Appropriate Assessment Screening Report on behalf of Shipseybarry

Proposed Student Accommodation at the Rialto, South Circular Road, Dublin 6.

July 2019

Prepared by

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Project	**Appropriate Assessment Screening Report for the proposed development of student accommodation at the Rialto, South Circular Road, Dublin 6.**		
Client	**Shipseybarry**		
Project ref	**Report no**	**Client ref**	
1911	1911	**-**	

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Date	**Rev**	**Status**	**Prepared by**	
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1. Introduction

An Appropriate Assessment (AA) Screening was undertaken by DixonBrosnan Environmental Consultants to determine the potential impacts, if any, of the proposed development on nearby sites with European conservation designations (i.e. Natura 2000 sites).

1.1 Purpose of this Report

The purpose of this Appropriate Assessment Screening Report is to determine, the appropriateness, or otherwise, of the proposed development with respect to any direct or indirect impacts on nearby Natura 2000 sites in the context of their conservation status. This report identifies whether the proposed development is likely to have a significant effect on Natura 2000 site(s).

2. Background and legislative context

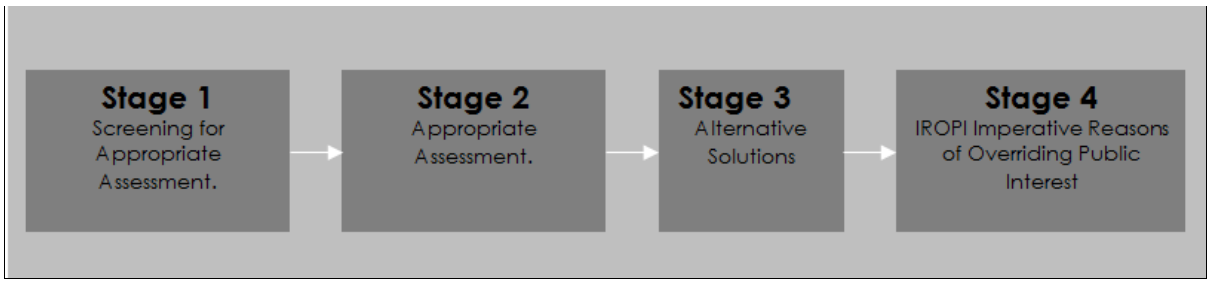
Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter 'the Habitats Directive') requires that, any plan or project not directly connected with or necessary to the management of a designated site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. For the purposes of the application for permission in respect of the proposed project, the requirements of Article 6(3) have been transposed into Irish law by Part XAB of the Planning and Development Act 2000, as amended.

The possibility of there being a significant effect on a designated or "European" site will generate the need for an appropriate assessment to be carried out by the competent authority for the purposes of Article 6(3). As set out in Section 177U of the Planning and Development Act 2000 as amended, a screening for appropriate assessment of an application for consent for the proposed development must be carried out by the competent authority to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on any European site. A Stage Two Appropriate Assessment is required if it cannot 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. The first (Screening) Stage for appropriate assessment operates merely to determine whether a (Stage Two) Appropriate Assessment must be undertaken on the implications of the plan or project for the conservation objectives of relevant European sites.

2.2 Appropriate Assessment Procedure

The assessment requirements of Article 6(3) establish a stage-by-stage approach. This assessment follows the stages outlined in the 2001 European Commission publications "Assessment of plans and projects significantly affecting Natura 2000 sites: methodological guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC" (2001) and Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive

92/43/EEC (Draft) Office for Official Publications of the European Communities, Luxembourg (EC, 2015);



The stages are as follows:

Stage One: Screening — the process which identifies any appreciable impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;

Stage Two: Appropriate assessment — the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage Three: Assessment of alternative solutions: The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site. It is confirmed that no reliance is placed by the developer on Stage Three in the context of this application for development consent;

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of imperative reasons of overriding public interest). Again, for the avoidance of doubt, it is confirmed that no reliance is placed by the developer on Stage Four in the context of this application for development consent

Documentation/guidelines of relevance to this screening report include the following:

- European Commission, 2001. Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);
- European Commission, 2000a. Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg (EC, 2000a);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (Draft) Office for Official Publications of the European Communities, Luxembourg (EC, 2015);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2000)

- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; (EC, 2007);
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010a);
- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities (DEHLG, 2010b);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);
- CJEU Case C 164/17 Edel Grace Peter Sweetman v An Bord Pleanála

2.3 Screening of Proposed Development

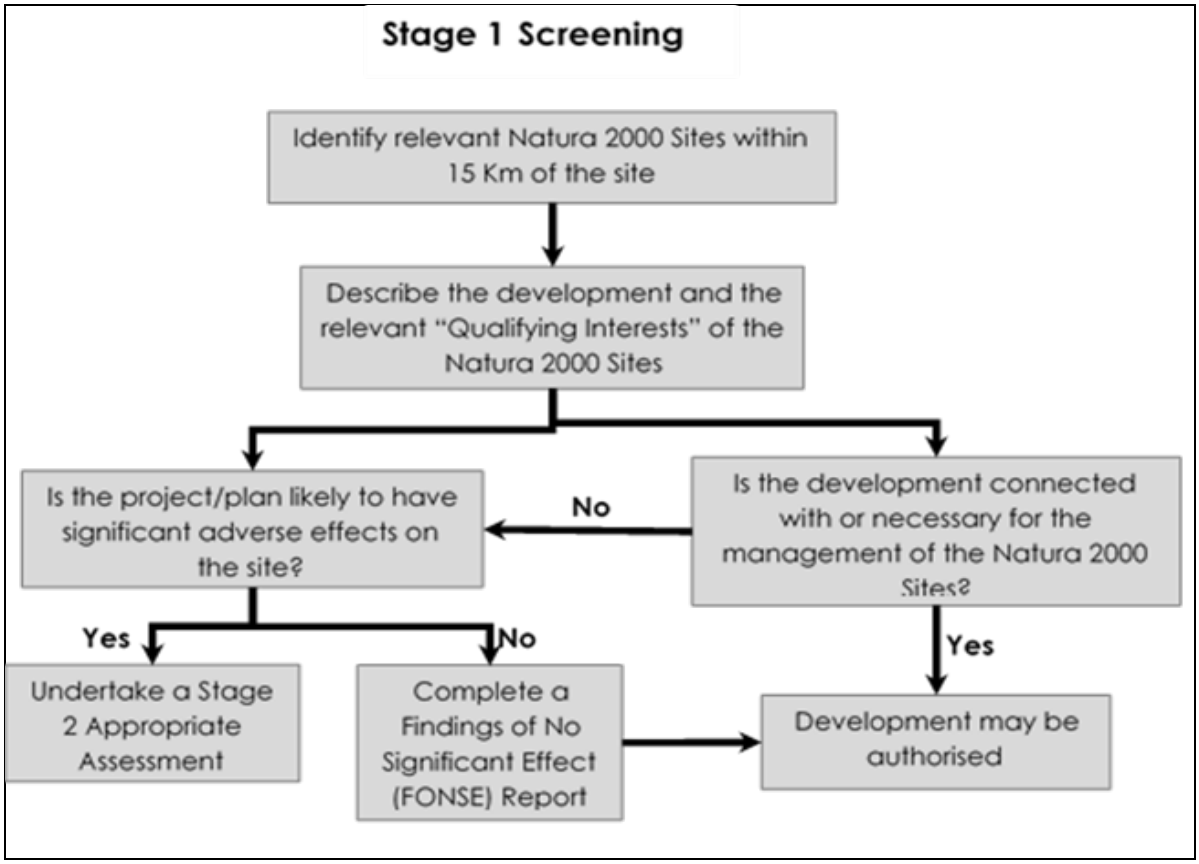
In accordance with the Department of Environment Heritage and Local Government (DoEHLG) Guidelines screening is the process that addresses two tests of Article 6(3) of the Habitats Directive:

I. *whether a plan or project is directly connected to or necessary for the management of the site, and*
II. *whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives*.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2. The screening assessment for the operations follows the following steps in accordance with the DoEHLG guidelines.

2.4 Stages of Appropriate Assessment

A flow diagram illustrating Stage 1 of the Appropriate Assessment is outlined below:



3. Methodology

3.1 Study Area and Scope of Appraisal

Natura 2000 sites (European sites) are only at risk from significant effects where a source-pathway-receptor link exists between a proposed development and a Natura 2000 site(s). This can take the form of a direct impact (e.g. where the proposed development and/or associated construction works are located within the boundary of the Natura 2000 site(s) or an indirect impact where impacts outside of the Natura 2000 site(s) affect ecological receptors within (e.g. impacts to water quality which can affect riparian habitats at a distance from the impact source).

