NATURA IMPACT STATEMENT

FOR

LARGE-SCALE RESIDENTIAL DEVELOPMENT (LRD)

AT

LEYDEN'S WHOLESALERS & DISTRIBUTORS, NO. 158A RICHMOND ROAD, DUBLIN 3, D03 YK12

ON BEHALF OF

MALKEY LIMITED

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1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Thornton O'Connor Planning Consultants acting on behalf of Malkey Limited, to prepare an Appropriate Assessment (AA) Screening Report in respect of a Proposed Large-scale Residential Development (the 'Proposed Development') at a c. 0.55 hectare developable site at Leyden's Wholesalers & Distributors, No. 158A Richmond Road, Dublin 3, D03 YK12, hereafter referred to as the 'Site'. The AA Screening Report concluded that a degree of uncertainty exists that the Proposed Development may give rise to potentially significant effects on European sites located within Dublin Bay. Therefore, this Natura Impact Statement (NIS) has been prepared to provide information for the relevant competent authority to enable it to carry out a Stage 2 AA in respect of the Proposed Development.

1.2 Legislative Background

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protected Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community. The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011).

SACs and SPAs are collectively known as Natura 2000 or European sites. It is the responsibility of each member state to designate SACs and SPAs. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the Qualifying Interests (QI) of the sites; from these the conservation objectives of the site are derived.

An AA is an assessment required prior to the grant of planning permission to determine whether a plan or project, based on best scientific knowledge, will have an adverse effect on the integrity of a European site, either alone or in combination with other plans and projects. It is required for any plan or project not directly connected with or necessary to the management of a site but likely to have a significant effect on it.

1.2.1 Legislative Context

An AA is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a Natura 2000 site. Paragraph 3 states that:

"*6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site, in view of the site's conservation objectives. In the light of the conclusions of the*

assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

These obligations in relation to AA have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended ("the 2000 Act"), and in particular Section 177T and Section 177V thereof in relation to Natura Impact Statements (NIS) and AA. The relevant provisions of Section 177T and 177V are set out below:

"***177T.—*** *(1) In this Part— (a) A Natura impact report means a statement for the purposes of Article 6 of the Habitats Directive, of the implications of a Land use plan, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.*

(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites."

(3) …

(4) The applicant for consent for proposed development may, or if directed in accordance with subsection (5) by a competent authority, shall furnish a Natura impact statement to the competent authority in relation to the proposed development.

(5) At any time following an application for consent for proposed development a competent authority may give a notice in writing to the applicant concerned, directing him or her to furnish a Natura impact statement.

(6) ...

(7) (a) Without prejudice to subsection (1) a Natura impact report or a Natura impact statement shall include all information prescribed by regulations under section 177AD .

(b) Where appropriate, a Natura impact report or a Natura impact statement shall include such other information or data as the competent authority considers necessary to enable it to ascertain if the draft Land use plan or proposed development will not affect the integrity of the site."

"177V.— *(1) An appropriate assessment carried out under this Part shall include a determination by the competent authority under Article 6.3 of the Habitats Directive as to whether or not a draft Land use plan or proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the*

competent authority, in each case where it has made a determination under section 177U(4) that an appropriate assessment is required, before—

(a) the draft Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent is given for the proposed development.

(2) In carrying out an appropriate assessment under subsection (1) the competent authority shall take into account each of the following matters:

(a) the Natura impact report or Natura impact statement, as appropriate;

(b) any supplemental information furnished in relation to any such report or statement;

(c) if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura impact statement;

(d) any additional information furnished to the competent authority at its request in relation to a Natura impact report;

(e) any information or advice obtained by the competent authority;

(f) if appropriate, any written submissions or observations made to the competent authority in relation to the application for consent for proposed development;

(g) any other relevant information.

(3) Notwithstanding any other provision of this Act, or, as appropriate, the Act of 2001, or the Roads Acts 1993 to 2007 and save as otherwise provided for in sections 177X, 177Y, 177AB and 177AC, a competent authority shall make a Land use plan or give consent for proposed development only after having determined that the Land use plan or proposed development shall not adversely affect the integrity of a European site.

(4) Subject to the other provisions of this Act, consent for proposed development may be given in relation to a proposed development where a competent authority has made modifications or attached conditions to the consent where the authority is satisfied to do so having determined that the proposed development would not adversely affect the integrity of the European site if it is carried out in accordance with the consent and the modifications or conditions attaching thereto.

(5) ...

(6) …."

1.3 Stages of Appropriate Assessment

The AA process is a four-stage process, with issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required (Figure 1).

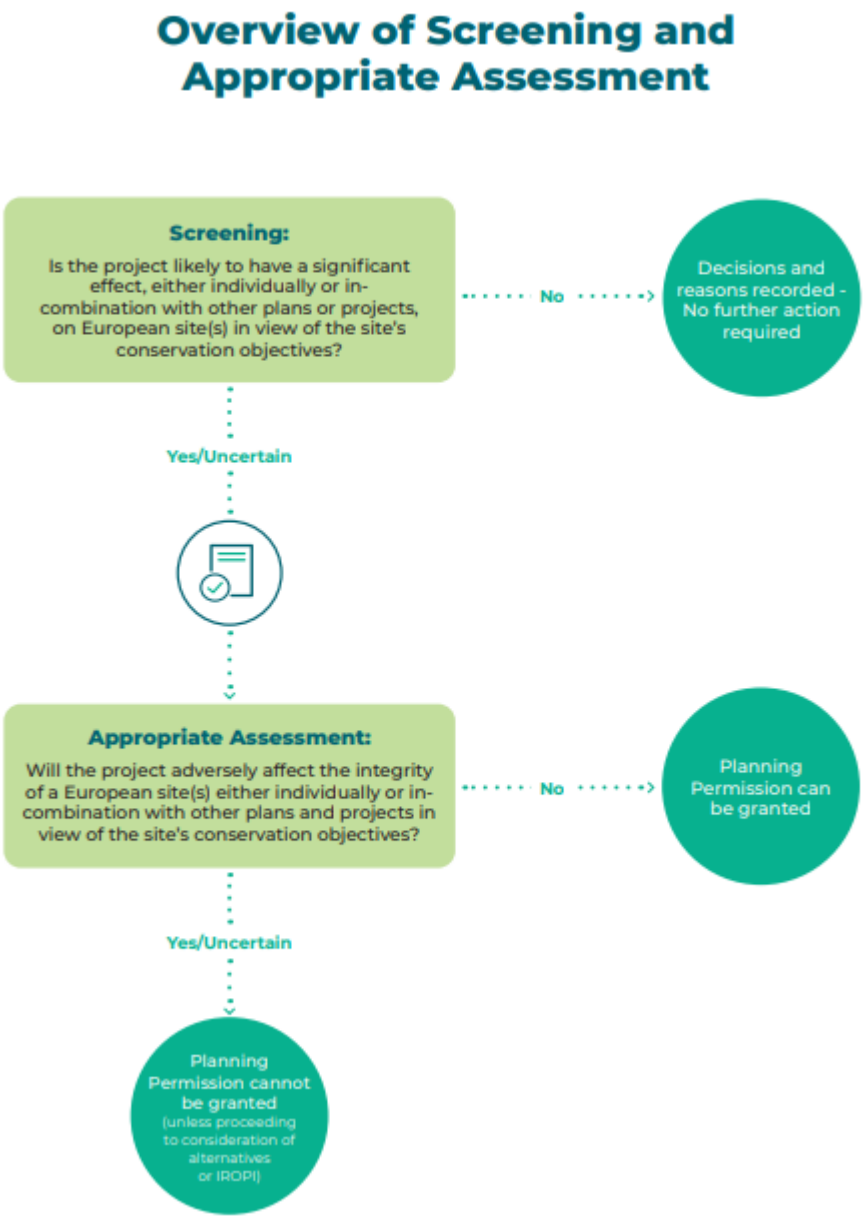

Figure 1. An Overview of the Appropriate Assessment Process (OPR, 2021).

The four stages of an AA, can be summarised as follows:

- Stage 1: *Screening.* The first stage of the AA process is to determine the likelihood of significant effects of the Proposed Development, this addresses:
    - whether a plan or project is directly connected to or necessary for the management of the Site, or
    - whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.

- Stage 2: *NIS.* The second stage of the AA requires the competent authority to determine whether the project or plan (either alone or in combination with other projects or plans) will have an adverse effect on the integrity of the European site, having regard to the conservation objectives of the site and its ecological structure and function. The developer must provide an NIS to the competent authority to inform the AA, which is a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites. It must include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites. The competent authority must consult with the public in relation to any plan or project that requires AA. If the competent authority determines that the plan or project would have an adverse effect on the integrity of any European site, it can only grant consent after proceeding through stages 3 and 4.
- Stage 3: *Assessment of alternative solutions*. If the outcome of Stage 2 is negative i.e., adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.
- Stage 4: *Assessment where no alternative solutions exist and where adverse impacts remain.* The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European site, where no less damaging solution exists.

The Habitats Directive promotes a hierarchy of avoidance, mitigation, and compensatory measures. First the project should aim to avoid any negative effects on European sites by identifying possible effects early in the planning stage and designing the project in order to avoid such effects. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse effects on the site(s) remain. If the project is still likely to result in adverse effects, and no further practicable mitigation is possible, a refusal for planning permission may be recommended. In this case, the project will generally only be considered where no alternative solutions are identified and the project is required for IROPI, or, in the case of priority habitats, considerations of health or safety, or beneficial consequences of primary importance for the environment or to other IROPI. Then compensation measures are required for any remaining adverse effects.

2 QUALITY ASSURANCE AND COMPETENCE

Synergy Environmental Ltd., T/A Enviroguide Consulting, is wholly Irish Owned multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All Enviroguide consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development.

Enviroguide Consulting as a company remains fully briefed in European and Irish environmental policy and legislation. Enviroguide staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Experienced Ornithologist Brian McCloskey undertook the winter bird surveys at the Site. Enviroguide Senior Ecologist Liam Gaffney undertook the field surveys of the Site.

Liam Gaffney has a B.Sc. in Zoology (Hons) and a M.Sc. (Hons) in Wildlife Conservation and Management, from University College Dublin, and a wealth of experience in desktop research, literature scoping-review, and report writing, as well as practical field experience (Habitat surveys, Invasive species surveys, Wintering bird surveys, large mammals, fresh water macro-invertebrates etc.). Liam has extensive experience in compiling Biodiversity Chapters of EIARs, EcIAs, AA screening and NIS reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments. Liam is also a Qualifying member of CIEEM, the Chartered Institute of Ecology and Environmental Management.

Brian McCloskey is a Project Ecologist and experienced Ornithologist with 11 years of birding experience. Brian is a longstanding and active member of Bird Watch Ireland and has provided Ornithology survey work for ecological consultancies, e.g., Vantage points surveys of Gulls, Terns, Raptors, Waders and Wildfowl; hinterland surveys of the above as well as riverine species; and breeding waders and country birds. Brian is highly experienced with all survey methodologies and with surveying all species groups of Irish birds and migrants.

3 CONCLUSION OF STAGE 1 SCREENING ASSESSMENT

The AA Screening Report containing information for the purposes of Stage 1 Screening for AA is presented in a separate document with this application, the conclusions of which are presented below:

"The Proposed Mixed-use Development at Leyden's Wholesalers & Distributors, No. 158A Richmond Road, Dublin 3, D03 YK12 has been assessed for its potential to result in likely significant effects on European sites, with the following factors considered:

- *the nature, size and location of the Proposed Development works and possible impacts arising from the construction works.*
- *the qualifying interests and conservation objectives of the European sites*
- *the potential for in-combination effects arising from other plans and projects.*

…

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

- *Rockabill to Dalkey Island SAC [003000]*
- *Baldoyle Bay SAC [000199]*
- *Ireland's Eye SAC [002193]*
- *Howth Head SAC [000202]*
- *Malahide Estuary SAC [000205]*
- *Wicklow Mountains SAC [002122]*
- *Glenasmole Valley SAC [001209]*
- *Dalkey Islands SPA [004172]*
- *Wicklow Mountains SPA [004040]*
- *Baldoyle Bay SPA [004016]*
- *Howth Head Coast SPA [004113]*
- *Malahide Estuary SPA [004025]*
- *Ireland's Eye SPA [004117]*

However, upon examination of the relevant information including in particular the nature of the potential impact pathways associated with the Proposed Development, ***the possibility cannot be excluded*** *that the Proposed Development will have a likely significant effect on the European sites listed below:*

- *South Dublin Bay SAC [000210]*
- *North Dublin Bay SAC [000206]*

- *South Dublin Bay and River Tolka Estuary SPA [004024]*
- *North Bull Island SPA [004006]*

As such, further assessment is required to establish whether any likely significant effects to the above four European sites may arise as a result of the Proposed Development. A NIS has been prepared and accompanies this application as a separate document."

Therefore, the above four European sites are assessed further as part of this NIS.

4 METHODOLOGY

4.1 Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources relevant for the completion of the NIS. The desk-top study, completed in January 2023, relied on the following sources:

- Information on the network of European sites, relevant boundaries, QIs and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at https://www.npws.ie/protected-sites;
- Information on the status of EU protected habitats and species in Ireland, obtained from the NPWS Article 17 reports (NPWS, 2019);
- Text summaries of the relevant European sites taken from the respective Site Synopses and Standard Data Forms for each site, available at *www.npws.ie* and https://natura2000.eea.europa.eu/;
- Information on the species of the European sites from the Conservation Objectives supporting documents available at *www.npws.ie* ;
- Information on species records and distributions, obtained from the National Biodiversity Data Centre (NBDC) at https://biodiversityireland.ie/; http://www.maps.biodiversityireland.ie/;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at https://gis.epa.ie/EPAMaps/ ;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at https://www.gsi.ie/;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland; and
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and their design team.

The following guidance documents were consulted and followed in the completion of this NIS:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government, 2010).
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10.
- *Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2021).
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019).
- *OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management'* (OPR, 2021).

A comprehensive list of all the specific documents and information sources consulted in the completion of this report is provided in Section 12, References.

4.2 Field Surveys

4.2.1 Ecological surveys

The Site was visited by Enviroguide Consulting on the 6th of September 2022. The Site was surveyed for any potentially important ecological receptors and/or potential impact pathways linking the Proposed Development to European sites.

4.2.2 Winter Bird Surveys

It was noted that the Proposed Development lies along the northern bank of the River Tolka and ca.1.3km upstream of the South Dublin Bay and River Tolka Estuary SPA. Wintering waterfowl such as Light-bellied Brent Geese *Branta bernicla hrota* are known to utilise *ex-situ* inner-city grassland feeding grounds during the winter months. Based on the proximity of the Proposed Development to the Tolka estuary, and the potential for Light-bellied Brent Goose to commute along the Tolka to and from feeding grounds, the potential for collision risks posed by the proposed buildings were assessed as a precautionary measure.

