was compiled.

11.1.2.1 *Potential Impacts*

Two potential impacts arising from the Proposed Development were identified – the possibility of an impact on the protected structure at Sybil Hill House and the potential impact on the conservation area at St Anne's Park.

It was found that there would be a slight impact on the setting of Sybil Hill House, arising from the provision of the access road and from the development itself. There would be a moderate impact on the setting of the former garden wall of Maryland, though that is not a protected structure. The assessment also identified a moderate impact on the setting of St Anne's Park.

11.1.2.2 *Mitigation Measures*

The assessment concluded that the potential impacts on the settings of Sybil Hill House and St Anne's Park were not of such magnitude that they would require any mitigation measures. The impact on the setting of the former wall of Maryland would not require mitigation, though it would need to be protected during the Construction Phase of the development.

11.1.3 *Residual Impacts*

11.1.3.1 *Construction Phase*

The impacts on the setting of Sybil Hill House would be slight and on the setting of St Anne's Park would be moderate and there would be no direct impacts on either. There would be no

impact on the former wall of Maryland provided adequate protection is in place during construction.

11.1.3.2 *Operational Phase*

Following the completion of construction there would be a continuing slight impact on the setting of Sybil Hill House and moderate impact on the setting of St Anne's Park.

11.2 Archaeology, Culture and Architectural Heritage

11.2.1 *Introduction*

The EIAR details out an archaeology, culture and architectural heritage impact assessment of the Proposed Development.

The purpose of the impact assessment is to provide an archaeological, architectural and cultural heritage assessment of the receiving environment, to identify the likely significant effects on the receiving environment and to propose measures to avoid, prevent or reduce these effects.

11.2.2 *Methodology*

The assessment is based on a desk-top study of relevant archaeological, architectural and cultural heritage sources supported by a Site inspection of the Proposed Development conducted on 15 August 2019. Existing archaeology sources include the results of a 2015 geophysical survey at the Site of Maryville, which was conducted on 14-16 September 2015.

11.2.3 *Potential Impacts*

A total of four heritage sites were identified within and in close proximity to the Proposed Development:

- Maryville (Site of), extant garden wall and relict demesne landscape, which lie within or next to the Proposed Development;
- Sibyl Hill House (Vincentians' residence), garden and grounds situated immediately west of the Proposed Development, and encroached by the proposed access road from Sybil Hill Road;
- The entrance avenue to St. Anne's Park, which forms the southern boundary of the Proposed Development; and
- The townland and civil parish boundary between Maryville townland (Raheny Civil Parish) and Sibyl Hill and Harmonstown townlands (Clontarf Civil Parish).

From an archaeological perspective the Proposed Development will have a significant direct impact on the site of Maryville, where a geophysical survey has shown that sub-surface remains survive, and have a potentially significant direct impact on unrecorded, sub-surface architectural or archaeological features or material elsewhere at the site, including in the former grounds at Sibyl Hill House or associated with the townland and parish civil boundary.

11.2.4 *Mitigation Measures*

To address the potential impacts on unrecorded sub-surface architectural or archaeological features or material, it is recommended that the site be subject to pre-Construction archaeologically-directed test trenching.

Should test trenching yield evidence of archaeologically significant material or structures that cannot be preserved *in-situ,* archaeological excavation and recording, to full resolution, is recommended.

Based on the results of archaeologically-directed test trenching, archaeological monitoring of all groundworks associated with the development may be recommended, with the provision for full excavation of any archaeologically significant material uncovered at this time.

It is suggested to retain ‘Maryville’, or a component thereof, in naming the Proposed Development.

11.2.5 *Residual Impacts*

No residual impacts are identified in respect of archaeology and cultural heritage. Potential impacts will be mitigated at the pre-Construction and Construction phases of the Proposed Development. Archaeological test trenching, excavation and monitoring will retrieve archaeological information across the site of the Proposed Development.

12 MATERIAL ASSETS

12.1 Traffic

12.1.1 *Introduction*

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

Full details of the Traffic Impact Assessment undertaken by ILTP are included in the Traffic & Transport Assessment (TTA) and Mobility Management Plan (MMP) reports included under separate cover as part of the planning application for the Proposed Development.

