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Marine & Environmental Consultancy

Appropriate Assessment Screening for a proposed White Water Rafting Course at Georges Dock, in Dublin's Docklands.

20TH AUGUST 2019

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ON BEHALF OF: DUBLIN CITY COUNCIL

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1. INTRODUCTION

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 NATURA 2000 sites (Special Areas of Conservation (SAC) or Special Protection Areas (SPA)).

The following Appropriate Assessment Screening has been prepared by **Altemar Ltd.** at the request of Dublin City Council, for a proposed White Water Rafting Course at Georges Dock, in Dublin's Docklands. The AA Screening stage examines the likely significant effects of a plan or project, either on its own, or in combination with other plans and projects, upon a Natura 2000 site and considers whether, on the basis of objective scientific evidence, it can be concluded, in view of best scientific knowledge and the conservation objectives of the relevant European sites, that there are not likely to be significant effects on any European site.

BACKGROUND TO 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 is the managing director of Altemar. Bryan is an environmental scientist, marine biologist and marine mammal observer with 20 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. 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 Appropriate Assessment Screening.

2. BACKGROUND TO THE APPROPRIATE ASSESSMENT

The Habitats Directive 92/43/EEC (together with the Birds Directive (2009/1477/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 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 NATURA 2000 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 Natura 2000 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 Natura 2000 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 NATURA 2000 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 NATURA 2000 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.*
- *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 NATURA 2000 assets which must also be useful to monitor the plan or project implementation."*

[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;

3. 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' 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 Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives
- Assessment of likely effects – direct, indirect and cumulative- undertaken on the basis of available information as a desk study or field survey or primary research as necessary and,
- Screening Statement with Conclusions.

2) Appropriate Assessment (Natura Impact Statement):

- Description of the NATURA 2000 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.

3) Alternative Solutions

If mitigation is possible that enables a risk to be avoided fully, then, subject to other necessary approvals, the project or plan may proceed. If mitigation measures are insufficient, or are not actually practicable and achievable to avoid the risk entirely, then, in the light of a negative assessment, the plan or project may not proceed. A wider search for alternative solutions may need to be considered – Stage 3. [2]

4) Imperative Reasons of Overriding Public Interest (IROPI)/Derogation. (: Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a NATURA 2000 site to proceed in cases where it has been established that no less damaging alternative solution exists. The extra protection measures for Annex I priority habitats come into effect when making the IROPI case.

[2] (DoEHLG, 2009) Appropriate Assessment of Plans and projects in Ireland: Guidance for planning authorities.

4. SCREENING STAGE ASSESSMENT

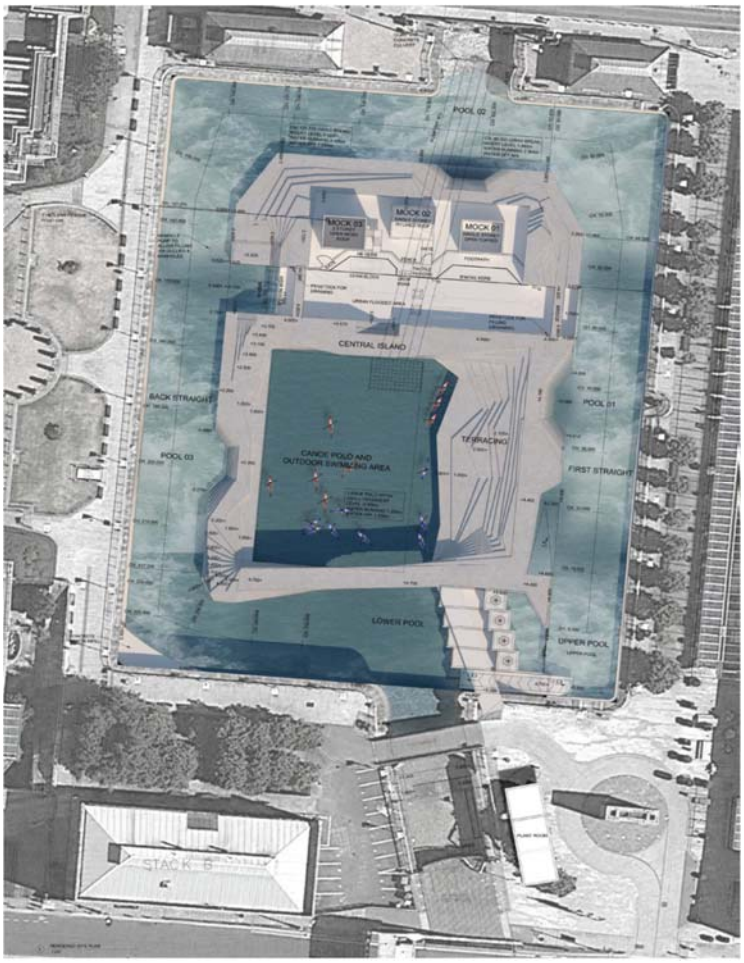
MANAGEMENT OF THE SITE

The plan or project is not directly connected with, or necessary to, the management of NATURA 2000 sites.

DESCRIPTION OF THE PROPOSED PROJECT

The project proposes a new city centre urban activity located in Dublin's Docklands and set within the historic environs of George's Dock (Figures 1 & 2).

The White Water Rafting Centre (WWRC) will provide facilities for a very wide range of people and will serve members of the public, who wish to kayak or river raft, and course customers including tourist visitors as well as club canoeists, elite athletes and emergency services. The white water course is designed for general watersports use and for competitions. The arrangements of the course and its support accommodation will provide for the needs of canoe and kayak club members as well as for elite sports training. It will also provide for general use by people for water-based activity as entertainment.



The white water rafting centre supports the aims of the Water Animation Strategy for the Docklands (SDZ) area which seeks to promote the area as a world-class destination for living and doing business as well as for tourism, wellness and cultural activities. The WWRC will complement the existing activities on the river, such as the river taxi and the water sports currently enjoying use of the Liffey.