Winter waterbird flight-line surveys were carried out at the Site of the Proposed Development over the course of the 2021/2022 winter by Enviroguide Ornithologist Brian McCloskey. The objective of these surveys was to determine the composition, numbers, frequency and heights of species in passage over the Site of the Proposed Development, if any, in order to inform decisions on potential disturbance to flight-lines of birds commuting to/from roost sites and/or between feeding sites as a result of the construction of the proposed structures.

The flight-line surveys focused on those SCI species that are characterised as "poor" fliers and considered to be more at risk of collision (see Eirgrid, 2012, 2016 & 2020). The most at-risk groups (classified as 'medium' and 'high' collision risk species) include wader species; waterfowl such as geese, swan and duck species; and some raptor species. Gulls such as Herring Gull *Larus argentatus* are classed as 'low' collision risk species due to their superior manoeuvrability when flying (see Eirgrid, 2012, 2016 & 2020), and therefore, are not classified as 'at-risk' species in terms of in-flight collisions with structures.

A suite of 8 flight-line surveys was carried out at the Site between November 2021 and April 2022. The survey dates were as follows:

- 24th November 2021
- 10th December 2021
- 7th January 2022
- 21st January 2022
- 4th February 2022
- 18th February 2022
- 11th March 2022
- 5th April 2022

Each survey consisted of a 6-hour vantage point survey, either commencing at dawn or ending at dusk; to cover temporal variations in flight-line activity. The Site was observed from a suitable vantage point with surveyors using a binoculars and identification guides where necessary to identify all waterbirds in flight over the Site.

All surveys were undertaken using:

- Opticron 8x42 binoculars (or equivalent).
- Opticron 20x Telescope (or equivalent).
- Agreed survey methodology.
- A4 map of survey area.

The winter waterbird surveys were conducted at the appropriate time of year i.e., November-April. This period is sufficient for flight-line surveys of an urban site, as it covers the period that overwintering species including waterfowl & shorebirds are present in Ireland (NRA, 2009b). The full results of the winter waterbird surveys are provided in Appendix I of this Report

5 LIMITATIONS

No limitations were encountered in the preparation of this NIS.

6 FIELD SURVEY RESULTS

6.1 Winter waterbird Surveys

A set of winter waterbird flight-line surveys were carried out between November 2021 and April 2022 with the aim of identifying what species fly over the Site of the Proposed Development; to assess the potential for flight-line obstructions and collision risk to SCI species listed for the relevant SPAs.

This assessment was primarily focused on those SCIs considered to be "poor fliers" i.e., waterfowl and shorebirds, and most at risk of collisions or obstruction. Species fitting the above criteria that were recorded over the Site are listed below:

- Light-bellied Brent Goose
- Curlew *Numenius arquata*
- Grey Heron *Ardea cinerea*
- Mallard *Anas platyrhynchos*
- Little Egret *Egretta garzetta*

It is noted that Gull species were not recorded over the course of this flight-line assessment, as this species group are not considered to be at-risk of collisions with buildings, due to their superior manoeuvrability in flight, and general adaptation to inhabit city environments. As discussed previously, Gull species are not characterised as "poor" fliers as waterfowl species groups such as Geese are (Eirgrid, 2012; 2016 & 2020), and therefore, are not classified as 'at-risk' species in terms of in-flight collisions with structures.

6.1.1 Results of flight-line surveys

Two species listed as SCI's for nearby SPAs were recorded over the Site during the 2021/22 winter surveys: Curlew and Light-bellied Brent Goose. The remaining waterbird species are not listed as named SCIs for any European site, however, '[A999] Wetlands and waterbirds' is a QI for both North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA and thus covers these other waterbird species, namely: Grey Heron, Mallard and Little Egret.

Curlew were recorded over the Site during six hourly counts spread over three dates, with a peak count flock of eight recorded flying overhead on 24th November 2021, flying due west at a height of approximately 100m. The average number of Curlew over the Site when present was 3.3 birds. Curlew flew over the Site at heights of between 75 and 100m, with an average flight height of approx. 94m.

Several flocks of Light-bellied Brent Geese were recorded commuting at height over the Site and surrounding lands over the course of the winter surveys. Light-bellied Brent Geese were recorded during 14 hourly counts spread over seven dates. A peak flock count of 125 geese were recorded overhead on the 11th of March, heading east at a height of approximately 150m. The average number of Light-bellied Brent Geese recorded over the Site when present was 27.7 birds. All Light-bellied Brent Geese were recorded flying at heights of between 70m and 200m, with the average flight height calculated as approx. 133m.

Light-bellied Brent Geese, a winter migrant to Ireland, are known to roost in Dublin Bay at Bull Island and commute to feed both along the Dublin Bay Coastline, and inland; to feed on a network of *ex-situ* grassland feeding grounds, largely comprised of playing pitches, golf-courses and amenity parks (BirdWatch Ireland, 2017; Pers. Obs.). The Light-bellied Brent Goose recorded during these surveys were noted to be geese commuting inland to forage at *ex-situ* grassland sites. Curlew similarly are known to forage on inland grassland sites for earthworms during high tide.

With regard to the other species noted during the winter surveys i.e., Mallard, Grey Heron and Little Egret, these species were recorded almost daily during the surveys. It is observed that these birds were using the River Tolka to the south of the Site as a feeding ground rather than using it as a commuting flightline, with birds flying over the Site and dropping down to the river.

Mallard were recorded over the Site during ten hourly counts spread over six dates, with a peak count flock of four recorded on three occasions flying overhead. The average number of Mallard over the Site when present was 2.7 birds. Mallard flew over the site at heights of between 10 and 50m, with an average flight height of approx. 23.5m.

Little Egret was recorded over the Site on one occasion on the 24th November 2021, with a single bird flying overhead at a height of approx. 30m. Grey Heron were recorded over the Site during four hourly counts spread over four dates, all records of individual birds. This species flew over the site at heights of between 20 and 75m, with an average flight height of approx. 50m. The results of the flight-line surveys are provided in Table 1.

Table 1. Records of SCI Species made as part of flight-line surveys at the Site of the Proposed Development.

Date	Time	No. of Birds	Approx. Height (m)	Flight Direction
Light-bellied Brent Goose				
24/11/2021	09:05	16	120m	North-west
	10:25	11	120m	North-west
10/12/2022	11:10	83	150m	East
	13:10	10	150m	East
	16:10	14	130m	East
07/01/2022	10:30	16	150m	North-west

Date	Time	No. of Birds	Approx. Height (m)	Flight Direction
21/01/2022	08:30	32	70-100m	North-west
	11:30	1	70-100m	South-east
04/02/2022	08:00	12	150m	North-west
	10:00	1	150m	South-east
18/02/2022	11:40	18	150m	East
	16:40	44	150-200m	East
11/03/2022	13:25	5	100m	East
	15:25	125	150m	East
Curlew				
24/11/2021	08:05	8	100m	West
	09:25	2	100m	North-west
	10:25	5	100m	North-west
10/12/2022	11:10	2	100m	East
	13:10	1	75m	East
07/01/2022	14:30	2	75-100m	South-west
Mallard				
10/12/2021	11:10	4	25m	South
07/01/2022	15:30	1	50m	West

Date	Time	No. of Birds	Approx. Height (m)	Flight Direction
21/01/2022	13:30	2	30m	South
04/02/2022	09:00	2	30m	West
	11:00	3	20m	West
18/02/2022	15:40	2	10m	West
11/03/2022	12:25	2	25m	West
	13:25	4	10m	West
05/04/2022	08:05	3	20m	East
	11:05	4	15m	North-east
Little Egret				
24/11/2021	10:25	1	30m	West
Grey Heron				
24/11/2021	08:05	1	25m	North
21/01/2022	13:30	1	75m	South-east
04/02/2022	08:00	1	50m	South-east
18/02/2022	13:40	1	20m	West

6.1.2 Likelihood of Collision Impacts

The physical location of buildings and structures can influence the likelihood of bird collisions, with structures placed on or near areas regularly used by large numbers of feeding, breeding, or roosting birds, or on a local flight path, such as those located between important foraging and roosting areas, can present a higher risk of collision.

The Site itself is located near a river that is utilised by waterfowl species for foraging or to commute inland. However, it is not deemed to be located in close proximity or adjacent to any SPAs designated for wetland bird populations, with the closest SPA; the South Dublin Bay and River Tolka Estuary SPA located ca.1.3km downstream. Due to the highly developed nature of the Site, there is no suitable *ex-situ* feeding/roosting/staging habitat for Light-bellied Brent Goose, or any other SCI species of waterbirds listed for the relevant European sites (Habitats present totally comprised of hardstanding).

Building Height

As can be seen based on the above results, Light-bellied Brent Goose and Curlew were recorded flying at average heights of approx. 133m (max height of 200m) and 94m (max height of 100m) respectively. These flight heights, and the directions of flight noted, are in keeping with the objectives of these birds, i.e., commuting across urban Dublin between their roosts along the coast and inland *ex-situ* feeding grounds located across the city.

Similarly, the other species recorded over the Site e.g., Mallard, Grey Heron and Little Egret, were recorded flying at average heights of approx. 23.5m (max height of 50m), 50m (max height of 75m) and 30m (max height of 30m) respectively. These birds were using the River Tolka to the south of the Site as a feeding ground rather than using it as a commuting flightline, with birds observed flying over the Site and dropping down to the river

The Proposed Development entails building heights ranging from 1-10 storeys (maximum 35m) in height (See Figure 2) and as such, the risk of migrating birds colliding with the structure due to its height is deemed to be negligible (Migrating species tend to commute far above this with Swans and Geese flying up to 2500ft (ca.750m) during migration along Irish Coasts (Irish Aviation Authority, 2020)). Birds that fly over the Site to commute across the city or in order to reach feeding grounds at various locations would fly lower than these migration heights, as can be seen in the results of the flight-line surveys. However, all birds were observed flying above the maximum height of the proposed buildings during the surveys, with the exception of Little Egret which was observed on one occasion at 30m height. However, this species is capable of flying at heights greater than this. Once the proposed structures are made of visible materials i.e., not entirely comprised of reflective materials such as glass, the birds flying in the vicinity of the Site will simply fly around or over them.

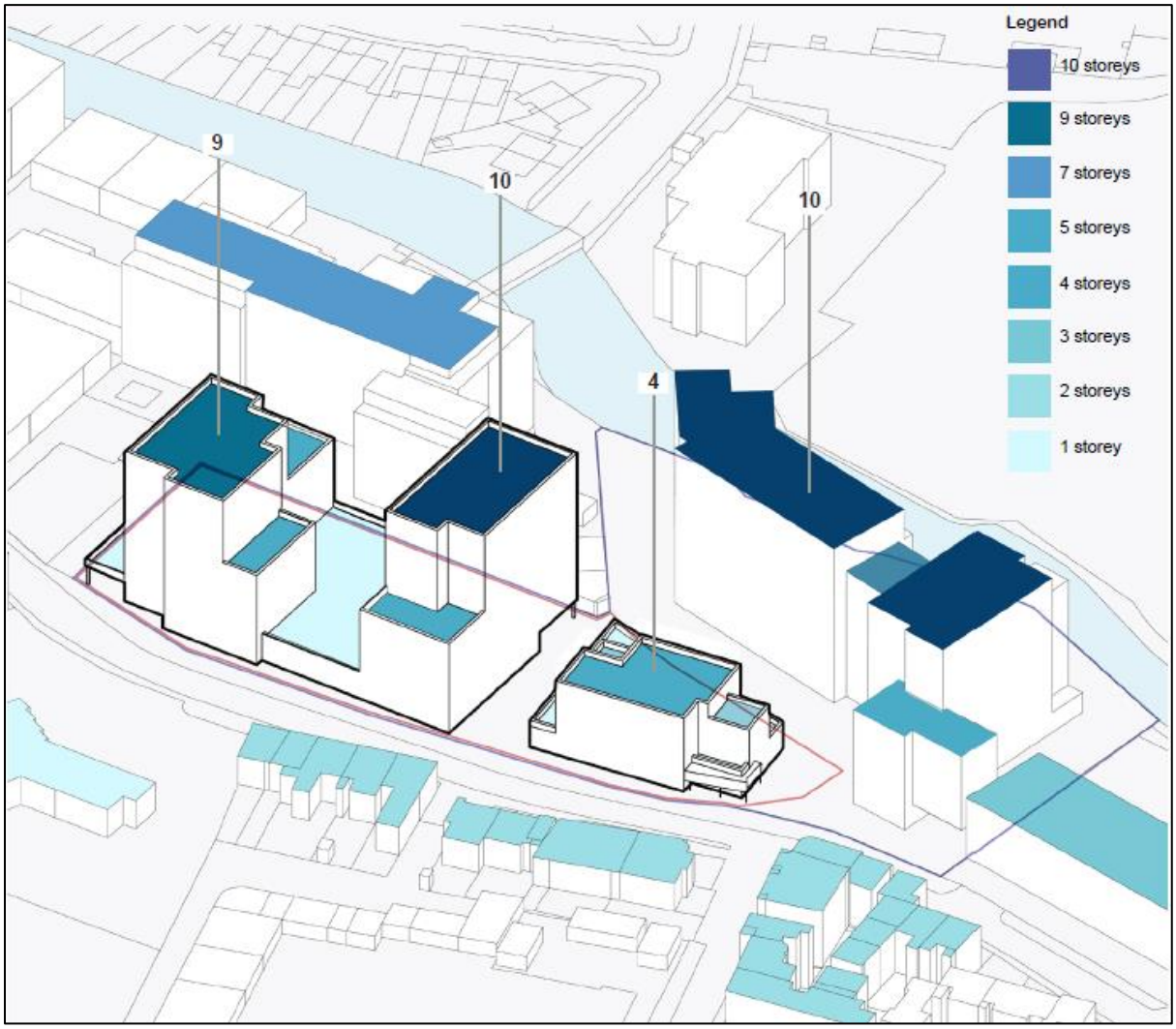

Figure 2. Proposed building heights at the Site of the Proposed Development (within the red outline) (Adapted from RKD - Architectural & Urban Design Statement (Dated January 2023).

Building Appearance

The overall façades of the proposed structures are well broken up, with areas of glazing dispersed across a varied material composition (See Figure 3). The opaque materials proposed, such as coloured brick and stone, provide important visible cues as to the presence and extent of the proposed structures to any commuting/foraging bird species should they be in the vicinity of the Site. The overall visual heterogeneity of the building façades will be sufficient to further ensure that the risk of bird collisions as a result of the Proposed Development is negligible. These architectural design features are part of the overall design of the Proposed Development and are not included as specific mitigation measures to prevent collisions, however, they will contribute to the overall effect in this regard.

