

Marine & Environmental Consultancy

Natura Impact Statement - Information for a Stage 2 (Natura Impact Statement) AA for a proposed Residential Development on a site located on the former St. Teresa's Gardens, Donore Avenue, Dublin 8.



5th December 2022

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	Docum	ent Control Sheet	
Project	Natura Impact Statement - Ir	formation for a Stage 2 (Nat	ura Impact Statement) AA
	for a proposed Residential De	evelopment on a site located	on the former St. Teresa's
	Gardens, Donore Avenue, Du	ıblin 8.	
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Introduction

The following Natura Impact Statement (NIS) has been prepared by **Altemar Ltd.** for a proposed Residential Development on a site located at the former St. Teresa's Gardens, Donore Avenue, Dublin 8. The development will consist of the construction of a residential scheme of 543 no. apartments on an overall site of 3.26 ha, as described in more detail below.

An Appropriate Assessment is an assessment of the potential effects of a proposed project or plan, on its own, or in combination with other plans or projects, on one or more European sites. European sites are those sites designated as Special Areas of Conservation (SAC) or Special Protection Areas (SPA). An AA Screening was carried out for the proposed project and concluded that 'Acting on a strictly precautionary basis, NIS is required in respect of the effects of the project on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA because it cannot be excluded on the basis of best objective scientific information following screening, in the absence of control or mitigation measures in relation to pollution (silt, dust, potential contamination and runoff) during construction and operation, that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

An NIS or Stage 2 Appropriate Assessment is not required for the effects of the project on all other listed Natura sites above because it can be excluded on the basis of the best objective scientific information following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the European Site/s.'

This Natura Impact Statement examines whether the project, either alone, or in combination with other plans and projects, in the view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European sites.

Altemar Ltd.

Since its inception in 2001, Altemar has been delivering ecological and environmental services to a broad range of clients. Operational areas include: residential; infrastructural; renewable; oil & gas; private industry; Local Authorities; EC projects; and, State/semi-State Departments. Bryan Deegan, the managing director of Altemar, is an Environmental Scientist and Marine Biologist with 27 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry.

Bryan is currently contracted to Inland Fisheries Ireland as the sole "External Expert" to environmentally assess internal and external projects. He is also chair of an internal IFI working group on environmental assessment. Bryan Deegan (MCIEEM) holds a MSc in Environmental Science, BSc (Hons.) in Applied Marine Biology, NCEA National Diploma in Applied Aquatic Science and a NCEA National Certificate in Science (Aquaculture). Bryan Deegan carried out all elements of this NIS. Hugh Delaney is an ecologist (ornithologist primarily) having completed work on numerous sites with ecological consultancies over 10+ years. Hugh is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Background to the Appropriate Assessment

The Habitats Directive 92/43/EEC (together with the Birds Directive (2009/147/EC)) forms the cornerstone of Europe's nature conservation policy. The Directive protects over 1000 animals and plant species and over 200 "habitat types" which are of European importance. In the Habitats Directive, Articles 3 to 9 provide the legislative means to protect habitats and species of European Community interest through the establishment and conservation of an EU-wide network of conservation sites (NATURA, 2000). These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive), Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment:

"Any plan or project not directly connected with or necessary to the management of the [NATURA 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the component national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

As outlined in "Managing European sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" (European Commission, 21 November 2018) "The purpose of the appropriate assessment is to assess the implications of the plan or project in respect of the site's conservation objectives, either individually or in combination with other plans or projects. The conclusions should enable the competent authorities to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus of the appropriate assessment is therefore specifically on the species and/or the habitats for which the European site is designated."

As outlined in the EC guidance document on Article 6(4) (January 2007)¹:

"Appropriate assessments of the implications of the plan or project for the site concerned must precede its approval and take into account the cumulative effects which result from the combination of that plan or project with other plans or projects in view of the site's conservation objectives. This implies that all aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.

Assessment procedures of plans or projects likely to affect European sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity. Regardless of whether the provisions of Article 6(3) are delivered following existing environmental impact assessment procedures or other specific methods, it must be ensured that:

- Article 6(3) assessment results allow full traceability of the decisions eventually made, including the selection of alternatives and any imperative reasons of overriding public interest.
- The assessment should include all elements contributing to the site's integrity and to the overall coherence of the network as defined in the site's conservation objectives and Standard Data Form, and be based on best available scientific knowledge in the field. The information required should be updated and could include the following issues:
 - Structure and function, and the respective role of the site's ecological assets;
 - Area, representativity and conservation status of the priority and nonpriority habitats in the site;
 - Population size, degree of isolation, ecotype, genetic pool, age class structure, and conservation status of species under Annex II of the Habitats Directive or Annex I of the Birds Directive present in the site;
 - Role of the site within the biographical region and in the coherence of the European network; and,
 - Any other ecological assets and functions identified in the site.
- It should include a comprehensive identification of all the potential impacts of the plan or project likely to be significant on the site, taking into account cumulative impacts and other impacts likely to arise as a result of the combined action of the plan or project under assessment and other plans or projects.

¹ European Commission. (2007).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;

- The assessment under Article 6(3) applies the best available techniques and methods, to estimate the extent of the effects of the plan or project on the biological integrity of the site(s) likely to be damaged.
- The assessment provides for the incorporation of the most effective mitigation measures into the plan or project concerned, in order to avoid, reduce or even cancel the negative impacts on the site.
- The characterisation of the biological integrity and the impact assessment should be based on the best possible indicators specific to the European assets which must also be useful to monitor the plan or project implementation."

Stages of the Appropriate Assessment

This Appropriate Assessment screening was undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001), Part XAB of the Planning and Development Act 2000, as amended, in addition to the December 2009 publication from the Department of Environment, Heritage and Local Government; 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities', OPR Practice Note PN01 Appropriate Assessment Screening for Development Management, and the European Communities (Birds and Natural Habitats) Regulations 2011. In order to comply with the above Guidelines and legislation, the Appropriate Assessment process must be structured as follows:

- 1) Screening stage:
 - Description of plan or project, and local site or plan area characteristics;
 - Identification of relevant European sites, and compilation of information on their qualifying interests and conservation objectives
 - Identification and description of individual in combination effects likely to result from the proposed project;
 - Assessment of the likely significance of the effects identified above. Exclusion of sites where it can be objectively concluded that there will be no likely significant effects; and,

Conclusions

- 2) Appropriate Assessment (Natura Impact Statement):
 - Description of the European sites that will be considered further;
 - Identification and description of potential adverse impacts on the conservation objectives of these sites likely to occur from the project or plan; and,
 - Mitigation Measures that will be implemented to avoid, reduce or remedy any such potential adverse impacts
 - Assessment as to whether, following the implementation of the proposed mitigation measures, it can be concluded, beyond all reasonable scientific doubt, that there will be no adverse impact on the integrity of the relevant European Site in light of its conservation objectives"
 - Conclusions.

If it can be demonstrated during the AA screening phase (Stage 1), that the proposed project will not have a significant effect, whether alone or in combination with other plans or projects, on the conservation objectives of a Natura 2000 site, then no further AA (Stage 2) will be required. It is important to note that there is a requirement to apply a precautionary approach to AA screening. Therefore, where effects are possible, certain or unknown at the screening stage, AA will be required.

In addition, it should be noted that Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an AA of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

Stage 2: Natura Impact Statement

A Natura Impact Statement (NIS) is Stage 2 of the Appropriate Assessment process. In the case of the proposed residential development on lands at the former St. Teresa's Gardens, Donore Avenue, Dublin 8, acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary and North Bull Island SPA (due to the potential for petrochemicals or silt laden material to enter the Poddle Stream and marine environment downstream of the works), because it cannot be excluded on the basis of best objective scientific information, in the absence of control or mitigation measures, following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

The NIS evaluates the potential for direct, indirect effects, alone or in combination with other plans and projects having taken into account the use of mitigation measures. A Stage 2 Appropriate Assessment or NIS is not required for the effects of the project on all other listed Natura sites within, and sites beyond, 15km because, it can be excluded, on the basis of the best objective scientific information following screening, that the project, individually and/or in combination with other plans or projects, will have not a significant effect on those listed sites.

Management of the Site

The project is not directly connected with, or necessary to the management of European sites.

Description of the Proposed Project

The Land Development Agency, on behalf of Dublin City Council, gives notice of its intention to make an application for approval to An Bord Pleanála for a seven year permission in relation to a proposed residential development at this site located on the former St. Teresa's Gardens, Donore Avenue, Dublin 8. The site is bound by Donore Avenue to the north-east, Margaret Kennedy Road to the north-west, The Coombe Women & Infants University Hospital to the west, the former Bailey Gibson factory buildings to the south-west, and the former Player Wills factory to the south-east. The development will consist of the construction of a residential scheme of 543 no. apartments on an overall site of 3.26 ha.

The current site is part of the overall Strategic Development & Regeneration Area (SDRA) 11. This site lies at the centre of the SDRA 11 lands.

The development (GFA of c. 53,227 sqm) contains the following mix of apartments: 225 No. 1 bedroom apartments (36 no. 1-person & 189 no. 2-person), 274 No. 2 bedroom apartments (including 52 No. 2 bed 3 person apartments and 222 No. 2 bed 4 person apartments), 44 No. 3 bedroom 5-person apartments, together with retail/café unit (168 sq.m.), mobility hub (52 sq.m.) and 952 sq.m. of community, artist workspace, arts and cultural space, including a creche, set out in 4 No. blocks.

The breakdown of each block will contain the following apartments:

- Block DCC1 comprises 111 No. apartments in a block of 6-7 storeys;
- Block DCC 3 comprises 247 No. apartments in a block of 6-15 storeys;
- Block DCC5 comprises 132 No. apartments in a block of 2-7 storeys;
- Block DCC6 comprises 53 No. apartments in a block of 7 storeys;

The proposed development will also provide for public open space of 3,408 sqm, communal amenity space of 4,417 sqm and an outdoor play space associated with the creche. Provision of private open space in the form of balconies or terraces is provided to all individual apartments.

The proposed development will provide 906 no. residential bicycle parking spaces which are located within secure bicycle stores. 5% of these are over-sized spaces which are for large bicycles, cargo bicycles and other non-standard bicycles. In addition, 138 spaces for visitors are distributed throughout the site.

A total of 79 no. car parking spaces are provided at undercroft level. Six of these are mobility impaired spaces (2 in each of DCC1, DCC3 & DCC5). 50% of standard spaces will be EV fitted. Up to 30 of the spaces will be reserved for car sharing (resident use only). A further 15 no. on-street spaces are proposed consisting of:

- 1 no. accessible bay (between DCC5 & DCC6)
- 1 no. short stay bay (between DCC5 & DCC6)
- 1 no. crèche set-down/ loading bay (between DCC5 & DCC6)
- 1 no. set-down / loading bay (northern side of DCC5)
- 1 no. set-down/loading bay (northern side of DCC 3)
- 10 no. short stay spaces (north-east of DCC1)

In addition, 4 no. motorcycle spaces are also to be provided.

Vehicular, pedestrian and cyclist access routes are provided from a new entrance to the north-west from Margaret Kennedy Road. Provision for further vehicular, pedestrian and cyclist access points have been made to facilitate connections to the planned residential schemes on the Bailey Gibson & Player Wills sites for which there are extant permissions (Ref. No.'s ABP-307221-20 & ABP-308917-20).

The development will also provide for all associated ancillary site development infrastructure including site clearance & demolition of boundary wall along Margaret Kennedy Road and playing pitch on eastern side of site and associated fencing/lighting, the construction of foundations, ESB substations, switch room, water tank rooms, storage room, meter room, sprinkler tank room, comms room, bin storage, bicycle stores, green roofs, hard and soft landscaping, play equipment, boundary walls, attenuation area and all associated works and infrastructure to facilitate the development including connection to foul and surface water drainage and water supply. The proposed site outline, location, site layout plan, and elevations are demonstrated in Figures 1-5.