Considering the Natura 2000 sites present in the region, their Qualifying Interests (QIs) and conservation objectives, and any potential impact pathways that could link those sites to the proposed development area, a distance of 15km was considered appropriate to encompass all Natura 2000 sites potentially within the Zone of Influence (ZoI) of the proposed development.

Thus, any appreciable direct, indirect or cumulative impacts which could arise from the proposed development in relation to the designated sites within this zone were considered.

3.2 Desktop Study

A desktop review facilitates the identification of the baseline ecological conditions and key ecological issues relating to Natura 2000 sites and facilitates an evaluation assessment of potential in-combination impacts. Sources of information used for this screening report include

reports prepared for the Dolphins Barn area, information from statutory and non-statutory bodies. The sources of information and relevant documentation utilised are as follows:

- National Parks & Wildlife Service (NPWS) - www.npws.ie including qualifying interests and conservation objectives for Natura 2000 sites.
- Environmental Protection Agency (EPA) – www.epa.ie
- BirdWatch Ireland - http://www.birdwatchireland.ie/
- National Biodiversity Data Centre – www.biodiversityireland.ie
- Information on the status of EU protected habitats in Ireland (National Parks & Wildlife Service, 2013a & 2013b)

3.3 Author of Report for Screening and Appropriate Assessment

This ecological screening report provides the relevant ecological information on the proposed project to assist the relevant Planning Authority to screen the project, to determine if an Appropriate Assessment is required and ultimately to make a determination in relation to the likely impact on Natura 2000 sites. This report was prepared by Carl Dixon MSc. (Ecological Monitoring) and Ian McDermott MSc. (Ecological Monitoring). Both have worked on Screening/NIS's for a range of small and large-scale projects, including assessments of aquatic impacts.

4. Screening of proposed development

4.1 Proposed development

The Development is for a new student accommodation scheme at 353 South Circular road Dublin 8 at the current derelict Rialto Motors building (formerly the Rialto Cinema). The site Extends to approximately 0.3 ha (0.75 acres) and zoned Z4 under the Dublin City Council Development Plan. The proposal consists of 317 student Beds contained in 314 bedrooms with communal facilities on the Ground floor and Basement. The Scheme is a mix of a retained Art Deco Element to the Front (South Circular road) and a new build over 7 storeys to the rear in a cruciform shape. The development requires the demolition of the rear former auditorium element of the old cinema composition with the 'head' Deco element fully restored. This provides for 4 distinct courtyard areas for recreational uses. The development has no parking with approximately 160 bikes spaces provided for on site. Sustainable design is incorporated in building systems and envelope to NZEB standards with extensive green roof areas and arrays of PV panels. it is anticipated the project will have an 18 month build phase for occupation September 2021. The proposed development is outlined in **Appendix 2.**

It is noted that environmental control measures will implemented during construction in line with standard guidelines (i.e. Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (Department of Environment, Heritage and Local Government, July 2006), CIRIA document – 133 Waste Minimisation in Construction, CIRIA document – Guidelines Control of Water Pollution from Construction Sites – Guide to Good Practice)). Whilst the implementation of such measures during construction will assist in minimising impacts on the local environment, the implementation of these measures has not been taken into consideration in this screening report when reaching a conclusion as to the likely impact of the development on Natura 2000 sites.

4.2 Surface Water Discharge

At present the existing building and hardstanding surround drains by gravity to a combined public sewer in the South Circular Road. However, once constructed storm water from the upper roof areas will drain, via RW outlets, gullies, downpipes and suspended SW drainage pipework, to a gravity network of below ground surface water sewers on the perimeter of the site at Upper Ground floor level. These sewers will drain by gravity to an onsite attenuation facility proposed on the north western side of the site. Attenuation capacity is designed for a 1 in 100year storm event + 20% allowance for climate change. Attenuation will be provided by a 75m³ below ground storage tank. Attenuated outfall from this system will fall by gravity to the public combined sewer in the South Circular Road. Surface water outfall from the attenuation tank is to be restricted by a hydrobrake. The small site area (0.297 Ha.) gives a theoretical greenfield run-off rate less than 2 l/s and as such a 2 l/s value was used to calculate the required attenuation storage volume. The peak stormwater discharge is therefore to be restricted to 2 l/s (or as per lowest commercially available restriction hydrobrake requirement).

4.3 Sustainable Drainage System (SuDS)

The Greater Dublin Strategic Drainage Study (GDSDS) Vol. 2 Section E2.1 requires provision of interception and/or treatment volume for River Water Quality Protection. It is intended to provide interception for first 5-10mm of rainfall within the site by incorporation of Green Roof to approx. 70% of total roof area.

The following ‘soft’ SuDS measures are proposed within the site;

- Green Roofs system to upper roofs

t is intended to provide an overall area of Green Roof of just under 70% of new roof areas (1,264m2). The system proposed for majority of green roof area will incorporate a Sedum type Blanket over a Bauder DSE40 water retention/drainage and protection layer green roof system (or similar approved). This is an Extensive type of green roof which provides a water storage capacity of 13.5 Litres/m2 and will provide interception storage for the first 5-10mm of rainfall. As well as improving water quality by providing surface water interception and infiltration, green roofs improve biodiversity by providing habitat for wildlife.

- Permeable paving to courtyards 2,3 & 4

It is intended to provide permeable paving (pervious paving and porous asphalt) within the courtyard areas (circa 650m2) to provide Interception in the courtyard paving and landscaping area by means of provide inherent storage capacity within the voided sub-base of the Courtyard area at Level 0. This will act to trap suspended solid and filter pollutants from stormwater

- Water Butts and Rainwater Harvesting

A small local water butt at Ground level and larger Rainwater Harvesting storage tank at basement level are to be provided within the site to provide non-potable water storage for serving landscaping and general irrigation and maintenance needs. Rainwater harvesting will

reduce the quantity of rainwater entering the surface water system and reduce the water demand on mains water supply.

- Attenuation

Attenuation is to be provided by means of a below ground Storage Tank to restrict outflow from the development to 2 l/sec/Hectare, in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS). Attenuation is to be designed for a 1 in 100 year storm event + 20% for climate change. The attenuation volume required is 75m3.

4.4 Foul Water Discharge

There is an existing foul sewer network on site serving the cinema and latterly the Motor company. This will be mostly removed as part of the demolition works and replaced by a new Foul Drainage system which will largely discharge from the accommodation units at each level, via vertical shafts, to a foul water collection system at Upper Ground Floor level (Level 1). As the Lower Ground Floor level (Level 0) is below the invert of the combined sewer in the South Circular Road, a Foul Water pumping station is required at this level, for any outfall foul drainage from the leisure facilities at this level, with duty and stand-by pumps and with volume of chamber sized for 24-hour storage of surface water. Foul outfall will be pumped to a transition manhole on site at Upper Ground floor level and then fall by gravity to the combined sewer in South Circular Road.

5. Designated sites

Natura 2000 sites within a 15km radius of the proposed development site are listed below in **Table 1** and shown in **Figure 1** & **2**. It is noted that use of a 15km radius is a precautionary measure, as impacts at this distance from the proposed development are highly unlikely in the absence of recognisable pathways.

The proposed development is not located within any Natura 2000 site; however, a source-pathway-receptor link has been identified between the source (the proposed student accommodation) and the receptor (South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA) via a potential pathway (Discharge of surface water run-off and wastewater). Wastewater discharging from the proposed development will be conveyed to the Ringsend WWTP for treatment prior to discharging into the Dublin Bay/ Liffey Estuary Lower, which the four aforementioned Natura 2000 sites lay within. Qualifying species and habitats could potentially be impacted via a reduction in water quality.

Surface waters generated during construction could potentially carry silt, oils or other contaminants into either the local combined sewer network which discharges to Dublin Bay via Ringsend WWTP or the local surface water sewer network which ultimately discharges to Dublin Bay. There is a potential risk that surface waters may be contaminated as a consequence of groundwater dewatering at the proposed site during construction, as some localised contaminated land may be encountered

Overall, the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA are of conservation significance for the occurrence of good examples of habitats that are listed on Annex I of the E.U. Habitats

Directive and being recognised under the E.U. Birds Directive as being of international importance by regularly supporting in excess of 20,000 wintering waterfowl including Annex I listed species under the E.U. Birds Directive. Further information on these sites are provided below. A full site synopsis for the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA is included **Appendix 1**.