The project comprises four principal parts:

1. provision of a white water rafting course utilising the existing George's Dock basin, which is a protected structure, including;

a. a central flat water training facility including water polo amenity,

b. white water slalom course,

c. kayak/raft conveyor,

d. pumping station and water treatment plant,

e. a mechanical control centre and electrical substations,

f. enhancement of existing public lighting and provision of low illumination level floodlighting for water based activities; and

g. swift water rescue centre with floodable urban street with mock enclosures forming a 'rescue village'.

2. The demolition of former Dublin Docklands Development Authority office building and removal of 6 no. existing trees at Custom House Quay. Construction of two new quayside buildings with a combined total floor area of 763.98 m² and maximum height of 5.5m. The east building incorporating land based activities including changing rooms, reception, staff amenity area, equipment storage. The west building comprising replacement offices and conference room for the use of Dublin City Council Docklands office. Ancillary landscaped public open space between these proposed quayside buildings including surface water attenuation area and quayside walkway;

3. Reconfigured and resurfaced public open space where necessary to the existing plaza at George's Dock, including the removal of 4 no. existing trees, making good any damage caused by construction work, and the provision of temporary construction compound. Connection to public surface water drainage system; and

4. Conservation and protection works to the lock gate and quay walls together with retention and protection of the triumphal arch on site and the partial removal of the timber boardwalk and insertion of access structures to the canal channel at the sea wall.

Details of the course technical design and water management is provided in the Engineer's Report.

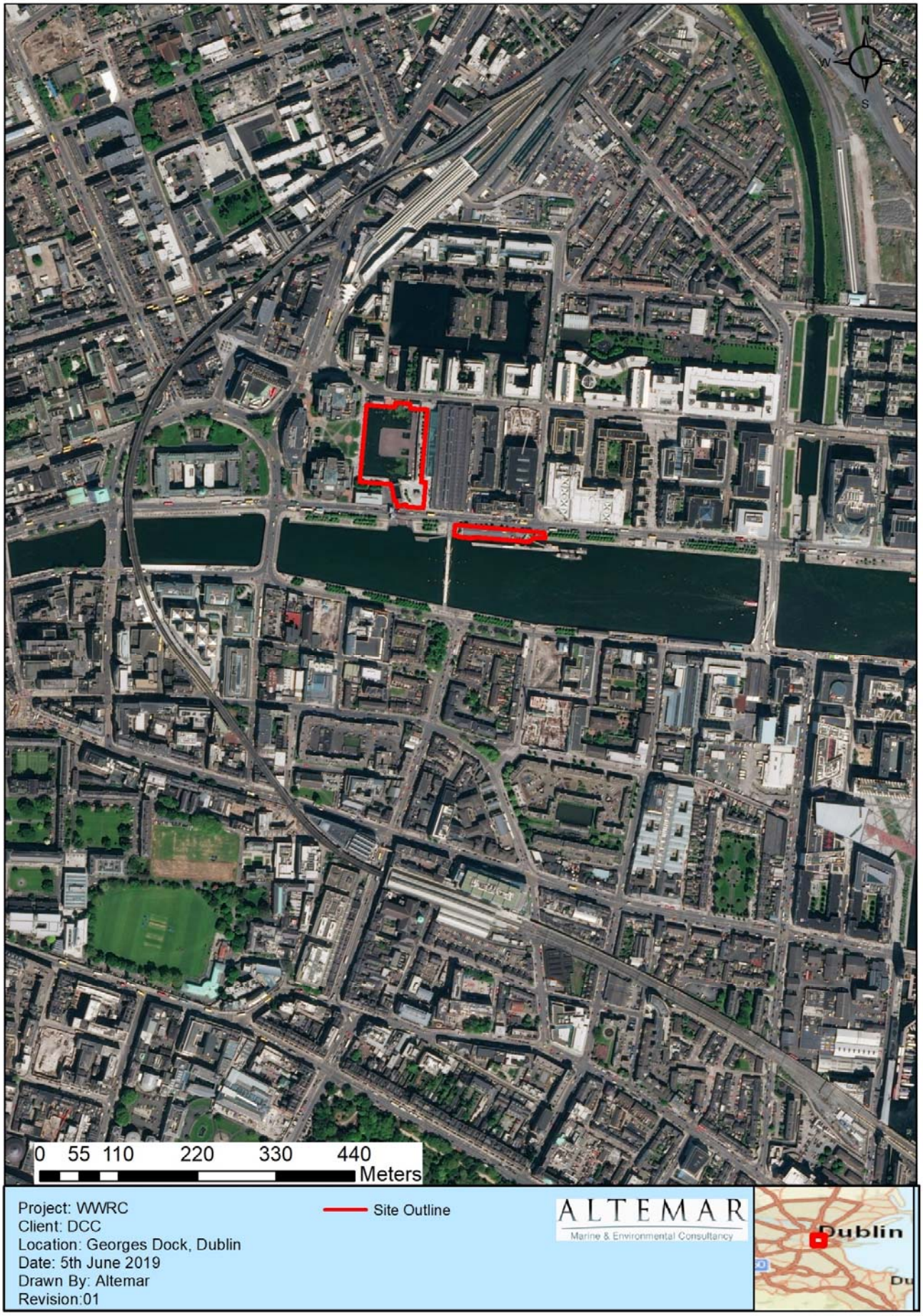


Figure 1. Proposed site location (Bing satellite imagery)