Figure 3. Example of the proposed building façades (viewed from Richmond Rd), with opaque materials comprising coloured brick and stone (Adapted from RKD - Architectural & Urban Design Statement (Dated January 2023).

As such, and as concluded in the AA Screening that accompanies this application under separate cover, based on the heights of the proposed structures, the physical appearance of these structures, and as supported by the results of focused flightline surveys, it is deemed that birds including SCI species **do not have the potential to be impacted** by the Proposed Development; through collisions or obstructions to flight-lines over the Site, and the risk is therefore deemed to be **negligible** in the absence of any mitigation.

7 DESCRIPTION OF THE PROJECT

7.1 Site Location

The Site of the Proposed Development measures a total of ca. 0.83Ha (development site area and road works area) and currently comprises warehouse and shed structures and associated vehicular yard.

The Site is bounded to the north-east by Richmond Road, to the west/south-west by No. 146A and Nos. 148-148A Richmond Road (pending application ABP Reg. Ref. TA29N.312352), to the south/ south-west by a residential and commercial development (Distillery Lofts) and to the east/south-east by No. 156-163 Richmond Road (derelict brick and stone building). The River Tolka lies ca.50m to the south of the Site and is separated by hardstanding. The general surroundings of the Site comprise of commercial and residential lands for the most part, with various areas of green space associated with sports clubs, religious orders, and educational institutions scattered throughout (See Figure 4).

7.2 Brief Description of the Development

Malkey Limited intend to apply for permission for development (Large-scale Residential Development (LRD)) at this c. 0.55 hectare site at the former Leydens Wholesalers & Distributors, No. 158A Richmond Road, Dublin 3, D03 YK12. The site is bounded to the north-east by Richmond Road, to the west/south-west by No. 146A and Nos. 148-148A Richmond Road (pending application ABP Reg. Ref. TA29N.312352), to the south/south-west by a residential and commercial development (Distillery Lofts) and to the east/south-east by the Former Distillery Warehouse (derelict brick and stone building). Improvement works to Richmond Road are also proposed including carriageway widening up to c. 6 metres in width, the addition of a c. 1.5 metre wide one-way cycle track/lane in both directions, the widening of the northern footpath on Richmond Road to a minimum of c. 1.8 metres and the widening of the southern footpath along the site frontage which varies from c. 2.2 metres to c. 7.87 metres, in addition to a new signal controlled pedestrian crossing facility, all on an area of c. 0.28 hectares. The development site area and road works area will provide a total application site area of c. 0.83 hectares.

The Proposed Development will principally consist of: a Large-scale Residential Development (LRD) comprising the demolition of existing industrial structures on site (c. 3,359 sq m) and the construction of a mixed-use development including artist studios (c. 749 sq m), a creche (c. 156 sq m), a retail unit (c. 335 sq m), and a gym (c. 262 sq m), and 133 No. residential units (65 No. one bed apartments and 68 No. two bed apartments). The development will be provided in 3 No. blocks ranging in height from part 1 No. to part 10 No. storeys as follows: Block A will be part 1 No. storey to part 4 No. storeys in height, Block B will be part 1 No. storeys to part 10 No. storeys in height (including podium) and Block C will be part 1 No. storeys to part 9 No. storeys in height (including podium). The proposed development has a gross floor area of c. 14,590 sq m and a gross floor space of c. 13,715 sq m.

The development also proposes the construction of: a new c. 204 No. metre long flood wall along the western, southern and south-eastern boundaries of the proposed development with a top of wall level of c. 6.4 metres AOD to c. 7.15 metres AOD (typically c. 1.25 metres to c.

2.3 metres in height) if required; and new telecommunications infrastructure at roof level of Block B including shrouds, antennas and microwave link dishes (18 No. antennas enclosed in 9 No. shrouds and 6 No. transmission dishes, together with all associated equipment) if required. A flood wall and telecommunications infrastructure are also proposed in the adjoining Strategic Housing Development (SHD) application (pending decision ABP Reg. Ref. TA29N.312352) under the control of the Applicant. If that SHD application is granted and first implemented, no flood wall or telecommunications infrastructure will be required under this application for LRD permission (with soft landscaping provided instead of the flood wall). If the SHD application is refused permission or not first implemented, the proposed flood wall and telecommunications infrastructure in the LRD application will be constructed.

The proposed development also provides ancillary residential amenities and facilities; 25 No. car parking spaces including 13 No. electric vehicle parking spaces, 2 No. mobility impaired spaces and 3 No. car share spaces; 2 No. loading bays; bicycle parking spaces; motorcycle parking spaces; electric scooter storage; balconies and terraces facing all directions; public and communal open space; hard and soft landscaping; roof gardens; green roofs; boundary treatments; lighting; ESB substation; switchroom; meter room; comms rooms; generator; stores; plant; lift overruns; and all associated works above and below ground.

As detailed in the Statutory Notice, the development proposes the provision of a flood wall along the western, southern and south-eastern boundaries of the proposed development in the event that the flood wall proposed in the adjoining SHD (pending decision ABP Reg. Ref. TA29N.312352) is neither granted nor implemented before this application commences development. Both applications are under the control of the Applicant.

On the preferred basis that the flood wall is not required as part of the subject application as it will have already been provided as part of the Phase 1 SHD application, an approach favouring soft landscaping will be used between Phase 1 (SHD) and 2 (LRD). The soft-landscaping approach will comprise grass and shrub planting of between 40 to 100 centimetres, allowing for the creation of a vegetative buffer adjoining Block A. A gate will also be provided between the two phases at the end of the central courtyard of phase 2 between Buildings A and B, creating a physical link between Phases 1 and 2.

Except where referenced, all assessments carried out are based on the worst-case scenario, i.e. the provision of the flood wall as this is more invasive than the soft-landscaping option.

It is noted, however, that the inclusion or omission of the floodwall has little impact on the landscaping and biodiversity enhancement proposed at the Site, with some minor changes to the locations of proposed trees in the north-western corner of the Site should the flood wall be required. Please see Mitchells & Associates drawings: RIC0001-MA-XX-XX-DR-L-100 and RIC0001-MA-XX-XX-DR-L-103 for ground floor landscaping without, and with flood wall, respectively.

The proposed layout plans showing scenarios without and with the floodwall are provided in Figure 5 and Figure 6 of this Report.

7.3 Construction Phase

According to the Preliminary Construction Environmental Management Plan (PCEMP) prepared by DBFL Consulting Engineers (DBFL, 2023a), the Construction Phase will comprise the following:

- Site Setup.
- Service terminations and identification of any services on the site by the utility providers.
- Provision of temporary power, lighting and water services.
- Set up of site accommodation and welfare facilities.
- Identification of the trees that are required to be removed and the removal of these along with scrub and vegetation, in accordance with the arboriculture report.
- Identification of trees to be retained and protection of same.
- Identification of any hazardous materials on site
- Designation of exclusion zones for the demolition/dismantling.
- Demolition and site clearance.
- Undertaking remaining site investigations / sampling.
- Earthworks, including cut and fill and disposal of excess material off site.
- Construction of new flood defence wall.
- Construction of superstructure, roofs and glazing / windows / facades.
- Internal fit out.
- External site works/ infrastructure.
- Construction of external / hardstanding areas.
- Landscaping.

The following details are taken from the PCEMP (DBFL, 2023a) and Infrastructure Design Report (DBFL, 2023b).

7.3.1 Demolition

Demolition works will be carried out by a suitably qualified demolition contractor, who will be required to submit a detailed method statement including the sequence of works, segregation and disposal process and outline all proposed health and safety measures. Demolition works require the provision of temporary fencing on site to define any exclusion zones or protected areas. The works will be separated from outside traffic and passing public. Protective screens will be used, where necessary, to ensure that no debris enters the grounds of the neighbouring proposed Richmond Road Phase 1 to the west and The Distillery to the east.

7.3.2 Construction Waste

Any waste generated during the Construction Phase will be subject to best practice in managing waste. No waste shall be deposited within the Site lands. All waste generated during the Construction Phase will be removed from the Site by an appropriately permitted waste collection operator and dispatched to an appropriately permitted waste recovery/disposal facility (as necessary).

The removal of soils from the Site will be subject to testing to confirm its composition and to determine the appropriate treatment facility. There is the potential for contaminated soils to be encountered during excavation works at the Site. Any such materials will be excavated, stored and disposed of as per best practise guidelines.

7.4 Operational Phase

The Operational Phase will comprise commercial and residential use and retail activities consistent with the neighbouring land use in the area.

7.4.1 Proposed Surface Water Management

Local Authority record drawings indicate surface water infrastructure in the vicinity of the Site, with a 1350mm diameter surface water sewer at the proposed entrance to the Site under Richmond Road. Within the Site, the existing surface water network comprises of a combination of gullies, concrete channels and 100mm - 225mm diameter uPVC surface water pipes, which collects surface water runoff from the existing site, and discharges unattenuated runoff to the public surface water sewer along Richmond Road.

To manage surface water runoff from the Proposed Development, it is proposed to discharge attenuated runoff from the Site to the existing public surface water sewer at the southeast corner of the Site along Richmond Road. Surface water storage will be provided within the Site to accommodate runoff from a 1% AEP event plus 20% climate change. A combination of SUDS (Sustainable Urban Drainage System) features and traditional drainage, such as gullies and pipes will be utilised to manage runoff from the Site.

Surface water runoff from the development will be attenuated to greenfield runoff (Qbar), in accordance with the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS). Surface water run-off from the surface water catchment will be controlled using a vortex flow control device (Hydrobrake or equivalent) on the surface water outlet from the catchment area.

A suite of SUDS measures will be included in the Proposed Development as per the recommendations of the GDSDS. It is noted that SUDS measures are in no way included to mitigate potential impacts to downstream European sites. Surface water will be contained within the green/blue roof system and within an underground geo-cellular attenuation system located in the south-eastern corner of the Site, under the proposed road. The green/blue roof area and the green/blue terrace areas will make up a total of 70% of the total roof/terrace area.

Footpath runoff in landscaped areas at ground level will be intercepted by the specified permeable paving or adjacent soft landscaping where impermeable paving is used. All surface water collected from roads will pass through an appropriate petrol interceptor and grease trap, complying with the provision of 2 treatment stages mentioned within requirements of the CIRIA document C697.

For severe (>1%AEP) storm events, an overland surface water strategy has been developed to ensure buildings are not flooded in the case of these storm events and appropriate freeboard has been allowed for. It is intended that all surface water collected will pass through an appropriate petrol interceptor and grease trap.

7.4.2 Proposed Wastewater Management

There is an existing 900mm concrete foul sewer within Richmond Road. It is proposed to discharge foul flows from the Proposed Development to this existing sewer at the proposed Site entrance via an existing manhole at this location.

A pre-connection enquiry for the Proposed Development was issued to Irish Water and a copy of the Confirmation of Feasibility (COF) from Irish Water has been received. The design of the foul water network was issued to Irish Water and a Statement of Design Acceptance was also received from same (See DBFL, 2023b for details).

7.5 Existing Environment

7.5.1 *Geology, Hydrology and Hydrogeology*

The Site is underlain by the Lucan Bedrock formation (LU) comprising dark limestone and shale (calp). The groundwater rock units underlying the area are classified as *Dinantian Upper Impure Limestones* (GSI, 2023). The sub-soil at the Site of the Proposed Development is classified as *Made Ground* (EPA, 2023).

Richmond Road and the surrounding area are located within the *Dublin* groundwater body, which has an overall Water Framework Directive (WFD) status of *Good* and its risk of not achieving its status objectives under the WFD is under review according to the EPA (EPA, 2023). The Site of the Proposed Development is located on a Locally Important Aquifer - *Bedrock which is moderately productive only in local Zones (Ll),* with groundwater vulnerability in the area listed as *Low* (GSI, 2023).

The Site of the Proposed Development is located within the Liffey and Dublin Bay river catchment and the *River Tolka* sub catchment (Tolka_SC_020) and the *Tolka* (Tolka_060) sub basin. The *River Tolka* (EPA Code: 09T01) flows in a south-easterly ca.50m from the south-western boundary of the Site of the Proposed Development, and forms part of the Tolka Estuary Transitional Waterbody. This transitional waterbody has a WFD status of *Poor* and is *At risk* of not achieving its status objectives under the WFD (EPA, 2023). The River Tolka flows into the Tolka Estuary and Dublin Bay approximately 1.4km south-east of the Site of the Proposed Development. The Royal Canal is located ca.655m to the south of the Site where it passes Croke Park Stadium. The WFD status of the stretch of the Royal Canal (Code: IE_09_AWB_RCMLE) closest to the Site is *Good*, however, the risk of it not meeting its status objectives under the WFD is under review (EPA, 2023).