Spatial Scope and Zone of Influence

The proposed development site is not within a European site and is not necessary for the management of a Natura 2000 site. As outlined in Office of the Planning Regulator Guidance Note on AA Screening (2021) "The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source- Pathway-Receptor framework and not by arbitrary distances (such as 15 km)."

A key factor in the consideration as to whether or not a particular European site is likely to be affected by the proposed development is its distance from the development location. It is generally, but not necessarily, the case that the greater the distance from the plan or project the smaller the likelihood of impacts. In this case, the nearest European site to the proposed development is 4.4 km away (South Dublin Bay and River Tolka Estuary SPA). Given the scale of the proposed development, and the fact that surface water drainage will ultimately outfall to the Poddle Stream which in turn outfalls to the River Liffey and Dublin Bay, out of an abundance of caution it is considered that the ZOI of the proposed project includes the site outline, the River Liffey and Natura 2000 sites located within Dublin Bay. In the absence of mitigation, there is the potential for dust and surface water runoff to enter the Poddle Stream with the potential for downstream impacts on Natura 2000 sites located within Dublin Bay. Specifically, South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA.

In the interest of carrying out a thorough assessment in line with both the Habitats Directive, and the precautionary principle, the ZoI was expanded for this assessment to include designated sites within 15km of the proposed development site, and sites beyond 15km with the potential for a hydrological connection. This was done in the interest of ensuring that any pathways, however indirect or remote, were taken into account.



Figure 1. Proposed site outline and location



Figure 2. Proposed site outline



Figure 3 – Proposed site outline and location – Google Earth Pro (Image dated 03-2022)



Figure 4 – Proposed site layout



Figure 5 – *Proposed site elevations*

Landscape

A landscape strategy has been prepared by AECOM to accompany this planning application. The proposed landscape masterplan is demonstrated in Figure 6.

Drainage

An Infrastructure Report has been prepared by AECOM to accompany this planning application. This report details the following foul and surface water drainage strategy for the proposed development:

Wastewater Drainage

In relation to the existing foul wastewater drainage, this report outlines the following:

'There is an existing 225 mm combined sewer which drains east, collecting the wastewater flow from The Coombe Women & Infants University Hospital (west of the site) and flowing eastwards, connecting to the existing 1,020 mm combined sewer running along Donore avenue.'

In terms of the proposed foul wastewater drainage strategy, this report details the following:

⁶AECOM submitted a Pre-Connection Enquiry Form to Irish Water on the 9th February 2021 in order to establish the feasibility of connecting to the existing network. The customer reference number is CDS21000854. To allow for changes to the Schedule of Accommodation, AECOM assumed a conservative estimate of 750 no. units at the time of submitting the pre-connection enquiry to Irish Water.

A Confirmation of Feasibility was issued on the 1st October 2021 (refer to Appendix B), which states the peak discharge from the development must be limited to 2DWF (dry weather flow) using a throttle or pump.

AECOM engaged with Irish Water regarding the restriction of peak discharge to 2DWF. It was explained that the Pre-Connection Application was submitted with an estimated 750 no. units. Given, the proposal is now for approx. 200 units less than this, it was agreed that it would not be required to limit the peak discharge.

The proposed development now consists of 543 no. residential units, the associated wastewater discharge of the development is estimated in Table 5.1.

Under-croft car parks have the potential to discharge runoff which is highly concentrated of hydrocarbons as the car parks wouldn't receive rainfall directly, but instead receive minimal runoff from what is brought in from wet vehicles. It is therefore required by DCC that surface water discharges to the wastewater network.'

Foul wastewater from the subject site will ultimately discharge to Ringsend Wastewater Treatment Plant (WwTP)

Surface Water Drainage

In relation to the existing surface water drainage on-site, this report outlines the following:

- 'A portion of the Bailey Gibson warehouse drains to a 150 mm surface water line within the Donore Project site, and drains north towards The Coombe Women & Infants University Hospital car park and then joins a 300 mm sewer which drains east, which enters the Donore Project site from The Coombe Women & Infants University Hospital lands, traverses the location of the proposed DCC1 Block and continues along the site of the former St. Teresa's Gardens flats (the line upsizes to a 375 mm sewer in this area), before discharging to a 1 m stormwater culvert in Donore Avenue..
- 2. A 450 mm concrete sewer running parallel to the west of the Player Wills warehouse (which drains north), reduces in size to a 375 mm pipe and previously connected to the 375 mm pipe described in the bullet point above, via a 60 m run of pipe as shown in records (refer to Appendix G). This 60 m run of 375 mm pipe was removed by DCC in 2019 during demolition of St. Teresa's Gardens flats, meaning the 450 mm pipe does not join this network which discharges to the culvert in Donore Avenue. The 450 mm was not diverted to another outfall location and DCC previously noted that there was no indication of flooding as result of the lack of a downstream connection.
- 3. A 1,030 mm surface water concrete culvert which is shown on the records to drain from Donore Avenue, northwest across the SDRA site, entering The Coombe Women & Infants University Hospital lands. The sewer is noted to be obsolete and removed in the area where the St. Teresa's Gardens flats once existed. Northwest beyond this area, within The Coombe Women & Infants University Hospital lands, the sewer remains as a live asset. The portion of culvert within the St. Teresa's Church grounds acts as storage,

permanently filled with water. The inflow to this 'storage' is from an overflow from Donore Avenue 700 mm above its invert. The outflow from this 'storage' is a 225 mm pipe which connects into the 450 mm sewer described in the bullet point above, which does not have an outfall location and DCC had noted there is no indication of flooding issues at this location. It is not proposed to divert this overflow, as the potential volume from the Donore Avenue culvert which overflows to this storage culvert could be too large to be catered for in the attenuation tank. It is proposed to retain the existing scenario for this 1,030 mm culvert.

In terms of the proposed surface water drainage diversions, this report outlines the following:

'Diversion 1

Diversion of Existing Catchment (Bailey Gibson Factory):

The 150 mm sewer which traverses the proposed DCC5 Block, drains a portion of runoff from the existing Bailey Gibson warehouse. It is proposed to divert this portion of catchment into the proposed network, meaning this runoff will be attenuated. The attenuation tank proposed for the development is designed to also account for future developments within this SDRA, which includes this portion of catchment described. Refer to Section 4.4 for further details on the proposed attenuation strategy.

Diversion of Sewer (Coombe Hospital car park – Donore Avenue):

A diversion is also required for the 300 mm surface water sewer which traverses the location of the proposed DCC1 Block. The proposed route of this diversion is; altering the route to flow north within The Coombe Women & Infants University Hospital car park (parallel to the DCC1 Block) before turning east below the existing boundary wall, into the proposed surface water pipe which enters Margaret Kennedy (MK) Road for 10m, before running under the proposed footpath, crossing the proposed road and then running adjacent to Margaret Kennedy (MK) Road (between MK Road and the proposed tank) and ultimately discharging to the same location in Donore Avenue, unattenuated, as before.

Diversion 1 – Construction Process

The initial portion of the diversion is within The Coombe Women & Infants University Hospital car park. To allow the surface water diversion to be completed, a foul diversion must be completed first. The existing foul water line (the grey 'FW' line shown in Figure 4.4) will remain live until the diversion shown in red has been constructed as far as the Margaret Kennedy Road. The surface water line shown in blue would clash with the exiting foul line shown in grey, which couldn't be avoided due to levels constraints. Therefore, the surface water line can only be completed when the wastewater diversion has taken place, and the existing foul line decommissioned and removed.

Diversion 2

It is proposed to divert the flow from the 450 mm line, which runs along the boundary of the Player Wills factory site and previously had its downstream connection removed leaving the sewer in a dead end, as discussed in Section 4.2, Point 2. The flow will be diverted into the proposed drainage network and attenuated, a catchment analysis was undertaken and incorporated into the attenuation calculations, along with the future developments within this SDRA. A total of 2 no. spur have been provided in the design of this diversion to facilitate connection to the network from the future developments.

Diversion 3 (Future Diversion)

It is not proposed under this application to divert/remove the overflow from Donore Avenue into the 1,030 mm culvert 'storage', this is instead proposed under a separate application for development within the SDRA. This application proposed to retain the current scenario regarding the overflow and 'storage'. It is noted however the diversion of the 450 mm line described above does reduce the flow to this dead end, thus allowing more 'storage'. The future application to divert / remove the overflow from Donore Avenue into the 1030mm culvert storage will be a standalone upgrade and does not impact this application.'

Further, a Hydrological and Hydrogeological Risk Assessment has been prepared by Enviroguide Consulting to accompany this planning application. This report details outlines the ultimate destination of surface water drainage from the subject site. This is demonstrated below:

'• Surface water from the Proposed Development Site will be managed, treated and attenuated at the Site in accordance with the principles of SUDS and GDSDS prior to discharge to the mains drainage which outfalls to the Poddle Stream. Foul water from the Proposed Development Site will be discharged to Dublin Bay following treatment at Ringsend WWTP and IW confirmed capacity to accept the foul discharges from the Proposed Development.

• The embedded design avoidance and mitigation measures will prevent the potential impacts on water quality during the construction works and post construction (Operational Phase). It is noted that there are no identified impacts to surface water in the downstream Poddle Stream, Liffey Estuary and Dublin Bay. There are no identified potential impacts to offsite groundwater associated with the Proposed Development.

• The Proposed Development will not cause a deterioration to the WFD status of the water bodies hydraulically connected with the Proposed Development Site and within the same river basin district including the river waterbodies, transitional waterbodies, coastal waterbodies and groundwater bodies taking account of design avoidance and mitigation measures including the Poddle Stream, Liffey Estuary, Dublin Bay and Dublin GWB. The Camac River is not hydraulically connected to the Site and therefore there is no identified impact associated with the Proposed Development of the WFD status of the Camac River. The Proposed Development will not jeopardise objectives to achieve good surface water status or good ecological potential and the attainment of good surface water chemical status. The Proposed Development will not exclude or compromise the achievement of the OFD in other bodies of water within the same river basin district.

• The Proposed Development will not cause any impact to Natura 2000 sites with a potential hydraulic connection to the Proposed Development Site In the worst-case scenario in the absence of mitigation or design avoidance measures there would be no deterioration in water quality or impact on the receiving environment associated with the Proposed Development that would result in a significant effect on any Natura 2000 sites either in combination with other plans or projects or individually.' The proposed drainage layout plan, flood exceedance route, and SuDS layout is demonstrated in Figures 7 - 9.

Flood Risk Assessment

A Flood Risk Assessment has been prepared by AECOM to accompany this planning application. This report details the following for the proposed development: 'The mixed-use development is proposed on a SDRA (Strategic Development & Regeneration Area) and comprises of 'Less Vulnerable' retail and commercial units at ground floor, a creche ('Highly Vulnerable') at ground floor (and first floor) and residential units ('Highly Vulnerable') at higher floors.

Based on the available CFRAM mapping published in 2016, which is based on outdated and no longer relevant topography, approx. 90% of the site is located within Flood Zone C, 10% within Flood Zone B and <1% situated within Flood Zone A. However, by assessing the current topographical information, it is apparent that the flood routes are now different to what was modelled as part of CFRAM, and the site would not receive flood waters given the topography following the demolition of the St. Teresa's Gardens flats. This, coupled with the zoning for the subject site, results in the subject site passing the Justification Test.

Nevertheless, it is noted that the water level for the fluvial node SO14324909 from the CFRAM flooding model is 18.49m OD, for which it would be prudent to set all FFL's within the site to minimum 19.00 to allow a 500 mm freeboard above the 0.1% AEP (1 in 1000-year return period) storm event. The lowest proposed FFL is 19.1 m.