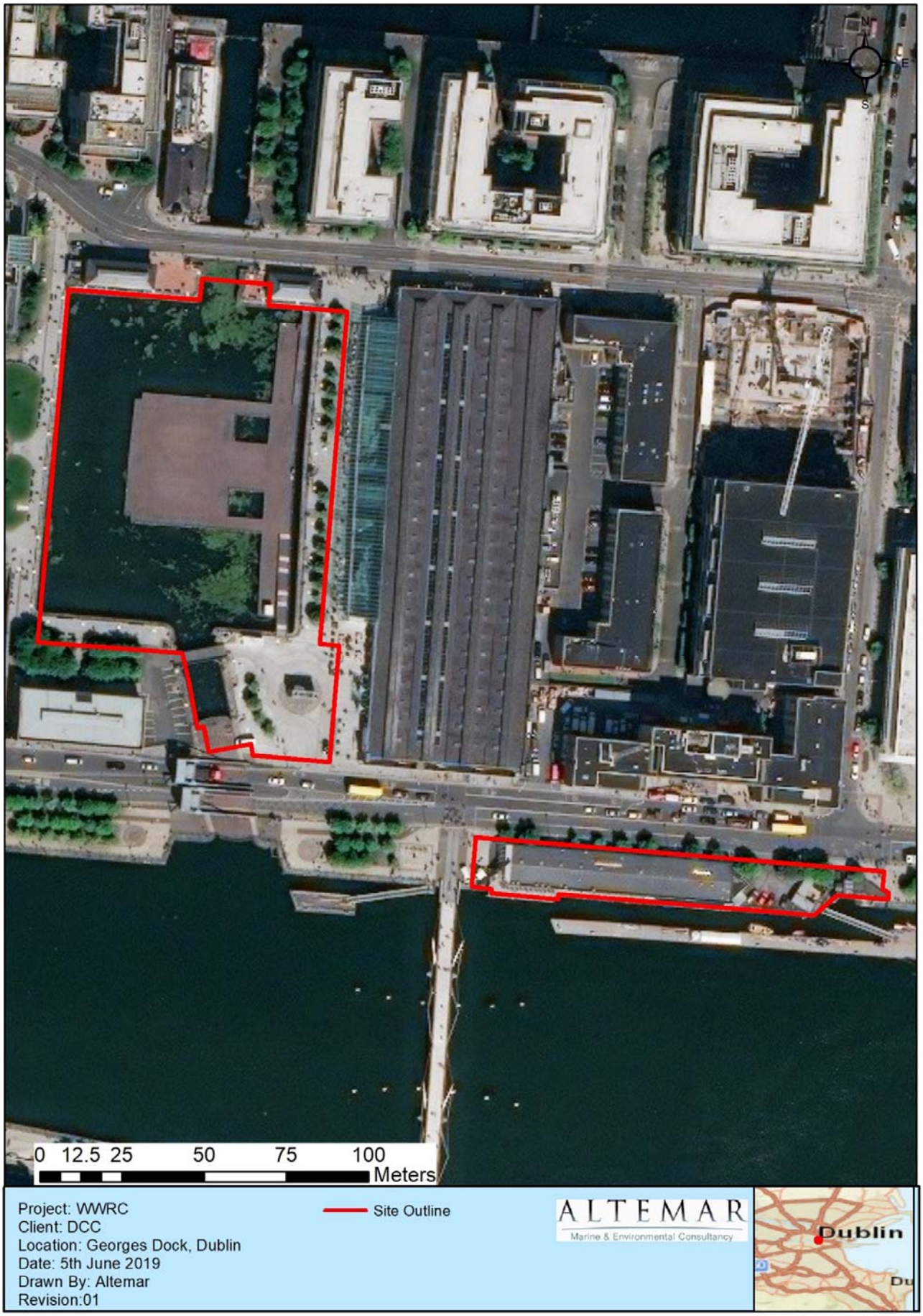


Figure 2. Site outline (redline).

DESIGN OF THE WWRC PROJECT

GEORGE'S DOCK WHITE WATER COURSE:

The course length is 250m and travels in an anticlockwise direction from the upper pool and flows down to the lower pool in an 11m wide channel with vertical sides and left side only access from a brimful start and 3m head. The flow rate is 14 m3/sec served by four pumps with variable frequency drives located in the pumping station. The course ends in a lower pool at the base of the kayak conveyor.

The design adapts the existing concrete partitioning in the dock that currently isolates George's Dock from the Inner Dock and River Liffey to provide a new facility for sports use. The course will be self-contained and has treated fresh water similar to blue flag standard. The use of river water was considered but the impact of maintenance life cycle costs where saline or brackish water is used promoted potable water as the favoured option.

The course will be floodlit for training and incorporates masts integrating broadcast television, public lighting, CCTV, public address and wireways for the course slalom poles. Access to the Central Island is controlled via the bridge over the pumping station and canoe conveyor. This provides maintenance access (quadbike + trailer) and supervised access by instructors & trainers and specified personnel. A second egress point is provided at the opposite end for emergency use only and exits from the Middle Lock beside the retail unit and Luas bridge.

Provision for mobility impaired access is open to suitably capable kayakers and the course boat ramp will be assessed for potential route to water for suitably capable, mobility impaired kayakers.

THE WWRC COURSE AND RESCUE VILLAGE

From the Quayside buildings, most users will approach the whitewater rafting course by kayak from the river pontoon to the sea wall. They will come from the channel to a wash area behind the electrical substation. From here they will enter Georges basin and the course for one of the uses.

George's basin will be transformed into a whitewater rafting course with inner perimeter access from a terrace which encloses the flat water pool and swift water rescue village. The Swift Water Rescue Village will consist of 3 structures which can be selectively flooded and will be used to run simulations and drills for the purposes of training emergency rescue personnel.

The course length is 250m and water flow will travel in an anticlockwise direction starting from the upper pool down to the lower pool in an 11m wide channel. This has vertical sides and access to left side only via stepped terraces, the flow rate is 14m3/sec, served by four pumps with variable frequency drives located in the pumping station. The course has 3m head and ends in the lower pool at the base of the kayak conveyor.

DESIGN OF THE WWRC PLAZA

The design for the plantroom and plaza integrates these to create a dynamic public space that opens up views of the dock and the new activities seen there when viewed from the quays. The design creates a public space that is open and accessible for casual spectating of the new use in the dock. It acknowledges the challenge of locating a white water facility in an existing tight urban setting and seeks to mitigate risk from anti-social behaviour whilst avoiding excessive railing off or fencing out solutions. The paving at CHQ is continued across the repaved plaza as noted on the Landscape Architect's drawings. The plaza must be maintained free of fixed obstruction as the pumping station requires periodic access by mobile crane for maintaining the pumps. The kayakers arrive by paddling in and transferring to the quay at the Entrance Lock set-down leaving their boats and taking new ones inside the course. The transfer area is partially enclosed to allow passive security for the teams arriving and departing.