12.1.2 *Methodology*

In order to assess the traffic impact of the Proposed Development it was first necessary to assess the current traffic situation in the area. Fully classified traffic counts in the environs of the Proposed Development were previously undertaken by ILTP in 2015 and 2017, with new site surveys conducted in February 2019.

The purpose of the surveys was to measure current traffic flows at the Site and neighbouring junctions during the peak periods. This was of critical interest in gauging the effect the Proposed Development would have on existing traffic patterns and volumes in the area during peak flow periods. The site survey also allowed sight lines and traffic conditions to be observed, in addition to signal phasing at nearby junctions. ILTP also observed pedestrian and cyclist patterns and behaviours in the vicinity of St Paul's College and the Proposed Development.

A desktop study relating to the Proposed Development was undertaken by ILTP in 2019, concluding in September 2019, and included a review of relevant policy and guidelines.

ILTP calculated the estimated trip rates from the Proposed Development using comparable developments and the TRICS database and added these figures to the base flows. A Picady traffic modelling analysis was also undertaken to assess the capacity of the proposed access onto Sybil Hill Road. LinSig Traffic Signal Junction modelling software was also utilised to assess the capacity of the adjacent Howth Road junction with the Proposed Development in place.

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

Full details of traffic modelling assumptions and results are included in the Traffic & Transport Assessment and Mobility Management Plan report completed by ILTP for the Proposed Development, included separately with the planning application for the Proposed Development.

To assess the projected traffic impacts / effects of the Proposed Development on the receiving environment in EIAR terms, the Environmental Protection Agency document *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Draft),* August 2017, was followed.

12.1.3 *Potential Impacts*

Construction Phase

The proposed routes for HGV movements during the Construction Phase are shown in Figure **12.1**. It is proposed that construction traffic will access the Site from the north along the R808 Brookwood Avenue, and egress the Site in the same direction. This provides a route to the M50 (Junction 2) using the R104 and R107 (Malahide Road) regional roads, and to the city centre using the R107 Malahide Road.

It is projected that the majority of HGV movements during the Construction Phase will be to and from the M50. The HGV route to the M50 is proposed as it is the most direct and shortest route, solely uses regional roads and avoids lower capacity local roads.

The proposed route minimises impact on the nearby Howth Road / Sybil Hill Road junction, as all construction traffic can pass through the junction via 'Straight-Ahead' movements. This negates the need to turn left and right, which can contribute to delays by swinging into adjacent traffic lanes.

