Natura Impact Statement

Parkgate Street

Residential Development

Prepared by: Moore Group – Environmental Services

2 November2023

On behalf of Ruirside Developments Limited

Project Proponent	Ruirside Development Limited
Project	Parkgate Street Residential Development
Title	Natura Impact Statement Parkgate Street Residential Development

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Abbreviations

AA	Appropriate Assessment
ABP	An Bord Pleanála
CEMP	Construction Environmental Management Plan
EEC	European Economic Community
EPA	Environmental Protection Agency
EU	European Union
FWPM	Freshwater Pearl Mussel
GIS	Geographical Information System
LAP	Local Area Plan
NHA	Natural Heritage Area
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
OSI	Ordnance Survey Ireland
pNHA	proposed Natural Heritage Area
SAC	Special Area of Conservation
SPA	Special Protection Area
SuDS	Sustainable Drainage System
UÉ	Uisce Éireann
WFD	Water Framework Directive

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1. Introduction

1.1. General Introduction

This Natura Impact Statement (NIS) has been prepared by Moore Group – Environmental Services on behalf of Callan Co-op. This NIS report contains information to assist the competent authority in carrying out an Appropriate Assessment (AA) for the purposes of Article 6(3) of the Habitats Directive and section 177V of the Planning and Development Act 2000, as amended, (the "Planning Acts") in respect of the construction and operation and decommissioning of a Residential Development and specifically amendments to ABP Reg. Ref. 306569-20 (SHD 1) and 310567-21 (SHD 2), at No. 42A Parkgate Street, Dublin 8 (hereafter referred to as the Proposed Development).

This NIS informs the Appropriate Assessment process in the determination of any adverse effects on the integrity of European sites, having regard to their conservations objectives and in light of best scientific knowledge. It is necessary that the Proposed Development has complies with Article 6(3) of the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (referred to as the Habitats Directive). For the purposes of the Proposed Development, this is transposed into Irish Law by Part XAB of the Planning and Development Act 2000 as amended[1]. The focus of the assessment is on objectively assessing by reference to the evidence as to whether the Proposed Development will adversely affect the integrity of the European sites in light of their conservation objectives.

1.2. Legislative Background - The Habitats and Birds Directives

Articles 6(3) and 6(4) of the Habitats Directive are transposed into Irish Law inter alia by the Part XAB of the Planning Acts (section 177U and 177V) governing the requirement to carry out appropriate assessment screening and appropriate assessment, where required, per Section 1.1 above.

The Habitats Directive (Council Directive 92/43/EEC of 21 May 1992) on the conservation of natural habitats and of wild fauna and flora) is the main legislative instrument for the protection and conservation of biodiversity in the European Union (EU). Under Article 3 of the Habitats Directive, Member States are obliged to designate Special Areas of Conservation (SACs) which contain habitats or species considered important for protection and conservation in a EU context.

[1]The European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477) as amended (referred to as the Habitats Regulations) transposes the Habitats Directive for the purposes of proposed projects subject to legislation other than the Planning and Development Act 2000, as amended.

The Birds Directive (Council Directive 2009/147/EC) on the conservation of wild birds), transposed into Irish law by the Habitats Regulations 2011, as amended, and the Wildlife Act 1976, as amended, is concerned with the long-term protection and management of all wild bird species and their habitats in the EU. Among other things, the Birds Directive requires that Special Protection Areas (SPAs) be established to protect migratory species and species which are rare, vulnerable, in danger of extinction, or otherwise require special attention.

SACs designated under the Habitats Directive and SPAs, designated under the Birds Directive, form a pan-European network of protected sites known as Natura 2000. The Habitats Directive sets out a unified system for the protection and management of SACs and SPAs. These sites are also referred to in Irish legislation as 'European sites'.

Articles 6(3) and 6(4) of the Habitats Directive set out the requirement for an assessment of proposed plans and projects likely to have a significant effect on Natura 2000 sites.

Article 6(3) establishes the requirement to screen all plans and projects and to carry out an appropriate assessment if required (Appropriate Assessment (AA)). Article 6(4) establishes requirements in cases of imperative reasons of overriding public interest:

> ***Article 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 subjected to an appropriate assessment of its implications for the site in view of the site's conservation objectives. In 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 Appropriate Assessment have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended, and in particular Section 177T thereof.

Section 177T(1)(b) and (2) state as follows with regard to a Natura Impact Statement:

> *"(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."

The EU Water Framework Directive[2] (WFD) is an important piece of environmental legislation which aims to improve our water quality. It applies to rivers, lakes, groundwater, estuaries and coastal waters. The Water Framework Directive was agreed by all individual EU member states in 2000, and its first cycle ran from 2009 – 2015. The Directive runs in 6-year cycles, so the second cycle runs from 2016 – 2021 and the third cycle runs form 2022-2027. It focuses on protection of surface water and groundwater and the consideration of the WFD has been addressed in the Environmental Report submitted with the planning application[3]. The key conclusions set out and incorporated into this NIS where the assessment of potential impacts on the River Suir were assessed and necessarily considered the impact on surface waters and groundwaters which were potentially linked to the European sites considered in this AA.

1.3. Methodology

The Commission's methodological guidance (EC, 2002, 2018, 2021 see Section 1.4 below) promotes a four-stage process to complete the AA and outlines the 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.

Stages 1 and 2 deal with the main requirements for assessment under Article 6(3). Stage 3 may be part of Article 6(3) or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Stage 1 Screening: This stage examines the likely effects of a project either alone or in combination with other projects upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant. In order to screen out a project, it must be excluded, on the basis of objective information, that the Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site.

Stage 2 Appropriate Assessment: In this stage, there is a consideration of the impact of the project with a view to ascertain whether there will be any adverse effect on the integrity of the Natura 2000 site either alone or in combination with other projects or plans, with respect to the site's structure and

[2] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

[3] Environmental Assessment Report for a Proposed Asphalt Plant at Cloughleigh, Golden, Co Tipperary. Report Ref. 31279-2. TMS Environment Ltd. January 2023

function and its conservation objectives. Additionally, where there are predicted impacts, an assessment of the potential mitigation of those impacts is considered.

Stage 3 Assessment of Alternative Solutions: This stage examines alternative ways of implementing the project that, where possible, avoid any adverse impacts on the integrity of the Natura 2000 site.

Stage 4 Assessment where no alternative solutions exist and where adverse impacts remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the sites will be necessary.

1.4. Guidance

The NIS has been compiled in accordance with guidance contained in the following documents:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010 rev.)(soon to be superseded by EC Guidance in prep.).
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC, 2018).
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive (EC, 2021).
- 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 (EC, 2021).
- Office of the Planning Regulator (OPR) Practice Note PN01 Appropriate Assessment Screening for Development Management (OPR, 2021).

1.5. Data Sources

Sources of information that were used to collect data on the Natura 2000 network of sites, and the environment within which they are located, are listed below:

- The following mapping and Geographical Information Systems (GIS) data sources, as required:
    - National Parks & Wildlife (NPWS) protected site boundary data;
    - Ordnance Survey of Ireland (OSI) mapping and aerial photography;
    - OSI/Environmental Protection Agency (EPA) rivers and streams, and catchments;
    - Open Street Maps;
    - Digital Elevation Model over Europe (EU-DEM);
    - Google Earth and Bing aerial photography 1995-2023;

- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie including:
    - Natura 2000 - Standard Data Form;
    - Conservation Objectives;
    - Site Synopses;
- National Biodiversity Data Centre records;
    - Online database of rare, threatened and protected species;
    - Publicly accessible biodiversity datasets.
- Status of EU Protected Habitats in Ireland. (National Parks & Wildlife Service, 2019); and
- Dublin City Development Plan 2016-2022

1.6. Statement of Authority

This report was compiled by Ger O'Donohoe (B.Sc. Applied Aquatic Sciences (ATU Galway , 1993) & M.Sc. Environmental Sciences (TCD, 1999)) who has 30 years' experience in environmental impact assessment and has completed numerous reports for Appropriate Assessment Screening and Natura Impact Statements in terrestrial and aquatic habitats.

Engineering and technical data was supplied by Arup Consulting Engineers for the Proposed Development.

1.7. Description of the Proposed Development

The proposed development seeks amendments to ABP Reg. Ref. 306569-20 (SHD 1) and 310567-21 (SHD 2), at No. 42A Parkgate Street, Dublin 8, including:

- 40 no. 'Build To Rent' residential apartments (30 no. 2-bed/4 person & 10 no. 2-bed/3 person units from 1st to 8th floors inclusive, each unit with private 'winter garden' and/or balcony), replacing consented office floor area within the Block B2 office building.

- Co-working and community space at ground floor level, replacing consented café/restaurant at Block B1.

- Ancillary internal private residential communal amenity area at mezzanine level, including lobby, residents' lounge and fitness area, replacing consented co-working space at Block B2.

- And all ancillary and associated site, structural and landscape works proposed to tie amended Block B2 in with the consented development, including:

- Design adjustments at the interface of proposed Block B2 with the consented Block A tower building and Block B1, including increase in roof parapet height (by 1.0m):
- Amendments to landscaping at roof level of consented Block B2 and part of Block B1 to accommodate proposed changes to roof levels associated with Block B2 change of use.
- Changes to the northern Parkgate Street façade of consented Block B2 to suit residential use and accommodate external private amenity (wintergardens & balconies).
- Changes to the southern internal façade of consented Block B2 to suit residential use and accommodate external private amenity (balconies).
- 20 no. additional visitor bicycle spaces within consented public realm at surface level.
- Reconfiguration of floor plan and Increase in floor area of consented basement/undercroft at Block B1, to accommodate additional ancillary residential bicycle storage.
- Reconfiguration of ground and mezzanine floors of consented Block B1 to accommodate the proposed residential amenities and additional ancillary refuse, circulation, plant and non-residential back of house areas.

For avoidance of doubt, while the red line site boundary is drawn around the entire planning unit of ABP Ref. 306569-20, the development works for which permission is expressly sought are identified with a green dashed line, within the wider red line planning unit in the site layout figures below. There is no significant change in the overall height of the proposed development.

As per the consented development, the overall site (c.0.82 ha) is principally bounded by Parkgate Street to the north, the River Liffey to the south, an existing electricity substation and the junction of Sean Heuston Bridge and Parkgate Street to the east, existing Parkgate Place office and residential development to the west. The application site includes areas of public footpath and roadway on Parkgate Street and a small, landscaped area at the junction of Sean Heuston Bridge and Parkgate Street. There are Protected Structures on site.

The river wall will be braced against the proposed new Block A building in the same manner as consented under ABP-306569-20, in so far as it affects the river wall.

The groundworks external to the buildings will comprise installation of precast retaining walls along the existing River Liffey boundary to facilitate build-up of ground to proposed finished levels.

Dewatering may be required for local excavations, such as pile cap or lift pit locations. Any local dewatering is to be discharged to the River Liffey, subject to any necessary agreements or consents. Alternatively, dewatering may be reinjected to the subsurface through a number of wells or injection

points across the site. Local dewatering is likely to be necessary for only a portion of the construction programme, approximately 20 weeks.

The new development will have an estimated maximum hydraulic loading of 227m^3 per day of foul effluent generated on completion of the development. This equates to an average flow of 2.63 litres/second (over a 24-hour period). The sewage discharge will be licensed by Irish Water, collected in the public sewer and treated at Irish Water's Wastewater Treatment Plan (WWTP) at Ringsend prior to treated discharge to Dublin Bay.