DESIGN OF THE QUAYSIDE BUILDINGS:

The 2 no. proposed quayside buildings will be contained within the location of the existing Dublin Docklands Office building, which it is proposed to demolish. The new replacement buildings along the quayside to replace the existing DCC offices in this location will consist of:

- A public pavilion building which will include
  - Welcome area;
  - Changing rooms;
  - Public bathrooms;
  - Staff amenity areas;
  - A lecture area;
  - Equipment storage; and
  - Quayside walkway and entry to the pontoon.
- A Council office building for use as the Dublin City Council Docklands Office.
- A public open space between the buildings

The experience of the WWRC begins in the East Building for most users as outlined above. The movement of people through the building is structured to allow flow from the point of arrival and through control of the 'wet' and 'dry' areas, which is described in detail in the Architectural Design Statement. Participants will enter the east building by the courtyard and progress through the building in stages from check in to kitting out, instruction briefing and changing before exiting by the east exit to the covered storage and pontoon.

The east building also contains administration and backroom facilities for staff, guides and coaches, storage for hire equipment and support services such as a laundry and bin storage.

The west building contains offices for Dublin City Council, a conference centre for the use of DCC and the WWRC. These can be entered from either end depending on user and function.

The buildings frame a quayside walkway attached which addresses the Liffey and provides for access under part M of the building regulations. From the walkway there will be two access to the pontoon and the Jeannie Johnson berth- the existing to the east and a proposed ne gangway to the west. The development will require the removal of 4no. mature trees at the roadside.

Parking & Drop Off

The Quayside Building will provide support facilities for the development. The existing car park will be removed. It is anticipated that visitors will come on foot and the majority of bookings will be scheduled in advance by appointment. That is the system in operation in the UK white water courses.

Servicing, Fire & Emergency Access

The servicing for the offices are via the screened area at the east end of the development and are noted on the architect's drawings. Fire and emergency access set down is noted there also.

Materials & Finishes - George's Dock, Plaza and Quayside Building:

The course and central island are of concrete of graphite colour with specialist applied finishes to assist in the maintenance, weathering and slip resistance. The design includes feature elements such as the pumping station bridge that are made in metal and painted black to mirror the winches and maritime elements of the urban setting. The concrete finish will be executed to achieve appropriate slip resistance and ease of maintenance. The darker colour was proposed following visits to similar installations in the

UK. The course management will include regular cleaning and treatment of the water as set out in the engineer's report to mitigate algae and airborne organic material. For details of the proposed landscaping and external works refer to the Landscape architect's report.

The plaza between Georges Dock, CHQ and Custom House Quay Road will be repaved to reflect the existing dark granite paving to the frontage of CHQ and elsewhere at this location. This will extend across the plaza and over the roof of the service building creating a seamless but simple space of quality. Whilst vehicular access will be retained through this space, feature seating and decorative planters will create defensible areas, particularly to the frontage of CHQ. A new gathering space will result in this key focal point in Docklands with feature lighting to draw people in.

On the campshires south of Custom House Quay Road, functional areas of pcc slabs will be replaced by the material of the plaza described above, linking the plaza to the new service building on the quayside. Existing cobbled areas and established trees will be retained.

As a contemporary structure on the campshires, the new Quayside building will introduce a new aesthetic. Reflecting this, a contemporary ground concrete pavement pattern is proposed as a new setting – a simple quality material yet functional and referencing the industrial context as well as the distinctive new building. This material will run along the campshire, through the building and its courtyard to the eastern part of the site.

PROPOSED DEVELOPMENT SITE

As outlined in the Patrick Parsons Geotechnical Report "The site forms a roughly square plot, formed by the George's Dock basin (a non-working dock) and is approximately 100m long and 80m wide. The basin contains a timber and steel platform constructed in 2004 to host outdoor events with several water fountains present around the periphery of the platform (Figure 3). It is understood that the basin was partially infilled to accommodate this structure, which is believed to rest on a concrete slab. The dock can be infilled with water to a depth of 1m to give the impression that the platform floats. When not in use water is pumped out of the dock to allow access. Two dock access channels are present to the north and south, with the northern most connecting with a larger dock (Revenue Dock) beyond Georges Dock Road and the southernmost connecting with the River Liffey beyond Custom House Quay Road. To the west of the basin, commercial buildings (AIB House, IFSC House and La Touche House), separated by an area of grassed and paved public open space are present. To the north and the east, further commercial buildings including the CHQ Building (east) and Harbour Master Place (north) are present."

DRAINAGE

Existing Irish Water Sewer Infrastructure

As outlined in the Parsons Flood Risk Assessment and Drainage Strategy Report "IW record plans indicate a 225mm diameter concrete foul water sewer is present to the Northeast corner of the Whitewater Course site. This discharges to a 1980mm diameter brick combined sewer approximately 160m east of the proposed Whitewater Course at the crossroads between Commons Street and Georges Dock. IW record plans indicate a 375mm diameter vitrified clay combined sewer approximately 5m away from the northeast boundary of the proposed Quayside Building. The 375mm diameter combined sewer then discharges into a 1980mm diameter brick combined sewer approximately 160m north at the crossroads between Commons Street and Georges Dock.

Existing Dublin City Surface Water Sewer Infrastructure

There is a 750mm diameter culvert which runs north to south along the western side of George's Dock which outfalls into the Liffey. A number of small networks of 225mm diameter surface water drains are shown to run along sections of the R801 before outfalling into the Liffey. One of these networks outfalls to the west of the proposed Quayside West Building and another network is shown to outfall between the two proposed Quayside Buildings. A brick 1840mm x 1220mm culvert runs north to south along Commons Street, crosses the R801 before outfalling into the Liffey through the application boundary under the proposed hardstanding area to the east of the Eastern Quayside Building.