There are no recorded incidents of previous flooding on the site. Sewers identified to be surcharging as part of the GDSDS (Greater Dublin Strategic Drainage Study) will be diverted and a new proposed surface water network including a 20% climate change allowance will be constructed, minimising the risk of flooding occurring on site and reducing the volume of runoff entering the sewers predicted to flood. The proposed ground level SuDS measures (swales, raingardens, tree pits and porous asphalt) and low areas of the site will minimise exceedance runoff leaving the site before entering the drainage system (overland flows). Green roofs and permeable roof paving are proposed at roof level, which will delay runoff entering the drainage network, which is beneficial for 'flash' events.' The proposed flood exceedance route can be seen in figure 8.



Figure 6 – Proposed landscape masterplan



Figure 7 – *Proposed overall drainage layout*



Figure 8 – *Proposed flood exceedance route*



Figure 9 – *Proposed SuDS layout*

Identification of Relevant European Sites (Natura 2000 sites)

The proposed development is located in an urban environment surrounded by roads. The proposed works are not within a European site and there is no direct pathway to a European site. The European sites and those with a direct hydrological pathway within 15 km are seen in Figures 10 & 11 and Table 1. European sites screened in for NIS are seen in Table 2.

Table 1. Proximity to designated sites of conservation importance

Site Code	NATURA 2000 Site	Distance		
Special Areas of Conservation				
IE000210	South Dublin Bay SAC	4.6 km		
IE000206	North Dublin Bay SAC	7.3 km		
IE001209	Glenasmole Valley SAC	9.8 km		
IE002122	Wicklow Mountains SAC	10.4 km		
IE000199	Baldoyle Bay SAC	12.2 km		
IE003000	Rockabill to Dalkey Island SAC	12.8 km		
IE000202	Howth Head SAC	13 km		
IE001398	Rye Water Valley/Carton SAC	13.7 km		
IE000725	Knocksink Wood SAC	14.2 km		
IE000205	Malahide Estuary SAC	14.9 km		
Special Protection Areas				
IE004024	South Dublin Bay and River Tolka Estuary SPA	4.4 km		
IE004006	North Bull Island SPA	7.3 km		
IE004040	Wicklow Mountains SPA	10.5 km		
IE004016	Baldoyle Bay SPA	12.5 km		
IE004172	Dalkey Islands SPA	14 km		
IE004025	Malahide Estuary SPA	14.9 km		

Table 2. Initial screening of Natura 2000 sites within 15km and Natura 2000 sites within 15km with potential of hydrological connection to the proposed development.

Natura Code	Name	Screened In/Out	Details/Reason
Special Areas of	Conservation		
IE000210	South Dublin	IN	Conservation Objectives
	Bay SAC		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.
			Qualifying Interests
			Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]
			Potential Impact
			The development site is located within an urban area 4.6 km from the South Dublin Bay SAC (Figure 10). There is no direct hydrological pathway to this SAC.
			There is an indirect hydrological connection to this SAC via the proposed foul and surface water drainage strategies. Surface water drainage will be directed to a public surface water drainage network that outfalls to the Poddle Stream, which outfalls to the River Liffey, and ultimately the marine environment at Dublin Bay. It is considered that, out of an abundance of caution, and in the absence of mitigation, there is the potential for dust and contaminated surface water runoff to enter the Poddle Stream with the potential for downstream impacts on the qualifying interests of this SAC. Mitigation measures are required to ensure that dust and contaminated surface water runoff does not enter the Poddle Stream.
			Foul wastewater will be directed to an existing public foul network, which in turn discharges to Ringsend WwTP for treatment. Foul wastewater will be treated along this network and as a result no significant effects on this SAC are likely from this indirect hydrological pathway.
			In a strict application of the precautionary principle, it has been concluded that significant effects on the South Dublin Bay SAC cannot be ruled out, in the absence of mitigation measures, from the proposed development primarily as a result of the indirect hydrological connection of surface water drainage to the SAC.
			Mitigation measures will need to be in place to prevent silt, hazardous materials and petrochemicals entering the surface water network, which has an indirect hydrological pathway to this SAC. For these reasons (mitigation measures are required in relation surface water drainage), it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives.

Natura Code	Name	Screened	Details/Reason
		In/Out	Significant effects cannot be ruled out - Natura Impact Statement Required
IE000206	North Dublin	IN	Conservation Objectives
	Bay SAC		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.
			Qualifying Interests
			Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (<i>Petalophyllum ralfsii</i>) [1395]
			Potential Impact
			The proposed works are located within an urban area 7.3 km from North Dublin Bay SAC (Figure 10). There is no direct hydrological pathway to this SAC.
			There is an indirect hydrological connection to this SAC via the proposed foul and surface water drainage strategies. Surface water drainage will be directed to a public surface water drainage network that outfalls to the Poddle Stream, which outfalls to the River Liffey, and ultimately the marine environment at Dublin Bay. It is considered that, out of an abundance of caution, and in the absence of mitigation, there is the potential for dust and contaminated surface water runoff to enter the Poddle Stream with the potential for downstream impacts on the qualifying interests of this SAC. Mitigation measures are required to ensure that dust and contaminated surface water runoff does not enter the Poddle Stream.
			Foul wastewater will be directed to an existing public foul network, which in turn discharges to Ringsend WwTP for treatment. Foul wastewater will be treated along this network and as a result no significant effects on this SAC cannot be ruled out from this indirect hydrological pathway.
			In a strict application of the precautionary principle, it has been concluded that significant effects on the South Dublin Bay SAC cannot be ruled out, in the absence of mitigation measures, from the proposed development primarily as a

Natura Code	Name	Screened	Details/Reason
		In/Out	
			result of the indirect hydrological connection of surface water drainage to the SAC.
			Mitigation measures will need to be in place to prevent silt, hazardous materials and petrochemicals entering the surface water network, which has an indirect hydrological pathway to this SAC. For these reasons (mitigation measures are required in relation surface water drainage), it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives.
			Significant effects cannot be ruled out - Natura impact Statement Required
Special Protectio	on Areas		
IE004024	South Dublin Bay and River Tolka Estuary SPA	IN	Conservation Objectives 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.
			Qualifying Interests
			Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A144] Dunlin (<i>Calidris alpina</i>) [A149] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Redshank (<i>Tringa totanus</i>) [A162] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Roseate Tern (<i>Sterna dougallii</i>) [A192] Common Tern (<i>Sterna hirundo</i>) [A193] Arctic Tern (<i>Sterna paradisaea</i>) [A194] Wetland and Waterbirds [A999]
			Potential Impact
			The development site is located within an urban area 4.4 km from the South Dublin Bay and River Tolka Estuary SPA (Figure 11). There is no direct hydrological pathway to this SPA.
			There is an indirect hydrological connection to this SPA via the proposed foul and surface water drainage strategies. Surface water drainage will be directed to a public surface water drainage network that outfalls to the Poddle Stream, which outfalls to the River Liffey, and ultimately the marine environment at Dublin Bay. It is considered that, out of an abundance of caution, and in the absence of mitigation, there is the potential for dust and contaminated surface water runoff to enter the Poddle Stream with the potential for downstream impacts on the qualifying interests of this SPA. Mitigation measures are required to ensure that dust and contaminated surface water runoff does not enter the Poddle Stream.

Natura Code	Name	Screened	Details/Reason
		In/Out	
			Foul wastewater will be directed to an existing public foul network, which in turn discharges to Ringsend WwTP for treatment. Foul wastewater will be treated along this network and as a result no significant effects on this SPA are likely from this indirect hydrological pathway.
			Given the minimum distance to this SPA (4.4 km) across a substantial urban environment, no significant noise or vibration impacts on this SPA are foreseen. A wintering bird survey (Appendix I) was conducted onsite to accompany this planning application. This report concludes: <i>'Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). The open ground habitat on-site was judged to be sub-optimal for Gulls, Geese or Wader species. Results also suggest that the site is not a regular flightline path for such species like Brent Geese or other species of significant interest, checks on data bases (Irishbirding.com for example) suggest this part of the city has no history of foraging Geese or other significant species with the closest known sites being Crumlin farther to the south.' In addition, the site consists of an active construction site, recolonizing bare ground, scrub and long grassland that is succumbing to scrub. The subject site primarily consists of scrub and recolonising bare ground and does not contain habitats of importance to the qualifying interests of this SPA. The proposed development will not significantly effect the roosting or foraging behaviours of the qualifying interests of this SPA.</i>
			In a strict application of the precautionary principle, it has been concluded that significant effects on the South Dublin Bay and River Tolka Estuary SPA cannot be ruled out, in the absence of mitigation measures, from the proposed development primarily as a result of the indirect hydrological connection of surface water drainage to the SPA and the potential for pollution and silt to enter this network.
			Mitigation measures will need to be in place to prevent silt, hazardous materials and petrochemicals entering the surface water network, which has an indirect hydrological pathway to this SPA. For these reasons (mitigation measures are required in relation surface water drainage), it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives.
			Significant effects cannot be ruled out - Natura Impact Statement Required
IE004006	North Bull	IN	Conservation Objectives
	Island SPA		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.
			Qualifying Interests Light-bellied Brent Goose (Branta bernicla hrota) [A046]

Natura Code	Name	Screened	Details/Reason
		In/Out	
			Shelduck (<i>Tadorna tadorna</i>) [A048] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A140] Knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A144] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Turnstone (<i>Arenaria interpres</i>) [A169] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Wetland and Waterbirds [A999]
			Potential Impact
			The proposed works are located within an urban area 7.3 km from the North Bull Island SPA (Figure 11). There is no direct hydrological pathway to this SPA.
			There is an indirect hydrological connection to this SPA via the proposed foul and surface water drainage strategies. Surface water drainage will be directed to a public surface water drainage network that outfalls to the Poddle Stream, which outfalls to the River Liffey, and ultimately the marine environment at Dublin Bay. It is considered that, out of an abundance of caution, and in the absence of mitigation, there is the potential for dust and contaminated surface water runoff to enter the Poddle Stream with the potential for downstream impacts on the qualifying interests of this SPA. Mitigation measures are required to ensure that dust and contaminated surface water runoff does not enter the Poddle Stream.
			Foul wastewater will be directed to an existing public foul network, which in turn discharges to Ringsend WwTP for treatment. Foul wastewater will be treated along this network and as a result no significant effects on this SPA are likely from this indirect hydrological pathway.
			Given the minimum distance to this SPA (7.3 km) across a substantial urban environment, no significant noise or vibration impacts on this SPA are foreseen. A wintering bird survey (Appendix I) was conducted onsite to accompany this planning application. This report concludes: ' <i>Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). The open ground habitat onsite was judged to be sub-optimal for Gulls, Geese or Wader species. Results also suggest that the site is not a regular flightline path for such species like Brent Geese or other species of significant interest, checks on data bases (Irishbirding.com for example) suggest this part of the city has no history of foraging Geese or other significant species with</i>

Natura Code	Name	Screened	Details/Reason
		in/Out	the closest known sites being Crumlin farther to the south.' In addition, the site consists of an active construction site, recolonizing bare ground, scrub and long grassland that is succumbing to scrub. The subject site primarily consists of scrub and recolonising bare ground and does not contain habitats of importance to the qualifying interests of this SPA. The proposed development will not significantly effect the roosting or foraging behaviours of the qualifying interests of this SPA.
			In a strict application of the precautionary principle, it has been concluded that significant effects on the North Bull Island SPA cannot be ruled out, in the absence of mitigation measures, from the proposed development primarily as a result of the indirect hydrological connection of surface water drainage to the SPA.
			Mitigation measures will need to be in place to prevent silt, hazardous materials and petrochemicals entering the surface water network, which has an indirect hydrological pathway to this SPA. For these reasons (mitigation measures are required in relation surface water drainage), it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives.
			Significant effects cannot be ruled out - Natura Impact Statement Required



Figure 10. Special Areas of Conservation (SAC) within 15km of the proposed works site



Figure 11. Special Protection Areas (SPA) within 15km of the proposed works site



Figure 12. Waterbodies within 1km of the subject site



Figure 13. Waterbodies and SACs proximate to the proposed works site



Figure 14. Waterbodies and SPAs proximate to the proposed works site

In-Combination Effects

Cumulative Impacts can be defined as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer.