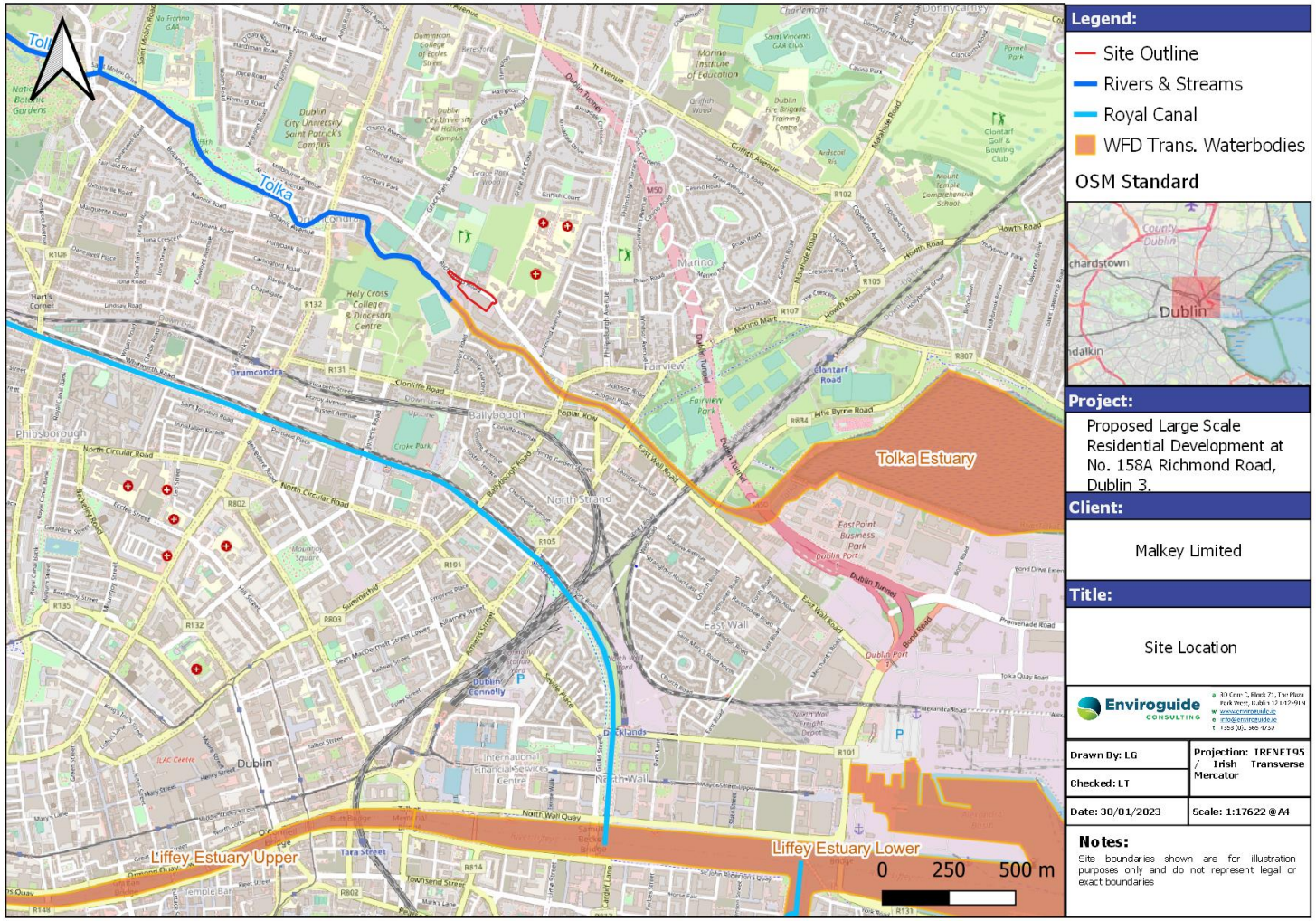

Figure 4. Site Location

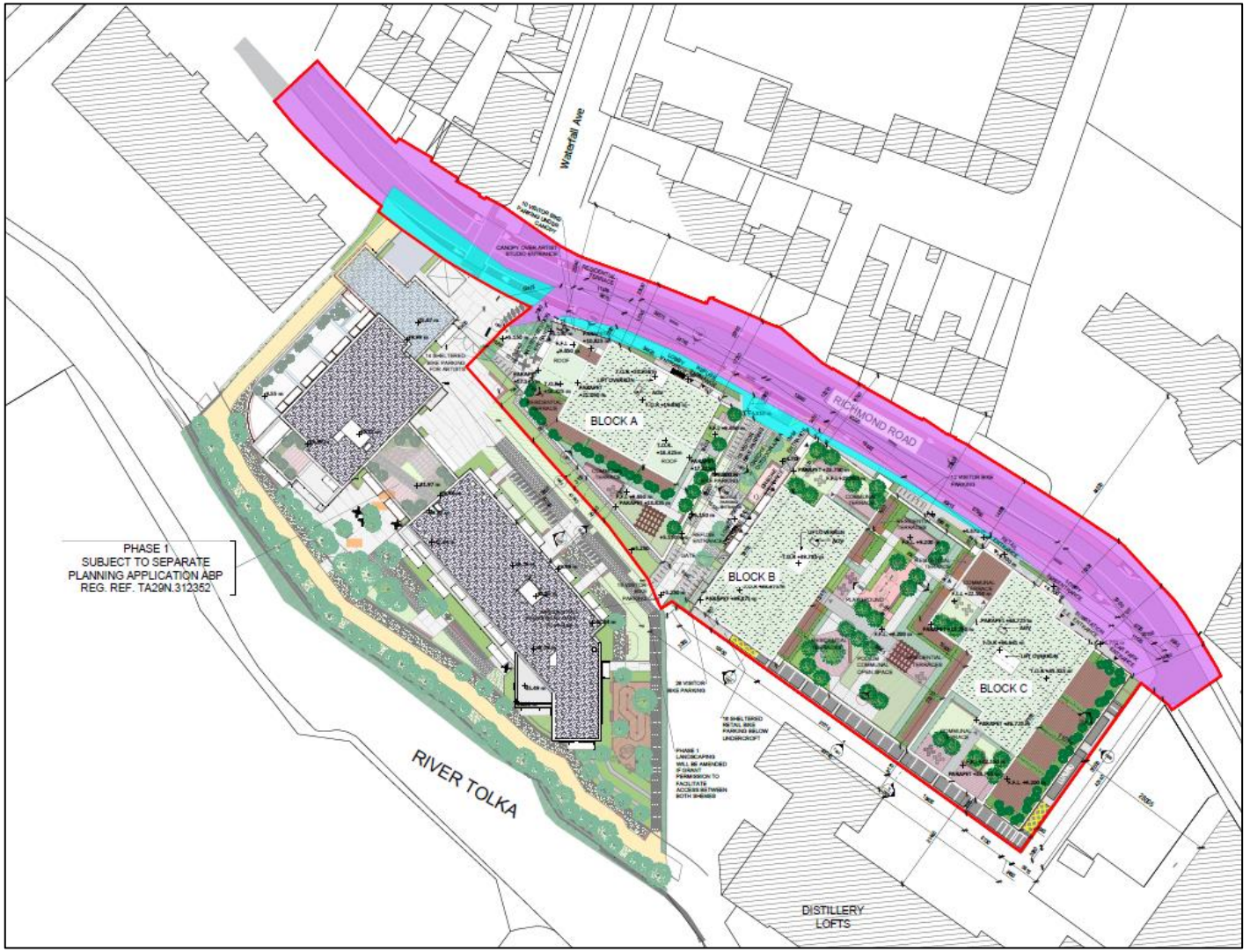

Figure 5. Proposed Site Layout (RKD Drwg: 22001-RKD-ZZ-00-DR-A-1002A, Rev: P5, Dated January 2023)

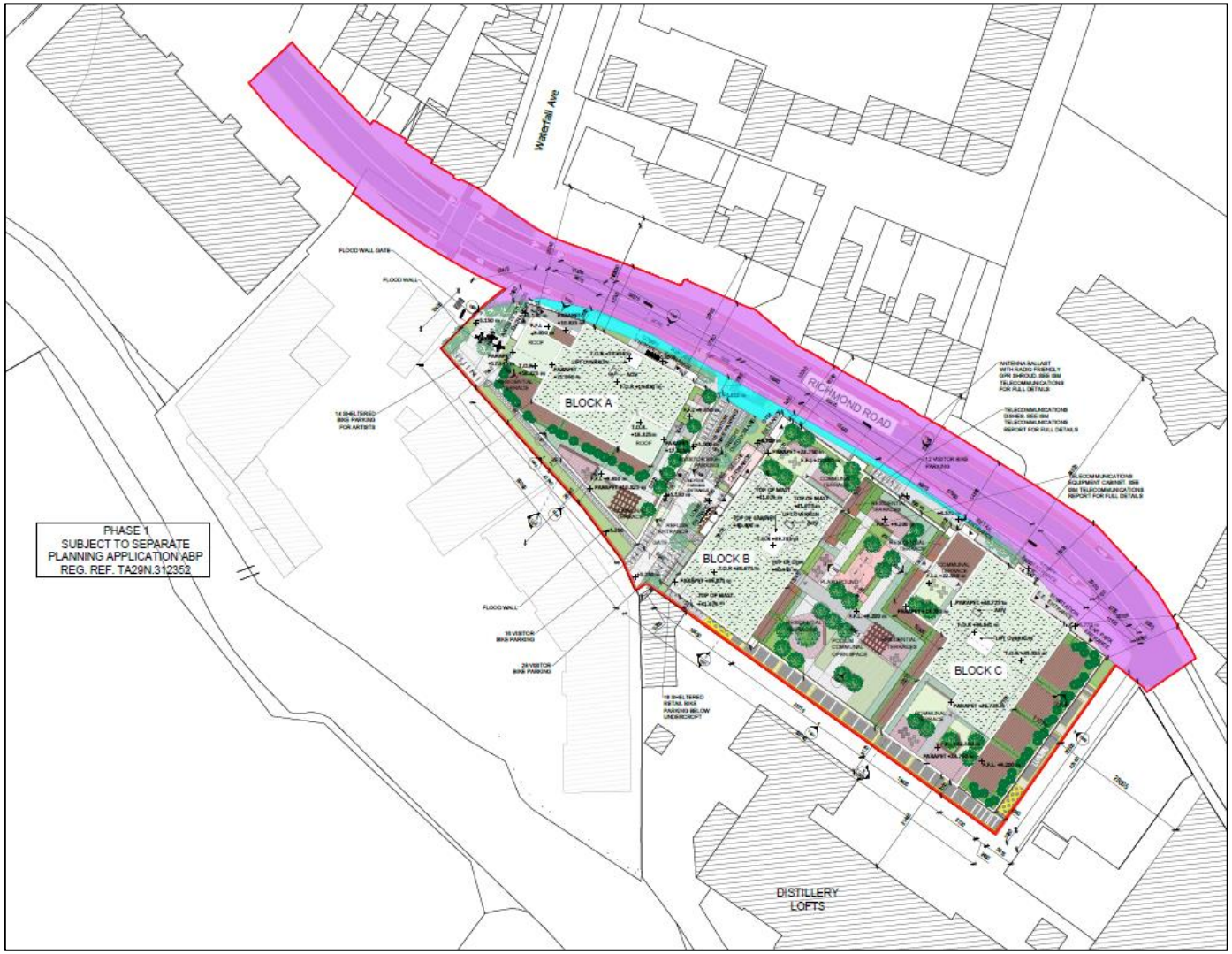

Figure 6. Proposed Site Layout if Phase 1 not approved (RKD Drwg: 22001-RKD-ZZ-00-DR-A-1002B, Rev: P5, Dated January 2023)

8 SUMMARY OF RELEVANT EUROPEAN SITES

The following descriptions of the above listed European sites have been extracted from the respective "Other Site Characteristics" and "Quality and Importance" sections of the Natura 2000 – Standard Data Forms for said sites[1]:

8.1 South Dublin Bay SAC [000210]

"Site possesses a fine and fairly extensive example of intertidal flats. Sediment type is predominantly sand, with muddy sands in the more sheltered areas. A typical macro-invertebrate fauna exists. Has the largest stand of Zostera *on the east coast. Supports part of the important wintering waterfowl populations of Dublin Bay. Regularly has an internationally population of Light-bellied Brent Goose* Branta bernicla hrota*, plus nationally important numbers of at least a further 6 species, including Bar-tailed Godwit* Limosa lapponica*. Regular autumn roosting ground for significant numbers of* Sterna *terns, including* S. dougallii*. The scientific interests of the site have been well documented."*

8.2 North Dublin Bay SAC [000206]

"Site possesses an excellent diversity of coastal habitats. The North Bull Island dune system is one of the most important systems on the east coast and is one of the few in Ireland that is actively accreting. It possesses extensive and mostly good quality examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Both Atlantic and Mediterranean salt marshes are well represented and a particularly good marsh zonation is shown. The salt marshes grade into mudflats and sandflats, some of which are dominated by annual Salicornia *species.* Petalophyllum ralfsii *occurs at its only known station away from the western seaboard. The site has five Red Data Book vascular plant species and four Red Data Book bryophyte species. This is one of the most important sites for wintering waterfowl in Ireland, with internationally important populations of Light-bellied Brent Goose* Branta bernicla hrota*, Knot,* Calidris canutus *and Bar-tailed Godwit,* Limosa lapponica*, plus nationally important numbers of a further 14 species. 20% of the national total of Grey Plover* Pluvialis squatarola *occurs here. Formerly it had important colony of Little Tern,* Sterna albifrons*. North Dublin Bay is nationally important for three insect species. The scientific interests of the site have been well documented and future prospects are good owing to the various designations assigned to site."*

8.3 South Dublin Bay & River Tolka Estuary SPA [004024]

"The site possesses extensive intertidal flats which support wintering waterfowl which are part of the overall Dublin Bay population. It regularly has an internationally important population of Light-bellied Brent Goose, Branta bernicla hrota*, which feeds on* Zostera noltii *in the autumn. It has nationally important numbers of a further 6 species: Oystercatcher,* Haematopus ostralegus*, Ringed Plover,* Charadrius hiaticula*, Knot,* Calidris canutus*, Sanderling,* Calidris alba*, Dunlin,* Calidris alpina *and Bar-tailed Godwit,* Limosa lapponica*. It is an important site*

[1] Natura 2000 Standard Data Forms are available from the online Natura 2000 Network Viewer (https://natura2000.eea.europa.eu/)

for wintering gulls, especially Black-headed Gull, Larus ridibundus *and Common Gull,* Larus canus*. South Dublin Bay is the premier site in Ireland for Mediterranean Gull* Larus melanocephalus*, with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including Roseate Tern,* Sterna dougallii*, Arctic Tern* S. hirundo *and Common Tern,* S. paradisaea*."*

8.4 North Bull Island SPA [004006]

"*The site is among the top ten sites for wintering waterfowl in the country. It supports internationally important populations of Light-bellied Brent Goose,* Branta bernicla hrota *and Bar- tailed Godwit* Limosa lapponica*. A further 14 species have populations of national importance, with particular notable numbers of Shelduck,* Tadorna tadorna *(8.5% of national total), Pintail,* Anas acuta *(11.6% of national total), Grey Plover,* Pluvialis squatarola *(6.9% of national total), Knot,* Calidris canutus *(10.5% of national total). North Bull Island SPA is a regular site for passage waders such as Ruff,* Philomachus pugnax*, Curlew Sandpiper,* Calidris ferruginea *and Spotted Redshank, Tringa erythropus. The site supports* Asio flammeus *in winter. Formerly the site had an important colony of Little Tern,* Sterna albifrons *but breeding has not occurred in recent years. The site provides both feeding and roosting areas for the waterfowl species. Habitat quality for most of the estuarine habitats is very good. The site has a population of the rare* Petalophyllum ralfsii *which is the only known station away from the western seaboard as well as five Red Data Book vascular plant species and four bryophyte species. It is nationally important for three insect species. Wintering bird populations have been monitored more or less continuously since the late 1960s, and the other scientific interests of the site have also been well documented. Future prospects are good owing to various designations assigned to site."*

8.5 Qualifying Interests and Conservation Objectives

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

The "favourable conservation status" of a habitat or species is defined by Articles 1(e) and 1(i) of the Habitats Directive as follows:

"The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- *its natural range, and area it covers within that range, are stable or increasing, and*
- *the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and*
- *the conservation status of its typical species is favourable.*

The conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' when:

- *population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*
- *the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and*
- *there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis."*

Table 2 details the conservation objectives set for each of the QIs of the European sites relevant to this Report. Table 3 outlines the conservation attributes and targets that define the 'favourable conservation condition' referred to in the conservation objective for each QI.