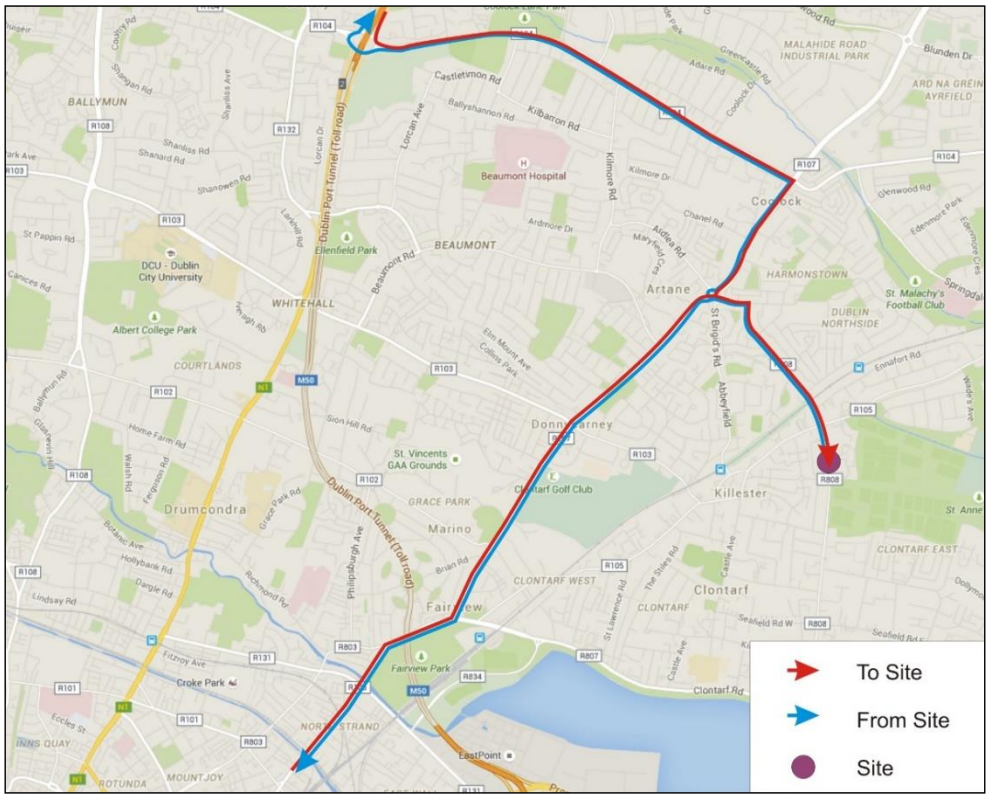

Figure 12.1 - Proposed Haul Route for HGV Movements during Construction Phase

The likely effects of the Proposed Development during the Construction Phase will be:

- additional HGV traffic along the proposed designated haul route which will have a slight short-term adverse effect on the local road network during the construction works;
- additional construction personnel car / light vehicle movements which will have an insignificant short-term adverse effect on the local road network during the construction works;
- construction vehicle movements and works on Sybil Hill Road, such as when forming the new junction with the Proposed Development or when undergoing service connections on the public road, which will have a slight short-term adverse effect on traffic movements on Sybil Hill Road in the vicinity of the Proposed Developmen;
- construction vehicle movements and works on Sybil Hill Road, which will have a slight short-term adverse effect on pedestrian and cycle movements on Sybil Hill Road in the vicinity of the Proposed Development, for example due to pedestrians and cyclists having to give way at the construction access to the Site and / or divert around construction works on Sybil Hill Road;

For further details relating to the Construction Phase of the Proposed Development refer to the 'Construction Traffic Impact Assessment' section of the Traffic & Transport Assessment and Mobility Management Plan report, and Construction Environmental Management Plan (CEMP), which are included separately with the planning application for the Proposed Development.

Operational Phase

In assessing the traffic impact of the Proposed Development, the assumed Opening Year of the development was taken to be 2021, with the Design Year taken as 2036. ILTP have assumed that background traffic up to the 2021 Opening Year and 2036 Design Year will not decline further in line with recorded trends such as the recorded site surveys and the National Transport Authority / Dublin City Council annual Cordon Count (Canal Cordon Report 2018 - Report on Trends in Mode Share of Vehicles and People Crossing the Canal Cordon 2006 to 2018, April 2019), but remain constant at the recorded 2019 levels.

The estimated Annual Average Daily Traffic (AADT) volumes on the road network adjoining the Proposed Development for the 2021 Opening Year and 2036 Design Year scenarios are shown in Table **12.1**.

Table 12.1: Estimated 2021 Opening Year and 2036 Design Year AADTs

Location	2019 Base Year AADT	2021 Opening Year without St. Paul's Development	2021 Opening Year with St. Paul's Development	2036 Design Year without St. Paul's Development	2036 Design Year with St. Paul's Development	% HGV
Location 1 - Howth Road West	12,030	12,052	12,185	12,052	12,185	0.5%
Location 2 - Brookwood Avenue	10,078	10,152	10,499	10,152	10,499	0.9%
Location 3 - Howth Road East	13,369	13,401	13,636	13,401	13,636	0.5%
Location 4 - Sybil Hill Road North	6,690	6,818	7,533	6,818	7,533	1.0%
Location 5 - Sybil Hill Road	6,317	6,482	7,346	6,482	7,346	1.2%
Location 6 - Vernon Avenue	4,321	4,343	4,460	4,343	4,460	0.7%
Location 7 - Sybil Hill Road South	8,312	8,456	9,203	8,456	9,203	1.1%

Note 1: '2021 Opening Year without St. Paul's Development' and '2036 Design Year without St. Paul's Development' scenarios include permitted adjacent MKN development projected Trip Generation figures.

Note 2: '2021 Opening Year with St. Paul's Development' and '2036 Design Year with St. Paul's Development' scenarios include proposed St. Paul's SHD & proposed adjacent St. Paul's School Sports Hall & Pitches development.