A review of other off-site developments and proposed developments was completed as part of this assessment. The following projects and plans were reviewed and considered for possible cumulative effects with the Proposed Development.

Table 3 details the existing, proposed and granted planning permissions on record in the area:

	Table 3:	Potential	Cumulative	Impacts
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Planning Re No.	f Applicant Name	Summary of Development
3537/21	Coombe Lying-in Hospital	Planning permission for development at the Coombe Women and Infants University Hospital, Dolphin's Barn Street, Dublin 8, D08 XW7X on a 0.15 hectare site to the south-east of the hospital site, such site also including the existing Colposcopy building.
		The development for which planning permission is sought comprises of the development of a new dedicated Colposcopy/Women's Health Unit building of 3 no. storeys plus rooftop plant room which will be attached to the existing Colposcopy building to the west by way of glazed link. The development will include the partial demolition of the eastern meeting room and lobby area wing to the existing Colposcopy building to facilitate the connection to the new building. The proposed building comprises of a 988 sq.m gross floor area building. The building will comprise of: (i) at ground floor level; a waiting area, 2 wc's (1 accessible), 1 plant room, 1 meeting room, 3 gynaecology examination rooms (with associated changing rooms), 1 utility room, a waste room, an early pregnancy assessment unit with dedicated entrance, 2 assessment rooms, reflection room, 1 wc, and an office/reception; (ii) at first floor; a waiting area, a check in room, a supplies store, 2 wc's (1 accessible), 4 colposcopy examination rooms and with associated changing and consultation areas, a utility and a waste room; (iii) at second floor; a meeting room, 2 staff changing rooms (1 accessible with shower and wc), a wc, a staff canteen, a photocopier room and 4 staff office rooms. The proposed Colposcopy building will involve the loss of 10 existing parking spaces, at the south- eastern corner of the hospital site. 2 number accessible car parking spaces will be provided to the south of the proposed extension. Planning permission is also sought for site drainage, a glazed link to the existing Colposcopy building, site landscaping works, and all other associated and ancillary works. Access is via the main hospital campus which is accessed from Dolphin's Barn Street.
		Grant Permission 25 Apr 2022
SHD0031/20 ABP 308917- 2	DBTR-SCR1 Fund, a Sub-Fund of the CWTC Multi Family ICAV,	Demolition of all buildings excluding the original fabric of the former Player Wills Factory, construction of 492 no. Build to Rent apartments, 240 no. Build to Rent shared accommodation along, creche and associated site works. Grant Permission 15 Apr 2021
1		

ABP-307221-20	DBTR-SCR1 Fund aSub-Fund of the CWTC Multi Family ICAV	Demolition of all structures, construction of 416 no. residential units (4 no. houses, 412 no. apartments) and associated site works. Planning Permission Granted with Conditions 14/09/2020
4049/19	The Coombe Women & Infant's University Hospital	The development will consist of a new four storey laboratory building (1340m ²) (under construction) within the existing Coombe site with the provision of rooftop plant and 2 no. rear extensions to the existing adjacent laboratory building to include a new link, office and store (68m2) with all associated site works. This application site is in S.D.R.A. no.12, St Teresa's Gardens and Environs Strategic Development and Regeneration Area. Grant Permission 11 Feb 2020
ABP- 314171	CWTC Multi Family ICAV (Applicant) CWTC Multi Family ICAV (Applicant) (Active)	Demolition of buildings, construction of 345 no. residential units (292 no. Build to Rent apartments, 49 no. Build to Sell apartments, 4 no. Build to Sell Houses) creche and associated site works. Case is due to be decided by 14/11/2022

There is no direct pathway to designated sites. It is considered that in combination effects on biodiversity, with other existing and proposed developments in proximity to the application area, would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on designated conservation sites will be seen as a result of the proposed development alone or in combination with other projects.

No projects in the vicinity of the proposed development would be seen to have a significant in combination effect on Natura 2000 sites.

Further Information on European Sites Screened in for NIS

South Dublin Bay SAC (Site code: 000210)

As outlined in the South Dublin Bay SAC Site Synopsis² (NPWS, version date 10.12.2015):

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

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

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

[2110] Embryonic shifting dunes

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

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

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

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

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

At low tide the inner parts of the south bay are used for amenity purposes. 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.'

The Natura 2000 Standard Data Form (2020)³ states that:

² <u>https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000210.pdf</u>

³ <u>https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000210.pdf</u>

'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.'

As outlined in the Conservation objectives supporting document⁴ (NPWS, 2013), it is an objective:

'To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC, which is defined by the following list of attributes and targets."

Target 1: "The permanent habitat area is stable or increasing, subject to natural processes."

Target 2: "Maintain the extent of the Zostera-dominated community, subject to natural processes."

Target 3: "Conserve the high quality of the Zostera-dominated community, subject to natural processes."

Target 4: "Conserve the following community type in a natural condition: Fine sands with Angulus tenuis community complex."

4

https://www.npws.ie/sites/default/files/publications/pdf/000210_South%20Dublin%20Bay%20SAC%20Marine%20Supp_ orting%20Doc_V1.pdf






Figure 2. Distribution of community types in South Dublin Bay SAC

North Dublin Bay SAC (Site code: 000206)

As outlined in the North Dublin Bay SAC Site Synopsis⁵ (NPWS, version date 12.08.2013):

'This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site.

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

[1140] Tidal Mudflats and Sandflats
[1210] Annual Vegetation of Drift Lines
[1310] Salicornia Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[2110] Embryonic Shifting Dunes
[2120] Marram Dunes (White Dunes)
[2130] Fixed Dunes (Grey Dunes)*
[2190] Humid Dune Slacks
[1395] Petalwort (Petalophyllum ralfsii)

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

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

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

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

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "Salicornia flat", which is dominated by Salicornia dolichostachya, a pioneer glasswort species, and covers about 25 ha. Beaked Tasselweed (Ruppia maritima) occurs in this area, along with some Narrow-leaved Eelgrass (Zostera angustifolia). Dwarf Eelgrass (Z. noltii) also occurs in Sutton Creek. Common Cordgrass (Spartina

⁵ <u>https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000206.pdf</u>

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.'

The Natura 2000 Standard Data Form (2020)⁶ states that:

'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

⁶ <u>https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000206.pdf</u>

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 landuse 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.'

As outlined in the Conservation objectives supporting document (NPWS, 2013):

'North Dublin Bay SAC (site code: 206) is designated for a range of coastal habitats, including mudflats and salt flats, saltmarsh and sand dunes. The following eight coastal habitats are included in the qualifying interests for the site (* denotes a priority habitat):

- Salicornia and other annuals colonising mud and sand (1310)
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae) (ASM) (1330)
- Mediterranean salt meadows (Juncetaliea maritimi) (MSM) (1410)
- Annual vegetation of drift lines (1210)
- Embryonic shifting dunes (2110)
- Shifting dunes along the shoreline with Ammophila arenaria (white dunes) (2120)
- Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130)*
- Humid dune slacks (2190)

The first three are saltmarsh habitats and the last five are associated with sand dune systems, although all eight of these habitats are found in close association with each other (McCorry, 2007; Ryle et al., 2009; Delaney et al., 2013).

This backing document sets out the conservation objectives for the eight coastal habitats listed above in North Dublin Bay SAC, which are defined by a list of parameters, attributes and targets. The main parameters are (a) Range (b) Area and (c) Structure and Functions, the last of which is broken down into a number of attributes, including physical structure, vegetation structure and vegetation composition.

The targets set for the saltmarsh habitats are based primarily on the results of the Saltmarsh Monitoring Project (SMP) (McCorry, 2007; McCorry & Ryle, 2009⁷) and this document should be read in conjunction with those reports.'

⁷ McCorry, M. (2007) Saltmarsh Monitoring Project 2006, Unpublished report for National Parks and Wildlife Service, Dublin, IE.

McCorry, M., Ryle, T. (2009) Saltmarsh Monitoring Project 2007-2008: Final Report, Unpublished report for National Parks and Wildlife Service, Dublin, IE.









South Dublin Bay and River Tolka (Site code: 004024)

As outlined in the South Dublin Bay SAC Site Synopsis⁸. (NPWS, version date 30.05.2015):

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

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

⁸ <u>https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004024.pdf</u>

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.'

The Natura 2000 Standard Data Form (2020)⁹ states that:

'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.'

According to the conservation Objectives Supporting Document¹⁰ (NPWS 2014) for the South Dublin Bay and River Tolka Estuary SPA:

'The overarching Conservation Objective for North Bull Island Special Protection Area, and for South Dublin Bay and River Tolka Estuary Special Protection Area, is to ensure that waterbird populations and their wetland habitats are maintained at, or restored to, favourable conservation condition. This includes, as an integral part, the need to avoid deterioration of habitats and significant disturbance; thereby ensuring the persistence of site integrity.

The site should contribute to the maintenance and improvement where necessary, of the overall favourable status of the national resource of waterbird species, and continuation of their long-term survival across their natural range.

Conservation Objectives for North Bull Island Special Protection Area, and for South Dublin Bay and River Tolka Estuary Special Protection Area, based on the principles of favourable conservation status, are described below and summarised in Table 3.1. Note that these objectives should be read and interpreted in the context of information and advice provided in additional sections of this report.

Objective 1: To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA.

https://www.npws.ie/sites/default/files/publications/pdf/South%20Dublin%20Bay%20and%20River%20Tolka%20Estuar y%20SPA%20(004024)%20Conservation%20objectives%20supporting%20document%20-%20[Version%201].pdf

⁹ <u>https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004024.pdf</u>

¹⁰ Note that 'population' refers to site population (numbers wintering at the site) rather than the species biogeographic population.

This objective is defined by the following attributes and targets:

- To be favourable, the long term population trend for each waterbird Special Conservation Interest species should be stable or increasing¹¹. Waterbird populations are deemed to be unfavourable when they have declined by 25% or more, as assessed by the most recent population trend analysis.
- To be favourable, there should be no significant decrease in the range, timing or intensity of use of areas by the waterbird species of Special Conservation Interest, other than that occurring from natural patterns of variation.

Factors that can adversely effect the achievement of Objective 1 include:

- Habitat modification: activities that modify discreet areas or the overall habitat(s) within the SPA in terms of how one or more of the listed species use the site (e.g. as a feeding resource) could result in the displacement of these species from areas within the SPA and/or a reduction in their numbers (for further discussion on this topic please refer to Section 5.4).
- Disturbance: anthropogenic disturbance that occurs in or near the site and is either singular or cumulative in nature could result in the displacement of one or more of the listed waterbird species from areas within the SPA, and/or a reduction in their numbers (for further discussion on this topic please refer to Section 5.4).
- Ex-situ factors: several of the listed waterbird species may at times use habitats situated within the immediate hinterland of the SPA or in areas ecologically connected to it. The reliance on these habitats will vary from species to species and from site to site. Significant habitat change or increased levels of disturbance within these areas could result in the displacement of one or more of the listed waterbird species from areas within the SPA, and/or a reduction in their numbers (for further information on this topic please refer to Section 5.2).