Surface Water Drainage

As outlined in the Parsons Flood Risk Assessment and Drainage Strategy Report "Attenuation storage has been included within the proposed surface water drainage which will serve the Quayside Building. It is noted that generally Dublin City Council requirements are for a maximum discharge rate of 2 l/s/hectare to be utilised. However, due to the small areas associated with the site (0.128ha) and the risk of blockage caused by using very small orifice size that would be required to achieve this flow, a maximum practicable limit of 4 l/s is proposed. These flows are proposed to connect via a petrol interceptor into the surface water culvert which crosses through the eastern portion of the site as there is insufficient capacity in the combined or foul water sewers to allow connection into those systems. Direct discharge into the Liffey via a new outfall is also not an option as we are not allowed to penetrate the dock walls which are protected structures. In accordance with Section 3 of the Greater Dublin Regional Code of Practice for Drainage Works, it is proposed to use existing outfall points via the existing surface water system.

Foul flows from the Quayside Buildings are proposed to connect into the Irish Water combined manhole at the junction of the R801 and Commons Street. This is a 375mm diameter vitrified clay sewer. A surface water drainage system has also been shown to drain the plantroom roof which will be located next to the course. This roof only has an area of 80m2 and will generate peak flows of approximately 1 l/s without any attenuation. A connection point for this drainage is proposed to connect into the existing surface water drainage system on the south side of the R801. This 225mm diameter existing drainage system discharges into the Liffey immediately to the west of the Sean O'Casey Bridge.

Non return valves are included before the connection from the Quayside Buildings to prevent tidal water backing into the new drainage. It is also proposed to connect above the soffit level of the existing drainage in accordance with the Greater Dublin Regional Code of Practice for Drainage Works.

Surface Water Management Plan

All water running through the Whitewater Course will be routinely passed through a Water Treatment Plant to maintain water quality for the safety of users. Runoff from the Whitewater Course is explained below.

The use of SuDS has been a key element in the design of the surface water drainage system to provide treatment, source control and attenuation, to limit the effect on the receiving surface water systems and the River Liffey. In addition, SuDS techniques are a standard building requirement within the DCC development plan and are in accordance with the Greater Dublin Regional Code of Practice for Drainage Works.

The following SUDS techniques have been considered;

Green roofs
The view of the design and conversation team was that the materials of the new buildings should reference the history and visual congruence of the protected structures around the site. This includes the use of a pitched roof for the Quayside Buildings and watercourse plant room. Therefore, a green roof is not suitable for these buildings as the slopes will not provide effective attenuation or irrigation. A green roof is proposed for the small kayak store to the east of the eastern building around an area of photo voltaic cells if these are required.

Permeable Paving
Areas of permeable paving have been shown at the hardstanding areas to the east and west of the courtyard buildings and also within the space between the buildings. All building rainwater pipes will discharge into the sub base of this permeable paving which will provide a first level of treatment, source control and attenuation. To prevent water seeping from the permeable paving into the ground under the building and behind the river wall, the permeable paving granular sub base will be wrapped with an impermeable membrane around the sides and base. The watercourse plantroom rainwater pipes will also discharge into granular material in the form of a gravel trench which will be lined with an impermeable membrane and will provide the same filtration, source control and attenuation benefits. However, the granular trench receiving these rainwater pipes will be covered with the impermeable surfacing to match the existing paving. This will ensure that the trench is not used to drain any external areas around the watercourse.

Attenuation ponds
Not compatible with this development due to the restricted site size and location.

Swales
Not compatible with this development due to the restricted site size and location.

Wetlands and detention basins
Not compatible with this development due to the restricted site size and location.

Infiltration planters
Not compatible with this development due to the restricted site size and location.

Water butts
Water butts will be considered for the Quayside Buildings for the purpose of washing wetsuits, however, bearing in mind the shape of the roof and that the site boundary is tight against footpaths on both the north and south elevation they may not be practical. The building detail design has not been completed however it may be that rainwater downpipes run internally due to the shape of the roof which would make the rainwater pipes in accessible for the attachment of a water butt

Attenuation tank
Whilst offering no water quality benefit an attenuation tank is proposed at the east of the Eastern Quayside Building prior to the outfall in order to restrict the outgoing flow to 4l/s. A silt trap manhole will be utilised before flows discharge into the attenuation tank in order to reduce maintenance risks.

Hydrocarbon Interceptor
After carrying out a risk assessment with reference to C753 and Greater Dublin Regional Code of Practice for Drainage Works, it was concluded that a hydrocarbon / petrol interceptor is not required as the new drainage systems will only drain roofs and very small pedestrian areas, all of which have a low potential to generate run off polluted with hydrocarbons. However, a bypass petrol interceptor has been included prior to the point of outfall to contain any airborne hydrocarbons which could land on the roofs or on the pedestrian areas. The interceptor will have a silt storage facility and an alarm to warn when full.

Water Treatment Plant
The Water Treatment Plant will have a 'backwash' of dirty water from its treatment system, this will be discharged to the foul sewer. The manufacturer will need to confirm an exact rate (the detailed design is yet to be completed). This will discharge to the 225mm diameter concrete foul water sewer which is present in the Northeast corner of the Whitewater Course site next to Georges Dock. The water treatment system will be designed to treat the water to EU Water Directive bathing standard (Green Flag) and to World Health Organisation guidelines. A pre-connection enquiry was made to Irish Water about this drainage connection into the foul system and to ascertain if the water mains have sufficient capacity to deliver 10 l/s of mains water for the site to fill the watercourse and to keep it topped up when required.

Course Overflow
The Whitewater Course structure will be impermeable and is to be constructed from waterproof concrete in order to eliminate water loss. In extreme rainfall events the water level will begin to rise and this water needs to be removed from the Whitewater Course such that the desirable water level is not raised. Although the rainfall over the area of the course will be treated, it will be unsuitable to discharge to the surface water system and Liffey as it will contain concentrations of chlorine which could affect wildlife and natural vegetation in the river.