Table 2. The QIs for the European sites relevant to this NIS and their respective conservation objectives.

Qualifying Interest	Conservation Objectives
North Dublin Bay SAC (000206)	
[1140] Mudflats and sandflats not covered by seawater at low tide	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in North Dublin Bay SAC.
[1210] Annual Vegetation of Drift Lines	To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC.
[1310] *Salicornia* and other annuals colonizing mud and sand	To restore the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in North Dublin Bay SAC.
[1330] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*)	To maintain the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in North Dublin Bay SAC.
[1410] Mediterranean Salt Meadows (*Juncetalia maritimi*)	To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in North Dublin Bay SAC.
[2110] Embryonic Shifting Dunes	To restore the favourable conservation condition of Embryonic shifting dunes in North Dublin Bay SAC.
[2120] Shifting dunes along the shoreline with *Ammophilia arenaria* (White Dunes)	To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in North Dublin Bay SAC.
[2130] Fixed Dunes (Grey Dunes)*	To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in North Dublin Bay SAC.
[2190] Humid Dune Slacks	To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC.
[1395] Petalwort (*Petalophyllum ralfsii*)	To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC.
South Dublin Bay SAC (000210)	
[1140] Mudflats and sandflats not covered by seawater at low tide	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC.

Qualifying Interest	Conservation Objectives
[1210] Annual vegetation of drift lines [1310] *Salicornia* and other annuals colonising mud and sand. [2110] Embryonic shifting dunes	There are currently no Conservation Objectives available for these habitat types. However, their respective locations and '% areas' within the SAC rule out the possibility of any significant impacts as a result of the Proposed Development (See Table 5).
South Dublin Bay & River Tolka Estuary SPA (004024)	
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194]	To maintain the favourable conservation condition of these species in South Dublin Bay and River Tolka Estuary SPA.
[A999] Wetland and Waterbirds	To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.
North Bull Island SPA (004006)	
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	To maintain the favourable conservation condition of these species in North Bull Island SPA.
[A999] Wetland and Waterbirds	To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 3. The conservation attributes and targets that define the 'favourable conservation condition' referred to in the conservation objective for each QI for the relevant European sites

Site Name	Qualifying Interests	Attributes and Targets
Special Areas of Conservation (SACs)		
North Dublin Bay SAC	[1140] Mudflats and sandflats not covered by seawater at low tide	**Habitat Area -** The permanent habitat area is stable or increasing, subject to natural processes. **Community extent -** Maintain the extent of the *Mytilus edulis*-dominated community, subject to natural processes. **Community structure: *Mytilus edulis* density -** Conserve the high quality of the Mytilus edulis dominated community, subject to natural processes. **Community distribution -** Conserve the following community types in a natural condition: Fine sand to sandy mud with *Pygospio elegans* and *Crangon crango*n community complex; Fine sand with *Spio martinensis* community complex.
	[1210] Annual Vegetation of Drift Lines	**Habitat area -** Area increasing, subject to natural processes, including erosion and succession. Total area mapped: South Bull - 0.11ha. **Habitat distribution -** No decline, or change in habitat distribution, subject to natural processes. **Physical structure: functionality and sediment supply -** Maintain the natural circulation of sediment and organic matter, without any physical obstructions. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation composition: typical species and subcommunities -** Maintain the presence of species-poor communities with typical species: sea rocket (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and oraches (*Atriple*x spp.) **Vegetation composition: negative indicator species -** Negative indicator species (including non-natives) to represent less than 5% cover
	[1310] *Salicornia* and other annuals colonizing mud and sand	**Habitat area -** Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 29.10ha.

Site Name	Qualifying Interests	Attributes and Targets
		Habitat distribution - No decline, or change in habitat distribution, subject to natural processes. **Physical structure: sediment supply -** Maintain, or where necessary restore, natural circulation of sediments and organic matter, without any physical obstructions. **Physical structure: creeks and pans -** Maintain creek and pan structure, subject to natural processes, including erosion and succession. **Physical structure: flooding regime -** Maintain natural tidal regime. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation structure: vegetation height -** Maintain structural variation within sward. **Vegetation structure: vegetation cover -** Maintain more than 90% of area outside creeks vegetated. **Vegetation composition: typical species and subcommunities -** Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009). **Vegetation structure: negative indicator species - *Spartina anglica* -** No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.
	[1330] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*)	**Habitat area -** Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island – 81.84ha. **Habitat distribution -** No decline, or change in habitat distribution, subject to natural processes. **Physical structure: sediment supply -** Maintain natural circulation of sediments and organic matter, without any physical obstructions. **Physical structure: creeks and pans -** Maintain creek and pan structure, subject to natural processes, including erosion and succession. **Physical structure: flooding regime -** Maintain natural tidal regime. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation structure: vegetation height -** Maintain structural variation within sward.

Site Name	Qualifying Interests	Attributes and Targets
		Vegetation structure: vegetation cover - Maintain more than 90% of area outside creeks vegetated. **Vegetation composition: typical species and subcommunities -** Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009). **Vegetation structure: negative indicator species - *Spartina anglica* -** No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.
	[1410] Mediterranean Salt Meadows (*Juncetalia maritimi)*	**Habitat area -** Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island – 7.96ha. **Habitat distribution -** No decline, or change in habitat distribution, subject to natural processes. **Physical structure: sediment supply -** Maintain /restore natural circulation of sediments and organic matter, without any physical obstructions. **Physical structure: creeks and pans -** Maintain creek and pan structure, subject to natural processes, including erosion and succession. **Physical structure: flooding regime -** Maintain natural tidal regime. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation structure: vegetation height -** Maintain structural variation within sward. **Vegetation structure: vegetation cover -** Maintain more than 90% of area outside creeks vegetated. **Vegetation composition: typical species and subcommunities -** Maintain range of sub-communities with characteristic species listed in SMP (McCorry and Ryle, 2009). **Vegetation structure: negative indicator species - *Spartina anglica* -** No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.
	[2110] Embryonic Shifting Dunes	**Habitat area -** Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull Island – 2.64ha; South Bull – 3.43ha. **Habitat distribution -** No decline, or change in habitat distribution, subject to natural processes.

Site Name	Qualifying Interests	Attributes and Targets
		Physical structure: functionality and sediment supply - Maintain natural circulation of sediment and organic matter, without any physical obstructions. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation composition: plant health of foredune grasses -** More than 95% of sand couch (*Elytrigia juncea*) and/or Lyme-grass (*Leymus arenarius*) should be healthy (i.e., green plant parts above ground and flowering heads present. **Vegetation composition: typical species and subcommunities -** Maintain the presence of species poor communities with typical species: sand couch (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*). **Vegetation composition: negative indicator species -** Negative indicator species (including non-native species) to represent less than 5% cover.
	[2120] Shifting dunes along the shoreline with *Ammophilia arenaria* (White Dunes)	**Habitat area -** Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull Island – 2.20ha; South Bull – 0.97ha. **Habitat distribution -** No decline, or change in habitat distribution, subject to natural processes. **Physical structure: functionality and sediment supply -** Maintain natural circulation of sediment and organic matter, without any physical obstructions. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation composition: plant health of dune grasses -** 95% of marram grass (*Ammophila Arenaria*) and/or Lyme-grass (*Leymus arenarius*) should be healthy (i.e., green plant parts above ground and flowering heads present. **Vegetation composition: typical species and subcommunities -** Maintain the presence of species poor communities dominated by marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*). **Vegetation composition: negative indicator species -** Negative indicator species (including non-native species) to represent less than 5% cover.
	[2130] Fixed Dunes (Grey Dunes)*	**Habitat area -** Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull Island – 40.29ha; South Bull – 64.56ha.

Site Name	Qualifying Interests	Attributes and Targets
		Habitat distribution - No decline, or change in habitat distribution, subject to natural processes. **Physical structure: functionality and sediment supply -** Maintain natural circulation of sediment and organic matter, without any physical obstructions. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation structure: bare ground -** Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes. **Vegetation Structure: sward height -** Maintain structural variation within sward. **Vegetation composition: typical species and subcommunities -** Maintain range of sub communities with typical species listed in Delaney *et al.* (2013). **Vegetation composition: negative indicator species (including *Hippophae rhamnoides*) -** Negative indicator species (including non-native species) to represent less than 5% cover. **Vegetation composition: scrub/trees: -** No more than 5% cover or under control.
	[2190] Humid Dune Slacks	**Habitat area -** Area increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull Island – 2.96ha; South Bull – 9.15ha. **Habitat distribution -** No decline, or change in habitat distribution, subject to natural processes. **Physical structure: functionality and sediment supply -** Maintain natural circulation of sediment and organic matter, without any physical obstructions. **Physical structure: hydrological and flooding regime -** Maintain natural hydrological regime. **Vegetation structure: zonation -** Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession. **Vegetation structure: bare ground -** Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground. **Vegetation Structure: vegetation height -** Maintain structural variation within sward.

Site Name	Qualifying Interests	Attributes and Targets
		Vegetation composition: typical species and subcommunities - Maintain range of sub communities with typical species listed in Delaney *et al.* (2013) **Vegetation composition: cover of *Salix repens* -** Maintain less than 40% cover of creeping willow (*Salix repens*). **Vegetation composition: negative indicator species -** Negative indicator species (including non-native species) to represent less than 5% cover. **Vegetation composition: scrub/trees:** No more than 5% cover or under control.
	[1395] Petalwort (*Petalophyllum ralfsii*)	**Distribution of populations -** No decline. **Population Size -** No decline. Population at Bull Island estimated at a maximum of 5,824 thalli. Actual population is more likely to be 5% of this, or c. 300 thalli. **Area of suitable habitat -** No decline. Area of suitable habitat at Bull Island is estimated at c. 0.04ha. **Hydrological conditions: soil moisture -** Maintain hydrological conditions so that substrate is kept moist and damp throughout the year, but not subject to prolonged inundation by flooding in winter. **Vegetation structure: height and cover -** Maintain open, low vegetation with a high percentage of bryophytes (small acrocarps and liverwort turf) and bare ground.
South Dublin Bay SAC	[1140] Mudflats and sandflats not covered by seawater at low tide	**Habitat Area -** The permanent habitat area is stable or increasing, subject to natural processes. **Community extent -** Maintain the extent of the *Zostera*-dominated community, subject to natural processes. **Community structure: *Zostera* density -** Conserve the high quality of the *Zostera*-dominated community, subject to natural processes. **Community distribution -** Conserve the following community types in a natural condition: Fine sands with *Angulus tenuis* community complex.
	[1210] Annual vegetation of drift lines [1310] *Salicornia* and other annuals colonising mud and sand.	There are currently no Conservation Objectives available for these habitat types. However, their respective locations and '% areas' within the SAC rule out the possibility of any significant impacts as a result of the Proposed Development (See Table 5).

Site Name	Qualifying Interests	Attributes and Targets
	[2110] Embryonic shifting dunes	
Special Protection Areas (SPAs)		
South Dublin Bay & River Tolka Estuary SPA [004024]	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	**Population trend -** Long term population trend stable or increasing. **Distribution** - No significant decrease in the range, timing or intensity of use of areas, other than that occurring from natural patterns of variation.
	Roseate Tern (*Sterna dougallii*) [A192]	**Passage population: individuals –** No significant decline. **Distribution: roosting areas –** No significant decline.

Site Name	Qualifying Interests	Attributes and Targets
		Prey biomass available – No significant decline. **Barriers to connectivity** – No significant increase. **Disturbance at roosting site** – Human activities should occur at levels that do not adversely affect the numbers of Roseate tern among the post-breeding aggregation of terns.
	Common Tern (*Sterna hirundo*) [A193]	**Breeding population abundance: apparently occupied nests (AONs) –** No significant decline. **Productivity rate: fledge young per breeding pair –** No significant decline. **Passage population: individuals –** No significant decline. **Distribution: breeding colonies –** No significant decline. **Distribution: roosting areas –** No significant decline. **Prey biomass available –** No significant decline. **Barriers to connectivity** – No significant increase. **Disturbance at breeding site** – Human activities should occur at levels that do not adversely affect the breeding common tern population. **Disturbance at roosting site** – Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns.
	Arctic Tern (*Sterna paradisaea*) [A194]	**Passage population: individuals –** No significant decline. **Distribution: roosting areas –** No significant decline. **Prey biomass available –** No significant decline. **Barriers to connectivity** – No significant increase. **Disturbance at roosting site** – Human activities should occur at levels that do not adversely affect the numbers of Artic tern among the post-breeding aggregation of terns.
	Wetland and Waterbirds [A999]	**Habitat Area –** The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation.

Site Name	Qualifying Interests	Attributes and Targets
North Bull Island SPA	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162]	**Population trend -** Long term population trend stable or increasing. **Distribution** - No significant decrease in the range, timing or intensity of use of areas, other than that occurring from natural patterns of variation.

Site Name	Qualifying Interests	Attributes and Targets
	Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	
	Wetland and Waterbirds [A999]	**Habitat Area -** The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713 hectares, other than that occurring from natural patterns of variation.

9 ASSESSMENT OF POTENTIAL IMPACTS ON EUROPEAN SITES

9.1 Linkages to Annex I Habitats/Species

9.1.1 North Dublin Bay SAC

Table 4 below assesses potential linkages of the Proposed Development to each of the QIs of North Dublin Bay SAC.

Table 4. Potential linkages between the Proposed Development and the QIs of North Dublin Bay SAC.