There is no change to the drainage and watermain strategy as agreed with DCC Drainage Division and Uisce Éireann[4] required under this Block B2 planning amendment. DCC Drainage Division have confirmed no objection to the surface water strategy and flood risk assessment for the permitted development, as outlined in their Drainage Report to An Bord Pleanála (ref APBSHDPAC0036/20 dated 14/01/21).

Uisce Éireann issued Confirmation of Feasibility Statements for the permitted scheme and agreement was reached on their conditions relating to the Design Acceptance Statement. A formal Connection Application was submitted to Uisce Éireann and a Connection Offer was received in March 2023.

1.8. Construction Management

A Construction Environmental Management Plan (CEMP) was prepared in respect of the consented permissions (ABP 206569-20 and ABP 310567) to manage the potential effects of construction activities associated with development.

The CEMP sets out the principles to be adhered to and outlines measures that will be implemented during the construction of the development to ensure that potential environmental impacts and disturbance will be minimised or eliminated. It is the intention that these principles will also be applied to the proposed amendments.

It will be the responsibility of the project proponent and contractor employed to update and add (where required) specific control measures relevant to the environmental management plan and procedures, taking into account any conditions imposed on any planning permissions granted. The control measures will be amended by improvement with regards to environmental protection and will take cognisance of additional environmental commitments arising from planning conditions.

[4] Arup Technical Note CE-TN001 Block B2 Change of Use (Office to Residential) - Arup Water and Drainage Technical Statement

The project proponent will oversee the process through appointment of the contractor with input from the Project engineer and oversight from the planning and project team. The contractor will be contractually obliged to comply with the CEMP.

Figure 1 shows the proposed development location and Figure 2 shows a detailed view of the proposed development boundary on recent aerial photography. Figures 3a-c show plans of the proposed development.

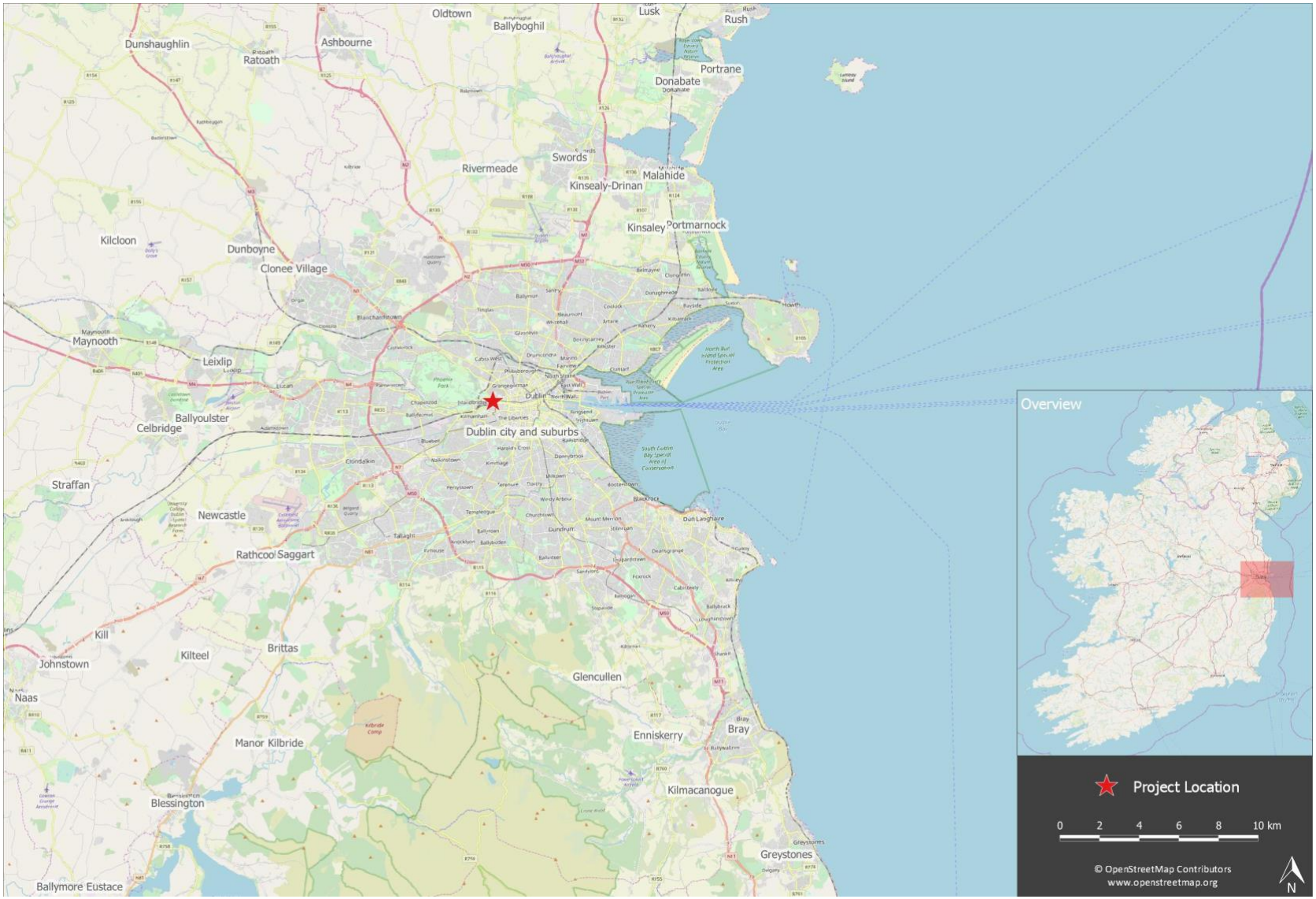

Figure 1. Showing the Proposed Development location in Dublin City.

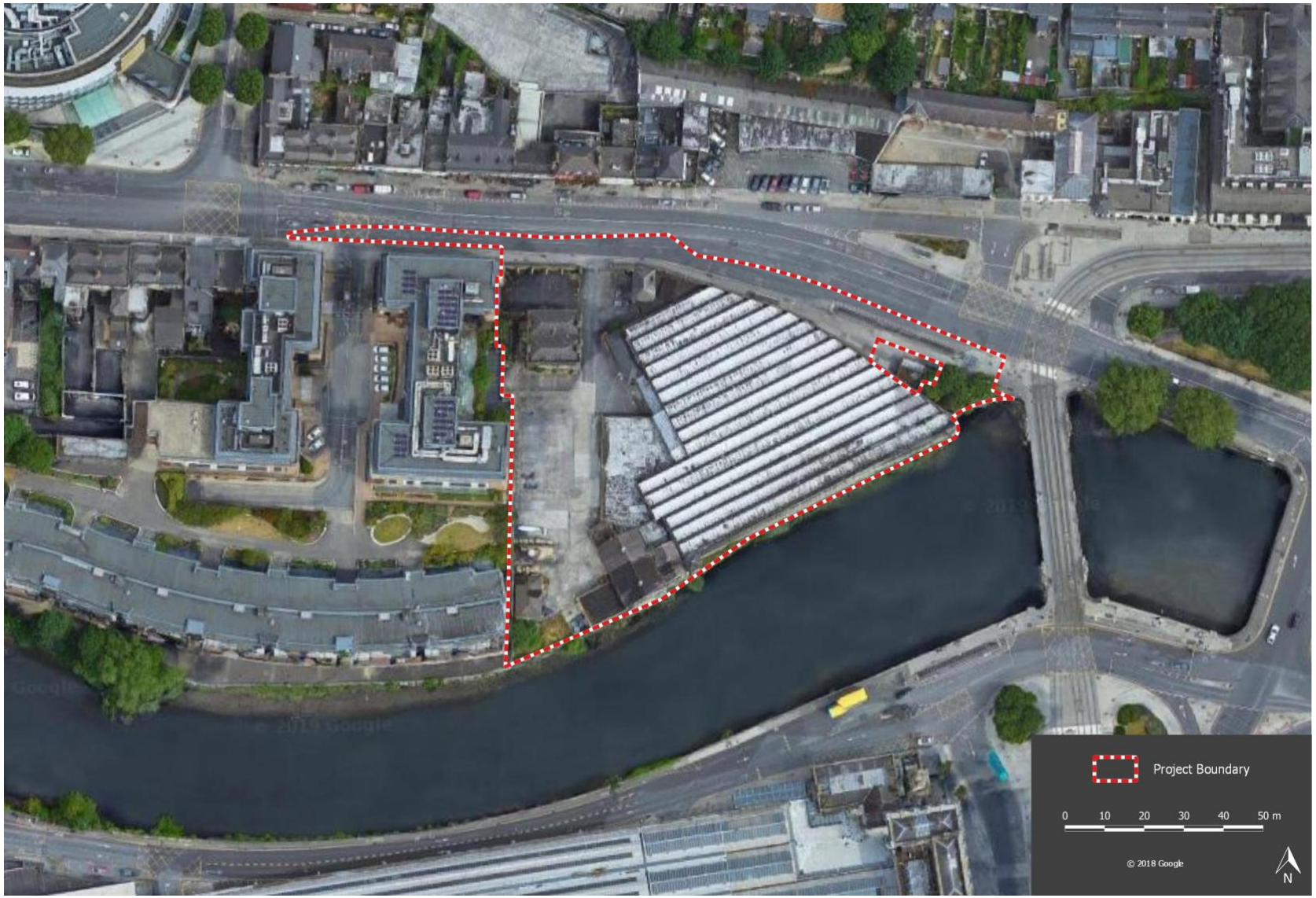

Figure 2. Showing the proposed development boundary on recent aerial photography.