Given the limited scale of the proposed development, the lack of a hydrological connection, the dilution provided in the estuarine/marine environment and the distances involved, no potential impact on other designated sites has been identified.

It is noted that the proposed development site does not support any of the habitats or species listed as conservation interests for the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA. A detailed ecological impact assessment of the site was carried out. The ecological appraisal of the site indicates that it supports common habitats which are not of high value in the context of the Natura 2000 designation.

Table 1. Designated sites and their location relative to the proposed work site.

Site	Code	Distance at closest point (As the Crow Fly's)
Special Area of Conservation (SAC)		
South Dublin Bay	000210	5.3km E of the proposed works area. Although improbable, a potential impact on this SAC has been identified from discharges in wastewater during operation via the Ringsend WWTP to the waters of Dublin Bay/ Liffey Estuary Lower.
North Dublin Bay	000206	7.9km ENE of the proposed works area. Although improbable, a potential impact on this SAC has been identified from discharges in wastewater during operation via the Ringsend WWTP to the waters of Dublin Bay/ Liffey Estuary Lower.
Glenasmole Valley	001209	9.7km SSW – No Connection/ Possibility of Significant Effects
Wicklow Mountains	002122	10.5km S – No Connection/ Possibility of Significant Effects
Rye Water Valley/Carton	001398	13.4km WNW – No Connection/ Possibility of Significant Effects
Baldoyle Bay	000199	12.9km NE – No Connection/ Possibility of Significant Effects
Rockabill to Dalkey Island	003000	13.5km E – No Connection/ Possibility of Significant Effects
Howth Head	000202	13.6km ENE – No Connection/ Possibility of Significant Effects
Knocksink Wood	000725	14.5km SE – No Connection/ Possibility of Significant Effects
Special Protection Area (SPA)		
Wicklow Mountains	004040	10.6km S – No Connection/ Possibility of Significant Effects
South Dublin Bay & River Tolka Estuary	004024	5.0km E of the proposed works area. Although improbable, a potential impact on this SPA has been identified from discharges in wastewater during operation via the Ringsend WWTP to the waters of Dublin Bay/ Liffey Estuary Lower.
North Bull Island	004006	7.9km ENE of the proposed works area. Although improbable, a potential impact on this SPA has been identified from discharges in wastewater during operation

		via the Ringsend WWTP to the waters of Dublin Bay/ Liffey Estuary Lower.
Baldoyle Bay	004016	13.1km NE – No Connection/ Possibility of Significant Effects
Dalkey Islands	004172	14.5km SE – No Connection/ Possibility of Significant Effects

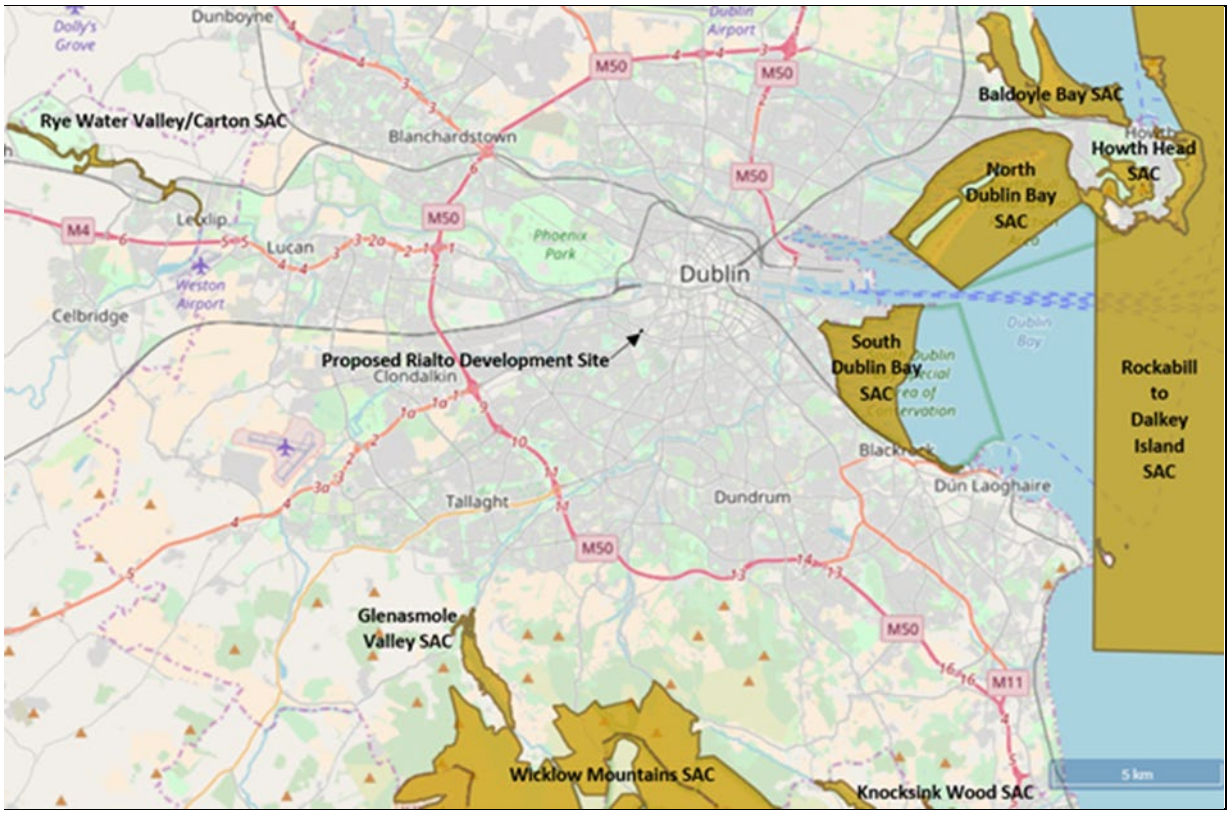


Figure 1: Special Areas of Conservation (SAC) within 15km of the proposed Rialto development site.