Qualifying Interest	Potential for Impact
[1140] Mudflats and sandflats not covered by seawater at low tide	This habitat covers most of the SAC and extends from the north of the Bull wall on the west of the island and out to the east up as far as Howth. There will be no direct loss of this habitat as a result of the Proposed Development. There is an indirect hydrological connection between the Site and this habitat via potential inadvertent emissions of contaminated surface water containing silt, cementitious materials and/or other pollutants from the Site, which could make their way to the River Tolka located ca.50m to the south. It is **deemed unlikely** that the Proposed Development would have a significant impact on this habitat, due to the set-back between the Site and the River Tolka, and the distance downstream of the SAC itself. Nevertheless, the potential for a reduction in water quality downstream of the Proposed Development during the Construction Phase will be addressed with appropriate mitigation measures. **Potential for significant effect.**
[1210] Annual vegetation of rift lines	This habitat covers some 0.11ha within the SAC however, it is very difficult to measure in view of its dynamic nature, which means that it can appear and disappear within a site from year to year. This habitat was recorded from both North Bull and South Bull sub-sites by the Coastal Monitoring Project (CMP) (Ryle et al., 2009) but was only recorded in South Bull by the SDM. This habitat is located 3.5km north of the Site of the Proposed Development. There will be no direct loss of this habitat due to the Proposed Development. There is a significant marine water buffer between the location of any potential construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this habitat within North Dublin Bay SAC. **No potential for significant effect.**
[1310] *Salicornia* and other annuals	The closest recorded location of *Salcornia* mud [1310] is on the western side of the south Bull Island and on the western side of North Bull within North Dublin Bay, *ca.*5.3km to the northeast of the Site of the Proposed Development. Salicornia is an annual species, so its distribution can vary

Qualifying Interest	Potential for Impact
colonizing mud and sand	significantly from year to year. The largest area of Salicornia flats occurs north of the central causeway. There will be no direct loss of this habitat as a result of the Proposed Development. There is a significant marine water buffer between the location of any potential construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this habitat within North Dublin Bay SAC. This habitat is located at sufficient distance such that there will be no potential for impact due to the Proposed Development. **No potential for significant effect.**
[1330] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*)	The closest recorded location of Atlantic salt meadows [1330] within the SAC is located on the western side of the Bull Island, *ca.*5km to the northeast of the Site of the Proposed Development. Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry, 2007), Atlantic salt meadow (ASM) was surveyed and mapped at a single site, giving an estimated area of 81.84ha. Other parcels of this habitat are located at Portmarnock Point and at the north of the Bay near the outflow of the Sluice River. The ASM at Bull Island was the largest single section of saltmarsh surveyed by the SMP in 2006. There will be no direct loss of this habitat as a result of the Proposed Development. There is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this habitat within North Dublin Bay SAC. This habitat is located at sufficient distance such that there will be no potential for impact due to the Proposed Development. **No potential for significant effect.**
[1410] Mediterranean salt meadows (*Juncetalia maritima*)	This habitat is located on North Bull Island and is an estimated area of 7.98ha, including mosaics. The habitat is *ca.*6.9km to the north-east of the Site of the Proposed Development. There will be no direct loss of this habitat because of the Proposed Development. There is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this habitat within North Dublin Bay SAC. This habitat is located at sufficient distance such that there will be no potential for impact due to the Proposed Development. **No potential for significant effect.**
[2110] Embryonic shifting dunes	Located along on the eastern margin of North Bull Island, this terrestrial habitat is approximately 5.6km from the Site of the Proposed Development. There will be no direct loss of habitat as a result of the Proposed Development. These is a significant marine water buffer between the location of any construction related surface water discharges at the Site of

Qualifying Interest	Potential for Impact
	the Proposed Development and the nearest recorded locations of the habitat. **No potential for significant effect.**
[2120] Shifting dunes along the shoreline with *Ammophilia Arenaria* ("white dunes")	Located west and adjacent to the strips of Embryonic shifting dunes this terrestrial habitat is located approximately 5.6km from the Site of the Proposed Development. These dunes were surveyed and mapped at two sub-sites, giving a total estimated area of 3.18ha. Habitat is very difficult to measure in view of its dynamic nature. There will be no direct loss of habitat as a result of the Proposed Development. These is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the nearest recorded locations of the habitat. **No potential for significant effect.**
[2130] Fixed Coastal dunes with herbaceous vegetation (grey dunes)	This habitat was surveyed and mapped at two sub-sites to give a total estimated area of 104.85ha. This habitat covers the majority of eastern side of Bull Island and is situated *ca.*4.7km from the Site of the Proposed Development. There will be no direct loss of habitat as a result of the Proposed Development. These is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the nearest recorded locations of the habitat. **No potential for significant effect.**
[2190] Humid Dune Slacks	Habitat was surveyed in 2013 for the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013) and mapped at two sub-sites to give a total estimated area of 12.11ha. The dune slack on North Bull consists of a long stretch of habitat that lies between successive dune ridges over a distance of approx. 700m. The dune slack topography is similar on South Bull with a number of individual long slacks between dune ridges. The habitat is situated *ca.*5.5km from the Site of the Proposed Development. There will be no direct loss of habitat as a result of the Proposed Development. These is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the nearest recorded locations of the habitat. **No potential for significant effect.**

Qualifying Interest	Potential for Impact
Petalophyllum ralfsii (Petalwort) [1395]	Petalwort is an Annex II liverwort, and Bull Island is the only known location of this species on the Eastern seaboard. The known population of *Petalophyllum ralfsii* at Bull Island occurs along the track that cuts through the Alder marsh, south and east of St. Anne's Golf Club. Data from NPWS surveys and Campbell (2013). The nearest recorded location of this species is situated *ca.*7.7km from the Site of the Proposed Development. There will be no direct loss of suitable habitat supporting Petalwort as a result of the Proposed Development. There is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this species and its habitat within North Dublin Bay SAC. **No potential for significant effect.**

9.1.1.1 Mudflats and sandflats not covered by seawater at low tide [1140]

According to the Conservation Objectives Supporting document for this SAC (NPWS, 2013d), three constituent community types of the QI of *Mudflats and sandflats not covered by seawater at low tide* [1140] have been recorded within North Dublin Bay SAC:

- Fine sand to sandy mud with *Pygospio elegans* and *Crangon Crangon* community complex;
- Fine sand with *Spio martinensis* community complex; and
- *Mytilus edulis*-dominated community.

The extent of the three community types within the SAC is given in the Conservation Objectives document for the site. The community type "fine sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex" is recorded throughout the site from Drumleck Point to Dollymount.

The community type "fine sand with *Spio martinensis* community complex is recorded on the seaward side of North Bull Island, including Dollymount Strand and on the leeward side of the island from Kilbarrack to Sutton. It extends from the intertidal into the shallow subtidal (<7m).

The community type "*Mytilus edulis*- dominated community" which is a mussel dominated community occurs at the intertidal zone between Sutton and Kilbarrack. They occur on a sediment of fine sand and invertebrate fauna present included *Spio martinensis, Cerastoderma edule, Nephtys cirrose, Praunus flexuosus, Peringia ulvae, Bathyporeia guilliamsoniana, Corophium volutator, Angulus tenuis* and *Tubificoides benedii.*

An assessment of the potential impacts on this habitat type as a result of the Proposed Development, are included in the relevant sections below.

9.1.2 South Dublin Bay SAC

Table 5 below assesses potential linkages of the Proposed Development to each of the QIs of South Dublin Bay SAC.

Table 5. Potential Linkages between the Proposed Development and the QIs of South Dublin Bay SAC

Qualifying Interest	Potential for Impact
[1140] Mudflats and sandflats not covered by seawater at low tide	This habitat covers most of the SAC and extends from the South Wall southwards across Sandymount Strand as far down as Dun Laoghaire. The habitat covers *ca.*720ha. This habitat is located *ca.*4km southeast of the Site of the Proposed Development. There will be no direct loss of this habitat as a result of the Proposed Development. There is an indirect hydrological connection between the Site and this habitat via potential inadvertent emissions of contaminated surface water containing silt, cementitious materials and/or other pollutants from the Site, which could make their way to the River Tolka located ca.50m to the south. It is **deemed unlikely** that the Proposed Development would have a significant impact on this habitat, due to the set-back between the Site and the River Tolka, and the distance downstream of the SAC itself. Nevertheless, the potential for a reduction in water quality downstream of the Proposed Development during the Construction Phase will be addressed with appropriate mitigation measures. **Potential for significant effect.**
[1210] Annual vegetation of rift lines	This habitat covers some 0.1ha within the SAC however it is very difficult to measure in view of its dynamic nature, which means that it can appear and disappear within a site from year to year. There will be no direct loss of this habitat due to the Proposed Development. There is a significant marine water buffer between the location of any potential construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this habitat within South Dublin Bay SAC. **No potential for significant effect.**
[1310] *Salicornia* and other annuals colonizing mud and sand	This habitat covers some 0.1ha within the SAC. There will be no direct loss of this habitat because as a result of the Proposed Development. There is a significant marine water buffer between the location of any potential construction related surface water discharges at the Site of the Proposed Development and the recorded locations of this habitat within South Dublin Bay SAC. The habitat is located at a sufficient distance such that there will be no potential for impacts as a result of the Proposed Development. **No potential for significant effect.**

Qualifying Interest	Potential for Impact
[2110] Embryonic shifting dunes	This habitat covers some 0.3ha within the SAC. There will be no direct loss of habitat as a result of the Proposed Development. These is a significant marine water buffer between the location of any construction related surface water discharges at the Site of the Proposed Development and the recorded locations of the habitat within South Dublin Bay SAC. **No potential for significant effect.**

9.1.2.1 Mudflats and sandflats not covered by seawater at low tide [1140]

According to the Conservation Objectives Supporting Document for this SAC (NPWS, 2013e), several community types, two of which are constituent community types of the qualifying interest of *Mudflats and sandflats not covered by seawater at low tide* [1140], have been recorded within South Dublin Bay SAC:

- Fine sands with *Angulus tenuis* community complex
- *Zostera*-dominated community;
- Intertidal reef community;
- Fine sand to sandy mud with *Pygospio elegans* and *Crangon Crangon* community complex; and
- Fine sand with *Spio martinensis* community complex.

There is considerable overlap between this SAC site and the South Dublin Bay and River Tolka Estuary SPA. The latter two communities described above are only found in the SPA rather than in the SAC.

The extent of the community types within the SAC is given in the Conservation Objectives document for the site and is included in Appendix 1 of this report. The community type "fine sands with *Angulus tenuis* community complex" occurs throughout the site from the intertidal to a depth of c.6m. The sediment of this community is mainly fine sands with some small amounts of silt-clay. The distinguishing species of this community are the bivalve *Angulus tenuis* and the polychaetes *Scoloplos (Scoloplos) armiger*, *Pygospio elegans* and *Nephtys cirrosa.*

The *"Zostera-dominated community"* is located on the upper shores at the Merrion Gates. The sediment of this community is muddy sand. Principal indicator species of this community are the sea grass *Zostera noltii,* the polychaete *Arenicola marina* and the bivalve *Sercstoderma edule.*

An intertidal reef community occurs in the south of the site along the shore from Booterstown to Monkstown. The community occurs on a hard substrate which is predominantly flood defences with some areas of bedrock, cobble and boulders. The species associated with this community are the brown algae *Fucus vesiculosus*, *F. serratus, F. spiralis, Ascophyllum nodosum* and *Pelvetia canaliculata*, unidentified red algae, the gastropods *Patella vulgata* and *Littorina littorea*, the barnacle *Semibalanus balanoides*, and the bivalve *Mytilus edulis.*

The community type "fine sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex" is recorded on the north shore of Dublin Bay from Clontarf to Marino. Fine

sand is the principal sediment of this community with cobbles, pebbles and stones covering the upper shoreline. The distinguishing invertebrate fauna of the community (*Pygospio elegans* and *Crangon crangon*) are not uniformly distributed across the community and occur in low to moderate abundances (NPWS, 2013a).

The community type "fine sand with *Spio martinensis* community complex is recorded in the subtidal area south of the Bull Wall and is found within fine sand sediments. Again, the species of this community occur in low abundances with *Spio martinensis* being the dominant present.

An assessment of the potential impacts on this habitat type as a result of the Proposed Development, is included in the relevant sections below.

9.1.3 North Bull Island SPA and South Dublin Bay & River Tolka SPA

Table 6 below assesses potential linkages of the Proposed Development to each of the SCIs of North Bull Island SPA and South Dublin Bay & River Tolka SPA.

Table 6. Potential linkages between the Proposed Development and the SCIs of North Bull Island SPA and South Dublin Bay & River Tolka SPA

European Site	Qualifying Interest	Potential for Impact
South Dublin Bay & River Tolka Estuary SPA	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194]	Although considered unlikely to occur, contaminated waters generated by the Proposed Development could lead to reductions in water quality in Dublin Bay, potentially affecting the distribution of SCI species that forage therein. The potential for a reduction in water quality downstream of the Proposed Development during the Construction Phase will be addressed with appropriate mitigation measures. **Potential for significant effect.**
	Wetland and Waterbirds [A999]	
North Bull Island SPA	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140]	Although considered unlikely to occur, contaminated waters generated by the Proposed Development could lead to reductions in water quality in Dublin Bay, potentially affecting the distribution of SCI species that forage therein. The potential for a reduction in water quality downstream of the Proposed Development during the

European Site	Qualifying Interest	Potential for Impact
	Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	Construction Phase will be addressed with appropriate mitigation measures. **Potential for significant effect.**
	Wetland and Waterbirds [A999]	

9.2 Construction Phase Impacts

9.2.1 Construction-related Surface water discharges

Although unlikely to occur due to the set back from the Site to the River Tolka (50m of built land including existing neighbouring buildings) and the distance from the European sites in question, the Construction Phase could lead to inadvertent emissions of contaminated waters containing silt, cementitious materials and/or other pollutants to the River Tolka. This could lead to reductions in water quality within the downstream European sites of Dublin Bay, potentially affecting the distribution of SCI species listed for the relevant SPAs.

A suite of mitigation measures is identified in section 10.1 of this report. Once these measures are adhered to, it is deemed that **there will be no significant adverse impacts** to the Conservation Objective attributes of the mud-flat habitats of North Dublin Bay SAC and South Dublin Bay SAC, or the SCIs of South Dublin and River Tolka SPA and North Bull Island SPA, as a result of construction-related surface water discharges from the Proposed Development.

9.3 Operational Phase Impacts

9.3.1 Operational Phase Surface Water

As outlined in the AA Screening that accompanies this application under separate cover, the possibility for likely significant effects relating to Operational Phase surface water run-off has been screened out. The justification for this is provided below for reference.

It is proposed that surface water from the Site will be discharged to the existing public surface water sewer at the southeast corner of the Site along Richmond Road. Surface water storage will be provided within the Site to accommodate runoff from a 1% AEP event plus 20% climate change. A combination of SUDS features and traditional drainage, such as gullies and pipes will be utilised to manage runoff from the Site. Surface water runoff from the development will be attenuated to greenfield runoff (Qbar), in accordance with the recommendations of the GDSDS. Surface water run-off from the surface water catchment will be controlled using a vortex flow

control device (Hydrobrake or equivalent) on the surface water outlet from the catchment area (DBFL, 2023b).

The suite of SUDS measures will be included in the Proposed Development as per the recommendations of the GDSDS. It is noted that SUDS measures are in no way included to mitigate potential impacts to downstream European sites.