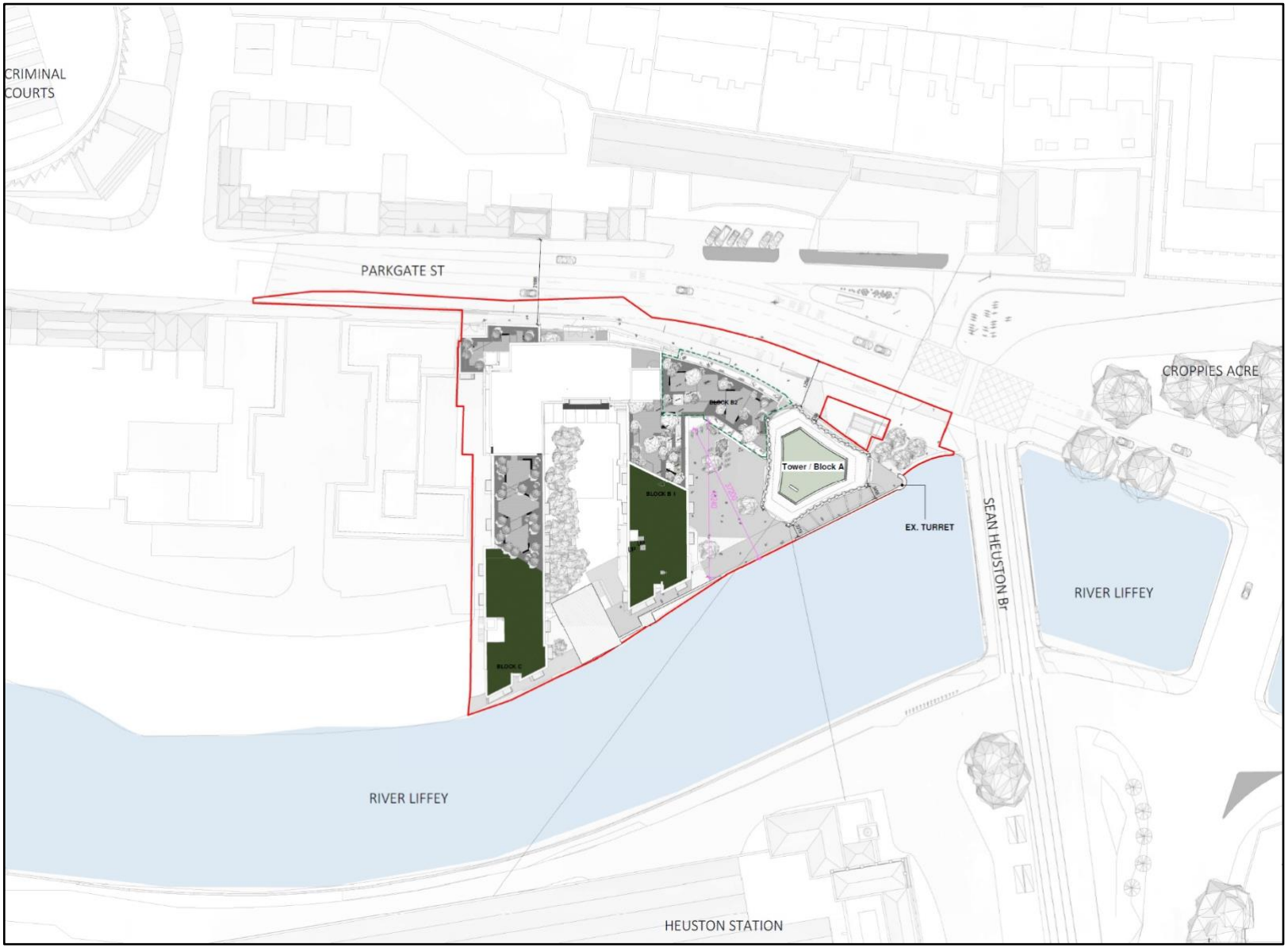

Figure 3a. Site layout of the proposed development.

Figure 3b. Ground floor layout of the proposed development.

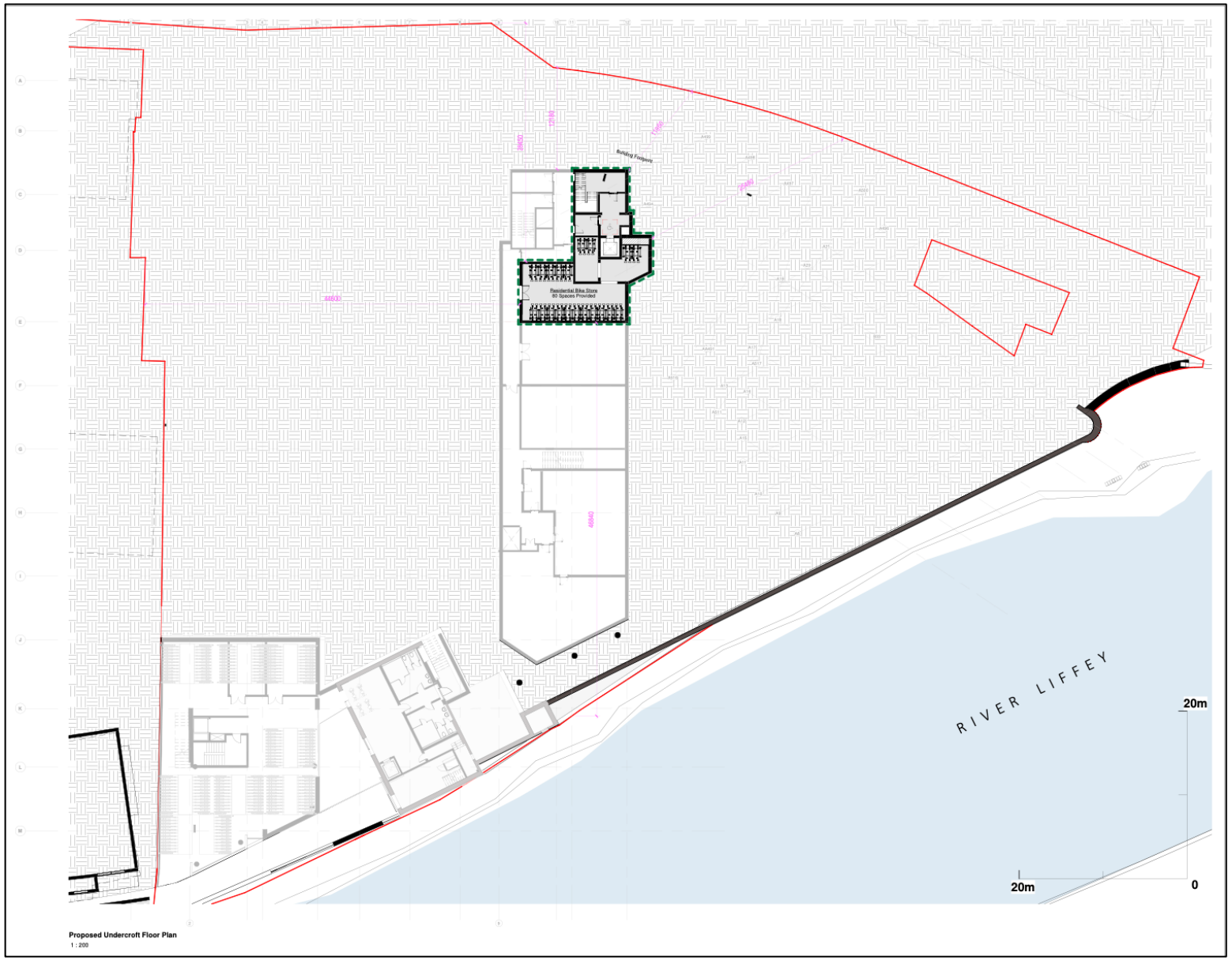

Figure 3c. Undercroft layout of the proposed development.

2. Stage 1 – Screening for Appropriate Assessment

2.1. Description of Natura Sites Potentially Significantly Affected

A Zone of Influence (ZoI) of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. In accordance with the OPR Practice Note (2021), PN01, the ZoI should be established on a case-by-case basis using the Source- Pathway-Receptor framework.

The European Commission's "*Assessment of plans and projects in relation to Natura 2000 sites guidance on Article 6(3) and (4) of the Methodological Habitats Directive 92/43/EEC*" published 28 September 2021 states at section 3.1.3, that:

"Identifying the Natura 2000 sites that may be affected should be done by taking into consideration all aspects of the plan or project that could have potential effects on any Natura 2000 sites located within the zone of influence of the plan or project. This should take into account all of the designating features (species, habitat types) that are significantly present on the sites and their conservation objectives. In particular, it should identify:

- *any Natura 2000 sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;*
- *any Natura 2000 sites within the likely zone of influence of the plan or project Natura 2000 sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g. water) and various types of waste, discharge or emissions of substances or energy;*
- *Natura 2000 sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g. loss of feeding areas, reduction of home range);*
- *Natura 2000 sites whose connectivity or ecological continuity can be affected by the plan or project".*

The range of Natura 2000 sites to be assessed, i.e. the zone in which impacts from the plan or project may arise, will depend on the nature of the plan or project and the distance at which effects may occur. For Natura 2000 sites located downstream along rivers or wetlands fed by aquifers, it may be that a plan or project can affect water flows, fish migration and so forth, even at a great distance. Emissions of pollutants may also have effects over a long distance. Some projects or plans that do not directly affect Natura 2000 sites may still have a significant impact on them if they cause a barrier effect or

prevent ecological linkages. This may happen, for example, when plans affect features of the landscape that connect Natura 2000 sites or that may obstruct the movements of species or disrupt the continuity of a fluvial or woodland ecosystem. To determine the possible effects of the plan or project on Natura 2000 sites, it is necessary to identify not only the relevant sites but also the habitats and species that are significantly present within them, as well as the site objectives.

The Zone of Influence may be determined by considering the Proposed Development's potential connectivity with European sites, in terms of:

- Nature, scale, timing and duration of all aspects of the proposed works and possible impacts, including the nature and size of excavations, storage of materials, flat/sloping sites;
- Distance and nature of potential pathways (dilution and dispersion; intervening 'buffer' lands, roads etc.); and
- Location of ecological features and their sensitivity to the possible impacts.

The potential for source pathway receptor connectivity is firstly identified through GIS interrogation and detailed information is then provided on sites with connectivity. European sites that are located within a potential Zone of Influence of the Proposed Development are listed in Table 1 and presented in Figures 4 and 5, below. Spatial boundary data on the Natura 2000 network was extracted from the NPWS website (www.npws.ie) on 2 November 2023. This data was interrogated using GIS analysis to provide mapping, distances, locations and pathways to all sites of conservation concern including pNHAs, NHA and European sites.

Table 1 European Sites located within the potential Zone of Influence[5] of the Proposed Development.

Site Code	Site name	Distance (km)[6]
000199	Baldoyle Bay SAC	11.96
000202	Howth Head SAC	13.22
000205	Malahide Estuary SAC	14.1
000206	North Dublin Bay SAC	7.47
000210	South Dublin Bay SAC	5.41
001209	Glenasmole Valley SAC	10.99
001398	Rye Water Valley/Carton SAC	13.14
002122	Wicklow Mountains SAC	12.02
003000	Rockabill to Dalkey Island SAC	13.48
004006	North Bull Island SPA	7.46

[5] All European sites potentially connected irrespective of the nature or scale of the Proposed Development.

[6] Distances indicated are the closest geographical distance between the Proposed Development and the European site boundary, as made available by the NPWS.

Site Code	Site name	Distance (km)[6]
004016	Baldoyle Bay SPA	12.34
004024	South Dublin Bay and River Tolka Estuary SPA	4.37
004025	Malahide Estuary SPA	14.1
004040	Wicklow Mountains SPA	12.11
004236	North-West Irish Sea SPA	9.34

The nearest European sites are those associated with Dublin Bay including South Dublin Bay and River Tolka Estuary SPA (site Code 004024) which is located approximately 4.37 km to the east, South Dublin Bay SAC (Site Code 000210) which is located approximately 5.41 km to the east, North Bull Island SPA (Site Code 004006) which is located approximately 7.46 km to the east, and North Dublin Bay SAC (Site Code 000206) which is located approximately 7.47 km to the east.

The following sites are excluded due to lack of connectivity and the distance of removal and dilution along the pathway of the River Liffey; Baldoyle Bay SAC, Howth Head SAC, Malahide Estuary SAC, Glenasmole Valley SAC, Rye Water Valley/Carton SAC, Wicklow Mountains SAC, Rockabill to Dalkey Island SAC, Malahide Estuary SPA, Wicklow Mountains SPA, North-West Irish Sea SPA.

No direct impacts on the Dublin Bay European sites are predicted and there will be no habitat loss or fragmentation as a result of the proposed development, given the distance from the European sites in Dublin Bay.

Potential direct impacts on SPA bird species can also be ruled out, given the nature of the proposed development within an existing urban zone, with existing levels of human activity, e.g., movement of vehicles and background noise, as well as the distance of the site from Dublin Bay.

Having considered direct impacts and ruling them out, indirect impacts were then considered.