Objective 2. To maintain the favourable conservation condition of the wetland habitat at North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas.

This objective is defined by the following attributes and targets:

• To be favourable, the permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 3,904 ha, other than that occurring from natural patterns of variation.

This objective seeks to maintain the permanent extent of the wetland habitats that are contained within the boundary of these two SPAs, and which constitute an important resource for regularly-occurring migratory waterbirds (note that the total designated area also contains some non-wetland habitat).'



North Bull Island SPA (Site code: 004006)

As outlined in the North Bull Island SPA Site Synopsis¹² (NPWS, version date 25.03.2014)

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

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

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

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Lightbellied 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.'

¹² <u>https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004006.pdf</u>

The Natura 2000 Standard Data Form (2020)¹³ states that:

'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 landuse 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 ferruginea 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.'

The North Bull Island SPA Conservation Objectives Supporting Document¹⁴ (NPWS, 2014) states the following:

'North Bull Island lies roughly parallel to the shore and is a low-lying sandy spit, about 4.85 km long and 0.70 km wide (McCorry & Ryle, 2009a). It is a relatively recent geomorphological feature having emerged as a result of the build up of sediment over the last 200 years following the construction of the South and North Bull walls during the 18th and 19th centuries. The North Bull Wall marks the southern boundary of the island and is connected to the mainland by a wooden bridge. The island is actively accreting (Ryle et al. 2009a). A sandy beach, Dollymount Strand, occurs on the seaward side of the island and intertidal mudflats occur on the inner (mainland side) fringed by saltmarsh. A causeway built in 1965 provides the main access to the island and divides the intertidal flats into two areas known as the North and South Bull lagoons. Both of these are covered completely by most tides and are drained by permanent channels; the southern lagoon fills and empties beneath Bull Bridge, while water in the northern lagoon is channelled in and out through Sutton Creek (Harris, 1977). These lagoons provide the main feeding grounds for the wintering waterfowl while the fringing saltmarsh provides the main roost site for wintering birds in Dublin Bay. Macroalgal mats of filamentous Ulva spp. (formerly Enteromorpha spp.) 1 are prevalent.

North Bull Island is one of the finest sand dune systems in Ireland and is internationally important in terms of conservation value (McCorry & Ryle, 2009a). It has several high quality examples of rare and threatened coastal habitats and a wealth of biodiversity, which includes several habitats and species listed in Annexes I and II of the EU Habitats Directive. As a consequence, North Bull Island is afforded several other nature conservation designations alongside its status as a Special Protection Area. It was designated as an official bird sanctuary under the Wild Bird Protection Act, 1931, the first bird sanctuary in Ireland (McCorry & Ryle, 2009a), and was established as a National Nature Reserve in 1988 (two parts covered by S.I. 231 and S. I. 232 of 1988). The site

¹³ <u>https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004006.pdf</u>

https://www.npws.ie/sites/default/files/publications/pdf/North%20Bull%20Island%20SPA%20(004006)%20Conservation %20objectives%20supporting%20document%20-%20[Version%201].pdf

has been designated as part of a Special Area of Conservation (North Dublin Bay SAC - NPWS site code 000206). North Bull Island is also a Biogenetic Reserve (Council of Europe) and a UNESCO World Biosphere Reserve.'

The following objectives have been identified:

'Objective 1: To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA

Objective 2: To maintain the favourable conservation condition of the wetland habitat at North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas.'



Status of Qualifying Interests & Conservation Objectives

The Qualifying Interests (QI) (Features of Interest), Special Conservation Interests (SCIs) for the SAC and SPA sites and the National conservation status of the Natura 2000 sites subject to the NIS are seen in Table 4. The site specific conservation Objectives for Natura 2000 sites are seen in Table 5.

Qualifying Interests, Conservation Status, Mar	nagement Objectives, Conditions underpinning site integrity for relevant Europear) sites
Natura 2000 Site Name & Code	Qualifying Interests	Current Conservation Status &
		Trend
Special Areas of Conservation (SAC)		
South Dublin Bay SAC (000210)	Mudflats and sandflats not covered by seawater at low tide [1140]	Inadequate
	Annual vegetation of drift lines [1210]	Inadequate
	Salicornia and other annuals colonising mud and sand [1310]	Favourable
	Embryonic shifting dunes [2110]	Inadequate
North Dublin Bay SAC (000206)	Mudflats and sandflats not covered by seawater at low tide [1140]	Inadequate
	Annual vegetation of drift lines [1210]	Inadequate
	Salicornia and other annuals colonising mud and sand [1310]	Favourable
	Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Inadequate
	Mediterranean salt meadows (Juncetalia maritimi) [1410]	Inadequate
	Embryonic shifting dunes [2110]	Inadequate
	Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]	Inadequate
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Bad
	Humid dune slacks [2190]	Inadequate
	Petalwort (Petalophyllum ralfsii) [1395]	Favourable
Special Protection Areas (SPA)		
South Dublin Bay and River Tolka Estuary	Light-bellied Brent Goose (Branta bernicla hrota) [A046]	Amber
SPA (004024)	Oystercatcher (Haematopus ostralegus) [A130]	Amber
	Ringed Plover (Charadrius hiaticula) [A137]	Green
	Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Amber
	Knot (<i>Calidris canutus</i>) [A143]	Amber
	Sanderling (Calidris alba) [A144]	Green
	Dunlin (<i>Calidris alpina</i>) [A149]	Red
	Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Amber
	Redshank (Tringa totanus) [A162]	Red
	Black-headed Gull (Chroicocephalus ridibundus) [A179]	Red
	Roseate Tern (Sterna dougallii) [A192]	Amber
	Common Tern (<i>Sterna hirundo</i>) [A193]	Amber
	Arctic Tern (Sterna paradisaea) [A194]	Amber
	Wetland and Waterbirds [A999]	N/A

Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites				
Natura 2000 Site Name & Code	Qualifying Interests	Current Conservation Status &		
		Trend		
North Bull Island SPA (004006)	Light-bellied Brent Goose (Branta bernicla hrota) [A046]	Amber		
	Shelduck (<i>Tadorna tadorna</i>) [A048]	Amber		
	Teal (<i>Anas crecca</i>) [A052]	Amber		
	Pintail (Anas acuta) [A054]	Red		
	Shoveler (<i>Anas clypeata</i>) [A056]	Red		
	Oystercatcher (Haematopus ostralegus) [A130]	Amber		
	Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Red		
	Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Amber		
	Knot (<i>Calidris canutus</i>) [A143]	Amber		
	Sanderling (Calidris alba) [A144]	Green		
	Dunlin (<i>Calidris alpina</i>) [A149]	Red		
	Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Amber		
	Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Amber		
	Curlew (<i>Numenius arquata</i>) [A160]	Red		
	Redshank (<i>Tringa totanus</i>) [A162]	Red		
	Turnstone (Arenaria interpres) [A169]	Green		
	Black-headed Gull (Chroicocephalus ridibundus) [A179]	Red		
	Wetland and Waterbirds [A999]	N/A		

South Dublin Bay SAC (000210)			
Attribute	Measure	Target	
Mudflats and sandflats not covered by v	water at low tide [1140] (Maintain the	favourable conservation condition)	
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes	
Community extent	Hectares	Maintain the extent of the Zostera-dominated community, subject to natural processes	
Community structure: Zostera density	Shoots/m ²	Conserve the high quality of the Zostera-dominated community, subject to natural processes	
Community distribution	Hectares	Conserve the following community types in a natural condition: Fine sands with Angulus tenuis community complex	
North Dublin Bay SAC (000206)			
Attribute	Measure	Target	
Mudflats and sandflats not covered by v	vater at low tide [1140] (Maintain the	favourable conservation condition)	
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes	
Community extent	Hectares	Maintain the extent of the Mytilus edulis-dominated community, subject to natural processes	
Community structure: <i>Mytilus edulis</i> density	Individuals/m ²	Conserve the high quality of the Mytilus edulis -dominated community, subject to natural processes	
Community distribution	Hectares	Conserve the following community types in a natural condition: Fine sand to sandy mud with <i>Pygospio elegans</i> and <i>Crangon crangon</i> community complex; Fine sand with <i>Spio martinensis</i> community complex	
Annual vegetation of drift lines [1210] (Restore the favourable conservation condition)			
Habitat area	Hectares	Area increasing, subject to natural processes, including erosion and succession	
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes	
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation composition: typical species and subcommunities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sea rocket (<i>Cakile maritima</i>), sea sandwort (<i>Honckenya peploides</i>), prickly saltwort (<i>Salsola kali</i>) and oraches (<i>Atriplex</i> spp.)	
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	
Salicornia and other annuals colonizing	mud and sand [1310] (Restore the fave	ourable conservation condition of Salicornia and other annuals colonizing mud and sand)	
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub- site mapped: North Bull Island 29.10 ha.	
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes	

Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain, or where necessary restore, natural circulation of sediment and organic matter, without any physical obstructions	
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Centimetres	Maintain structural vegetation with sward	
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)	
Vegetation structure: negative indicator species – Spartina anglica	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1%.	
Atlantic salt meadows [1330] (Maintain	the favourable conservation condition	n)	
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub- site mapped: North Bull Island 81.84ha.	
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes	
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Centimetres	Maintain structural vegetation with sward	
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)	
Vegetation structure: negative indicator species – Spartina anglica	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1%.	
Mediterranean salt meadows [1410] (Maintain the favourable conservation condition)			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub- site mapped: North Bull Island – 7.98ha.	
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes	
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	

Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural vegetation with sward
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species – Spartina anglica	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1%.
Embryonic shifting dunes [2110] (Resto	re the favourable conservation conditi	on)
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub- site mapped: North Bull Island – 2.64ha; South Bull – 3.43ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: plant health of foredune grasses	Percentage Cover	More than 95% of sand couch (<i>Elytrigia juncea</i>) and/or lyme grass (<i>Leymus arenarius</i>) should be healthy (i.e., green plant parts above ground and flowering heads present)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch (<i>Elytrigia juncea</i>) and/or lyme grass (<i>Leymus arenarius</i>)
Vegetation structure: negative indicator species	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover
Shifting dunes along the shoreline with	Ammophila arenaria (white dunes) [22	120] (Restore the favourable conservation condition)
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub- site mapped: North Bull Island – 2.20ha; South Bull – 0.97ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: plant health of dune grasses	Percentage Cover	95% of marram grass (Ammophila arenaria) and/or lyme-grass (Leymus arenarius) should be healthy (i.e. green plant parts above ground and flowering heads present)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (Ammophila arenaria) and/or lyme-grass (Leymus arenarius)

Vegetation structure: negative indicator species	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover
Fixed coastal dunes with herbaceous ve	getation (grey dunes) [2130] (Restore	the favourable conservation condition)
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub- site mapped: North Bull – 40.29ha; South Bull – 64.56ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et. al. (2013)
Vegetation composition: negative indicator species (including <i>Hippophae</i> <i>rhamnoides</i>)	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover
Vegetation composition: scrub/trees	Percentage Cover	No more than 5% cover or under control
Humid dune slacks [2190] (Restore the	favourable conservation condition)	
Habitat area	Hectares	Area increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull -3.96 ha; South Bull -9.15 ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et. al. (2013)
Vegetation composition: cover of Salix repens	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (Salix repens)
Vegetation composition: negative indicator species	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover

Vegetation composition: scrub/trees	Percentage Cover	No more than 5% cover or under control
Petalwort (Petalophyllum ralfsii) [1395]	(Maintain the favourable conservation	n condition)
Distribution of populations	Number and geographical spread of populations	No decline
Population size	Number of individuals	No decline
Age of suitable habitat	Hectares	No decline
Hydrological conditions: soil moisture	Occurrence	Maintain hydrological conditions so that substrate is kept moist and damp throughout the year, but not subject to prolonged inundation by flooding in winter
Vegetation structure: height and cover	Centimetres and percentage	Maintain open, low vegetation with a high percentage of bryophytes (small acrocarps and liverwort turf) and bare ground