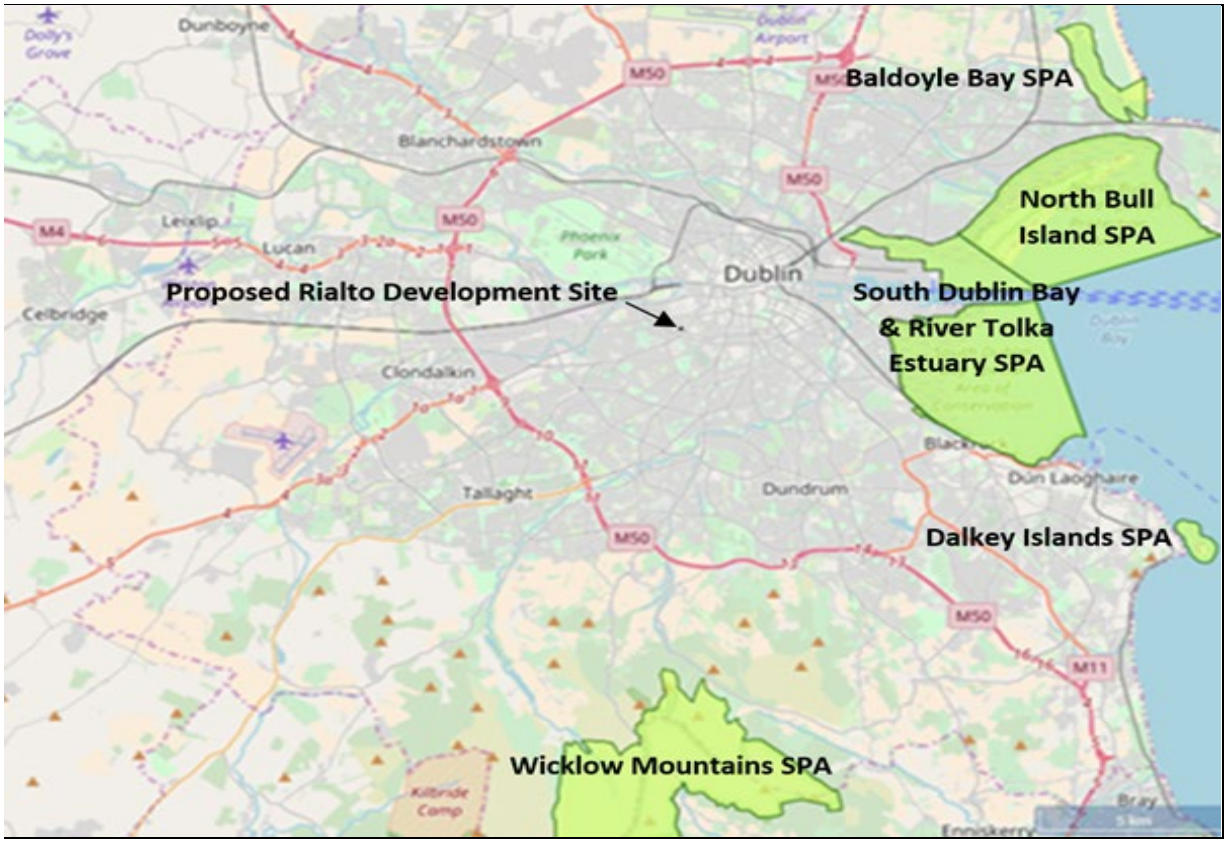


Figure 2: Special Protection Area (SPA) within 15km of the proposed Rialto development site.

5.1 North Dublin Bay SAC

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 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the island is predominantly glacial in origin and siliceous in nature. Between the island and the mainland there occurs two sheltered intertidal areas which are separated by a solid causeway constructed in 1964. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site. The interior of the island is excluded from the site as it has been converted to golf courses. The proximity of the North Bull Island to Dublin City results in it being a very popular recreational area. It is also very important for educational and research purposes. Nature conservation is a main land use within the site.

Site possesses an excellent diversity of coastal habitats. The North Bull Island dune system is one of the most important systems on the east coast and is one of the few in Ireland that is actively accreting. It possesses extensive and mostly good quality examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Both Atlantic and Mediterranean salt marshes are well represented and a particularly good marsh zonation is shown. The salt marshes grade into mudflats and sandflats, some of which are dominated by annual Salicornia species. *Petalophyllum ralfsii* occurs at its only known station away from the western seaboard. The site has five Red Data Book vascular plant species and four Red Data Book bryophyte species. This is one of the most important sites for wintering waterfowl in Ireland, with internationally important populations of *Branta bernicla horta*,

Calidris canutus and *Limosa lapponica*, plus nationally important numbers of a further 14 species. 20% of the national total of *Pluvialis squatarola* occurs here. Formerly it had important colony of *Sterna albifrons*. North Dublin Bay is nationally important for three insect species. The scientific interests of the site have been well documented and future prospects are good owing to the various designations assigned to site.

5.2 South Dublin Bay SAC

This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5 km. At their widest, the intertidal flats extend for almost 3 km. The seaward boundary is marked by the low tide mark, while the landward boundary is now almost entirely artificially embanked. 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. A number of small streams and drains flow into the site. The proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes.

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

5.3 North Bull Island SPA

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 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the island is predominantly glacial in origin and siliceous in nature. A well-developed dune system runs the length of the island, with good examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Extensive salt marshes also occur. Between the island and the mainland occur two sheltered intertidal areas which are separated by a solid causeway constructed in 1964. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site. Part of the interior of the island has been converted to golf courses. The proximity of the North Bull Island to Dublin City results in it being a very popular recreational area. It is also very important for educational and research purposes. Nature conservation is a main land use within the site.

The site is among the top ten sites for wintering waterfowl in the country. It supports internationally important populations of *Branta bernicila hrota* and *Limosa lapponica* and is the top site in the country for both of these species. A further 14 species have populations of national importance, with particular notable numbers of *Tadorna tadorna* (8.5% of national total), *Anas acuta* (11.6% of national total), *Pluvialis squatarola* (6.9% of national total), *Calidris canutus* (10.5% of national total). North Bull Island SPA is a regular site for passage waders such as *Philomachus pugnax, Calidris ferrugine*a and *Tringa erythropus*. The site supports *Asio flammeus* in winter. Formerly the site had an important colony of *Sterna*

albifrons but breeding has not occurred in recent years. The site provides both feeding and roosting areas for the waterfowl species. Habitat quality for most of the estuarine habitats is very good. The site has a population of the rare *Petalophyllum ralfsii* which is the only known station away from the western seaboard as well as five Red Data Book vascular plant species and four bryophyte species. It is nationally important for three insect species. Wintering bird populations have been monitored more or less continuously since the late 1960s, and the other scientific interests of the site have also been well documented. Future prospects are good owing to various designations assigned to site.

5.4 South Dublin Bay and River Tolka Estuary SPA

This site comprises a substantial part of Dublin Bay. It includes virtually all of the intertidal area in the south bay, as well as much of the Tolka Estuary to the north of the River Liffey. A portion of the shallow bay waters 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. The sands support the largest stand of *Zostera noltii* on the East Coast. 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. 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 proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes.

The site possesses extensive intertidal flats which support wintering waterfowl which are part of the overall Dublin Bay population. It regularly has an internationally important population of *Branta bernicla hrota*, which feeds on *Zostera noltii* in the autumn. It has nationally important numbers of a further 6 species: *Haematopus ostralegus, Charadrius hiaticula, Calidris canutus, Calidris alba, Calidris alpina* and *Limosa lapponica*. It is an important site for wintering gulls, especially *Larus ridibundus* and *Larus canus*. South Dublin Bay is the premier site in Ireland for *Larus melanocephalus*, with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including *Sterna dougallii, S. hirundo* and S*. paradisaea*.

5.5 Natura 2000 sites – Features of interests and conservation objectives.

The EU Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the EU Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as ‘qualifying interests’ and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A ‘qualifying interest’ is one of the factors (such as the species or habitat that is present) for which the site merits designation. The National Parks and Wildlife Service (NPWS) are responsible for the designation of SACs and SPAs in Ireland.

The conservation objectives for the site are detailed in:

I. NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
II. NPWS (2013) Conservation Objectives: South Dublin Bay SAC 000210. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

III. NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
IV. NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status sites designated as Special Areas of Conservation and Special Protection Areas. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. Favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis. The species and/or habitats listed as features of interests for the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA are included in **Tables 2** to **5**.

Table 2. Features of Interest for North Dublin Bay SAC.

Habitat/species Code	Habitat /Species	Conservation objective
1140	Mudflats and sandflats not covered by seawater at low tide	Maintain
1210	Annual vegetation of drift lines	Restore
1310	Salicornia and other annuals colonising mud and sand	Restore
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Maintain
1410	Mediterranean salt meadows (*Juncetalia maritimi*)	Maintain
2110	Embryonic shifting dunes	Restore
2120	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)	Restore
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Restore
2190	Humid dune slacks	Restore
1395	Petalwort *Petalophyllum ralfsii*	Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 3. Features of Interest for South Dublin Bay SAC.

Habitat Code	Habitat	Conservation objective
1140	Mudflats and sandflats not covered by seawater at low tide	Maintain
1210	Annual vegetation of drift lines	Maintain/Restore
1310	Salicornia and other annuals colonising mud and sand	Maintain/Restore
2110	Embryonic shifting dunes	Maintain/Restore

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 4: Features of Interest for North Bull Island SPA

Species code	Species	Scientific name	Conservation objective
A046	Brent Goose	*Branta bernicla hrota*	Maintain
A048	Shelduck	*Tadorna tadorna*	Maintain
A052	Teal	*Anas crecca*	Maintain
A054	Pintail	*Anas acuta*	Maintain
A056	Shoveler	*Anas clypeata*	Maintain
A130	Oystercatcher	*Haematopus ostralegus*	Maintain
A140	Golden Plover	*Pluvialis apricaria*	Maintain
A141	Grey Plover	*Pluvialis squatarola*	Maintain
A143	Knot	*Calidris canutus*	Maintain
A144	Sanderling	*Calidris alba*	Maintain
A149	Dunlin	*Calidris alpina alpina*	Maintain
A156	Black-tailed Godwit	*Limosa limosa*	Maintain
A157	Bar-tailed Godwit	*Limosa lapponica*	Maintain
A160	Curlew	*Numenius arquata*	Maintain
A162	Redshank	*Tringa totanus*	Maintain
A169	Turnstone	*Arenaria interpres*	Maintain
A179	Black-headed Gull	*Chroicocephalus ridibundus*	Maintain
A999	Wetlands		Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 5: Features of Interest for South Dublin Bay & River Tolka Estuary SPA