It should be noted that the primary pathway to European sites during the construction phase is hydrologically via the River Liffey and in this way the nearest sites are the South Dublin Bay and River Tolka Estuary SPA which is located over 6.8 river km downstream and the North Dublin Bay SAC and North Bull Island SPA which are located over 8.4 river km downstream. The South Dublin Bay SAC is located outside the South Bull wall and while hydrologically more disconnected from the River Liffey, it is included as it overlaps the South Dublin Bay and River Tolka Estuary SPA.

The consideration of source-pathway-receptor connectivity is presented in the Report for AA Screening and the following European Sites were brought forward for further analysis:

- North Dublin Bay SAC 000206
- South Dublin Bay SAC 000210

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

The possibility of any significant impacts, whether arising from the Proposed Development itself or in combination with other plans and projects, on any of the other European Sites, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

A worst-case scenario may be considered whereby the proposed development would be the source of a significant detrimental change in water quality in Dublin Bay either alone or in combination with other projects or plans as a result of indirect pollution via the River Liffey. The effect would have to be considered in terms of changes in water quality which would affect the habitats or food sources of the species for which the Dublin Bay sites are designated.

There will be indirect connectivity to Dublin Bay via the municipal system to Ringsend Wastewater Treatment Plant during the operational phase. This WWTP is required to operate under an EPA licence (D0034-01) and to meet environmental legislative requirements. Even without treatment at the Ringsend WWTP, the peak effluent discharge, calculated for the proposed development, would equate to 0.023% of the licensed discharge (peak hydraulic capacity) at Ringsend WWTP and would not impact on the overall water quality within Dublin Bay and therefore would not have an impact on the current Water Body Status (as defined within the Water Framework Directive).

In the absence of pollution control measures, there is the potential for suspended solids, from dewatering activities, to enter the adjacent River Liffey during the construction phase of the proposed development. Similarly, in the absence of pollution control measures, there is the potential for other polluting substances such as cement or hydrocarbons to enter the River Liffey during the construction phase of the proposed development. As outlined above, there is an indirect hydrological pathway to Dublin Bay, via the River Liffey.

Chemical spills can result in fish mortality and could affect feeding habitats for bird species that rely on the sand and mudflats downstream in Dublin Bay for food sources. Wet concrete and cement are very alkaline and corrosive and can cause serious pollution to watercourses.

In the absence of construction management and pollution control measures, the potential impact on downstream European sites is uncertain.

Thus, in line with Departmental Guidance and having regard to ECJ case law and the 'Precautionary Principle', Stage 2 Appropriate Assessment is required in respect of the four European sites referred to, i.e.:

- North Dublin Bay SAC 000206
- South Dublin Bay SAC 000210

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

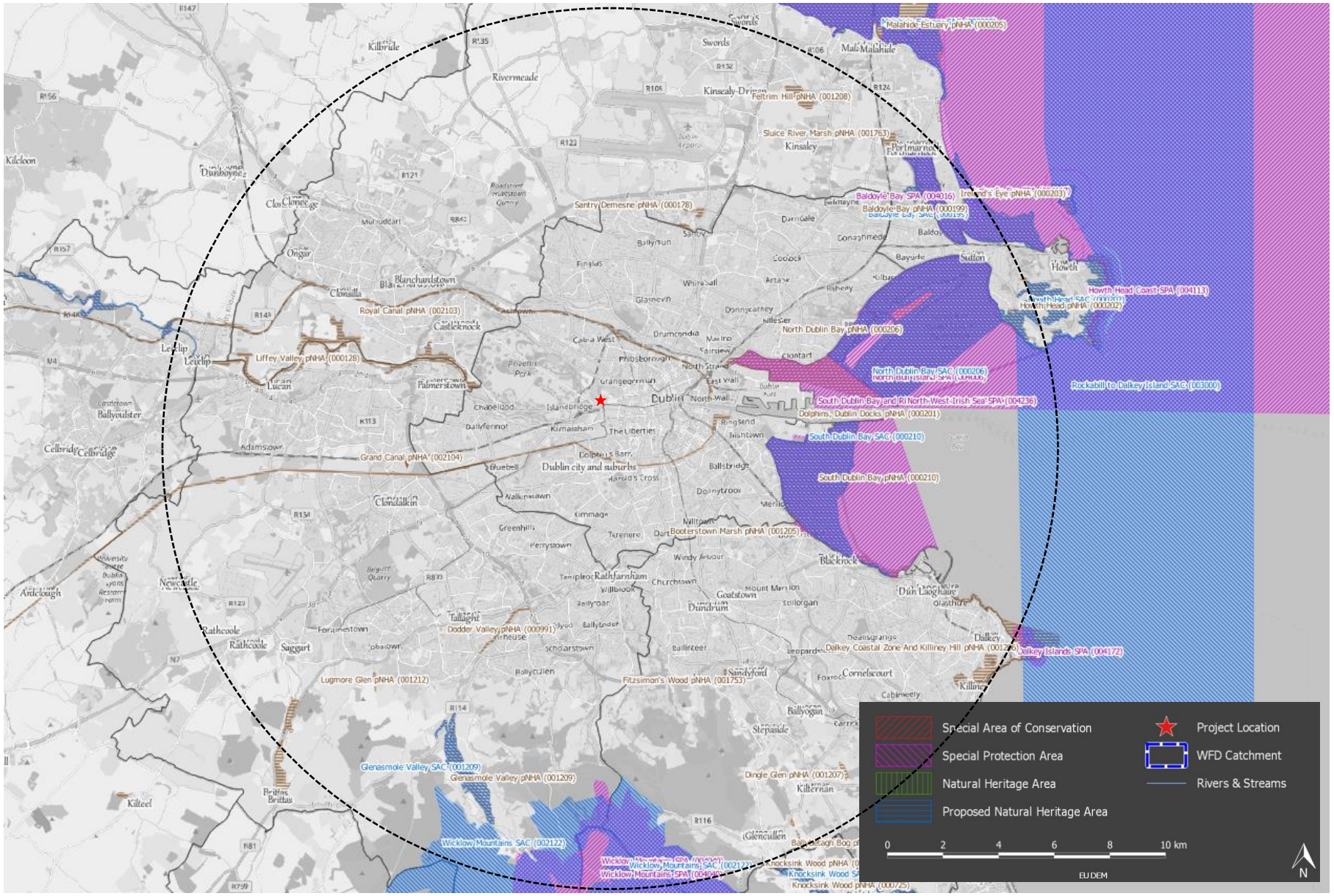

Figure 4. Showing European sites and NHAs/pNHAs in the wider vicinity of the Proposed Development.

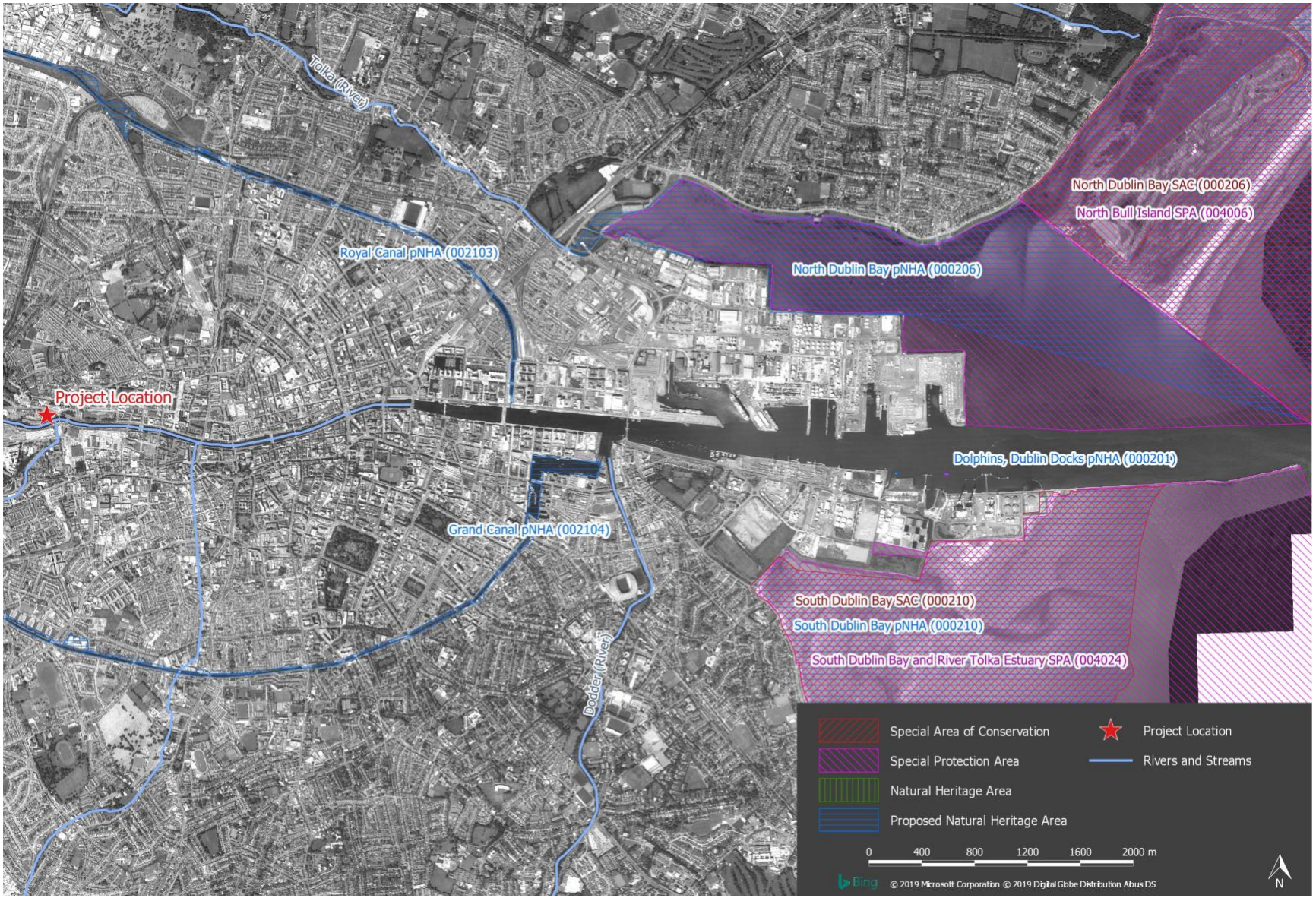

Figure 5. Detailed view of European sites and NHAs/pNHAs in the nearer vicinity of the proposed development.

3. Stage 2 – Appropriate Assessment

This stage considers whether the Proposed Development, alone or in combination with other projects or plans, will have adverse effects on the integrity of a European site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The Stage 2 Appropriate Assessment comprises a scientific examination of the Proposed Development and the relevant European sites to identify and characterise any possible implications for the site in view of the site's conservation objectives, structure and function, taking account of in combination effects.

3.1. Description of European Sites Potentially Affected

The Stage 1 AA has concluded that the potential for significant impacts on the following European Sites cannot be excluded:

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

The Qualifying Interests and the Special Conservation Interests of the European sites in the Xone of Influence of the Proposed Development are set out below.