An emergency overflow will be installed from the northern part of the watercourse which will outfall into the Middle Lock. The Middle Lock is a large body of water approximately 75m long, 11m wide and approximately 2.5m deep. It is separated from the Inner Dock at its northern extent by a cofferdam wall. It is understood that this channel doesn't normally come close to filling with rainwater but would overflow the northern cofferdam and flow into the Inner Dock before reaching the proposed level of the overflow pipes from the course. It should be noted that during the average wettest months of the year, 80mm of rainfall is expected in Dublin. This corresponds to an average daily rainfall of 2.67mm. Over the total area of the course, calculated to be 7750m2, this will generate 20.7m3 of water. The water treatment system will remove approximately 12m3 of water every day from the system whether it rains or not. This difference in volume would only raise water levels in the area of the course water body area by 1.5mm. The overflow pipes will be set 200mm above the design water level at that part of the course and therefore the overflowing will be a very infrequent occurrence.

During high rainfall events when 25mm of rain could fall in an hour the water level in the lower part of the course and within the central holding area could raise by up to 50-75mm which is not significant to the operation of the course and will not be enough to result in an overflow activation. During the summer, up to 12mm of water is expected to evaporate from the central pool area which would remove 39m3 from the pool volume. Water from the River Liffey is currently pumped into the Inner Dock approximately twice per year to top up water levels and maintain a particular salinity which is required for the cathodic protect system which protects the foundations of the apartments in the Inner Dock. This exercise can continue to occur after the watercourse is constructed and this provides reassurance

that the very infrequent emergency overflowing from the course into the Middle Lock from the course will not cause flooding in the waterbodies north of the course which require to be topped up biannually.

The overflow from the course will not have a link to the Liffey waters as the drain which exists beneath George's Dock to link the Liffey with the Inner Dock and Middle Lock will be removed during the scheme. If the Inner Dock needs to be emptied into the River, pumps can be temporarily brought in to pump the water via an over ground rising main hose which can be led around the outside of the watercourse in a reverse exercise to when it if being topped up.

Irish Water Consultation

A pre-connection enquiry was submitted to Irish Water to check that the proposed foul drainage connections can be facilitated and that the water mains have sufficient capacity to deliver 10 l/s of water to fill the watercourse and to keep it topped up when required. They have also confirmed that their response is sufficient for the planning application purposes. Peak flows form the Quayside Buildings are proposed to be 5 l/s and from the watercourse backwash flows the flow rate will be 2 l/s over a period of 3 hours in each 24 hours.

Maintenance

The new development will be operated by Dublin City Council who will be responsible for the regular maintenance of the proposed drainage systems. Any proprietary drainage items that they are unable to maintain will need to be addressed by a maintenance company but the responsibility for ensuring this is carried out will be DCC. Such items include the drainage channel which is required along the edge of the new walkway as the walkway needs to fall away from the Liffey. The drainage channel can be used with a much shallower profile than would be required for point drainage systems such as gullies and will operate as a shallow bridge deck drainage channel. The attenuation tank is necessary to attenuate flows as there is no other means to do this in the space available and this will also be maintained by a maintenance company. The petrol interceptor is included for reasons outlined earlier and will require periodic maintenance by a specialist. This item will also be fitted with an alarm to indicate if urgent maintenance is required. The permeable paving areas will also require maintenance by a specialist to ensure it continues to function correctly.

Construction Phase

Surface water run off from the development area will not be permitted to discharge either directly into the River Liffey or indirectly into the Liffey via the existing surface water drainage system. The contractor will be responsible for managing surface water during the demolition and construction phase which could include a temporary connection into the Irish Water foul or combined water sewers.

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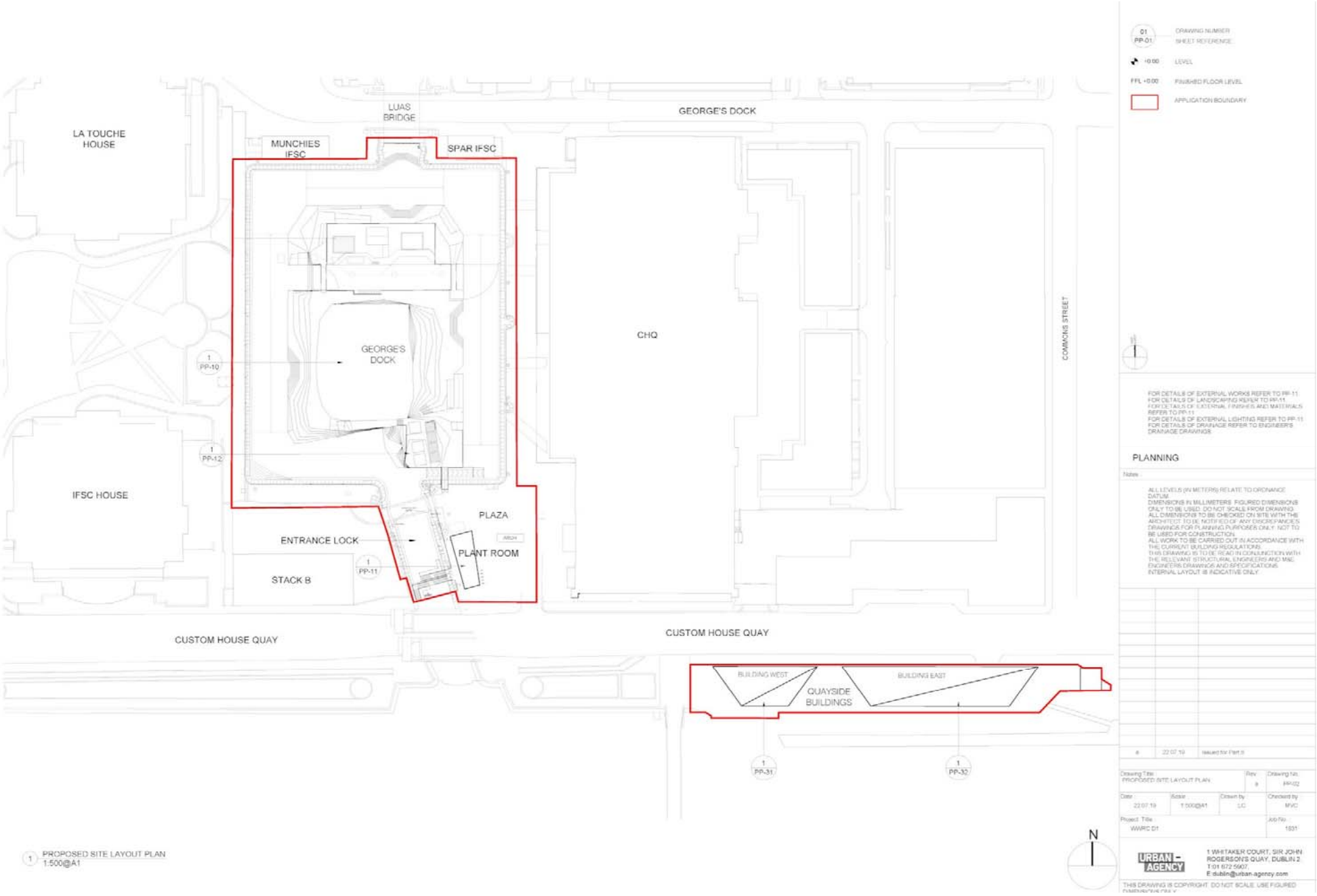