A Picady traffic modelling analysis was undertaken to assess the capacity of the proposed access junction onto Sybil Hill Road with the Proposed Development traffic in place. The Picady analysis found that the proposed access junction will operate with ample spare capacity with the peak hour development traffic in place. This confirms the proposed access has more than adequate capacity for the Proposed Development.

The capacity of the nearby Howth Road / Sybil Hill Road junction was assessed by using LinSig Signalised Junction Modelling software. The analysis has shown that the junction can satisfactorily accommodate the projected traffic from the Proposed Development.

For further details of the traffic analysis and wider traffic impact assessment refer to the Traffic and Transport Assessment & Mobility Management Plan report, included separately with the planning application for the Proposed Development.

The proposed residential development adjoins St. Anne's Park along three sides. Four pedestrian links are proposed between the Proposed Development and St. Anne's Park. These pedestrian links could also allow direct access to the park for residents, which would further increase the use of the park and would also reduce walk and cycle distance to Bus and Dart services.

The likely effect of the Proposed Development during the Operational Phase will be additional traffic which will have a slight long-term adverse effect on the adjoining road network.

The Proposed Development will not give rise to any likely significant long-term adverse traffic impacts.

The proposed pedestrian links between the Proposed Development and St. Anne's Park would have significant long-term positive impacts with regard to reduced walking and cycling travel times to public transport services and improved permeability and connectivity to amenities in St. Anne's Park.

12.1.4 *Mitigation Measures*

Construction Phase

Identified impact: Additional HGV traffic along proposed designated haul route which will have a slight short-term adverse effect on the local road network during the construction works.

Mitigation Measures:

- tracked excavators will be moved to and from the Site on low-loaders and will not be permitted to drive onto the adjacent roadway;
- the applicant shall at all times keep all public and private roads and footpaths entirely free of excavated materials, debris and rubbish;
- public roads outside the Site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris;
- the applicant shall be responsible for ensuring that the contractors make good any damages to existing roads or footpaths caused during the Construction Phase;.
- the contractor shall confine his activities to the area of the Site occupied by the works and the builders' compound, as far as practicably possible, during any particular phase of the works.

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

Mitigation Measures:

- all construction workers will be encouraged to use public transport, and also to car share.
- no day time or night time parking of site vehicles or construction staff vehicles will be permitted outside agreed areas.

Identified impact: Construction vehicle movements and works on Sybil Hill Road, such as when forming the new junction with the Proposed Development or when undergoing service connections on the public road, which will have a slight short-term adverse effect on traffic movements on Sybil Hill Road in the vicinity of the Proposed Development.

Mitigation Measures:

- construction work will be limited to normal working hours; that are 07.00 – 18.00 on weekdays and 08.00 – 14.00 on Saturdays. All deliveries of materials, plant and machinery to the Site and removals of waste or other material will take place within the permitted hours of work. Vehicle movements will be planned to ensure arrival and departure times are maintained inside the agreed working hours.

- deliveries will be co-ordinated to prevent queuing of vehicles adversely affecting traffic flow and to minimise disruption to local traffic. They will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly to adjoining owners), and rush hour traffic. Large deliveries will be scheduled outside peak traffic hours to minimise disruption.
- properly designed and designated access and egress points to the construction site will be used to minimise impact on external traffic.

Identified impact: Construction works and construction vehicle movements on Sybil Hill Road, which will have a slight short-term adverse effect on pedestrian and cycle movements on Sybil Hill Road in the vicinity of the Proposed Development, for example due to pedestrians and cyclists having to give way at the construction access to the Site and / or divert around construction works on Sybil Hill Road.

Mitigation Measures:

- priority to keep construction vehicles and pedestrians apart;
- separate entry and exit gateways will be provided for pedestrians and vehicles with a gate man in attendance to interface with the traffic and public to facilitate safe access and egress of vehicles;
- firm, level, and well-drained pedestrian walkways will be provided;
- measures will be implemented to ensure drivers driving out onto public roads can see both ways along the footway before they move on to it;
- footpaths will not be blocked resulting in pedestrians having to step onto the carriageway.