3.1.1. North Dublin Bay SAC (000206)

The NPWS provides the following Site Synopsis in relation to the North Dublin Bay SAC (Version date 12.08.2013):

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (= priority; numbers in brackets are Natura 2000 codes):*

[1140] Tidal Mudflats and Sandflats
[1210] Annual Vegetation of Drift Lines
[1310] Salicornia Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows

[2110] Embryonic Shifting Dunes

[2120] Marram Dunes (White Dunes)

*[2130] Fixed Dunes (Grey Dunes)**

[2190] Humid Dune Slacks

[1395] Petalwort (Petalophyllum ralfsii)

North Bull Island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (Ammophila arenaria) is dominant on the outer dune ridges, with Lyme-grass (Leymus arenarius) and Sand Couch (Elymus farctus) on the foredunes. Behind the first dune ridge, plant diversity increases with the appearance of such species as Wild Pansy (Viola tricolor), Kidney Vetch (Anthyllis vulneraria), Common Bird's-foot-trefoil (Lotus corniculatus), Common Restharrow (Ononis repens), Yellow-rattle (Rhinanthus minor) and Pyramidal Orchid (Anacamptis pyramidalis). In these grassy areas and slacks, the scarce Bee Orchid (Ophrys apifera) occurs.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (Alnus glutinosa). The water table is very near the surface and is only slightly brackish. Saltmarsh Rush (Juncus maritimus) is the dominant species, with Meadowsweet (Filipendula ulmaria) and Devil's-bit Scabious (Succisa pratensis) being frequent. The orchid flora is notable and includes Marsh Helleborine (Epipactis palustris), Common Twayblade (Listera ovata), Autumn Lady's-tresses (Spiranthes spiralis) and Marsh Orchids (Dactylorhiza spp.).

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels according to the vegetation types present. On the lower marsh, Glasswort (Salicornia europaea), Common Saltmarsh-grass (Puccinellia maritima), Annual Sea-blite (Suaeda maritima) and Greater Sea-spurrey (Spergularia media) are the main species. Higher up in the middle marsh Sea Plantain (Plantago maritima), Sea Aster (Aster tripolium), Sea Arrowgrass (Triglochin maritima) and Thrift (Armeria maritima) appear. Above the mark of the normal high tide, species such as Common Scurvygrass (Cochlearia officinalis) and Sea Milkwort (Glaux maritima) are found, while on the extreme upper marsh, the rushes Juncus maritimus and J. gerardi are dominant. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

The habitat 'annual vegetation of drift lines' is found in places, along the length of Dollymount Strand, with species such as Sea Rocket (Cakile maritima), Oraches (Atriplex spp.) and Prickly Saltwort (Salsola kali).

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "Salicornia flat", which is dominated by Salicornia dolichostachya, a pioneer glasswort species, and covers about 25 ha. Beaked Tasselweed (Ruppia maritima) occurs in this area, along with some Narrow-leaved Eelgrass (Zostera angustifolia). Dwarf Eelgrass (Z. noltii) also occurs in Sutton Creek. Common Cordgrass (Spartina anglica) occurs in places but its growth is controlled by management. Green algal mats (Enteromorpha spp., Ulva lactuca) cover large areas of the flats during summer. These sediments have a rich macrofauna, with high densities of Lugworms (Arenicola marina) in parts of the north lagoon. Mussels (Mytilus edulis) occur in places, along with bivalves such as Cerastoderma edule, Macoma balthica and Scrobicularia plana. The small gastropod Hydrobia ulvae occurs in high densities in places, while the crustaceans Corophium volutator and Carcinus maenas are common. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three rare plant species which are legally protected under the Flora (Protection) Order, 1999 have been recorded on the North Bull Island. These are Lesser Centaury (Centaurium pulchellum), Red Hemp-nettle (Galeopsis angustifolia) and Meadow Saxifrage (Saxifraga granulata). Two further species listed as threatened in the Red Data Book, Wild Clary/Sage (Salvia verbenaca) and Spring Vetch (Vicia lathyroides), have also been recorded. A rare liverwort, Petalophyllum ralfsii, was first recorded from the North Bull Island in 1874 and has recently been confirmed as still present. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.

North Dublin Bay is of international importance for waterfowl. During the 1994/95 to 1996/97 period the following species occurred in internationally important numbers (figures are average maxima): Brent Goose 2,333; Knot 4,423; Bar-tailed Godwit 1,586. A further 14 species occurred in nationally important concentrations - Shelduck 1505; Wigeon 1,166; Teal 1,512; Pintail 334; Shoveler 239; Oystercatcher 2,190; Ringed Plover 346; Grey Plover 816; Sanderling 357; Dunlin 6,238; Black-tailed Godwit 156; Curlew 1,193; Turnstone 197 and Redshank 1,175. Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Brent Goose, Oystercatcher, Ringed Plover, Sanderling and Dunlin).
The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. Ringed Plover, Shelduck, Mallard, Skylark, Meadow Pipit and Stonechat also nest. A well-known population of Irish Hare is resident on the island.

The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland (from the Orders Diptera, Hymenoptera and Hemiptera).

The main land uses of this site are amenity activities and nature conservation. The North Bull Island is the main recreational beach in Co. Dublin and is used throughout the year. Much of the land surface of the island is taken up by two golf courses. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. The site is used regularly for educational purposes. North Bull Island has been designated a Special Protection Area under the E.U. Birds Directive and it is also a statutory Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site.

This site is an excellent example of a coastal site with all the main habitats represented. The site holds good examples of nine habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a numbers of rare and scarce plants including some which are legally protected. Its proximity to the capital city makes North Dublin Bay an excellent site for educational studies and research.

3.1.2. South Dublin Bay SAC (000210)

The NPWS provides the following Site Synopsis in relation to the South Dublin Bay SAC (Version date 10.12.2015):

This site lies south of the River Liffey in Co. Dublin and extends from the South Wall to the west pier at Dun Laoghaire. It is an intertidal site with extensive areas of sand and mudflats. The sediments are predominantly sands but grade to sandy muds near the shore at Merrion Gates. The main channel which drains the area is Cockle Lake.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (= priority; numbers in brackets are Natura 2000 codes):*

[1140] Tidal Mudflats and Sandflats
[1210] Annual vegetation of drift lines
[1310] Salicornia and other annuals colonising mud and sand
[2110] Embryonic shifting dunes

The bed of Dward Eelgrass (Zostera noltii) found below Merrion Gates is the largest stand on the east coast. Green algae (Enteromorpha spp. and Ulva lactuca) are distributed throughout the area at a low density. Fucoid algae occur on the rocky shore in the Maretimo to Dún Laoghaire area. Species include Fucus spiralis, F. vesiculosus, F. serratus, Ascophyllum nodosum and Pelvetia canaliculata.

Several small, sandy beaches with incipient dune formation occur in the northern and western sectors of the site, notably at Poolbeg, Irishtown and Merrion/ Booterstown. The formation at Booterstown is very recent. Drift line vegetation occurs in association with the embryonic and incipient fore dunes. Typically drift lines occur in a band approximately 5 m wide, though at Booterstown this zone is wider in places. The habitat occurs just above the High Water Mark and below the area of embryonic dune. Species present are Sea Rocket (Cakile maritima), Frosted Orache (Atriplex laciniata), Spear-leaved Orache (A. prostrata), Prickly Saltwort (Salsola kali) and Fat Hen (Chenopodium album). Also occurring is Sea Sandwort (Honkenya peploides), Sea Beet (Beta vulgaris subsp. maritima) and Annual Sea-blite (Suaeda maritima). A small area of pioneer saltmarsh now occurs in the lee of an embryonic sand dune just north of Booterstown Station. This early stage of saltmarsh development is here characterised by the presence of pioneer stands of glassworts (Salicornia spp.) occurring below an area of drift line vegetation. As this is of very recent origin, it covers a small area but ample areas of substrate and shelter are available for the further development of this habitat.

Lugworm (Arenicola marina), Cockles (Cerastoderma edule) and annelids and other bivalves are frequent throughout the site. The small gastropod Hydrobia ulvae occurs on the muddy sands off Merrion Gates.

South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. The principal species are Oystercatcher (1215), Ringed Plover (120), Sanderling (344), Dunlin (2628) and Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Goose regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the E.U. Birds Directive, also occur.

Large numbers of gulls roost in South Dublin Bay, e.g. 4,500 Black-headed Gulls in February 1990; 500 Common Gulls in February 1991. It is also an important tern roost in the autumn, regularly holding 2000-3000 terns including Roseate Terns, a species listed on Annex I of the E.U. Birds Directive. South Dublin Bay is largely protected as a Special Protection Area.

At low tide the inner parts of the south bay are used for amenity purposes. Bait-digging is a regular activity on the sandy flats. At high tide some areas have wind-surfing and jet-skiing.

This site is a fine example of a coastal system, with extensive sand and mudflats, and incipient dune formations. South Dublin Bay is also an internationally important bird site.

3.1.3. North Bull Island SPA (004006)

The NPWS provides the following Site Synopsis in relation to the North Bull Island SPA (Version date 25.03.2014):

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Green algal mats (Ulva spp.) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (Arenicola marina) and Ragworm (Hediste diversicolor).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) - all figures are mean peaks for the five winters between 1995/96 and 1999/2000. The site is one of the most important in the country for Light-bellied Brent Goose. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Grey Plover (517), Golden Plover (2,033), Knot (2,837), Sanderling (141), Dunlin (4,146), Curlew (937), Redshank (1,431), Turnstone (157) and Black-headed Gull (2,196). The populations of Pintail and Knot are of particular note as they comprise 14% and 10% respectively of the all-Ireland population totals. Other species that occur regularly in winter include Grey Heron, Little Egret, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser, Ringed Plover and Greenshank. Gulls are a feature of the site during winter and, along with the nationally important population of Black-headed Gull (2,196), other species that occur include Common Gull (332) and Herring Gull (331). While some of the birds also

frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter.

The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the E.U. Birds Directive, notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl. North Bull Island is a Ramsar Convention site, and part of the North Bull Island SPA is a Statutory Nature Reserve and a Wildfowl Sanctuary.

3.1.4. South Dublin Bay and River Tolka Estuary SPA (Site code 004024)

The NPWS provides the following Site Synopsis in relation to the South Dublin Bay and River Tolka Estuary SPA (Version date 30.05.2015):

The South Dublin Bay and River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

In the south bay, the intertidal flats extend for almost 3 km at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The landward boundary is now almost entirely artificially embanked. There is a bed of Dwarf Eelgrass (Zostera noltii) below Merrion Gates which is the largest stand on the east coast. Green algae (Ulva spp.) are distributed throughout the area at a low density. The macro-invertebrate fauna is well-developed, and is characterised by annelids such as Lugworm (Arenicola marina), Nephthys spp. and Sand Mason

(Lanice conchilega), and bivalves, especially Cockle (Cerastoderma edule) and Baltic Tellin (Macoma balthica). The small gastropod Spire Shell (Hydrobia ulvae) occurs on the muddy sands off Merrion Gates, along with the crustacean Corophium volutator. Sediments in the Tolka Estuary vary from soft thixotrophic muds with a high organic content in the inner estuary to exposed, well-aerated sands off the Bull Wall. The site includes Booterstown Marsh, an enclosed area of saltmarsh and muds that is cut off from the sea by the Dublin/Wexford railway line, being linked only by a channel to the east, the Nutley stream. Sea water incursions into the marsh occur along this stream at high tide. An area of grassland at Poolbeg, north of Irishtown Nature Park, is also included in the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern and Arctic Tern. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of the SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex – all counts for wintering waterbirds are five year mean peaks for the period 1995/96 to 1999/2000. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. An internationally important population of Light-bellied Brent Goose (368) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at Merrion. At the time of designation the site supported nationally important numbers of a further nine species: Oystercatcher (1,145), Ringed Plover (161), Grey Plover (45), Knot (548), Sanderling (321), Dunlin (1,923), Bar-tailed Godwit (766), Redshank (260) and Black-headed Gull (3,040). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (127) and Turnstone (52). Little Egret, a species which has recently colonised Ireland, also occurs at this site.