South Dublin Bay and River Tolka Estuar	South Dublin Bay and River Tolka Estuary SPA (004024)			
Attribute	Measure	Target		
Light-bellied Brent Goose (Branta bernicle	a hrota) [A046], Oystercatcher (Haema	atopus ostralegus) [A130], Ringed Plover (Charadrius hiaticula) [A137], Knot (Calidris		
canutus) [A143], Sanderling (Calidris alba) [A144], Dunlin (<i>Calidris alpina alpina</i>)) [A149], Bar-tailed Godwit (Limosa lapponica) [A157], Redshank (Tringa totanus) [A162],		
Black-headed Gull (Chroicocephalus ridible	undus) [A179] (Maintain the favourable	e conservation condition)		
Note: Grey Plover (Pluvialis squatarola) [/	A141] is proposed for removal from the	e list of SCI's for the site so no site specific conservation objective is included for the		
species				
Population Trend	Percentage Change	Long term population trend stable or increasing		
Distribution	Range, timing and intensity of use of	No significant decrease in the range, timing and intensity of use of areas by all of the above		
	areas	named species, other than that occurring from natural patterns of variation		
Roseate Tern Sterna dougallii [A192]				
Passage population: individuals	Passage population: individuals	Passage population: individuals		
Distribution: roosting areas	Distribution: roosting areas	Distribution: roosting areas		
Prey biomass available	Prey biomass available	Prey biomass available		
Barriers to connectivity	Barriers to connectivity	Barriers to connectivity		
Disturbance at roosting site	Disturbance at roosting site	Disturbance at roosting site		
Common Tern Sterna hirundo [A193]				
Breeding population abundance: apparently	Breeding population abundance:	Breeding population abundance: apparently occupied nests (AONs)		
occupied nests (AONs)	apparently occupied nests (AONs)			
Productivity rate: fledged young per	Productivity rate: fledged young per	Productivity rate: fledged young per breeding pair		
breeding pair	breeding pair			
Passage population: individuals	Passage population: individuals	Passage population: individuals		
Distribution: breeding colonies	Distribution: breeding colonies	Distribution: breeding colonies		
Distribution:	Number; location; area (hectares)	No significant decline		
roosting areas				
Prey biomass available	Kilogrammes	No significant decline		

South Dublin Bay and River Tolka Estuary SPA (004024)				
Attribute		Measure		Target
Barriers to connectivity		Number; location; shape; area (hectares))	No significant increase
Disturbance at breeding sit	te	Level of impact		Human activities should occur at levels that do not adversely affect the breeding common tern population
Disturbance at roosting sit	e	Level of impact		Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns
Arctic Tern Sterna paradisa	aea [A194]			
Passage population: individ	duals	Number		No significant decline
Distribution: roosting area	S	Number; location; area (hecta	res)	No significant decline
Prey biomass available		Kilogrammes		No significant decline
Barriers to connectivity		Number; location; shape; area (hectares)	1	No significant increase
Disturbance at roosting sit	e	Level of impact		Human activities should occur at levels that do not adversely affect the numbers of Arctic tern
			C · I · I	among the post-breeding aggregation of terns
A999 Wetlands - To maintain the favourable conservation condition of the wetland habitat				
Habitat Area		Hectares		The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192ha, other than that occurring from natural patterns of variation
North Bull Island SPA (0	04006)			
Attribute	Measure		Target	
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Shelduck (<i>Tadorna tadorna</i>) [A048], Teal (<i>Anas crecca</i>) [A052], Pintail (<i>Anas acuta</i>) [A054], Shoveler (<i>Anas clypeata</i>) [A056], Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Golden Ployer (<i>Pluvialis apricaria</i>) [A140], Grey Ployer (<i>Pluvialis sauatarola</i>) [A141]. Knot (<i>Calidris</i>)				
canutus) [A143]. Sanderling (Calidris alba) [A144]. Dunlin (Calidris alping alping alping) [A149]. Black-tailed Godwit (Limosa limosa) [A156]. Bar-tailed Godwit (Limosa lapponica)				
[A157]. Curlew (Numeni	us arauata) [A160)]. Redshank (<i>Tringa totanus</i>)	(A162]. 1	[urnstone (Arenaria interpres) [A169]. Black-headed Gull (Chroicocephalus ridibundus)
[A179] (Maintain the favourable conservation condition)				
Population Trend Percentage Change		Long terr	m population trend stable or increasing	
Distribution	Range, timing and	nge, timing and intensity of use of areas		icant decrease in the range, timing and intensity of use of areas by all of the above named species,
		other tha	an that occurring from natural patterns of variation	
A999 Wetlands - To mai	ntain the favoura	ble conservation condition of	f the wetl	and habitat
Habitat Area	Hectares		The perm	nanent area occupied by the wetland habitat should be stable and not significantly less than the area
			of 1,713h	na, other than that occurring from natural patterns of variation

Analysis of the Potential Impacts on Natura 2000 Sites.

The Land Development Agency intend to apply for planning permission for a proposed residential development on lands at the former St. Teresa's Gardens, Donore Avenue, Dublin 8.

Impacts of the proposed works

The proposed development is not within a designated conservation site. The nearest Natura 2000 site is South Dublin Bay and River Tolka Estuary SPA (4.4 km). Given the nature of the construction works, and recognising that it is proposed to direct surface water drainage to an existing public network that outfalls to the Poddle Stream which outfalls to the River Liffey and ultimately the marine environment at Dublin Bay, it is considered that there is a direct hydrological pathway to South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Dublin Bay SAC, and North Bull Island SPA. Out of an abundance of caution, it is considered that there is the potential for dust and contaminated surface water runoff to enter the Poddle Stream during construction and operation and reach downstream European Sites. It cannot be ruled out, without mitigation, that the proposed development will have significant effects on the identified European sites.

The potential impacts on European sites are seen in Table 6. The proposed construction works would impact on the existing ecology of the site and the surrounding area. In the absence of mitigation, this could lead to the transportation of dust and surface water runoff to the Poddle Stream, with the potential for downstream impacts on European sites located within Dublin Bay.

Construction and operational phase mitigation measures are required on site particularly as clearance of the site is proposed which will remove all existing terrestrial habitats and in the absence of mitigation would lead to silt laden and contaminated runoff entering the Poddle Stream and downstream designated sites.

Mitigation Measures

Construction and operational mitigation will be incorporated into the proposed development project to minimise the potential negative impacts within the Zone of Influence (ZoI) including the Poddle Stream and downstream European sites (Table 7).

	Table 6. Potential for	adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites
Natura	Qualifying Interests	Potential for Adverse Effects
2000 Site		
South	Mudflats and sandflats not covered	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate
Dublin Bay	by seawater at low tide [1140]	vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if
SAC	Annual vegetation of drift lines	significant quantities of pollution or silt were introduced into the Poddle Stream via the surface water drainage network
	[1210]	with potential for downstream impacts on South Dublin Bay SAC. The habitats of conservation interest of this SAC are not
	Salicornia and other annuals	on site. However, the range of the species that are of conservational interest do not extend into the proposed development
	colonising mud and sand [1310]	Site, but are located downstream of the proposed works.
		notrochamicals. Existing draipage notworks on site, surface water runoff, haulage, storage of topsoil or works in the vicinity
	Embryonic shifting dunes [2110]	of the drainage networks on onsite could lead to dust bazardous material, soil or silt laden rupoff entering the Poddle
		Stream via the surface water drainage network. Surface water runoff on site during construction may lead to silt or
		contaminated materials from site entering the Poddle Stream via the surface water drainage network with downstream
		impacts on the SAC. The use of plant and machinery, as well as the associated temporary storage of construction materials
		oils. fuels and chemicals could lead to pollution on site or in adjacent watercourses.
		Impacts on the SAC from upstream sources have the potential to directly impact on the qualifying interests of the SAC in
		the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the
		distribution number and range of the following qualifying interests due to the potential for water pollution:
		 Mudflats and sandflats not covered by seawater at low tide [1140]
		Annual vegetation of drift lines [1210]
		 Salicornia and other annuals colonising mud and sand [1310]
		Embryonic shifting dunes [2110]
		Mitigation measures are required to remove the potential of impacts on the SAC from direct pathways via the Poddle
		Stream.
North	Mudflats and sandflats not covered	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate
Dublin Bay	by seawater at low tide [1140]	vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if
SAC	Annual vegetation of drift lines	significant quantities of pollution or silt were introduced into the Poddle Stream via the surface water drainage network
	[1210]	with potential for downstream impacts on North Dublin Bay SAC. The habitats of conservation interest of this SAC are not
	Salicornia and other annuals	on site. However, the range of the species that are of conservational interest may extend into the proposed development
	colonising mud and sand [1310]	site, and are located downstream of the proposed works.
	Atlantic salt meadows (Glauco-	construction works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and
	Puccinellietalia maritimae) [1330]	of the drainage networks on onsite could lead to dust bazardous material, soil or silt laden runoff entering the Doddle
	Mediterranean salt meadows	Stream via the surface water drainage network. Surface water runoff on site during construction may lead to silt or
	(Juncetalia maritimi) [1410]	contaminated materials from site entering the Poddle Stream via the surface water drainage network with downstream
	Embryonic shifting dunes [2110]	impacts on the SAC. The use of plant and machinery, as well as the associated temporary storage of construction materials
		oils, fuels and chemicals could lead to pollution on site or in the Poddle Stream via the surface water drainage network.

	Table 6. Potential for adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites			
Natura 2000 Site	Qualifying Interests	Potential for Adverse Effects		
	Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (<i>Petalophyllum ralfsii</i>) [1395]	 Impacts on the SAC from upstream sources have the potential to directly impact on the qualifying interests of the SAC in the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests due to the potential for water pollution: Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (<i>Petalophyllum ralfsii</i>) [1395] Mitigation measures are required to remove the potential of impacts on the SAC from direct pathways via the Poddle Stream. 		
South Dublin Bay and River Tolka Estuary SPA	Light-bellied Brent Goose (Branta bernicla hrota) [A046] Oystercatcher (Haematopus ostralegus) [A130] Ringed Plover (Charadrius hiaticula) [A137] Grey Plover (Pluvialis squatarola) [A141] Knot (Calidris canutus) [A143] Sanderling (Calidris alba) [A143] Dunlin (Calidris alpina) [A143] Bar-tailed Godwit (Limosa lapponica) [A157] Redshank (Tringa totanus) [A162] Black-headed Gull (Chroicocephalus ridibundus) [A179]	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the Poddle Stream via the surface water drainage network with potential for downstream impacts on South Dublin Bay and River Tolka Estuary SPA. The habitats of conservation interest of this SPA are not on site. However, the range of the species that are conservation interests would potentially be downstream of the proposed works. Construction works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and petrochemicals. Existing drainage networks on site, surface water runoff, haulage, storage of topsoil or works in the vicinity of the drainage networks on onsite could lead to dust, hazardous material, soil or silt laden runoff entering the Poddle Stream via the surface water drainage network. Surface water runoff on site during construction may lead to silt or contaminated materials from site entering the Poddle Stream via the surface sculd lead to pollution on site or in the Poddle Stream. Impacts on the SPA from upstream sources have the potential to directly impact on the qualifying interests of the SPA in the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests due to the potential for water pollution: Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Grey Plover (<i>Pluvialis squatarola</i>) [A141]		