Species code	Species	Scientific name	Conservation objective
A046	Brent Goose	*Branta bernicla hrota*	Maintain
A130	Oystercatcher	*Haematopus ostralegus*	Maintain
A137	Ringed Plover	*Charadrius hiaticula*	Maintain
A141	Grey Plover	*Pluvialis squatarola*	Maintain
A143	Knot	*Calidris canutus*	Maintain
A144	Sanderling	*Calidris alba*	Maintain
A149	Dunlin	*Calidris alpina alpina*	Maintain
A157	Bar-tailed Godwit	*Limosa lapponica*	Maintain
A162	Redshank	*Tringa totanus*	Maintain
A179	Black-headed Gull	*Chroicocephalus ridibundus*	Maintain
A192	Roseate Tern	*Sterna dougallii*	Maintain
A193	Common Tern	*Sterna hirundo*	Maintain
A194	Arctic Tern	*Sterna paradisaea*	Maintain
A999	Wetlands		Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

To acknowledge the importance of Ireland's wetlands to wintering waterbirds, “Wetland and Waterbirds” may be included as a Special Conservation Interest for some SPAs that have been designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest. Thus, a further objective is to maintain or restore the favourable conservation condition of the wetland habitat within the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise them.

It should be noted that some of the Natura 2000 sites overlap each other and thus the conservation objectives for these sites should be used in conjunction with those for overlapping and adjacent sites as appropriate.

6. Water quality

6.1 EPA Biological Monitoring

The Environmental Protection Agency carries out a biological assessment of most river channels in the country on a regular basis. The assessments are used to derive Q values, indicators of the biological quality of the water. The biological health of a watercourse provides an indication of long-term water quality. The EPA Q value scheme is summarised in **Table 6**. The relationship between the Q-rating system and the Water Framework Directive classification as defined by the Surface Waters Regulations 2009 (S.I. 272 of 2009) is shown in **Table 7**. EPA biological monitoring data for the closest freshwater monitoring sites applicable to the development site, in relation to flow direction and topography are shown in **Table 8** and **Figure 3**. The EPA does not monitor the Grand Canal which is located 158m southwest of the proposed development site.

The Q Value system, which is used by the Environmental Protection Agency, describes the relationship between water quality and the macro-invertebrate community in numerical terms. The presence of pollution causes changes in flora and fauna of rivers. Well documented changes occur in the macro-invertebrate community in the presence of organic pollution: sensitive species are progressively replaced by more tolerant forms as pollution increases. Q5 waters have a high diversity of macro-invertebrates and good water quality, while Q1 have little or no macro-invertebrate diversity and unsatisfactory water quality.

The intermediate ratings Q1-2, Q2-3, Q3-4 and Q4-5 are used to denote transitional conditions, while ratings within parenthesis indicate borderline values. Great importance is attached to the EPA biotic indices, and consequently it is these data that are generally used to form the basis of water quality management plans for river catchments.

The EPA also monitors both transitional and coastal water bodies. Both can be assigned a classification of; High, Good, Moderate, Poor or Bad, based on their WFD status. The former three are considered to be acceptable, while the latter two water quality ratings are considered as unsatisfactory.

Treated waste water from the proposed development site would ultimately be discharged to the transitional waters (Liffey Estuary Lower) / coastal waters (Dublin Bay) via a primary discharge point from the Ringsend WWTP. Results indicate that the water quality within the transitional waters of Liffey Estuary Lower and the coastal waters of Dublin Bay is of an acceptable quality (EPA Transitional Water Quality 2010-2015 – Dublin Bay: Good status &

Liffey Estuary Lower: Moderate status) (**Figure 3**). The 2017 AER for the Ringsend WWTP notes that the discharge from the wastewater treatment plant does not have an observable negative impact on the water quality in the near field of the discharge and in the Liffey and Tolka Estuaries. However, the WFD characterisation process concluded that the Ringsend WWTP is a significant pressure on the Liffey Estuary Lower water body (IE_EA_090_0300).

Table 6. EPA biotic index scheme.

Q value	Water quality	Pollution	Condition
5	Good	Unpolluted	Satisfactory
4	Fair	Unpolluted	Satisfactory
3	Doubtful	Moderately polluted	Unsatisfactory
2	Poor	Seriously polluted	Unsatisfactory
1	Bad	Seriously polluted	Unsatisfactory

Source: EPA

Table 7. Correlation between the WFD classification and Q values

Ecological status WFD	Q Values
High	Q5, Q4-5
Good	Q4
Moderate	Q3-4
Poor	Q3, Q2-3
Bad	Q2, Q1

Table 8. EPA water quality status

Q-Value location	Distance from development	Q-Value Score	Water Framework Directive Status
River Liffey			
Liffey - 0.2 km d/s Chapelizon Br (Lynch's Lane)	Approximately 3.53km northwest of the proposed development site. Located approximately 11km upstream of the Ringsend WWTP primary discharge point.	Q3-4 (2016)	Moderate
Liffey - 1km u/s Chapelizod Br (Glenaulin Park	Approximately 4.42km northwest of the proposed development site. Located approximately 12km upstream of the Ringsend WWTP primary discharge point	Q3 (2005)	Poor
Lucan Bridge	Approximately 10.55km northwest of the proposed development site. Located approximately 20km upstream of the Ringsend WWTP primary discharge point.	Q4 (2016)	Good
Camac River			
Riversdale Estate Bridge	Approximately 6.59km west-southwest of the proposed development site. Located approximately 16km upstream of the Ringsend WWTP primary discharge point.	Q3 (2016)	Poor

Camac Close Emmet Rd	Approximately 1.85km west-northwest of the proposed development site. Located approximately 10km upstream of the Ringsend WWTP primary discharge point.	Q3 (2016)	Poor
Poddle River			
The Priory, Kimmage Road	Approximately 3.03km south-southwest of the proposed development site. Located approximately 12km upstream of the Ringsend WWTP primary discharge point.	Q3 (2016)	Poor
Dodder River			
Footbridge, Beaver Row	Approximately 4.29km southeast of the proposed development site. Located approximately 6km upstream of the Ringsend WWTP primary discharge point.	Q3-4 (2016)	Moderate
Dodder - Milltown Br (Dundrum Rd Br)	Approximately 3.97km southeast of the proposed development site. Located approximately 8km upstream of the Ringsend WWTP primary discharge point.	Q3-4 (2010)	Moderate
Transitional Waterbodies	**Distance from development**	**Water Framework Directive Status (2010-2015)**	
Liffey Estuary Upper	Approximately 1.36km north of the proposed development site. Located approximately 5km upstream of the Ringsend WWTP primary discharge point.	Moderate Status (EPA Transitional water quality 2010-2012 lists the Liffey Estuary Upper as Eutrophic)	
Liffey Estuary Lower	Approximately 1.36km north of the proposed development site. Ringsend WWTP primary discharge point located within.	Moderate Status (EPA Transitional water quality 2010-2012 lists the Liffey Estuary Upper as unpolluted waters)	
Tolka Estuary	Approximately 5.56km northeast of the proposed development site. Located approximately 5km upstream of the Ringsend WWTP primary discharge point.	Moderate Status (EPA Transitional water quality 2010-2012 lists the Tolka Estuary as Potentially Eutrophic)	
Coastal Waterbodies	**Distance from development**	**Water Framework Directive Status (2010-2015)**	
Dublin Bay	Approximately 5.29km east of the proposed development site. Ringsend WWTP primary discharge point is located immediately adjacent to Dublin Bay.	Good Status (EPA Coastal water quality 2010-2012 lists Dublin Bay as unpolluted waters)	

Source: EPA Envision map system

The 2010-2015 WFD status results indicate that the water quality of the Liffey Estuary Lower and Dublin Bay, into which treated waste water from the proposed development will be discharged via Ringsend WWTP is of an acceptable quality with only a low level of water quality impairment indicated by water quality results.

Figure 3: EPA water quality monitoring location in relation to the proposed development site.

6.2 Water Framework Directive

The Water Framework Directive (WFD) is a key initiative aimed at improving water quality throughout the EU. It applies to rivers, lakes, groundwater, and coastal waters. The Directive requires an integrated approach to managing water quality on a river basin basis; with the aim of maintaining and improving water quality. The Directive requires that management plans be prepared on a river basin basis and specifies a structured approach to developing those plans. It requires that a programme of measures for improving water quality be brought into effect.