Figure 4. Proposed Layout

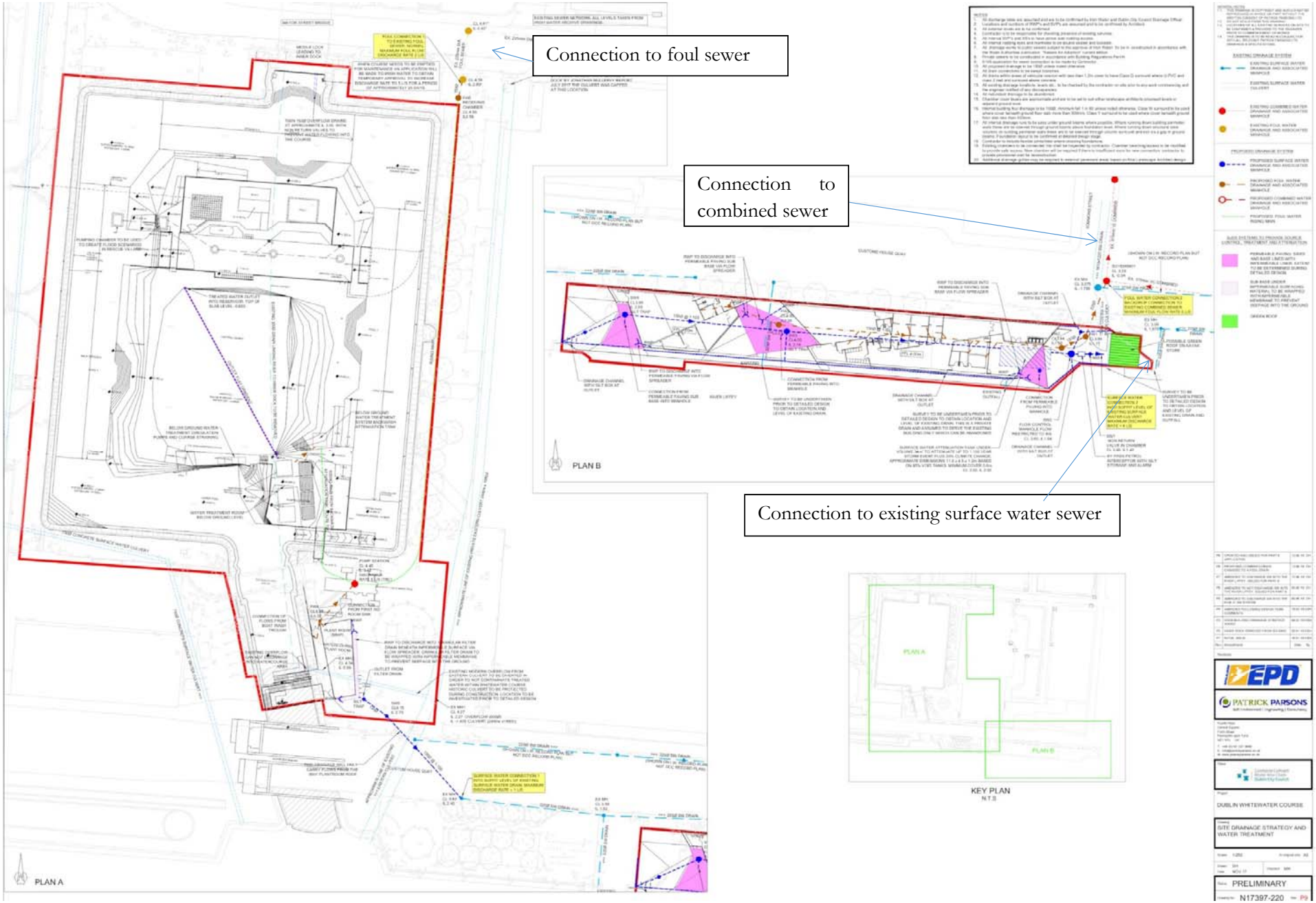

Figure 4. Proposed drainage connections.

CONSTRUCTION PHASING

The construction programme will span approximately 18 months, and it is envisaged that the development will be completed in two main phases; enabling works and construction. The initial phase of the development will be involving piling works and slab construction. Plant and equipment to be used during construction has been identified. Potential effects arising from construction activities have been identified and control measures are identified in the CMP report and in other relevant reports submitted to support the planning application. A Code of Construction Practice will be written by the main contractor upon appointment and submitted to Dublin City Council and other relevant organisations to set out the agreed procedures and 'best practice' on construction operations, and in accordance with relevant legislative requirements. Likely significant adverse effects will be appropriately mitigated. Management of subcontractors will be through procurement procedures and an agreed commitment to the Code of Construction Practice. A designated liaison officer will be in regular contact with the public, will keep residents informed of all relevant matters, and will deal with complaints and inquiries. Monitoring of construction activities will be reported back to the local authority on a regular basis.