South Dublin Bay is a significant site for wintering gulls, with a nationally important population of Black-headed Gull, but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter.

Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the E.S.B. dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey in 1995 recorded nationally important numbers of Common Tern nesting here (52 pairs). The breeding population of Common Tern at this site has increased, with 216 pairs recorded in 2000. This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

South Dublin Bay is an important staging/passage site for a number of tern species in the autumn (mostly late July to September). The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. This site is selected for designation for its autumn tern populations: Roseate Tern (2,000 in 1999), Common Tern (5,000 in 1999) and Arctic Tern (20,000 in 1996).

The South Dublin Bay and River Tolka Estuary SPA is of ornithological importance as it supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further nine wintering species. Furthermore, the site supports a nationally important colony of breeding Common Tern and is an internationally important passage/staging site for three tern species. It is of note that four of the species that regularly occur at this site are listed on Annex I of the E.U. Birds Directive, i.e. Bar-tailed Godwit, Common Tern, Arctic Tern and Roseate Tern. Sandymount Strand/Tolka Estuary is also a Ramsar Convention site.

3.2. Conservation Objectives of European Sites

3.2.1. North Dublin Bay SAC (000206) – Version 1, 6th November 2013

The following Conservation Objectives are set out for the North Dublin Bay SAC.

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, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes
Community extent	Hectares	Maintain the extent of the *Mytilus edulis* -dominated community, subject to natural processes
Community structure: *Mytilus edulis* density	Individuals/m^2	Conserve the high quality of the *Mytilus edulis*-dominated community, subject to natural processes
Community distribution	Hectares	Conserve the following community types in a natural condition: Fine sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex; Fine sand with *Spio martinensis* community complex.

1210 Annual vegetation of drift lines

To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area increasing, subject to natural processes, including erosion and succession. Total area mapped: South Bull - 0.11ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sea rocket (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and oraches (*Atriplex spp*.)
Vegetation structure: negative indicator species	Hectares	Negative indicator species (including non-natives) to represent less than 5% cover

1310 *Salicornia* and other annuals colonising mud and sand

To restore the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 29.10ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain, or where necessary restore, natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated

Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*). No new sites for this species and an annual spread of less than 1%

1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

To restore the favourable conservation condition of Atlantic salt meadows (*GlaucoPuccinellietalia maritimae*) in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 81.84ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of subcommunities with typical species listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 7.98ha.

Attribute	Measure	Target
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes.
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%

2110 Embryonic shifting dunes

To restore the favourable conservation condition of Embryonic shifting dunes in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull - 2.64ha; South Bull - 3.43ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats, including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: plant health of foredune grasses	Percentage cover	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 sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch

Attribute	Measure	Target
		(*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover

2120 Shifting dunes along the shoreline with *Ammophila 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, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. North Bull - 2.20ha; South Bull - 0.97ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats, including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: plant health of dune grasses	Percentage cover	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 sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (*Ammophila arenaria*) and/or lymegrass (*Leymus arenarius*)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. For subsites mapped: North Bull - 40.29ha; South Bull - 64.56ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes

Attribute	Measure	Target
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et al. (2013)
Vegetation composition: negative indicator species (including *Hippophae rhamnoides*)	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation composition: scrub/trees	Percentage Cover	No more than 5% cover or under control

2190 Humid dune slacks

To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area increasing, subject to natural processes including erosion and succession. For sub-sites mapped: North Bull - 2.96ha; South Bull - 9.15ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	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	Centimetres	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et al. (2013)

Attribute	Measure	Target
Vegetation composition: cover of *Salix repens*	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (*Salix repens*)
Vegetation composition: negative indicator species	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation composition: scrub/trees	Percentage Cover	No more than 5% cover or under control

1395 Petalwort *Petalophyllum ralfsii*

To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution of populations	Number and geographical spread of populations	No decline.
Population size	Number of individuals	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	Hectares	No decline. Area of suitable habitat at Bull Island is estimated at c. 0.04ha.
Hydrological conditions: soil moisture	Occurrence	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	Centimetres and percentage	Maintain open, low vegetation with a high percentage of bryophytes (small acrocarps and liverwort turf) and bare ground

3.2.2. South Dublin Bay SAC (000210) - Version 1, 22nd August 2013

The following Conservation Objective is set out for the South Dublin Bay SAC.

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, which is defined by the following list of attributes and targets.

Attribute	Measure	Target
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community, subject to natural processes
Community structure: *Mytilus edulis* density	Individuals/m^2	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes
Community distribution	Hectares	Conserve the following community types in a natural condition: Fine sands with *Angulus tenuis* community complex.

3.2.3. North Bull Island SPA (004006) – Version 1, 9th March 2015

The following Conservation Objectives are set out for the North Bull Island SPA.

Generic Conservation Objectives

In the absence of specific conservation objectives, the following generic conservation objectives can be applied to each qualifying species listed. Species with specific conservation objectives are listed below.

To maintain the favourable conservation condition of [each qualifying species] in North Bull Island SPA, which is defined by the following list of attributes and targets:

[Qualifying Bird Species]

Attribute	Measure	Target
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by [each qualifying species], other than that occurring from natural patterns of variation

Specific Conservation Objectives

A99 Wetlands

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. This is defined by the following attribute and target:

Attribute	Measure	Target
Habitat area	Hectares	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.

3.2.4. South Dublin Bay and River Tolka Estuary SPA (004024)

The following Conservation Objectives are set out for the South Dublin Bay and River Tolka Estuary SPA.

Generic Conservation Objectives

In the absence of specific conservation objectives, the following generic conservation objectives can be applied to each qualifying species listed. Species with specific conservation objectives are listed below.

To maintain the favourable conservation condition of [each qualifying species] in Malahide Estuary SPA, which is defined by the following list of attributes and targets:

[Qualifying Bird Species]

Attribute	Measure	Target
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by redshank, other than that occurring from natural patterns of variation

Specific Conservation Objectives

A141 Grey Plover *Pluvialis squatarola*

Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species.

A192 Roseate Tern *Sterna dougallii*

To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Passage population: individuals	Number	No significant decline
Distribution: roosting areas	Number; location; area (hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant decline
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns

A193 Common Tern *Sterna hirundo*

To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Breeding population abundance: Apparently occupied nests (AONs)	Number	No significant decline
Productivity rate: fledged young per breeding pair	Mean number	No significant decline
Passage population: individuals	Number	No significant decline
Distribution: breeding colonies	Number; location; area (Hectares)	No significant decline
Distribution: roosting areas	Number; location; area (Hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns

A194 Arctic Tern *Sterna paradisaea*

To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Passage population	Number of individuals	No significant decline
Distribution: roosting areas	Number; location; area (Hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns

A99 Wetlands

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 water birds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target
Habitat area	Hectares	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.

3.3. Description of the Existing Environment

The predominant habitat on site is 'Buildings and artificial surfaces' (BL3) which comprise the existing buildings and hardstanding areas of the site and adjacent Parkgate Street where upgrading drainage is proposed. A boundary stone and concrete wall (BL1) encompasses much of the site both by Parkgate Street and to the rear of the site, by the River Liffey. There were no rare or protected flora recorded in the Proposed Development area during fieldwork.

There are two 'green' areas; one internal small patch of grass which is scrubby in appearance to the south centre of the hardstanding area. The area is recolonised (ED3) by ruderal species such as Dandelion (*Taraxacum* agg.) and Dock (*Rumex obtusifolius*), Petty spurge *(Euphorbia peplus),* Germander speedwell *(Veronica chamaedrys)*, Rye grass *(Lolium* spp.*)*, Daisy *(Bellis perennis),* Ribwort plantain *(Plantago lanceolata),* Red clover *(Trifolium pratense)*, Rosebay willowherb *(Chamerion angustifolium)* along with Cow parsley *(Anthriscus sylvestris),* Yorkshire fog *(Holcus lanatus)*, Ragwort *(Senecio jacobaea)*, False oat-grass *(Arrhenatherum elatius),* Juvenile Sycamore *(Acer pseudoplatanus),* Bramble *(Rubus fruticosus agg.),* Cleavers *(Galium aparine)* and with Ivy (*Hedera helix*) growing onto the adjacent wall. A few Butterfly bushes (*Buddleia davidii*) give the area a scrubby appearance. Buddleia is considered an invasive species on road projects but is widespread in abandoned urban sites and is easily removed.

Outside the site, the eastern corner of the site is bordered by a small, landscaped area at the corner of Parkgate Street and Heuston Bridge; separated from the internal site by the boundary wall and from the urban street by metal railings. It is comprised of a patch of rough grass planted with four cultivar Lime trees (*Tilia cordata*).

Sections between the buildings consist primarily of concrete, with a very sparse cover of plant species found in cracks and flower beds. Species recorded include: dandelion *(Taraxacum vulgaria),* mouse-ear chickweed *(Cerastium),* Herb Robert *(Geranium robertianum),* Ladies smock *(Cardamine pratensis)*, Shepherds purse *(Capsella bursa-pastoris)*, Smooth sow-thistle *(Sonchus oleraceus)*, Willowherb *(Epilobium hirsutum)*, Creeping bent *(Agrostis stolonifera)* and Oxeye daisy *(Leucanthemum vulgare)*. A small flowerbed has non-native holly and ornamental willow scrub.

The boundary wall to the River Liffey is colonised by patches of Ivy with small amounts of Ivy growing on the outer river side along with occasional Buddleia plants and Broad-leaved dock *(Rumex obtusifolius)* at lower levels.

The River Liffey (FW2) is tidal at the point of the proposed development site at Heuston Bridge with the Islandbridge weir upstream of Sarah Bridge (Islandbridge) historically referred to as the 'highest point to which ordinary tides flow'. Thus, downstream of the weir the waters become brackish or have saltwater intrusion, depending on the level of the tide. Shortly after the weir and 'Sarah Bridge' downstream, the river enters its urban course through Dublin City. It discharges to Dublin Bay and feeds into the designated European sites which comprise the Dublin Bay Biosphere.

Upstream of Chapelizod, the river has a more natural course and is designated at a proposed Natural Heritage Area; the Liffey Valley pNHA and also holds the status of a Special Amenity Area. The River Liffey is a Salmon river and the river valley upstream is designated for mixed deciduous woodlands which occur on both sides of the river, normally consisting of old estate woodlands.

The immediate riverine environment adjacent to the proposed development site does not contain any designated habitats but is important in terms of water quality as a habitat for salmonids and otters.

3.4. Consideration of Potential Effects on European Sites before Mitigation

As described in Section 2, and as per the findings of the report for the purposes of AA Screening, no direct effects on European sites or species have been identified. However, in accordance with the precautionary principle, the potential for indirect impacts on Europeans sites or species from wastewater discharge to Dublin Bay and from contamination events have been brought forward for further assessment in this NIS.

3.4.1. Habitats Directive Annex I Habitats

Construction Phase Effects before mitigation

As previously stated, no direct impacts on European sites are predicted during the construction phase of the proposed development. Having considered direct impacts and ruled them out, indirect impacts are considered.

- Leakage could occur from construction site equipment. As a worst-case scenario an unmitigated leak from a temporary refuelling tank which would typically have a maximum capacity of 300 litres is considered. This would be a single short-term event i.e. if not adequately mitigated.
- Use of wet cement is a requirement during construction. Run-off water from recent cemented areas will result in highly alkaline water with high pH. As this would only occur during particular phases of work this is again considered as a single short-term potential event rather than an ongoing event.