Specifically, the WFD aims to: protect/enhance all waters (surface, ground and coastal waters); achieve "good status" for all waters by December 2015; manage water bodies based on river basins (or catchments); involve the public; and streamline legislation. 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.

The Water Frameworks Directive assesses the water quality of rivers and ranks their status as follows: High, Good, Moderate, Poor, Bad and Yet to be determined. The Water Frameworks Directive also determines the “Risk” level of a river as follows: 1a – At risk of not achieving Good Status, 1b – Probably at risk of not archiving Good Status, 2a – Expected to achieve Good Status and 2b – strongly expected to achieve Good Status. Relevant data for surface waters deemed applicable to this project are shown in **Table 10**.

Table 9. WFD Status

Waterbody	Status	Risk	Objective
WFD – 1st Cycle			
The Rialto site lies within an area that is unclassified/unassigned by the WFD. The results below are in regard to the Ringsend WWTP primary discharge point.			
Transitional Waterbody: Liffey Estuary Lower (Code:	Moderate	1a – At risk of not achieving Good Status	Restore 2027

IE_EA_090_0300)			
Coastal Waterbody: Dublin Bay(Code: IE_EA_090_0000)	Moderate	1a – At risk of not achieving Good Status	Restore 2027
Catchment: Liffey and Dublin Bay– Sub catchment: Dodder_SC_010			
Brewery Stream_010	Unassigned	Review	Unassigned
Dodder_010	Good	Not at risk	Unassigned
Dodder_020	Good	Not at risk	Unassigned
Dodder_030	Good	Review	Unassigned
Dodder_040	Moderate	At Risk	Unassigned
Dodder_050	Moderate	At Risk	Unassigned
Owenadoher_010	Moderate	At Risk	Unassigned
Poddle_010	Unassigned	At Risk	Unassigned
Glenasmole Lower (Lake)	Good	Not at risk	Unassigned
Glenasmole Upper (Lake)	Good	Not at risk	Unassigned
Dublin Bay (Coastal)	Good	Not at risk	Unassigned
Liffey Estuary Lower (Transitional)	Moderate	At Risk	Unassigned
Irish Sea Dublin (HA 09) (Coastal)	Unassigned	Not at risk	Unassigned
Southwestern Irish Sea - Killiney Bay (HA10) (Coastal)	High	Not at risk	Unassigned
Liffey Estuary Upper (Transitional)	Moderate	At Risk	Unassigned

Source: wfdireland map system & www.catchments.ie

7. Site inspection

A site inspection was carried out on the 18th of July 2018 to identify the habitats, flora and fauna present at the site. The survey consisted of walking systematically through the site and recording habitats and plant species, in addition to relative abundance, condition and degree of disturbance. The terrestrial and aquatic habitats within or adjacent to the proposed development site were classified using the classification scheme outlined in the Heritage council publication *A Guide to Habitats in Ireland* (Fossitt, 2000) and cross referenced with Annex 1 Habitats where required. A detailed description of the habitats found within the proposed development site and an assessment of their ecological value is provided in the report *Ecological Assessment – Rialto (DixonBrosnan, 2019)*

Habitats noted within the proposed works areas, or in close proximity to them, consist of the following:

- Buildings and artificial surfaces (BL3),
- Recolonising bare ground (ED3),
- Scrub (WS1)

No rare floral species were noted. Overall, the habitats noted within the works area are common in the surrounding landscape and are of a low ecological value at a local level. There will be no impacts on qualifying habitats of the South Dublin Bay SAC and North Dublin Bay SAC or habitats of value for bird species listed as qualifying interests of the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA.

7.1 Mammals

A mammal survey was undertaken of the site and surrounding environs during the site inspection. The main focus of the mammal survey was bats which are listed on Annex IV of the EU Habitats Directive.

An emergence survey was undertaken on the 18th of July 2018 using a Batbox Duet bat detector and Echo Meter Touch 2 PRO bat detector. In addition, an onsite day-time preliminary roost assessment survey of external structures was undertaken. The focus of the survey was primarily to determine if bats were roosting in the building to be affected by site works. Prior to the emergence survey an inspection of the building was conducted during day light hours to look for possible emergence points and bat presence. The presence of bats is often shown by grease staining, droppings, urine marks, corpses, feeding signs such as invertebrate prey remains and/or the presence of bat fly *Nycteribiidae* pupae, although direct observations are also occasionally made.

Two species were identified during the survey;

1. Common pipistrelle (*Pipistrellus pipistrellus*),
2. Leisler's bat (*Nyctalus leisleri*).

During the survey period there was little activity encountered within the site, however observations were made of primarily single bats i.e. Common pipistrelle, foraging within the south-eastern corner of the site (**Figure 4**). It is likely that these bats came from an east/south-easterly direction. Leisler's bat were recorded commuting over the site on two occasions, none were recorded emerging from or foraging within the site.

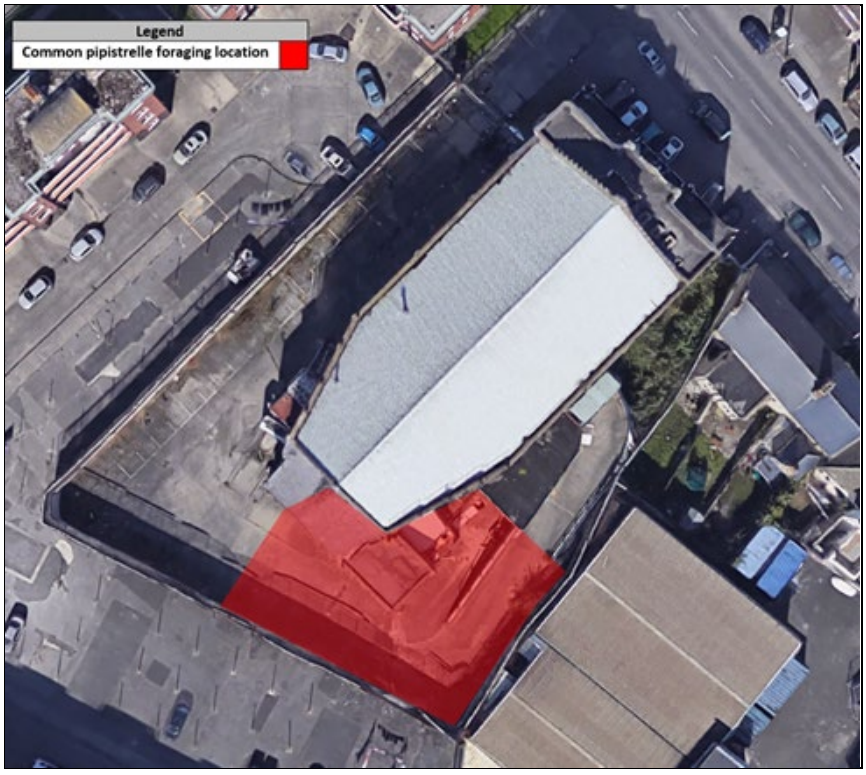


Figure 4: Location of Common Pipistrelle foraging within the proposed development site.

Low numbers of bats were recorded throughout the emergence survey; with Common pipistrelle being the most regularly encountered. This finding would suggest the site has low importance for bats, restricted to a site-specific level of importance only.

No bats were recorded emerging or re-entering from the former Rialto Cinema building. This suggest there are no bat roosts located within the building itself. In addition, first contact with both species was recorded outside the typical emergence times for each species, thus indicating that they roost outside the immediate vicinity of the building and have to travel to reach the site.

Overall, it is considered that the site is not important in a geographic context with respect to bats. The site is considered of negligible value to local bat populations with the proposed development unlikely to result in adverse impacts through habitat loss.

In addition, the site was surveyed for the presence of otter which is listed on Annex II of the Habitats Directive. A review of existing records within a 10km radius of the study site (Grid Square O13) showed that otter or signs of otter have been recorded on 23 occasions, the most recent being in September 2017. Of these recordings, one of a live animal was noted at Dolphins Barn Bridge (2014), over the Grand Canal, some 168m south-southeast of the proposed development site. However, no signs of otter were recorded during the recent site visit and there are no habitats within the proposed development site suitable for otter. No signs of otter (i.e. spraints, track, holts, couches, feeding signs etc.) were recorded within 150m of the former Rialto Cinema site.