Table 6. Potential for adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites				
Natura 2000 Site	Qualifying Interests	Potential for Adverse Effects		
	Roseate Tern (<i>Sterna dougallii</i>) [A192] Common Tern (<i>Sterna hirundo</i>) [A193] Arctic Tern (<i>Sterna paradisaea</i>) [A194] Wetland and Waterbirds [A999]	 Knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A144] Dunlin (<i>Calidris alpina</i>) [A149] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Redshank (<i>Tringa totanus</i>) [A162] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Roseate Tern (<i>Sterna dougallii</i>) [A192] Common Tern (<i>Sterna hirundo</i>) [A193] Arctic Tern (<i>Sterna paradisaea</i>) [A194] Mitigation measures are required to remove the potential of impacts on the SPA from direct pathways via the Poddle Stream. 		
North Bull Island SPA	Light-bellied Brent Goose (<i>Branta</i> <i>bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056]	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the Poddle Stream via the surface water drainage network with potential for downstream impacts on North Bull Island SPA. The habitats of conservation interest of this SPA are not on site. However, the range of the species that are conservation interests would potentially be downstream of the proposed works.		
	Oystercatcher (<i>Haematopus</i> ostralegus) [A130] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A143] Dunlin (<i>Calidris alpina</i>) [A144] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa</i> <i>limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa</i> <i>lapponica</i>) [A157] Curlew (<i>Numenius arguata</i>) [A160]	Construction works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and petrochemicals. Existing drainage networks on site, surface water runoff, haulage, storage of topsoil or works in the vicinity of the drainage networks on onsite could lead to dust, hazardous material, soil or silt laden runoff entering the Poddle Stream via the surface water drainage network. Surface water runoff on site during construction may lead to silt or contaminated materials from site entering the Poddle Stream via the surface water drainage network with downstream impacts on the SAC. The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels and chemicals could lead to pollution on site or in adjacent watercourses. Mitigation measures are required to remove the potential of impacts on the SPA from direct pathways via the Poddle Stream. Impacts on the SPA from upstream sources have the potential to directly impact on the qualifying interests of the SPA in the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests due to the potential for water pollution: • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Teal (<i>Anas crecca</i>) [A052] • Pintail (<i>Anas acuta</i>) [A054]		
	Bar-tailed Godwit (<i>Limosa</i> <i>lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162]	 Teal (Anas crecca) [A052] Pintail (Anas acuta) [A054] Shoveler (Anas clypeata) [A056] 		

Table 6. Potential for adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites				
Natura 2000 Site	Qualifying Interests	Potential for Adverse Effects		
	Turnstone (<i>Arenaria interpres</i>) [A169] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Wetland and Waterbirds [A999]	 Oystercatcher (Haematopus ostralegus) [A130] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Knot (Calidris canutus) [A143] Sanderling (Calidris alba) [A144] Dunlin (Calidris alpina) [A149] Mitigation measures are required to remove the potential of impacts on the SPA from direct pathways via the drainage ditch on site. 		

Table 7. Mitigation measures

Sensitive	Potential Impacts on	Mitigation Measures to Prevent Significant effectson Natura 2000 sites	
Receptors	SPA & SAC		
South Dublin Bay SAC North Dublin Bay SAC South Dublin Bay and River Tolka Estuary SPA North Bull Island SPA	 Habitat degradation Dust deposition Pollution Silt ingress from site runoff Downstream impacts Negative impacts on the aquatic environment, aquatic species and qualifying interests. 	 A project ecologist will be appointed to oversee works from prior to commencement of works on site to the completion of all drainage and landscape elements. Local silt traps established throughout site. Mitigation measures on site include dust control, stockpiling away from drains. Stockpiling of loose materials will be kept to a minimum of 20m from drains. Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses. Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches, excavations and other locations where it may cause pollution. Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations that require pumping will not directly discharge to the public network. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality. Mitigation measures on site include dust control, stockpiling away from drains Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system. During the construction works silt traps will be put in place in the vicinity of all runoff channels to prevent sediment entering the public network. Petrochemical interception and bunds in refuelling area Maintenance of any drainage structures (e.g. de-silting operations) will not result in the release of contaminated water to the surface water network. No entry of solids to the associated stream or drainage network during the connection of pipework to the public water system Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during grou	

Sensitive Recentors	Potential Impacts on	Mitigation Measures to Prevent Significant effectson Natura 2000 sites	
Receptors	SPA & SAC	Air & Dust	
		carried out to reduce dust emissions to a level that avoids the possibility of adverse effects on downstream biodiversity. The main	
		 activities that may give rise to dust emissions during construction include the following: Excavation of material; 	
		Materials handling and storage;	
		 Movement of vehicles (particularly HGV's) and mobile plant. 	
		Contaminated surface runoff	
		Mitigation measures to be in place:	
		 Consultation will be carried with an ecologist throughout the construction phases; 	
		• Trucks leaving the site with excavated material will be covered so as to avoid dust emissions along the haulage routes.	
		Speed limits on site (15kmh) to reduce dust generation and mobilisation.	
		Site Management	
		• Regular inspections of the site and boundary will be carried out to monitor dust, records and notes on these inspections will be logged.	
		 Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. 	
		Make the complaints log available to the local authority when asked.	
		• Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.	
		Monitoring	
		• Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces within 100 m of site boundary, integrity of the silt control measures, with cleaning and / or repair to be provided if necessary.	
		Preparing and Maintaining the Site	
		• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	
		• Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.	
		Avoid site runoff of water or mud.	
		Keep site fencing, barriers and scaffolding clean using wet methods.	
		 Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. 	

Sensitive	Potential Impacts on	Mitigation Measures to Prevent Significant effectson Natura 2000 sites	
Receptors	SPA & SAC		
		 Cover, seed or fence stockpiles to prevent wind whipping. Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic. Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions. 	
		 Operations Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. Use enclosed chutes and conveyors and covered skips. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. 	
		 Waste Avoid bonfires and burning of waste materials. Measures Specific to Earthworks Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in small areas during work and not all at once. 	
		 During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust. The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be appropriate and/or required. Storage/Use of Materials, Plant & Equipment Materials, plant and equipment shall be stored in the proposed site compound location; All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines - bold 110% of the contents or 110% of the largest container whichever is greater: 	

Sensitive	Potential Impacts on	Mitigation Measures to Prevent Significant effectson Natura 2000 sites	
Receptors	SPA & SAC		
Receptors		 Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages; Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use. Drip trays will be turned upside down if not in use to prevent the collection of rainwater; Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips; No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction; Drainage on-site a) Channels will be prepared on site, in the vicinity of future access roads. Within these channels silt fences/barriers will be placed and will consist of woven/terram style material of suitable density to remove the majority of silt from runoff. These will be maintained throughout the construction phase to ensure efficiency, prior to the installation of the permanent drainage network. b) Mitigation measures including silt fences will be in place (in consultation with the project ecologist) to capture silt from runoff and prevent it from entering the drainage ditch during the culvert works. c) Appropriate storage and settlement facilities will be provided on site. This could include the provision of silt and petrochemical interception for water pumped on site (if required). d) Fuel, oils and Chemicals will be stored on an impervious base with a bund. Under LEED there will be a strategy put in place to prevent pollution of watercourses. Operational Mitigation a) The project ecologist will inspect th	

Adverse Effects on the conservation objectives of Natura 2000 sites likely to occur from the project (post mitigation)

A robust series of mitigation measures are proposed. These would ensure that surface water runoff from the proposed works site is clean, uncontaminated and that dust from the works would not significantly impact on the Poddle Stream. It should be noted that the early implementation of ecological supervision on site will be at the initial mobilisation and enabling works. This is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation strategies.

With the successful implementation of the mitigation measures to limit surface water impacts on the Poddle Stream, including mitigation/supervision, no significant impacts are foreseen from the construction works of the proposed project. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works and would not impact on the integrity of downstream Natura 2000 sites.

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA, through the application of the standard construction phase controls as outlined above. In particular, the mitigation measures to ensure compliance with Water Pollution Acts, Inland Fisheries Ireland guidance and to prevent silt and pollution entering the Poddle Stream will satisfactorily address the potential impacts on downstream biodiversity and Natura 2000 sites within Dublin Bay. Adverse effects on the integrity of Natura 2000 sites having regard to their conservation objectives can be objectively ruled out following the implementation of the mitigation measures outlined above.

It is essential that these measures outlined are complied with, to ensure that the proposed development does not have "downstream" environmental impacts. These measures are to protect the surface water, which is the primary vector of impacts from the site, and to ensure that any European Sites are not impacted during construction and operation.

Conclusion

Following the implementation of the mitigation measures outlined, the construction and operation of the proposed development will not result in direct, indirect or in-combination effects which would have the potential to adversely affect the qualifying interests/special conservation interests of the European sites screened in for NIS with regard to the range, population densities or conservation status of the habitats and species for which these sites are designated (i.e. conservation objectives).

On the basis of the content of this report, the competent authority is enabled to conduct an Appropriate Assessment and consider whether, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

The proposed project will not will adversely affect the integrity of European sites.

Data used for the AA Screening/NIS

NPWS site synopses and Conservation objectives of sites within 15km were examined. There is no direct pathway to any Natura 2000 sites beyond 15km of the proposed development site. The most recent SAC and SPA boundary shapefiles were downloaded and overlaid on Bing maps and satellite imagery. Several site visits were carried out to determine if the site or project contained possible threats to a Natura 2000 site or any Natura 2000 species or habitats. These visits are outlined below:

Area		Surveyors	Survey Dates
Terrestrial Ecolog	gy/	Bryan Deegan (MCIEEM)	14 th April 2021, 27 th August 2021, 7 th July 2022
Mammal Survey		Bryan Deegan (MCIEEM)	14 th April 2021, 7 th July 2022
Wintering Assessment	Bird/Flightline	Hugh Delaney	29 th March 2022
Bat Fauna		Bryan Deegan (MCIEEM)	27 th August 2021, 7 th July 2022

References

- 1. 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 March 2010.
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government 2009; www.npws.ie/publications/archive/NPWS_2009_AA_Guidance.pdf
- Managing NATURA 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC, European Commission 2000;
- <u>ec.europa.eu/environment/nature/Natura2000/management/docs/art6/provision_of_art6_en.pdf</u>
 Assessment of Plans and Projects Significantly Affecting NATURA 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC;
- ec.europa.eu/environment/nature/Natura2000management/docs/art6/Natura_2000_assess_en.pdf
 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.europa.eu/environment/nature/Natura2000/management/docs/art6/guidance_art6_4_en.pdf

- Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging;
 ec.europa.eu/environment/nature/Natura2000/management/docs/guidance_doc.pdf
- 7. The Status of EU Protected Habitats and Species in Ireland. <u>www.npws.ie/publications/euconservationstatus/NPWS_2007_Conservation_Status_Report.pdf</u>
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- 12. NPWS (2016) Conservation Objectives: Howth Head SAC 000202. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- 13. NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- 14. NPWS (2021) Conservation objectives for Glenasmole Valley SAC [001209]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
- 15. NPWS (2013) Conservation Objectives: Malahide Estuary SAC 000205. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- 16. NPWS (2021) Conservation Objectives: Rye Water Valley/Carton SAC 001398. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
- 17. NPWS (2021) Conservation Objectives: Knocksink Wood SAC 000725. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
- 18. 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.
- 19. NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- 20. NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- 21. NPWS (2022) Conservation objectives for Dalkey Islands SPA [004172]. Generic Version 9.0. Department of Housing, Local Government and Heritage.
- 22. NPWS (2022) Conservation objectives for Wicklow Mountains SPA [004040]. Generic Version 9.0. Department of Housing, Local Government and Heritage
- 23. NPWS (2013) Conservation Objectives: Malahide Estuary SPA 004025. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Appendix I

St Teresa's Gardens-Donore Winter Bird/Flightline Survey March 29th, 2022

Introduction

In March 2022 a winter bird survey was conducted at Saint Teresa's Gardens, in Dublin City Centre, by Hugh Delaney, a freelance ecologist (Birds primarily) with an experienced background in bird surveying on numerous sites with ecological consultancies over 10+ years. Hugh, a lifelong birder, is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Winter Bird Survey Methodology

The survey at Saint Teresa's were conducted specifically to ascertain if the site was on the path of flightlines of species moving over the site as birds transition from one site to another, in a Dublin context the species concerned would be Brent Geese and wader species like Curlew, Oystercatcher and Black-tailed Godwit. Winter bird surveys are conducted from soon after sunrise until late in the afternoon before sunset, the site is monitored throughout the day and all bird species utilizing the site recorded, including species flying through overhead. Checks are also made on suitable habitat nearby or adjacent the site for comparative purposes and to monitor any interchange of birds between sites. Target species (species of more special interest) utilizing the site will be mapped and estimates of the time these species frequented the site recorded.