- The demolition of the existing building units and construction requires soil excavation and removal and import. Unmitigated run-off could contain a high concentration of suspended solids during earthworks. This could be considered an intermittent short-term event i.e. if proposed mitigation measures to control sediment laden run-off were to fail.

Further, in the absence of pollution control measures, there is the potential for suspended solids, from dewatering activities, demolition or excavation, to enter the adjacent River Liffey during the construction phase of the proposed development.

Operational Phase Effects before mitigation

As previously stated, no direct impacts on European sites are predicted during the operational phase of the proposed development. The following sources (hazards) are considered plausible for the operational phase of the proposed development:

(i) Leakage of petrol/ diesel fuel may occur from individual cars in parking areas, run-off may contain a worst-case scenario of 70 litres for example.

(ii) The foul discharge from the site will outfall to the public sewer and will be treated at the Irish Water Ringsend WWTP prior to subsequent discharge following treatment to Dublin Bay.

(iii) All [attenuated] stormwater will be discharged into the River Liffey after being processed through a Surface Water Management Plan which incorporates removal of silt/pollutants and debris by the installation of SuDS measures and a two-stage treatment train approach to the drainage strategy to improve the quality of water discharging to the Liffey.

3.4.2. Birds Directive Annex I Species

Construction Phase Impacts before mitigation

Potential direct disturbance impacts on SPA bird species were ruled at the Screening stage.

In terms of indirect impacts, chemical spills can result in fish mortality and could affect feeding habitats for bird species that rely on the sand and mudflats downstream in Dublin Bay for food sources.

As previously mentioned with regard to Annexed habitats above, standard mitigation will be incorporated into the construction plan design to minimise any impacts on stormwater drains. However, should any silt-laden stormwater from construction manage to enter the public stormwater sewer i.e. without on-site mitigation, the suspended solids will naturally settle within c. 0.5 km stretch

of the Liffey. As such short-term discharge of sediment laden water will have no detrimental impact on the habitat requirements of Dublin Bay which are located over 6.8 km downstream.

Operational Phase Impacts before mitigation

As previously determined foul wastewater from the proposed development will be collected and discharged to the municipal sewer, which in turn discharges to the Ringsend Wastewater Treatment Plant, for appropriate treatment, prior to discharge to Dublin Bay. The Ringsend WWTP is required to operate under EPA licence and meet environmental standards, further upgrade is planned and the foul discharge from the proposed development would equate to a very small percentage of the overall licensed discharge at Ringsend WWTP and thus would not impact on the overall water quality within Dublin Bay.

3.4.3. Ecological Network Supporting Natura 2000 Sites

An analysis of the proposed Natural Heritage Areas and designated Natural Heritage Areas in terms of their role in supporting the species using Natura 2000 sites was undertaken. These supporting roles mainly relate to mobile fauna such as mammals and birds which may use pNHAs and NHAs as "stepping stones" between Natura 2000 sites.

Article 10 of the Habitats Directive and the Habitats Regulations 2011 place a high degree of importance on such non-Natura 2000 areas as features that connect the Natura 2000 network. Features such as ponds, woodlands and important hedgerows were taken into account during the AA process.

There are no other designated or proposed designated sites or areas of semi-natural habitat that would be affected by the proposed development.

3.5. Effects on the Qualifying Interests of European Sites, without Mitigation

Construction Phase Effects, without Mitigation

Leakage, unmitigated run-off, or chemical spills can result in fish mortality and could affect feeding habitats for bird species that rely on the sand and mudflats downstream in Dublin Bay for food sources.

Wet concrete and cement are very alkaline and corrosive and, in the absence of mitigation, have the potential to cause serious pollution to watercourses and receiving water bodies in this case Dublin Bay.

Elevated suspended solids may be harmful to salmonids resulting in reduced oxygenation of surface waters due to settlement and the formation of deposits on the river bed which in turn can give rise to

septic and offensive conditions. Elevated suspended solids can clog salmonid gills and potentially cause mortality.

Operational Phase Effects, without Mitigation

Leakage or unmitigated run-off, or chemical spills can result in fish mortality and could affect feeding habitats for bird species that rely on the sand and mudflats downstream in Dublin Bay for food sources. Unmitigated stormwater can result in fish mortality and could affect feeding habitats for bird species that rely on the sand and mudflats downstream in Dublin Bay for food sources.

The Ringsend WWTP is required to operate under EPA licence and meet environmental standards, further upgrade is planned and the foul discharge from the proposed development would equate to a very small percentage of the overall licensed discharge at Ringsend WWTP and thus would not impact on the overall water quality within Dublin Bay.

3.6. Mitigation Measures

3.6.1. Construction Phase

Protection of Surface Water

Construction management measures including specific measures to prevent pollution of the River Liffey are incorporated into the CEMP, submitted with both ABP 206569-20 and ABP 310567, which will ensure that there are no likely effects on the River Liffey from surface water runoff.

Any stockpiles of demolition material will be temporarily stored on impermeable surfaces and covered using tarpaulin to avoid any contaminated run off entering the surface water system. Any stockpiles of excavated material will be covered using tarpaulin. Silt traps will be placed in gullies to capture any excess silt in the run-off. All silos will be bunded appropriately.

In terms of mitigation by prevention, settlement tanks and silt traps will be incorporated to capture any excess silt in the run-off during the construction phase.

Surface water from the proposed development will discharge to the River Liffey. A foreshore consent will be sought for this discharge. A Surface Water Management Plan will be implemented, which incorporates removal of silt/pollutants and debris by the installation of SuDS measures and a 2-stage treatment train approach to the drainage strategy to improve the quality of water discharging to the Liffey. SUDs measures include greenroofs, filter strips, filter drains, bio-retention rain-gardens and catchpits installed along the drainage system prior to outfall. In addition, as not all hardstanding can be intercepted and treated by SuDS measures, it is proposed to install a proprietary surface water

treatment system (First Defence or Downstream Defender) which will have removal efficiency rates of 50% for suspended solids and 80% for hydrocarbons prior to discharge.

Any local dewatering is to be discharged to the River Liffey by agreement with the Local Authority and will include necessary treatment as required, such as silt traps and settlement tanks. Alternatively, dewatering may be reinjected to the subsurface through a number of wells or injection points across the site. Similar treatment measures will be adopted prior to reinjection

In addition to these specific measures with regard to the River Liffey, the following general measures are included in the CEMP:

General

Prior to any works, all personnel involved will receive an on-site induction relating to operations adjacent to watercourses and the environmentally sensitive nature of the River Liffey and re-emphasise the precautions that are required as well as the construction management measures to be implemented.

The Proposed Development proponent will ensure that the engineer setting out the works is fully aware of the ecological constraints and construction management requirements.

Fuel/Lubricant spillage from equipment

- Chemicals used will be stored in sealed containers.
- Chemicals shall be applied in such a way as to avoid any spillage or leakage.
- All refuelling, oiling and greasing will take place above drip trays or on an impermeable surface which provides protection to underground strata and watercourses and away from drains and watercourses as far as reasonably practicable. Vehicles will not be left unattended during refuelling.
- It is proposed that the construction compound will be located within the site boundary.
- Storage areas, machinery depots and site offices will be located within the site boundary.
- Spill kits will be made available and all staff will be properly trained on correct use.
- All fuels, lubricants and hydraulic fluids required to be stored on site will be kept in secure bunded areas at a minimum of 10m from the River Liffey. The bunded area will accommodate 110% of the total capacity of the containers within it.
- Containers will be properly secured to prevent unauthorised access and misuse. An effective spillage procedure will be put in place with all staff properly briefed. Any waste

oils or hydraulic fluids will be collected, stored in appropriate containers and disposed of offsite in an appropriate manner.

- All plant shall be well maintained with any fuel or oil drips attended to on an ongoing basis.
- Any minor spillage during this process will be cleaned up immediately.
- Should any incident occur, the situation will be dealt with and coordinated by the nearest supervisor who will be responsible for instructions by the Local Authority.

Concrete

- Wet concrete and cement are very alkaline and corrosive and can cause serious pollution to watercourses. Disposal of raw or uncured waste concrete will be controlled during delivery or by removal by the contractor to ensure that the River Liffey will not be impacted.
- Careful management of bulk-liquid concrete will be implemented during the construction phase, including careful and controlled pouring and handling, secure shuttering / form-work and adequate curing times.
- Wash water from cleaning ready mix concrete lorries and mixers may be contaminated with cement and is therefore highly alkaline, therefore, washing will not be permitted on site.

Mitigation measures out in the CEMP in accordance with C*IRIA Good Practice Guidelines (C532 – Control of Water Pollution from Construction Sites)*[7] will be implemented during the construction phase of the proposed development.

3.6.1. Operational Phase

The proposed development will be fully serviced with [separate] foul and storm sewers which will have adequate capacity for the facility likely discharge, as required by Irish Water licencing.

The design of the proposed development will incorporate Sustainable urban Drainage Systems (SuDS) features in order to improve water quality and reduce the quantity of surface water discharging into the receiving system. The water supply network will include low flow devices with the aim of minimising water usage.

[7] CIRIA (2001) C532 Control of water pollution from construction sites: guidance for consultants and contractors

It is noted that the design of the proposed development will also include a proposed oil/ petrol interceptor on the stormwater drainage infrastructure.

The design of the proposed development will also incorporate a foul drainage system which, as per other urban developments in Dublin region, will outfall to the public sewer and will be treated at the Irish Water Ringsend WWTP prior to subsequent discharge following treatment to Dublin Bay. This WWTP is required to operate under an EPA licence and must meet environmental legislative requirements as set out in such licence.

3.7. Effects on the Qualifying Interests of European Sites, with Mitigation

Construction Phase Impacts, with Mitigation Measures

Having regard to the mitigation measures outlined in Section 3.6, no significant impacts on European sites or species are predicted to occur during the construction phase of the proposed development.

Operational Phase Impacts, with Mitigation Measures

Having regard to the mitigation measures outlined in Section 3.6, and the appropriate treatment of wastewater, no significant impacts on European sites or species are predicted to occur during the operational phase of the proposed development.

3.8. Assessment of In-Combination Effects

The Commission services' interpretation document 'Managing Natura 2000 sites', makes clear that the phrase 'in combination with other plans or projects' in Article 3(3) refers to cumulative effects caused by the projects or plans that are currently under consideration together with the effects of any existing or proposed projects or plans. When impacts are assessed in combination in this way, it can be established whether or not there may be, overall, an impact which may have significant effects on a Natura 2000 site or which may adversely affect the integrity of a site.

As part of the Appropriate Assessment, in addition to the proposed works, other relevant projects and plans in the region must also be considered. This step aims to identify at this early stage any possible significant in-combination or cumulative effects / impacts of the proposed development with other such plans and projects on European sites.

3.8.1. Consideration of Plans

The following Plans were considered in terms of potential in-combination effects.

Dublin City Development Plan 2022 – 2028 Policies

The local authority for the proposed development at Parkgate Street is Dublin City Council (DCC). Plans and developments within Dublin City County must comply with the policies and objectives of the Dublin City Development Plan 2022 – 2028 (DCC, 2022), which in turn references the National Biodiversity Plan 2017-2021. (DAHG, 2017), and the Dublin City Biodiversity Action Plan 2021-2025 (DCC, 2021).

The following policies from the Dublin City Development Plan 2022 – 2028 (DCC, 2022) are relevant to the proposed development as several designated sites are within the downstream receiving environment, and due to the potential for the site to host protected species, and/or invasive species.