<u>Operational Phase</u>

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

Mitigation Measures:

The following traffic mitigation measures shall be implemented for the Operational Phase of the development:

- a Mobility Management Plan has been prepared for the Proposed Development which includes recommended mitigation measures to reduce usage of private cars and increase the use by residents within the development of more sustainable modes of travel, such as including good cycle parking provision, use of a car club, and car sharing, will further promote the greater use of sustainable travel modes. It is projected that successful implementation of the mobility management mitigation measures included will reduce the vehicular trip generation from the Proposed Development below that included for in the Traffic Impact Assessment for the Proposed Development. For further details refer to the Traffic & Transport Assessment and Mobility Management Plan included separately with the planning application for the Proposed Development;

- the Proposed Development adjoins St. Anne's Park along three sides. Four pedestrian links are proposed between the Proposed Development and St. Anne's Park. These pedestrian links would further increase the use of the park and would also reduce walk and cycle distances to bus and DART services. This would make public transport an even more attractive alternative to private cars and further reduce the traffic impact of the Proposed Development;
- a Stage 3 Road Safety Audit will be undertaken post construction and pre-opening of the Proposed Development in accordance with RSA guidelines to address any potential road safety issues related to the completed scheme.

During the Operational Phase of the development it is projected that the adjoining road network can readily accommodate the additional traffic from the Proposed Development. Full details of traffic modelling assumptions and results are included in the Traffic & Transport Assessment and Mobility Management Plan report completed by ILTP for the Proposed Development, included separately with the planning application for the Proposed Development.

12.1.5 *Residual Impacts*

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

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

The Proposed Development will not give rise to any likely significant long-term traffic impacts.

12.2 Material Assets (Utilities)

12.2.1 *Introduction*

An assessment of the Proposed Development on the Material Assets for Utilities was carried out.

12.2.2 *Methodology*

The section specifically focuses on sources of pollution which are normally found in an urban environment and how they could impact on the utilities. The risk to human health is also considered, due to changes in the utilities networks, resulting from this project.

12.2.3 *Potential Impacts*

The potential effects of the Proposed Development on the utilities include:

- the Construction Phase will result in a change with connections being built and temporary utilities being required on the site to service the construction. These connections and temporary utilities could cause disturbance to the hydrological and geological environment;

- there will be some small sources of potential contamination present on site during the Construction Phase from machinery oils, fuel, cement etc;

- the Operation Phase will result in the long-term usage of telecoms, potable water, foul sewerage, electricity and gas as main utilities;

- run-off from construction sites can contain minor levels of pollutants from mineral oils and high concentrations of suspended solids during the Construction Phase of the Proposed Development.

12.2.4 *Mitigation Measures*

Proposed mitigation measures include:

- a CEMP will be implemented to ensure good construction management practices are employed and shall be adhered to by the contractors.

- ensuring that there will be no direct pathway to the North Dublin Bay SAC and the North Bull Island SPA during the Construction Phase.

- there will be no point surface water discharge connection to the Naniken Stream at Construction Phase prior to the installation of the full retention separator.

- during the Operational Phase the pollution hazard level from the development is with heating systems and risks of contamination of potable water within the apartment blocks.

12.2.5 Residual Impacts

There will be no significant sources of potential contamination present on site during the Operational Phase of the development. There are no significant residual impacts from Utilities after mitigation measures as outlined in the EIAR.

12.3 Material Assets (Waste)

12.3.1 *Introduction*

An assessment of the Proposed Development on the Material Assets for Waste was carried out.

12.3.2 *Methodology*

A Construction and Demolition Waste Management Plan (incorporated into the CEMP) has been produced on assessment of the scheme design and on review of the site and the built elements on site that will be affected by the construction of the project. This report identifies the sources of waste in the construction process and how they will be processed.

An Operational Waste Management Plan assesses the waste types produced during the Operational Phase of the scheme, how that waste will be managed and how it will be processed.

The risk to human health is also considered, with regard to wastemanagement .

12.3.3 *Potential Impacts*

The potential effects of the Proposed Development on the utilities include:

- the Construction Phase will result in soil and stone being excavated on site along with small quantities of other waste streams as detailed in the main chapter. The impacts of the Construction Phase will be short term impacts.

- the Operational Phase will also result in the generation of waste from the residential units which will be segregated and disposed of in accordance with the current legislative as set out in Dublin City Council Byelaws.

12.3.4 *Mitigation Measures*

Proposed mitigation measures include:

- the careful segregation of waste in accordance with Dublin City Council byelaws.

- the removal of asbestos containing materials and materials potentially containing asbestos by specialist contractors.