Site Location



Figure 1. Site Location – Donore Project in Dublin City, site boundary marked in red, optimal vantage point marked in yellow (circle), which gave optimal all-round views around site and over the old flats.

Site Description

Disused site comprising rough grassland at the main area adjacent to old flats, more advanced vegetated area to the south with some bushes and low trees.

Specific site survey methodology

Continual observation of site, primarily from the area marked in yellow on map, but site also walked regularly during the day.

Survey results

March 29th, 2022

Sunrise- 07.06hrs/Sunset 19.55hrs. Weather – Wind F2 North, Cloud 6/8, Dry, 10c, Excellent visibility. On-site 07.45hrs – 17.00hrs.

Species recorded – Herring Gull, Lesser black-backed Gull, Starling, Linnet, Goldfinch, Greenfinch, Dunnock, Wren, Feral Pigeon, Woodpigeon, Blue Tit, Great Tit, Goldcrest, Blackbird, Song Thrush, House Sparrow, Grey Wagtail, Meadow Pipit, Hooded Crow, Magpie, Jackdaw.

Observations from 07.45hrs – 12.00hrs –

Herring Gulls were noted regularly flying over and around the site, but were not noted foraging on-site, with the birds landing onto the old flats occasionally only. Maximum counts of 22 noted at 10.10hrs moving around the site and 16 at 11.30hrs. Occasional Lesser black-backed Gull also noted in smaller numbers, with maximum count of 4 at 09.40hrs, also not foraging on-site but occasionally landing onto roof of old flats. Other species recorded were passerines foraging on-site with Linnet (<5) and Goldfinch (<3) foraging on rough ground near St Teresa's. Blackbird, Song Thrush, Goldcrest and House Sparrow noted foraging on area at the south of the site. Starling, Woodpigeon, Magpie, Hooded Crow and Jackdaw mainly recorded passing over the site. A movement of Meadow Pipits (<10) was noted passing north over the site from 11.30hrs-12.30hrs were likely migrants. No other target species recorded.

Observations from 12.00hrs – 17.00hrs –

Herring and Lesser black-backed Gull activity less frequent over the site in afternoon with maximum counts of Herring (<12) at 13.30hrs and Lesser black-backed (<4) at 14.10hrs. Passerine activity mostly confined to area at south side of site with Greenfinch, Dunnock, Wren, Song Thrush, Blackbird, Blue Tit and Great Tit noted foraging in the area. Goldcrest (<2) noted at south of site at 14.15hrs. A Song Thrush was noted bringing food to a nest site at the south of the site was an early nester. No other Target species recorded.

Comments and observations on the survey results

21 bird species were recorded from observations made at the St Teresa's site. Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). The open ground habitat on-site was judged to be sub-optimal for Gulls, Geese or Wader species. Results also suggest that the site is not a regular flightline path for such species like Brent Geese or other species of significant interest, checks on data bases (Irishbirding.com for example) suggest this part of the city has no history of foraging Geese or other significant species with the closest known sites being Crumlin farther to the south.

Appendix II-Site Survey

Site assessments were carried out on the 14th April 2021, 27th August 2021, 7th July 2022. Habitats within the proposed development site were classified according to Fossitt (2000) (Figure A1) and the species noted within each habitat are described.



Figure A1. Fossitt Habitats on site (See habitat descriptions for the explanation to the Fossitt codes).

BL3-Buildings and artificial surfaces



Plate A.1. Buildings and artificial surfaces

A section of the site of the proposed development site (approx.15%) consists of Built Land (Fossitt 2000). This consists primarily of hard standing and abandoned amenity areas that have become overgrown. Opportunistic flora species had begun to grow in cracks and joints and in areas where debris had accumulated. Species included butterfly-bush (*Buddleja davidii*), bramble (Rubus fruticosus agg.), dandelion (*Taraxacum spp.*), rosebay willowherb (*Epilobium angustifolium*), plantains (*Plantago spp.*), red valerian (*Centranthus ruber*), ivy (*Hedera helix*), cleavers (*Galium aparine*), common ragwort (*Senecio jacobaea*), thistles (*Cirsium arvense & C. vulgare*), docks (*Rumex spp*rape (*Brassica napus*), great willowherb (*Epilobium hirsutum*), hoary willowherb (*Epilobium parviflorum*), elder (Sambucus nigra) and hedge bindweed (Calystegia sepium).

ED3-Recolonising Bare Ground



Plate A.2 Recolonising Bare Ground.

The dominant habitat on site is Recolonising Bare Ground (ED3)(Approx 45% of the site). This area is primarily the area of the former Saint Teresa's Gardens development. Based upon an examination of satellite imagery (Google Earth Pro) the buildings were still on site in May 2017 and were removed by May 2018. This area is being recolonised by opportunistic species such as nettle (*Urtica dioica*), rape (Brassica *napus*), dandelion (*Taraxacum spp*.), oxeye daisy (Leucanthemum vulgare), bramble (*Rubus fruticosus agg*.), colt's foot (*Tussilago farfara*), creeping buttercup (*Ranunculus repens*), clover (*Trifolium spp*.), daisy (*Bellis perennis*), plantains (*Plantago spp*.), thistles (*Cirsium arvense & C. vulgare*), docks (*Rumex spp*.), butterfly-bush (*Buddleja spp*.'), ivy (*Hedera helix*), common birds-foot-trefoil (*Lotus corniculatus*), ragwort (*Senecio sp*.), rosebay willowherb (*Chamaenerion angustifolium*), hoary willowherb (Epilobium *parviflorum*), great willowherb (Epilobium hirsutum) (Plate 5.2), common mallow (*Malva sylvestris*), wild mignonette (*Reseda lutea*), common poppy (*Papaver rhoeas*), pineappleweed (*Matricaria discoidea*), gorse (*Ulex europaeus*), silverweed (Potentilla anserina), wild teasel (*Dipsacus fullonum*), common figwort (*Scrophularia nodosa*), purple-loosestrife (*Lythrum salicaria*) and saplings of alder (*Alnus glutinosa*) and sycamore (*Acer pseudoplatanus*).

WS1-Scrub



Plate A.3 Scrub (including burtout cars).

Several areas of scrub were noted in the southern area of the site. based on a review of satllite (Google Earth Pro) and aeriel imagery (OSI) imagery this area has not undergone site clearance in the recent past (Since 1995). These were as a result of a natural sucession from grassland, to primarily bramble *Rubus fruticosus* agg.) to sycamore (*Acer pseudoplatanus*). Other species included gorse (Ulex sp), docks (*Rumex spp.*), nettle (*Urtica dioica*), rosebay willowherb (*Chamaenerion angustifolium*), thistles (*Cirsium arvense & C. vulgare*), butterfly-bush (*Buddleja spp.*'), great willowherb (*Epilobium hirsutum*).



Plate A.4 Dry meadows and grassy verges.

Within the scrub habitat is an area of Dry meadows and grassy verges. This habitat is currently undergoing a transition to scrub with thistles (*Cirsium arvense & C. vulgare*) and great willowherb (*Epilobium hirsutum*) beginning to become dense in parts of the habitat. It would be expected that this habitat will succumb to scrub enchment in the short to medium term. Species included nettle (Urtica dioica), bramble (*Rubus fruticosus agg.*), creeping buttercup (*Ranunculus repens*), clover (*Trifolium spp.*), docks (*Rumex spp.*), ragwort (*Senecio sp.*), butterbur (*Petasites hybridus*) common mallow (*Malva sylvestris*), silverweed (*Potentilla anserina*), gorse (*Ulex europaeus*) and saplings of sycamore (*Acer pseudoplatanus*).

Bats

Foraging activity of two bat species (soprano pipistrelle (*Pipistrellus pygmaeus*) and common pipistrelle (*Pipistrellus pipistrellus*) were noted along the southern side of the site (Appendix 5.1). No foraging was noted in other areas of the site. No buildings are on site. No trees of bat roosting potential are noted on site. No roosting bats were noted on site. However, to the south of the site (outside the proposed development site), a single (soprano pipistrelle (*Pipistrellus pygmaeus*) was noted emerging from ivy in 2021. No bats were noted emerging from the ivy in 2022.



Plate A.5. Ivy covered wall, south of the site.

Mammals

No terrestrial mammals of conservation importance, their resting or breeding places were noted on site.

Birds

A wintering bird/flightline assessment was carried out by Hugh Delaney (Appendix I). The report concludes that '21 bird species were recorded from observations made at the St Teresa's site. Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). The open ground habitat on-site was judged to be sub-optimal for Gulls, Geese or Wader species. Results also suggest that the site is not a regular flightline path for such species like Brent Geese or other species of significant interest, checks on data bases (Irishbirding.com for example) suggest this part of the city has no history of foraging Geese or other significant species with the closest known sites being Crumlin farther to the south.'.

Evaluation of Habitats

The proposed development site consists of build land, recolonising bare ground, bare ground (active construction site), scrub and grassland habitat that is succumbing to scrub encroachment. No habitats of conservation importance were noted on site.

Plant Species

The plant species encountered at the various locations on site are detailed above. No rare or plant species of conservation value were noted during the field assessment. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened plant species were recorded in the vicinity of the proposed site. No invasive plant species that could hinder removal of soil from the site during groundworks, such as Japanese knotweed, giant rhubarb, Himalayan balsam or giant hogweed were noted on site.

Fauna

Amphibians/Reptiles

The common frog (*Rana temporaria*) was not observed on site. There are no features within the site boundary that could be important to frogs. The common lizard (*Zootoca vivipara*) or smooth newt (*Lissotriton vulgaris*) were not recorded on site.

Terrestrial Mammals

No badgers or badger activity was noted on site. No protected terrestrial mammals were noted on site or in the immediate vicinity of the site. Foxes (*Vulpes vulpes*) (not protected) were noted on site.

Birds

The following bird species were noted on site: Herring Gull, Lesser black-backed Gull, Starling, Linnet, Goldfinch, Greenfinch, Dunnock, Wren, Feral Pigeon, Woodpigeon, Blue Tit, Great Tit, Goldcrest, Blackbird, Song Thrush, House Sparrow, Grey Wagtail, Meadow Pipit, Hooded Crow, Magpie, Jackdaw. As outlined in Appendix 5.2 "Herring Gulls were noted regularly flying over and around the site, but were not noted foraging on-site, with the birds landing onto the old flats occasionally only. Maximum counts of 22 noted at 10.10hrs moving around the site and 16 at 11.30hrs. Occasional Lesser black-backed Gull also noted in smaller numbers, with maximum count of 4 at 09.40hrs, also not foraging on-site but occasionally landing onto roof of old flats. No additional bird species were noted during the Altemar surveys.