GI9 European Union Natura 2000 Sites

To conserve, manage, protect and restore the favourable conservation condition of all qualifying interest/special conservation interests of all European sites designated, or proposed to be designated, under the EU Birds and Habitats Directives, as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (European / Natura 2000 sites).

GI10 Flora and Fauna Protected under National and European Legislation Located Outside Designated Areas

To adequately protect flora and fauna (under the EU Habitats and Birds Directives), the Wildlife Acts 1976 (as amended), the Fisheries Acts 1959 (as amended) and the Flora (Protection) Order 2022 S.I No. 235 of 2022, wherever they occur within Dublin City, or have been identified as supporting the favourable conservation condition of any European sites.

GI11 Proposed Natural Heritage Areas

To protect and enhance the ecological functions and connectivity of habitats and species of proposed Natural Heritage Areas (pNHAs) to be designated by the National Parks and Wildlife Service (NPWS).

GI13 Areas of Ecological Importance for Protected Species

To ensure the protection, conservation and enhancement of all areas of ecological importance for protected species, and especially those listed in the EU Birds and Habitats Directives, including those identified as supporting the favourable conservation condition of any European sites, in accordance with development standards set out in this plan.

It is an Objective of Dublin City Council:

GIO7 National Biodiversity Action Plan 2017-2021

To support the management targets for nature conservation sites set out in the National Biodiversity Action Plan 2017 (and as updated) and the objectives for local authorities to address threats to biodiversity.

GIO8 Dublin City Biodiversity Action Plan 2021 - 2025

To support the implementation of the 'Dublin City Biodiversity Action Plan 2021–2025' (or as updated), which sets out key themes and objectives for biodiversity conservation and restoration and measurable targets and actions, in partnership with all relevant stakeholders.

3.8.2. Consideration of Projects

For the purposes of this report, all planning applications recorded on the National Planning Applications Database (DoHPLG) and which were either Granted or Not Yet Decided within a 1km radius of the planning boundary were identified.

Planning applications within 1km of the planning boundary were identified as they were determined to constitute new development of a commercial, industrial, agricultural or residential nature which may have the potential to exacerbate environmental effects and thus be of significance to the cumulative assessment. Please note that the following types of applications have been excluded from the final listing in Table 4 below:

- Minor change of use applications;
- Residential applications of less than 10 no. units;
- Minor amendments to permitted applications;
- Retention applications;
- Minor signage applications;
- ESB infrastructure (i.e. substations, switch rooms and towers); and
- Minor utilities works including lighting and junction upgrades.

Of the applications to Dublin City Council those referring to building extensions and/or changes of use have been eliminated and the focus moved to those applications for residential development that could have in combination effects, see Table 4.

Table 2 Consideration of in-combination impacts.

Pl. Ref.	Project Description	Comments
2744/14	The development will consist of the demolition of existing house and commercial sheds and construction of a mixed-use building ranging from 4 to 5 stories with: 12x2 bedroom apartments with 16 private balconies and 1 shared roof garden; 1 cafe / commercial / retail unit at ground floor level; ground level car park with 7 parking spaces accessed from Pim St.; Ancillary site-works including bicycle parking, bin storage, pedestrian entrances on Newport St. and service connections at 17, 18, & 19, Newport Street, at Corner Of Newport Street and Pim Street, Dublin 8.	The application was accompanied by a Report for AA Screening which determined that there would be no significant impact on the European sites considered. This conclusion was accepted by the Competent Authority in carrying out its own AA Screening and permission was subsequently granted by the Competent Authority.
4179/15	The proposed development comprises a part 2, part 4 and part 6-storey building over lower ground floor level to provide 14 no. residential dwellings (comprising 12 x 3 bedroom, double stacked duplex residential units and 2 x 3 bedroom houses (with integrated car parking provision)) and c. 1,971 sq.m (GFA) of office accommodation. An ancillary roof terrace is proposed at first floor level to the rear (east) of the proposed office block and is enclosed by high level obscured glass balustrading. Ancillary roof terraces/balconies with glass balustrading are proposed at third floor level to the western elevation of the building serving the 6 no. duplex residential units at second and third floor level. Car parking in connection with the duplex units and the office accommodation are provided at lower ground level (22 No. car parking spaces) together with associated and ancillary bicycle and refuse storage areas. Vehicular access to the lower ground level is proposed at the northern end of the site off Brookfield Road. Communal landscaped open space and private gardens are provided to the rear of the proposed building at podium and ground floor levels at The Printworks, Brookfield Road, Kilmainham, Dublin 8.	ABP noted that *a screening report was not included and an assessment does not appear to have been conducted by the planning authority*. *There are seventeen European sites within fifteen kilometres of the site and the four in closest proximity are The South Dublin Bay SAC (0002100, South Dublin Bay and River Tolka Estuary SPA (004024), The North Dublin Bay SAC (00206) and the North Bull Island SPA (04006) The sites are designated for tor the tidal and estuarine habitats and wintering and water bird species which include roosting birds.* *Having regard to the location in the inner city and to the nature and scale of the development which comprises redevelopment of a brownfield site which was formerly in industrial use, to the proposed development of an office block and residential units incorporating satisfactory SUDS drainage measures, and to the nature of the receiving environment no appropriate assessment issues arise* [sic ABP].

		This conclusion was accepted by the Competent Authority in carrying out its own AA Screening and permission was subsequently granted by the Competent Authority.
3163/16	The development will consist of the removal of all existing buildings on the site, and the construction of a commercial unit and 33 apartments in 2 buildings; Block A facing onto North Brunswick Street is a 6-storey building including a recessed penthouse floor, and comprises 17 apartments; and Bock B facing onto North King Street is a 5-storey building, including a recessed penthouse floor, and comprises 16 apartments and 1 commercial unit. The overall development comprises 4 no. 3-bedroomed units, 18 no. 2-bedroomed units, 11 one-bedroomed units, all with balconies, one ground-floor commercial unit, bin store, internal landscaped courtyard, photovoltaic solar panels on support grids on roofs, and all associated site works at 84 North King Street and between George's Court and Red Mill Apartments on North Brunswick Street, Dublin 7. The site adjoins 85 North King Street (a Protected Structure).	ABP determination: *The subject site is located in an established city area on a brownfield site and is not located adjacent to nor in close proximity to any European sites, as defined in Section 177R of the Habitats Directive. Having regard to the nature and scale of the proposed development and/or the nature of the receiving environment and/or proximity to the nearest European site, no appropriate assessment issues arise and it is not considered that the proposed development would be likely to have a significant effect individually or in combination with other plans or projects on a European site*. Permission was subsequently granted by the Competent Authority.
3503/16	The proposed development consists of demolition of existing structures comprising disused buildings and sheds, construction of 10 x 2 bedroom apartments with balconies in two 6 storey blocks with associated facilities at ground floor including: 10 storage rooms with cycle parking, communal facilities, caretaker's room bin storage, plant & service rooms, service connections and a raised courtyard garden at 1st floor level, services enclosures on roofs, landscaping, railings and all associated site works at 10, Usher's Island, And 32 Island Street, Dublin 8.	The application was accompanied by a Report for AA Screening which determined that there would be no significant impact on the European sites considered. This conclusion was accepted by the Competent Authority in carrying out its own AA Screening and permission was subsequently granted by the Competent Authority.
4261/16	The development will consist of the demolition of all existing structures including no. 20 Stoneybatter and the construction of a part 1, 3, 4 and 5 storey student accommodation development of 2,980.8 sqm. Also proposed are all ancillary site and services	Information submitted with the application determined that the proposed development will not impact upon any designated Natura 2000 sites and therefore further AA consideration is not necessary.

	accommodation works at the rear of nos. 20 to 23a, Stoneybatter and nos. 1 and 2 Manor street, Stoneybatter, Dublin 7.	This conclusion was accepted by the Competent Authority in carrying out its own AA Screening and permission was subsequently granted by the Competent Authority.
3885/17	The development will consist of the refurbishment and deep retrofit of the existing 4-storey Block A and 2-storey Block B; the total area of the completed development is c. 2,023 sq.m over 4 storeys and 2 storeys respectively, providing a total of 22 units…and all associated ancillary site development works at Ellis Court, Benburb Street, Dublin 7 .	There is no record of Appropriate Assessment with the case file.
3014/18	Development comprising: (i) Demolition of the existing two-storey, flat roof, commercial building; (ii) Construction of a new seven-storey (22 metres in height) apartment building comprising 41 apartments (19 no. one-bedroom and 22 no. two-bedroom apartments) fronting Blackhall Street and Oxmantown Lane.	There is no record of Appropriate Assessment with the case file.
3328/18	The proposed development will involve the demolition of all existing structures onsite (c. 1,028 sqm) to provide for a new 6-8 storey residential over ground floor commercial development (c.3,166.7 sqm GFA),in one block accommodating 28 no. apartments..boundary treatments; PV panels; SuDS measures including blue roof surface water attenuation; and all other associated site excavation and site development works above and below ground. Access to the residential units will be provided via a private entrance lobby off Usher Street, with access to the commercial unit provided off Usher's Quay. Site at Nos. 1, 1A and 2 Usher Street and Nos. 29/30, Usher's Quay, Dublin 8.	There is no record of Appropriate Assessment with the case file.
2290/19	Permission for a residential development on this overall site of c. 0.07 ha. The proposed development shall comprise the demolition of the on site vacant 2-storey dwelling unit and vacant 1-storey shed, and provide for the construction of 29 no. residential units in the form of 1 no. 2 to 6 storey apartment building…landscaped	The application was screened for Appropriate Assessment and it was considered that significant effects are not likely to arise, either alone or in combination with other plans and projects that will result in significant effects to any Natura 2000 area. A full Appropriate Assessment of this project is therefore not required.

	communal open space area at ground level; all boundary treatment and landscaping works and all associated site development works at 6, 6A and 7, Pim Street, Dublin 8.	This conclusion was accepted by the Competent Authority in carrying out its own AA Screening and permission was subsequently granted by the Competent Authority.

3.8.3. Conclusion of In-combination Effects

On the basis of the implementation of Mitigation Measures to be included and enforced through a Construction Environmental Management Plan, the proposed development will have no predicted impacts on local ecology and biodiversity or on European sites, so that in-combination impacts can be ruled out.

The Dublin City Development Plan, in complying with the requirements of the Habitats Directive requires that all Projects and Plans that could affect the Natura 2000 sites in the same zone of impact of the Proposed Development site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. Similar policies are followed under other plans for the area of county Dublin. In this way any, in-combination impacts of Plans or Projects for the development area and surrounding townlands in which the development site is located, would be avoided.

Any new applications for the Proposed Development area will be initially assessed on a case by case basis initially by Dublin City Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

4. Natura Impact Statement & Conclusion

This NIS has reviewed the predicted impacts arising from the Project and found that with the implementation of appropriate mitigation measures specifically with regard to surface water, significant effects on the integrity of the European sites considered in Dublin Bay can be ruled out.

It is the conclusion of this NIS, on the basis of the best scientific knowledge available, and with the implementation of the mitigation and restriction measures set out under Section 3.6., that the possibility of any adverse effects on the integrity of the European Sites considered in this NIS (having regard to their conservation objectives), or on the integrity of any other European Sites (having regard to their conservation objectives,) arising from the proposed development, either alone or in combination with other plans or projects, can be excluded beyond reasonable scientific doubt.

A final determination will be made by the competent authority in this regard.

5. References

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