7.2 Birds

During the site survey, all birds seen or heard within the development site were recorded. The majority of birds utilising the site were common in the local landscape. Certain bird species are listed by BirdWatch Ireland as Birds of Conservation Concern in Ireland (BOCCI). These are bird species suffering declines in population size. BirdWatch Ireland and the Royal Society for the Protection of Birds have identified and classified these species by the rate of decline into Red and Amber lists. Red List bird species are of high conservation concern and the Amber List species are of medium conservation. Green listed species are regularly occurring bird species whose conservation status is currently considered favourable. Birds species listed in Annex I of the Birds Directive (2009/147/EC) are considered a conservation priority. Species recorded within the site are shown in **Table 10.**

Table 10: Bird Species recorded during the site visit on the 18th of July 2018.

Species		**Birds Directive Annex**			**BOCCI**	
		I	**II**	**III**	**Red List**	**Amber List**
Larus ridibundus	Black-headed Gull				X	
Larus fuscus	Lesser black-backed Gull					X
Larus argentatus	Herring Gull				X	
Passer domesticus	House Sparrow					X
Columba livia f. domestica	Feral Pigeon					
Turdus merula	Blackbird					
Corvus frugilegus	Rook					

Pica pica	Magpie					
Hirundo rustica	Barn Swallow					X
Apus apus	Swift					X
Symbol	**Description**					
I	**Annex 1**: species and sub-species are particularly threatened. Member States must designate Special Protection Areas (SPAs) for their survival and all migratory bird species.					
II	**Annex 2**: bird species can be hunted. However, the hunting periods are limited and hunting is forbidden when birds are at their most vulnerable: during their return migration to nesting areas, reproduction and the raising of their chicks.					
III	**Annex 3**: overall, activities that directly threaten birds, such as their deliberate killing, capture or trade, or the destruction of their nests, are banned. With certain restrictions, Member States can allow some of these activities for species listed here.					

Overall, the study area is of local value for a range of terrestrial bird species that are relatively common in the Irish countryside. The presence of gulls within the site is largely due to their opportunistic behaviour. Scavenging is an increasingly important feeding strategy: discarded takeaways, rubbish bins, flimsy black sacks containing food waste on the streets, green spaces in coastal cities and towns. In addition, the urban environment provides houses, offices etc with flat roofs which offer a safe place for gulls to nest. However, no gulls were noted nesting within the proposed development site, they were noted scavenging in the vicinity of the site. The habitats to be affected are of minimal value for birds.

8. Assessment of Potential Impacts

All potential impacts would relate to direct and indirect impacts to relevant habitats and fauna of the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA. Impacts are based on the EC Article 6 Guidance Document (2001), professional judgement and criteria or standards where available.

The potential impacts associated with the proposed development are discussed in the following section with respect to their likelihood to have significant impacts on Natura 2000 sites. As part of the assessment direct, indirect and cumulative impacts were considered. Direct impacts refer to habitat loss or fragmentation arising from land-take requirements for development. Indirect and secondary impacts do not have a straight-line route between cause and effect, and it is potentially more challenging to ensure that all the possible indirect impacts of the project/plan - in combination with other plans and projects have been established.

As part of the assessment the potential for impacts associated with the development were reviewed as outlined below:

- Loss of Habitat
- Impacts from noise and disturbance
- Impacts on Water Quality including Potential Increase in the Discharges from Ringsend WWTP
- Cumulative Impacts

8.1 Loss of habitat

The proposed works area is not located within a designated site and the habitats recorded within the works area do not correspond to habitats listed on Annex 1 of the Habitats Directive or to qualifying habitats for the South Dublin Bay SAC and North Dublin Bay SAC, are considered of a low value at a local level and are relatively common in the surrounding landscape.

The habitats within the development area may be utilised on occasions by common birds for feeding, however the area to be affected is not likely to be a critical feeding resource for these species in the context of the wider landscape.

No foraging habitat of significant value for species listed as qualifying interests for the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA will be affected. No breeding habitat for species listed as qualifying interests for the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA will be affected. Therefore, the proposed development will not result in any significant deterioration in habitat quality or loss of habitat within the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA.

The loss of habitat for birds and mammals is predicted to be negligible.

The proposed development will not result in any loss of habitat within Natura 2000 sites. The recorded habitats are considered of low value at a local level and are common in the surrounding landscape. No potential for habitat fragmentation has been identified. The impact from the proposed development will be permanent and major with impacts on highly modified habitats. Overall, no habitats of significant ecological value will be affected.

8.2 Impacts from noise and disturbance

Potentially increased noise and disturbance associated with the site works could cause disturbance/displacement of fauna. If of sufficient severity, there could be impacts on reproductive success.

The potential effects and impacts of disturbance have been widely recognised in wildlife conservation legislation, as has the need to develop conservation measures for birds whilst taking human activities into account. Article 4.4 of the Bird's Directive (79/409/EEC) requires member states to "*take appropriate steps to avoid… any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article*". This specifically relates to conservation measures concerning Annex I species.

The wintering birds listed as qualifying interests for the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA are strongly associated with estuarine shoreline areas or wetlands - habitat types not present within the footprint of the proposed development or in proximity to the development site. It follows that these species do not rely on the food resources available within the footprint of the proposed development.

Potentially increased noise and disturbance associated with the site works or with the occupancy of the completed dwellings, could cause disturbance/displacement of fauna. If of sufficient severity, there could be impacts on reproductive success. With respect to birds, the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA are located 7.9km and 5.0km east of the site and no impacts on birds within these SPA's will occur. The habitats

within the proposed development area are not considered of value for any of these bird species.

It is noted that the proposed development site is located within a heavily urbanised area and is subject to noise disturbance and light pollution from neighboring flat complexes, commercial properties and housing estates. During the construction stage, there may be short-term increases in disturbance but it will not be significant in the context of existing noise levels. Given the scale and temporary nature of the works and the distance involved no impact on bird populations within the SPA's is predicted to occur. Likewise given the absence of suitable habitats SPA bird species no impact from increased noise and disturbance during occupancy of the completed dwellings will occur.

8.3 Impacts on Water Quality and Fauna - Direct Impact

Potential impacts on aquatic habitats which can arise from this type of development include increased silt levels in surface water run-off, inadvertent spillages of hydrocarbons from fuel and hydraulic fluid and increased nutrients from treated waste water.

High levels of silt in surface water run-off from the storage areas, can impact in particular on fish species, in particular salmonids. If of sufficient severity, adult fish could theoretically be affected by increased silt levels as gills may become damaged by exposure to elevated suspended solids levels. If of sufficient severity, aquatic invertebrates may be smothered by excessive deposits of silt from suspended solids. In areas of stony substrate, silt deposits may result in a change in the macro-invertebrate species composition, favouring less diverse assemblages and impacting on sensitive species. Aquatic plant communities may also be affected by increased siltation. Submerged plants may be stunted and photosynthesis may be reduced. Such run-off if severe could potentially impact on water quality which could also impact on fish stocks which in turn could impact on populations of otter (*Lutra lutra*). It is noted however, that the proposed development site is located 900m at its closest point from the Camac River and 160m from the Grand Canal.

Elevated silt levels could theoretically, if of sufficient magnitude, result in changes in the ecology of nearby waters. The risk of significant silt levels being deposited within nearby watercourses during the construction phase of the development is considered low and due to the dilution provided in the estuarine environment and naturally fluctuating levels of silt impacts are only likely to arise from extremely severe levels of siltation. Likewise given the location of the works, the distance of the proposed development from the estuarine environment, the robust nature of qualifying habitats (e.g. Mudflats and sandflats not covered by seawater at low tide [1140] and Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] etc. See **Tables 2** & **3**) and the dilution provided in the estuarine/marine environment, any impacts on water quality due to elevated silt levels during construction is considered negligible.

Inadvertent spillages of hydrocarbons during construction could introduce toxic chemicals into the aquatic environment via surface water run-off or groundwater contamination and have a direct toxicological impact on habitats and fauna. Given the distance from estuarine/marine environment, the presence of buffers, the robust nature of qualifying habitats and the dilution provided in the estuarine/marine environment any impacts on water quality due to such spills during construction is considered negligible.