12.3.5 *Residual Impacts*

The mitigation measures will ensure that there will be no negative impacts or effects on utilities, during the Construction and Operational Phase.

13 RISK MANAGEMENT

13.1 Introduction

The EIA Directive requires consideration of how vulnerable the Proposed Development is to Major Accidents and/or Natural Disasters and what would the resulting impact be. Examples of Major Accidents include unexpected or unplanned events, such as fires, explosions. Natural Disasters can include events such as earthquakes or floods.

Risk is one of the most important elements to be considered as part of any development. It is critical that any building project is screened against potential risks which it might encounter and/or impose on the nearby environment during its Construction and Operational Phases.

13.2 Methodology

The Proposed Development has been screened against a list of national risks published by the Department of Defence in 2017. The list comprises of civil, natural, transportation and technological risks. In addition, the Proposed Development has also been screened against the risks to its future residents and nearby residents/properties in terms of building fire, radon gas and building failure.

The method of risk screening included review of EIAR of other disciplines, general risk assessment methods and consultations with the project design team. The EIAR Chapters have also identified standard mitigation measures to be implemented to reduce the risk of the development on the nearby environment and the risks to its future residents.

13.3 Potential Impacts

For the majority of the risks listed by the Department of Defence in 2017, it was found that the development is not particularly vulnerable, as it does not have any characteristics which make it more vulnerable than any other residential development. As with any other residential development, it is considered that the primary risks facing the development are flooding, building fire and building collapse/failure.

13.4 Mitigation measures

An attenuation tank is proposed to be incorporated within the development design to reduce the runoff to less than its greenfield runoff rate. The Proposed Development was not found to be located in the floodplain of a river nor located in close proximity to the coast so as to make it vulnerable to coastal flooding, it is also not vulnerable to groundwater and pluvial flooding.

A building fire consultant has been appointed to design and verify during construction the Proposed Development's resistance to fire. The Proposed Development will also be designed by a professional engineering firm in accordance with latest Irish/European structural standards, the engineers will also verify the design throughout the Construction Phase to ensure the development is being built as designed.

13.5 Residual Impact

The mitigation measures will ensure that the vulnerability of the development to major accidents and/or disasters during its Construction and Operational Phases will not be significant.

14 INTERACTIONS

This EIAR has considered the effects of the Proposed Development on the various aspects of the receiving environment. There are cases where an effect on one element of the environment results in an effect on another element. In most cases the effect is automatically considered.

The Construction, Operational and Cumulative impacts of the Proposed Development have been assessed. In practice, many impacts have slight or subtle interactions with other disciplines.

Discussions of the nature and effect of the impact of the development is primarily undertaken within each of the relevant chapters of the EIAR, while this chapter, Chapter 14 Interactions, identifies the most important interactions which are considered to potentially be of a significant nature. A matrix has been produced to show where interactions between effects on different factors have been addressed and is contained within Figure 14.1 of Chapter 14 Interactions.

When considering interactions, the assessor has been vigilant in assessing pathways – direct and indirect – that can magnify effects through the interaction or accumulation of effects – for instance the potential for cumulative significant effects to arise from multiple non-significant effects.

As demonstrated throughout this EIAR, most inter-relationships are neutral in impact when the mitigation measures proposed are incorporated into the design and Construction and Operational Phases of the Proposed Development.

15 CUMULATIVE IMPACTS

Potential cumulative impacts and resulting effects can arise from the Proposed Development when combined with other existing and/or approved developments. The cumulative impact assessments have been undertaken by each specialist in each relevant Section of this EIAR.

In accordance with the EPA Draft Guidelines (2017), a scoping exercise was undertaken to identify existing and/or approved developments with the potential for cumulative impacts, considering any existing environmental problems relating to areas of environmental importance likely to be affected or the use of natural resources.

The assessment particularly focuses on where the effects of the Proposed Development have been assessed to be of minor significance or worse, but when combined with the impact of other concurrent or future developments the overall impact may worsen. Where such effects are identified, additional mitigation measures should be put in place to prevent cumulative impacts from occurring or reduce their overall effect.

When all the impacts are examined in combination with other developments in the local and wider area, the Proposed Development is not likely to give rise to any significant cumulative effects, in combination with existing and/or permitted developments in the area.