Even in the absence of SUDS measures, the potential for likely significant effects at European sites as a result of operational surface water run-off is deemed to be negligible, due to the following:

- Operational surface waters will discharge to existing storm sewer infrastructure located along Richmond Road and not directly to the River Tolka.
- The capacity for dilution and mixing that exists within the receiving stormwater infrastructure during periods of rainfall, and ultimately the River Tolka and Dublin Bay.
- Surface waters at the Site of the Proposed Development (what is a commercial-use site with vehicular yard) currently discharge unattenuated to the storm sewer along Richmond Rd. The Proposed Development will result in an improvement in the quality of surface water leaving the Site compared to the existing pre-development situation.

9.4 Cumulative Impacts

9.4.1 Existing Granted Developments

A search of planning applications located within 1km of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Dublin City Council's Planning Application Map. This distance was deemed appropriate based on the location of the Site of the Proposed Development and the types of other developments present in the area.

Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable.

It is noted that the majority of developments within the vicinity of the Site of the Proposed Development are applications granted more than 5 years ago and that have since been completed. **No developments** with the potential to result in likely significant in-combination effects to any European site were identified. The larger, more recent applications are detailed below.

Table 7. Permitted developments and relevant developments awaiting decision located within the vicinity of the Proposed Development and an assessment of potential in-combination effects.

Planning Details	Distance from Site	Applicant Name	Summary of Development	Cumulative Impact Assessment
Planning Ref: 2935/20 **An Bórd Pleanála Ref:** ABP-308193-20 **ABP Decision:** GRANT PERMISSION **Decision Date:** 08/04/2021 Note: This decision has recently been quashed by the High court at Judicial Review stage. However. the scheme is still referenced as it is expected that a new application will be lodged in	Ca. 360m south-west.	Pairc an Chrocaigh Cuideachta Faoi Theorainn Rathaiochta	Permission for a hotel development on Lands off Clonliffe Road (formerly part of the Holy Cross College Lands), Clonliffe Road, Drumcondra, Dublin 3. The subject site encompasses an area of 0.51 hectares. The development will consist of: the construction of a 8.55m - 24.05m (above ground level) part -2 to part -7 storey 8,485 sq.m. hotel building comprising: (i) a lobby, bar/restaurant, kitchen and staff facilities at ground floor level; (ii) ancillary meeting room facilities including a breakout area and office, at first floor level and a gym; (iii) 200 - bedrooms arranged over floors 1-6; and (iv) plant room, lift overrun, green roof and 19 no. photovoltaic panels enclosed by 3m screen at roof level. The hotel is served by 38 no. car parking spaces (including 2 no. universally accessible spaces), 2 no. motorcycle spaces and 28 no. bicycle spaces accessed via a new vehicular and pedestrian entrance from within the Clonliffe College lands to the northern boundary of the site which includes a turning circle for coaches. The development also includes the demolition of the existing boundary wall, repositioning of the gate piers and widening of the entrance on Clonliffe Road to facilitate two-way traffic, the creation of 2 no. pedestrian accesses off Clonliffe Road, and the construction of a replacement plinth boundary wall with railings along Clonliffe Road, landscaping, boundary treatments, street lighting, SuDS drainage, piped and other services, and all ancillary site	An AA Screening accompanied this planning application (NM Ecology, 2020) and confirmed no potential for significant effects on European sites. The Proposed Development will not have any in-combination effects involving this development.

Planning Details	Distance from Site	Applicant Name	Summary of Development	Cumulative Impact Assessment
relation to those lands.			development works necessary to facilitate the development (including the alteration of site levels and the upgrade of the proposed entrance from Clonliffe Road to include a pedestrian crossing and traffic lights). The development to be applied for is within the Holy Cross College landholding which includes a number of buildings on the Dublin City Council record of protected structures, including the following: the main College Building (1863): Holy Cross Church; the South Link Building; the Ambulatory; the Assembly Hall and the Red House, ref. 1901 and 1902 respectively, all at the Clonliffe College lands, Clonliffe Road, Drumcondra, Dublin 3	
Bórd Pleanála Ref: TA29N.312352. **ABP Decision:** Decision overdue from 22nd April.	Adjacent to the west	Birkey Limited	Demolition of all existing structures on site and construction of 183 no. Build to Rent apartments and associated site works.	An AA Screening and NIS accompanied this planning application (Enviroguide, 2021) and confirmed no potential for significant effects on European sites with mitigation also proposed. The Proposed Development will not have any significant in-combination effects on European sites involving this development. As it is proposed that the construction of both developments will take place concurrently, it can be expected that there will be combined noise pollution during the proposed works. However, this is not considered to represent a source of significant impacts for SCI species at Dublin Bay European sites; due to the minimum distance of 1.3km that exists

Planning Details	Distance from Site	Applicant Name	Summary of Development	Cumulative Impact Assessment
				between the Site and these EU Sites [The *Waterbird Disturbance Mitigation Toolkit* (Cutts, Hemingway and Spencer, 2013) notes that noise generated at distances of over 500m are unlikely to cause disturbance impacts to waterbirds]. As it is proposed that the construction of both developments will take place concurrently, there is the potential for combined inadvertent surface water inputs to the River Tolka. This is more of an issue of concern for the adjacent development (TA29N.312352) due to it being located directly alongside the Tolka and involving river bank works. The Proposed Development is at a remove of ca.50m from Tolka and is separated by established buildings and hard-standing, and as such, there is a lesser risk of significant surface water run-off to the Tolka. An NIS has been prepared for the adjacent development (TA29N.312352) which details the mitigation measures required to address construction phase surface waters. Likewise, this NIS has been prepared as part of this Proposed Development application, and includes measures to mitigate any potential surface water impacts arising during the construction works.

9.4.2 Relevant Policies and Plans

In addition, the following Policies and Plans were reviewed and considered for possible in-combination effects with the Proposed Development:

- Dublin City Biodiversity Action Plan 2015 - 2020
- Dublin City Development Plan 2022-2028
- Dublin City Council Development Plan 2022-2028 Appropriate Assessment
- Dublin City Council Development Plan 2022-2028 Strategic Flood Risk Assessment
- Richmond Road Area Action Plan 2007

It is also noted that there is potential for proposed plans and projects within the Dublin City Development Plan 2022 - 2028 land area to have cumulative, negative impacts on conditions in Dublin Bay; via rivers, other surface water features, and foul waters treated at Ringsend Wastewater Treatment Plant (WwTP) and discharged into Dublin Bay (See section 9.4.3 below). However, the core strategy, policies and objectives of the Dublin City Development Plan have been developed to anticipate and avoid the need for developments that would be likely to significantly affect the integrity of any European site.

Furthermore, such developments are required to conform to the relevant regulatory provisions for the prevention of pollution, nuisance or other environmental effects likely to significantly affect the integrity of European sites. In addition, sustainable development including SUDS measures for all new developments; is inherent in the objectives of all development plans within the Greater Dublin Area, as per the Greater Dublin Regional Code of Practice for Drainage Works.

Upon examination of the above listed plans and projects within the general vicinity of the Proposed Development, and the above information regarding current Dublin drainage policy and requirements; it is concluded that there is **no possibility** for any significant cumulative impacts on European sites.

9.4.3 In-Combination Effects on Water Quality and/or Resource

This section addresses in more detail the general issue of potential cumulative impacts with Ringsend WwTP arising from the Operational Phase of the Proposed Development and other Developments, including future Developments.

In summary, the impact of the Proposed Development and any future Development has already been appropriately considered and assessed as part of the application process for the existing planning permissions pertaining to Ringsend WwTP.

The 2012 Ringsend WwTP application for planning permission (Ref. PL.29N.YA0010) was for a population equivalent of 2.4 million and was predicated on the findings of the 2005 Greater Dublin Strategic Drainage Study (GDSDS). The GDSDS set out the drainage requirements for the Greater Dublin Area (GDA) up to 2031. The GDSDS relied on the Regional Planning Guidelines (RPGs) and the National Spatial Strategy (NSS) in order to estimate the future projected population increases for the GDA. The studies indicated a predicted growth in population from 1.2 million in 2002 to just over 2 million in 2031 for the GDA region.

In June 2018 Irish Water applied for and subsequently received planning permission in 2019 for upgrade works to the Ringsend WwTP facility. The first phase of upgrade works to

Ringsend WwTP was completed in December 2021, which increased the capacity of the plant by 400,000 P.E. These works, together with the future works permitted will ultimately increase the capacity of the facility from 1.6 million P.E. to 2.4 million P.E. by 2025 (Irish Water website: https://www.water.ie/projects/local-projects/ringsend/).

Therefore, both the initially permitted 2012 upgrade and the permitted 2019 revised upgrade (Ref. ABP-301798-18) for Ringsend WwTP take account of population growth up to 2.4 million population equivalents. Both applications were subject to EIA and therefore accompanied by an EIAR and accompanied by an AA Screening Report and NIS.

Notwithstanding the above, and as outlined in the AA Screening Report that accompanies this application, on an individual basis the Operational Phase of the Proposed Development will have an imperceptible effect on the habitats/species/QIs listed within the relevant European sites specifically South Dublin Bay and River Tolka Estuary SPA (site code 004024), South Dublin Bay SAC (000210), North Bull Island SPA (004006), and North Dublin Bay SAC (000206), in terms of flows, relative to the total amount of waste water currently being received at Ringsend WwTP (the Proposed Development will generate 274 PE).

Under the heading of *"Potential impact – Discharge of treated effluent, impacts on water quality, effects on qualifying interests"*, the NIS (Irish Water, 2018b) for the Ringsend Wastewater Treatment Plant 2019 revised upgrade provides as follows:

> *"In the operational phase, the proposed upgrade of the Ringsend WwTP Component will result in an increase in the plant capacity and also an improvement in the final effluent quality. This will result in a reduction in the licensed parameters discharged into the receiving water, with significantly reduced quantities in respect of ammonia and phosphorous."*[2]

This NIS goes on to state as follows:

> *"Overall no significant adverse effects on are foreseen and indeed, a slight positive effect is possible. Effects of discharge during the operational phase of the project from the upgrade project will therefore have imperceptible impact on habitats listed within these European sites."*[3]

In respect of this issue, the NIS concludes as follows:

> *"Thus, there is no potential for in-combination impacts of any other plan and project with the Ringsend WwTP Component of the proposed Upgrade Project."*[4]

The EIAR for the ongoing upgrade at Ringsend WwTP (Irish Water, 2018) also details the lack of any significant impacts to European sites observed as a result of the current stormwater overflow discharge levels at the WwTP. During storm events, once the capacities of the holding tanks are surpassed, the WwTP releases overflow via an outfall at Pigeon House Rd into the lower Liffey estuary.

The EIAR carried out in relation to said upgrade concluded that in the 'do nothing' scenario, i.e., wherein the upgrade is not carried out; the current existing levels of nutrient input to

[2] Section 4.5.1 at page 32

[3] Section 4.5.1 at page 33

[4] Section 4.5.1 at page 34

Dublin Bay as a result of stormwater overflow from the WwTP, are not deemed to pose significant threats to the integrity of European sites located within or adjacent to Dublin Bay, or any of their Conservation Objectives regardless of said upgrade.

The EIAR report acknowledges that under the do-nothing scenario "*the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WwTP*", which could result in a decline in biodiversity and the deterioration of the biological status of Dublin Bay (Irish Water, 2018a). Nevertheless, these negative impacts of nutrient over-enrichment are considered "*unlikely*". This is because historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna. The EIAR notes that "*although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area*." Furthermore, the EIAR notes that significant impacts on waterbird populations foraging on invertebrates in Dublin Bay due to nutrient over-enrichment are "*unlikely*" to occur. What is important to note is that the do-nothing scenario predicts that nutrient and suspended solid loads from the WwTP will "*continue at the same levels and the impact of these loadings should maintain the same level of effects on marine biodiversity*" and that "*if the status quo is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay*."

Therefore, it can be concluded that likely significant effects on marine biodiversity and the European sites within Dublin Bay from the *current* operation of Ringsend WwTP are unlikely. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend. Thus, in the absence of any upgrading works, significant in-combination effects to European sites in this regard **are not deemed likely to arise,** and therefore likely significant effects involving foul waters produced by the Proposed Development also do not have the potential to occur.

It is therefore concluded that there is **no possibility for any significant cumulative impacts** to European sites involving the Proposed Development.

10 MITIGATION MEASURES

The preceding sections outlined the potential significant effects of the Proposed Development in the absence of mitigation measures on downstream European sites, due to the potential of Construction Phase surface water run-off.

The following mitigation measures will ensure that no significant effects arise to designated sites as a result of the Proposed Development, either alone or in-combination with other projects.

As concluded in the AA Screening Report, the Operational Phase of the Proposed Development does not have the potential to result in significant effects to any European site.

The following mitigation measures have been agreed in consultation with the Client and Design Team, with consideration given to the following specialist reports and documents: Ecological Impact Assessment (Enviroguide, 2023), Site Specific Flood Risk Assessment (DBFL, 2023c), and Infrastructure Design Report (DBFL, 2023b), which are submitted with this application.

10.1 Construction Phase Mitigation

To ensure that no contaminated waters containing silt, fuel, cementitious materials etc., have the potential to enter the River Tolka during the Construction Phase of the Proposed Development, a suite of mitigation measures will be put in place, and will be included in the final CEMP to be prepared by the contractor, along with all other relevant measures recommended to protect environmental sensitivities during the Proposed Works.

All works carried out will follow the guidelines published by Inland Fisheries Ireland (IFI) *Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters* (2016).

10.1.1 Construction Surface Water Management

Surface water management measures will include measures to prevent any movement of Construction Phase surface water from the Site towards the River Tolka to the south/south-west, along the existing private road located along the Site's southern boundary, or into the Richmond Road Phase 1 Site located adjacent to the south-west.

This will entail the installation of a berm/ silt-fence/ trench combination along the Site's south/south-western boundaries; to trap any construction surface waters generated at the Site and direct them to a settling pond/silt-trap apparatus within the Site for treatment and disposal.

These measures will be monitored for efficacy regularly by the contractor to ensure that they are operational and repairs will be carried out as required.

To prevent contaminated construction related surface waters entering existing surface water drains within or near the Site, particularly during the proposed upgrade works along Richmond Road, the measures listed below will be put in place to protect existing and new drains/gullies. These measures will be included as part of the contractor's final CEMP.

- Prior to construction commencing, all storm drains and curb inlets etc., within the Site area, and in close proximity, will be identified by the contractor and suitably protected from potential sediment/contaminant input. This can be accomplished by using

temporary storm drain filters that come in a variety of forms e.g., porous fabric barriers such as curb inlet filters and drain guards (e.g., https://ssienvironmental.ie/product/drain-guard/. Other makes are available).

- The above drain protection measures will be checked, cleaned and maintained for efficacy throughout the Construction Phase, with checks carried out daily for damage or sediment loading and cleaning carried out as required.