Once operational surface waters from the proposed development will pass through a number of Sustainable Drainage Systems (SUDs) prior to discharge thus reducing the likelihood of suspended solids or hydrocarbons entering the water system.

The construction and operational stage of the proposed development will not impact surface water quality nor interfere with the conservation objectives of the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA. There are no high value habitats in proximity to the proposed works and the habitats recorded on site do not correspond to the habitats listed as qualifying interests for the South Dublin Bay SAC and North Dublin Bay SAC. Therefore, no significant impacts on this Natura 2000 site is envisaged.

8.3.1 Potential Increase in the Discharges from Ringsend WWTP (Indirect Impact)

Once constructed surface and wastewater from the proposed development will be conveyed for treatment to Ringsend Waste Water Treatment Works, which is located approximately 6km east of the proposed development site. The treatment process includes the following;

- Preliminary treatment (including screening / grit removal)
- Primary treatment
- Secondary treatment - SBR and Nereda Pilot Plant
- Sludge treatment
- Tertiary treatment – UV treatment (during the bathing season)

Ringsend WWTP has historically operated at or above capacity, with a total constructed organic capacity of 1.64 million P.E. and a current loading of 2,190,649 PE.

In 2017 the plant was non-compliant with several parameters as set under the EPA discharge licence i.e. cBOD, COD, TSS, TP, TN and Faecal coliforms (E.coli). There were 61 samples non-compliant with the ELV in relation to cBOD. The non-compliance is due to inadequate treatment. There were 60 samples non-compliant with the ELV in relation to COD. The non-compliance is due to inadequate treatment. There were 168 samples non-compliant with the ELV in relation to TSS. The non-compliance is due to inadequate treatment. There were 102 samples non-compliant with the ELV for TP. The non-compliance was due to no P removal treatment on site. There were 99 samples noncompliant with the ELV for TN. The non-compliance was due to inadequate treatment. The WWTP effluent was compliant with pH and Toxicity ELVs set in the wastewater discharge licence. The WWTP was non-compliant with the ELV set in the wastewater discharge licence for Faecal Coliforms (E. Coli) monitored during the Bathing Season.

Any existing or proposed projects discharging to the plant have the potential to act cumulatively to reduce water quality in Dublin Bay, affecting European sites therein. Despite Ringsend WWTP historically operating above capacity, no significant effects from discharge arising from the proposed development are predicted due to the following:

- There was no proven link between WWTP discharges and nutrient enrichment of sediments in Dublin Bay based on analyses of dissolved and particulate Nitrogen signatures (Wilson and Jackson, 2011);

- Enriched water entering Dublin Bay has been shown to rapidly mix and become diluted such that the plume is often indistinguishable from the rest of bay water (O'Higgins and Wilson, 2005); and

- Marine modelling for Ringsend WWTP indicates that discharged effluent is rapidly mixed and dispersed to low levels via tidal mixing within a short distance of the outfall pipe (Dowly & Bedri 2007).

- A commitment by Irish Water to upgrade the plant to meet EU standards and extend the plant to achieve the maximum capacity possible on the existing site. Its current capacity is 1.6 million population equivalent (P.E) and the plan is to raise this by a further 500,000 to 2.1 million P.E. while still producing treated water of the same high quality and dispersing it through a new long sea outfall tunnel under the seabed to a discharge point 9 kilometres.

- In the future, it is intended that wastewater from the Greater Dublin area will be treated at the extended Ringsend Plant as well as at a new plant being planned in North County Dublin.

Therefore, it is concluded that there will be no likelihood for significant effects on any European sites, and there will be no adverse effects on European site integrity during the construction or operation of the proposed development in combination with other plans or projects, based on the fact that;

- The coastal waters in Dublin Bay are classed as “Unpolluted” by the EPA;

- It is an objective of all development plans within the catchment of Ringsend WWTW to include Sustainable Urban Drainage Systems for all new development;

- It is extremely unlikely that during construction a pollution event would occur of a magnitude that would have an adverse effect on water quality within Dublin Bay;

- There is a commitment by Irish Water to upgrade the plant to meet EU standards and expand the facility to raise the population equivalent (P.E) by a further 500,000 to 2.1 million P.E. This is likely to maintain the “Unpolluted” water quality status of coastal waters despite potential pressures from future development;

- There was no proven link between WWTP discharges and nutrient enrichment of sediments in Dublin Bay based on analyses of dissolved and particulate Nitrogen signatures (Wilson and Jackson, 2011); and

- Enriched water entering Dublin bay has been shown to rapidly mix and become diluted such that the plume is often indistinguishable from the rest of the bay water (O'Higgins and Wilson, 2005).

8.4 Cumulative Impacts

Cumulative impacts refer to a series of individually impacts that may, in combination, produce a significant impact. The underlying intention of this in combination provision is to take account of cumulative impacts from existing or proposed plans and projects and these will often only occur over time.

High negative threats, pressures and activities identified for the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA are shown in **Table 11**:

	High Negative Threats, Pressures & Activities										
Natura 2000 Site	roads, motorways	bridge, viaduct	Shipping lanes	Urbanised areas, human habitation	continuous urbanisation	Industrial or commercial areas	Discharges	walking, horseriding and non-motorised vehicl	golf course	reclamation of land from sea, estuary or marsh	accumulation of organic material
South Dublin Bay SAC	X			X		X	X	X		X	X
North Dublin Bay SAC				X		X	X	X	X		
North Bull Island SPA	X	X	X		X	X	X	X	X		
South Dublin Bay & River Tolka Estuary SPA	X			X		X	X	X		X	

The potential for the proposed development to indirectly impact the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA has been assessed. Potential cumulative impacts on the sites may arise owing to an alteration to water quality or quantity. Deterioration in water quality can occur as an indirect consequence of point source or diffuse pollution, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. This leads to potential negative consequences for the qualifying interests that rely on the maintenance of water quality within the Natura 2000 site.

The area surrounding the proposed development is heavily urbanised with a mixture of commercial properties scattered within, which have the potential to produce “in combination” effects to water quality in Dublin Bay. Sustainable drainage proposals at this site will ensure that operational surface water runoff arising from this development will be treated prior to discharge to the existing storm sewer. Therefore, the likelihood of impacts arising from this development is deemed to be low. It is considered extremely unlikely that during construction, a pollution event would occur of a magnitude that would have any adverse effects on water quality in Dublin Bay, or affect the features of interest of any of the Natura 2000 sites, due to the distance between the site and Dublin Bay and potential for dilution in the drainage network before entering Ringsend WWTP. Similarly, no significant cumulative impacts in relation to noise and disturbance have been identified.

9. Conclusion

According to the guidance published by the NPWS (DoEHLG, 2009), Screening for Appropriate Assessment can either identify that a Natura Impact Statement (NIS) is not required where:

(1) A project/proposal is directly related to the management of the site.

(2) There is no potential for significant effects affecting the Natura 2000 network

Where the screening process identifies that significant effects are certain, likely or uncertain the project must either proceed to Stage 2 Appropriate Assessment or be rejected.

The proposed works area, does not lay within the South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA, and does not support the species or habitats for which these Natura 2000 sites were selected. Both surface and wastewater emissions from the site will be managed to ensure that the water quality of the nearby waters is not compromised and will remain compliant with the Surface Water Regulations S.I. 272 of 2009.

Based on the above, the project does not present any risk of a direct adverse effect on either the habitats or species for which this Natura 2000 site was selected.

The likely impacts that will arise from the proposed works have been examined in the context of a number of factors that could potentially impact upon the integrity of the Natura 2000 network. On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the development:

(1) Is not directly connected with or necessary to the management of a Natura 2000 site and

(2) Will not have significant impacts on the Natura 2000 network.

It is concluded therefore that the proposed development will not have a significant impact on qualifying interests and conservation objectives for Natura 2000 sites, and that the integrity of these sites will not be adversely affected. No significant direct, indirect or cumulative impacts on Natura 2000 sites have been identified. A stage 2 Appropriate Assessment is not considered necessary.

9. References

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Appendix 1

Site Name: North Dublin Bay SAC

Site Code: 000206

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 surrrounding 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.

Site Name: South Dublin Bay SAC

Site Code: 000210

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. Baitdigging is a regular activity on the sandy flats. At high tide some areas have windsurfing 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.

Site Name: South Dublin Bay and River Tolka Estuary SPA

Site Code: 004024

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 macroinvertebrate 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.

Site Name: North Bull Island SPA

Site Code: 004006

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.