10.1.2 Excavations

Shallow groundwater may be encountered during excavation works. Where water must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA – C750) and regulatory consents. Water will not be discharged to open water courses (e.g., the Tolka River) and will be disposed to foul sewer as per the conditions of a consent/licence issued under Section 16 of the Local Government (Water Pollution) Acts and Regulations that must be obtained from Irish Water. Any such discharge licence will be subject to conditions regarding the flow (rates of discharge, quantity etc.); effluent quality prior to discharge and pre-treatment (e.g., settlement/filtration, hydrocarbon separation etc.) and monitoring requirements. All dewatering will be undertaken in strict compliance with the conditions of the discharge licence for the project.

A treatment system will be installed for the duration of the Proposed Development to meet the requirements of the discharge licence and will typically include a number of stages of settlement and filtration to remove sludge, suspended solids, free-phase hydrocarbons (oils) and dissolved phase hydrocarbons.

A monitoring programme will be implemented to ensure that water quality criteria set out in the discharge licence are achieved prior to discharging to the sewer.

Excavation works should be carried out at low tide regimes (in the event that there is a tidal influence on shallow groundwater at the site).

10.1.3 Fuel and Chemical Storage

Appropriate storage facilities will be provided on Site. Areas of high risk include:

- Fuel and chemical storage;
- Refuelling Areas;
- Site Compound; and
- Waste storage areas.

If required, fuel, oils and chemicals will be stored on an impervious base within a bund remote from any surface water ditches or locations.

All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Environmental Protection Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2904). All tank and drum storage areas shall, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or

- 25% of the total volume of substance that could be stored within the bunded area.

Concrete mixer trucks will not be permitted to wash out on Site with the exception of cleaning the chute into a container the contents of which will be removed off Site to an authorised facility.

10.1.4 Construction Best Practise

- Location of stilling/settling ponds will take into account groundwater vulnerability at the site and will be located in suitable areas.
- Discharge water generated during placement of concrete will be stored and removed off site for treatment and disposal.
- There will be no washing out of any concrete trucks on site.
- Specific areas for storage, delivery, loading/unloading of materials will be designated, which will have appropriate containment/spill protection measures where required.
- Leachate generation from stockpiles or waste receptacles will be prevented by using waterproof covers.
- Prolonged exposure of contaminated soils or groundwater to the atmosphere will be avoided where practical or unnecessary.
- Appropriate bunding, storage and signage arrangements for all deleterious substances will be used.
- Robust and appropriate Spill Response Plan and Environmental Emergency Plans will be included within the Contractor's CEMP and the details of which will be communicated, resourced and implemented for the duration of the works.
- Control measures and spill clean-up equipment adequate to treat spills at the Site will be available and staff will be trained and experienced in using said equipment.
- A register will be kept of all hazardous substances either used on site or expected to be present. The register shall be available at all times and shall include as a minimum: valid safety sheets; Health & Safety, environmental controls to be implemented when storing, handling, using and in the event of spillage of materials; emergency response procedures/precautions for each material; the Personal Protective Equipment (PPE) required when using the material.
- All existing services will be mapped, and a plan will be put in place to decommission/divert and manage any drains or sewers which are associated with the Site.
- A plan for dealing with any unknown drains or services which may be encountered during the works will be set out and implemented.
- Any drains or sewers which could act as pathways for contamination from the Site will be blocked where required.
- Any surface water inflow into the main areas of excavation will be minimised where possible.

The Contractor is to ensure that no contaminated water/liquids leave the site (as surface water run-off or otherwise), enter the local storm drainage system, or directly discharge to the River Tolka. Excavations and potentially contaminated stockpiled soils will be constructed/located/sheeted in a manner that ensures water is contained within the Site boundary.

It is deemed that once the mitigation measures described in the above specialist reports are implemented in full, there will be **no potential for likely significant adverse effects** to any downstream European sites, as a result of Construction Phase activities.

11 CONCLUSION

This NIS details the findings of the Stage 2 Appropriate Assessment conducted to further examine the potential direct and indirect impacts of the Proposed Development planning application at Leyden's Wholesalers & Distributors, No. 158A Richmond Road, Dublin 3 on the following European sites:

- North Bull Island SPA [004006]
- South Dublin Bay and River Tolka Estuary SPA [004024]
- North Dublin Bay SAC [000206]
- South Dublin Bay SAC [000210]

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

Where potentially significant adverse impacts were identified, a range of mitigation and avoidance measures have been proposed to negate them. Therefore, as a result of the complete, precise and definitive findings of this NIS; it has been concluded beyond any reasonable scientific doubt, that the Proposed Development will not have any significant adverse impact on the above European sites.

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Appendix I – Winter Waterbird Survey Data (2021/22)

Site visit	Count	Date	Observer	Site Name	Start time	End time	Species	No.	Activity Code	Flight direction	Duration over site	Approx height	Wind	Cloud	Temp	Precip	Vis	Sunrise	Sunset	High tide 1	Low tide 1	Notes
1	1	24/11/2021	BMcC	Richmond Rd	08:05	09:05	H.	1	FL	N	5s	25m	3	4	6	1	4	08:06	16:16	14:26	20:18	
1	2	24/11/2021	BMcC	Richmond Rd	09:05	09:25	CU	8	FL	W	10s	100m	3	4	7	1	4	08:06	16:16	14:26	20:18	
1	2	24/11/2021	BMcC	Richmond Rd	09:05	09:25	PB	16	FL	NW	12s	120m	3	4	7	1	4	08:06	16:16	14:26	20:18	RI flew NE over site @ 09:25
1	2	24/11/2021	BMcC	Richmond Rd	09:25	10:25	CU	2	FL	NW	10s	100m	3	4	7	3	4	08:06	16:16	14:26	20:18	
1	3	24/11/2021	BMcC	Richmond Rd	10:25	11:30	PB	11	FL	NW	15s	120m	3	4	7	1	4	08:06	16:16	14:26	20:18	
1	3	24/11/2021	BMcC	Richmond Rd	10:25	11:30	CU	5	FL	NW	11s	100m	3	4	7	1	4	08:06	16:16	14:26	20:18	
1	3	24/11/2021	BMcC	Richmond Rd	10:25	11:30	ET	1	FL	W	4s	30m	3	4	7	1	4	08:06	16:16	14:26	20:18	
1	4	24/11/2021	BMcC	Richmond Rd	11:30	12:30							3	4	7	4	3	08:06	16:16	14:26	20:18	
1	5	24/11/2021	BMcC	Richmond Rd	12:30	13:15							3	4	7	2	4	08:06	16:16	14:26	20:18	
1	6	24/11/2021	BMcC	Richmond Rd	13:15	14:05							3	4	7	2	4	08:06	16:16	14:26	20:18	
2	1	10/12/2021	BMcC	Richmond Rd	10:10	11:10							4	1	4	1	4	07:58	16:06	16:22	09:28	
2	2	10/12/2021	BMcC	Richmond Rd	11:10	12:10	CU	2	FL	E	10s	100m	4	1	4	1	4	07:58	16:06	16:22	09:28	
2	2	10/12/2021	BMcC	Richmond Rd	11:10	12:10	MA	4	FL	S	22s	25m	4	1	4	1	4	07:58	16:06	16:22	09:28	
2	2	10/12/2021	BMcC	Richmond Rd	11:10	12:10	PB	83	FL	E	14s	150m	4	1	4	1	4	07:58	16:06	16:22	09:28	
2	3	10/12/2021	BMcC	Richmond Rd	12:10	13:10	PB	10	FL	E	12s	150m	5	1	5	1	4	07:58	16:06	16:22	09:28	
2	4	10/12/2021	BMcC	Richmond Rd	13:10	14:10	CU	1	FL	E	10s	75m	5	1	6	1	4	07:58	16:06	16:22	09:28	
2	5	10/12/2021	BMcC	Richmond Rd	14:10	15:10							5	1	6	1	4	07:58	16:06	16:22	09:28	
2	6	10/12/2021	BMcC	Richmond Rd	15:10	16:10	PB	14	FL	E	11s	130m	5	1	6	1	4	07:58	16:06	16:22	09:28	
3	1	07/01/2022	BMcC	Richmond Rd	10:30	11:30	PB	16	FL	NW	15s	150m	4	4	3	3	2	08:37	16:24	15:00	20:50	
3	2	07/01/2022	BMcC	Richmond Rd	11:30	12:30							4	4	3	4	2	08:37	16:24	15:00	20:50	
3	3	07/01/2022	BMcC	Richmond Rd	12:30	13:30							4	4	2	4	2	08:37	16:24	15:00	20:50	
3	4	07/01/2022	BMcC	Richmond Rd	13:30	14:30							4	4	2	2	4	08:37	16:24	15:00	20:50	
3	5	07/01/2022	BMcC	Richmond Rd	14:30	15:30	CU	2	FL	SW	7s	75-100m	4	4	2	1	4	08:37	16:24	15:00	20:50	
3	6	07/01/2022	BMcC	Richmond Rd	15:30	16:30	MA	1	FL	W	5s	50m	4	2	2	1	4	08:37	16:24	15:00	20:50	
4	1	21/01/2022	BMcC	Richmond Rd	08:30	09:30	PB	32	FL	NW	15s	70-100m	3	4	6	1	4	08:24	16:47	13:42	19:31	
4	2	21/01/2022	BMcC	Richmond Rd	09:30	10:30							3	4	7	1	4	08:24	16:47	13:42	19:31	
4	3	21/01/2022	BMcC	Richmond Rd	10:30	11:30							3	4	7	1	4	08:24	16:47	13:42	19:31	
4	4	21/01/2022	BMcC	Richmond Rd	11:30	12:30	PB	1	FL	SE	12s	70-100m	3	4	7	1	4	08:24	16:47	13:42	19:31	
4	5	21/01/2022	BMcC	Richmond Rd	12:30	13:30							3	4	7	1	4	08:24	16:47	13:42	19:31	
4	6	21/01/2022	BMcC	Richmond Rd	13:30	14:30	MA	2	FL	S	7s	30m	3	4	7	1	4	08:24	16:47	13:42	19:31	
4	6	21/01/2022	BMcC	Richmond Rd	13:30	14:30	H.	1	FL	SE	10s	50-75m	3	4	7	1	4	08:24	16:47	13:42	19:31	
5	1	04/02/2022	BMcC	Richmond Rd	08:00	09:00	H.	1	FL	SE	12s	50m	4	4	3	1	4	08:02	17:13	13:49	19:36	
5	1	04/02/2022	BMcC	Richmond Rd	08:00	09:00	PB	12	FL	NW	10s	150m	4	4	3	1	4	08:02	17:13	13:49	19:36	
5	2	04/02/2022	BMcC	Richmond Rd	09:00	10:00	MA	2	FL	W	6s	30m	4	3	4	2	4	08:02	17:13	13:49	19:36	
5	3	04/02/2022	BMcC	Richmond Rd	10:00	11:00	PB	1	FL	SE	12s	150m	5	1	4	1	4	08:02	17:13	13:49	19:36	
5	4	04/02/2022	BMcC	Richmond Rd	11:00	12:00	MA	3	FL	W	5s	20m	5	1	5	1	4	08:02	17:13	13:49	19:36	
5	5	04/02/2022	BMcC	Richmond Rd	12:00	13:00							5	1	6	1	4	08:02	17:13	13:49	19:36	
5	6	04/02/2022	BMcC	Richmond Rd	13:00	15:00							5	1	6	1	4	08:02	17:13	13:49	19:36	
6	1	18/02/2022	BMcC	Richmond Rd	11:40	12:40	PB	18	FL	E	15s	150m	11	4	3	2	4	07:34	17:41	12:41	18:30	
6	2	18/02/2022	BMcC	Richmond Rd	12:40	13:40							9	3	4	2	4	07:34	17:41	12:41	18:30	
6	3	18/02/2022	BMcC	Richmond Rd	13:40	14:40	H.	1	FL	W	12s	20m	8	1	4	1	4	07:34	17:41	12:41	18:30	
6	4	18/02/2022	BMcC	Richmond Rd	14:40	15:40							8	4	6	4	4	07:34	17:41	12:41	18:30	
6	5	18/02/2022	BMcC	Richmond Rd	15:40	16:40	MA	2	FL	W	10s	10m	5	2	6	2	4	07:34	17:41	12:41	18:30	
6	6	18/02/2022	BMcC	Richmond Rd	16:40	17:40	PB	44	FL	E	10s	150-200m	6	1	5	1	4	07:34	17:41	12:41	18:30	
7	1	11/03/2022	BMcC	Richmond Rd	12:25	13:25	MA	2	FL	W	10s	25m	4	4	9	4	3	06:46	18:21	17:02	10:22	
7	2	11/03/2022	BMcC	Richmond Rd	13:25	14:25	MA	4	FL	W	6s	10m	3	4	11	4	3	06:46	18:21	17:02	10:22	
7	2	11/03/2022	BMcC	Richmond Rd	13:25	14:25	PB	5	FL	E	15s	100m	3	4	11	4	3	06:46	18:21	17:02	10:22	
7	3	11/03/2022	BMcC	Richmond Rd	14:25	15:25							3	4	11	1	4	06:46	18:21	17:02	10:22	
7	4	11/03/2022	BMcC	Richmond Rd	15:25	16:25	PB	125	FL	E	12s	150m	4	4	12	1	4	06:46	18:21	17:02	10:22	
7	5	11/03/2022	BMcC	Richmond Rd	16:25	17:25							4	4	12	1	4	06:46	18:21	17:02	10:22	
7	6	11/03/2022	BMcC	Richmond Rd	17:25	18:25							4	4	11	1	4	06:46	18:21	17:02	10:22	
8	1	05/04/2022	BMcC	Richmond Rd	07:05	08:05							5	4	9	1	4	06:46	20:07	15:03	08:28	
8	2	05/04/2022	BMcC	Richmond Rd	08:05	09:05	MA	3	FL	E	10s	20m	5	4	9	1	4	06:46	20:07	15:03	08:28	
8	3	05/04/2022	BMcC	Richmond Rd	09:05	10:05							6	4	10	1	4	06:46	20:07	15:03	08:28	
8	4	05/04/2022	BMcC	Richmond Rd	10:05	11:05							5	4	11	1	4	06:46	20:07	15:03	08:28	
8	5	05/04/2022	BMcC	Richmond Rd	11:05	12:05	MA	4	FL	NE	12s	15m	5	4	11	1	4	06:46	20:07	15:03	08:28	
8	6	05/04/2022	BMcC	Richmond Rd	12:05	13:05							6	4	12	1	4	06:46	20:07	15:03	08:28	

NOTE: HG, BH & CM recorded on all counts on each of the 8 site visits. Mostly in flight over the Site but occasionally foraging on the ground and roof of the Site.