The comments stated above by Parsons in the CMP are based on information received from other consultees, and this report is based upon the recommendations stated within these reports. The CMP report is intended for the use of the project design team in support of the planning application for the site only.

Whitewater Course

Assumptions; In considering this construction method statement it is assumed that the site has been cleared of the current temporary pontoon structure and all associated concrete footings and services. It is assumed in the absence of a site investigation at this stage that the existing hardcore/gravel present within the dock provides a suitable platform for construction access, its should be noted that pending site investigation works a sacrificial piling mat may be required should the existing material be found to have insufficient capacity.

Stage 1 – Enabling Works. It is assumed Stage 1 will be an enabling works contract comprising of the following main items;

- Piling works
- Repair of the existing historic Dock Walls
- Construction of flat base slab at lowest level including starter bars for columns and walls
- Connection of services to site boundary, including drainage
- Removal of existing demolition and gravel material to formation level

Stage 2 – Construction of support columns. Columns of varying height to be constructed from the base slab to support the elevated sections of the Whitewater Course.

Stage 3 – Construction of Pumping Station chamber and Conveyor supports

Stage 4 – Construction of Whitewater course floor slabs and vertical walls. Floor slabs constructed to span between columns, vertical walls constructed from the slabs.

Stage 5 – Construction of Canoe Polo Pitch. Construction of the walls and steps around the

Stage 6 – Construction of Urban Flood Simulator. Construction of buildings, bridges and weir associated with operation of the Urban Flood Simulator

Stage 7 – Construction of Plantroom and Mechanical and Electrical Fit out

Stage 8 – Commissioning

Hours of working

It is anticipated that the normal hours of working for construction will be: Weekdays 07.30 to 18.00 hours, and 08.00 to 13.00 hours on Saturdays. These working arrangements will be agreed with Dublin City Council prior to commencement. Hours of working will be governed by planning condition, including arrangements for carrying out specific tasks outside the agreed hours. Night time working will be restricted to exceptional circumstances. Hours of working will be covered in the Code of Construction Practice.

TEMPORARY CONSTRUCTION, REMEDIATION AND PROTECTION WORKS

In addition to the development within the Dock and at the Quayside Buildings there will be the following works:

- Temporary construction compound in the public plaza;
- The remediation of any disturbance to the public plaza during construction;
- New access between the dock and river sides of the separating sea wall adjacent to the lock gates; and
- Conservation and protection works to the lock gate.

The majority of the facility operations will be catering to the user categories described below. However, there may be occasional national white water kayaking events to International Canoeing Federation standards which will require temporary facility upgrade and spectator seating. The necessary consents will be acquired prior to these events where necessary

It is anticipated that very few matches involving water polo or canoe polo or kayaking events will attract any substantial number of spectators where temporary spectator facilities will be required and where necessary lighting enhanced to international competition standard will be installed. Such international competition standard lighting will be provided on a temporary basis for such occasional competition. The expected level of enhanced lighting may be supplemented to 200 lux on occasion and that for predominant matches, training and recreational activity lighting where it may be occasionally required for one-off events, but generally would be maintained at a level of 100 lux.

The training and educational element of the facility will be used by Dublin Fire Brigade and the emergency services during normal business hours unless occasional night time training is specifically required and recreational bookings will not be made available during those periods. Any rescue exercises in the evening would also be finished by 22.00 hours.

Operational hours of the proposed development will not exceed 22.00 hrs Monday to Sunday for all activities.

IDENTIFICATION OF NATURA 2000 SITES/SPECIES POTENTIALLY AFFECTED.

The proposed development site is not within a NATURA 2000 site. The distance from the proposed works to Natura 2000 sites are seen in Table 1.

Table 1. Linear distances of the proposed site to Natura 2000 sites

Natura 2000 Site	Distance
Special Protection Areas	
South Dublin Bay and River Tolka Estuary SPA [004024]	3.6 km
North Bull Island SPA [004006]	4.7 km
Baldoyle Bay SPA [004016]	9.7 km
Howth Head Coast SPA [004113]	12.8km
Ireland's Eye SPA [004117]	13.4 km
Dalkey Islands SPA [004172]	12.4 km
Wicklow Mountains SPA [004040]	12.7km
Broadmeadow/Swords SPA [004025]	13.1 km
Special Areas of Conservation	
South Dublin Bay SAC [000210]	2.5 km
North Dublin Bay SAC [000206]	4.6 km
Baldoyle Bay SAC [000199]	9.9 km
Howth Head SAC [000202]	10.3 km
Rockabill to Dalkey Island SAC [003000]	10.5 km
Wicklow Mountains SAC [002122]	12.4 km
Malahide Estuary SAC [000205]	12.6 km
Glenasmole Valley SAC [001209]	12.8 km
Ireland's Eye SAC [002193]	13.4 km

The initial screening of NATURA 2000 sites within 15km, their features of interest and the Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in adverse effects (without mitigation measures) on each NATURA 2000 site and features of interest, are seen in Table 2. The distance of 15km was selected due to the proximity of the proposed project to a waterbody. SPA's and SAC's within 15km are seen in Figures 7 -10.

Table 2. Screening of NATURA 2000 sites within 15km of the proposed development, their features of interest and the Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in adverse effects (without mitigation measures) on each NATURA 2000 site and features of interest.

NATURA CODE	NAME	Screened In/Out	Details/Reason
Special Protection Areas			
IE0004024	South Dublin Bay and River Tolka Estuary SPA	IN	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Features of Interest** A046 Light-bellied Brent Goose (*Branta bernicla hrota*) A130 Oystercatcher (*Haematopus ostralegus*) A137 Ringed Plover (*Charadrius hiaticula*) A141 Grey Plover (*Pluvialis squatarola*) A143 Knot (*Calidris canutus*) A144 Sanderling (*Calidris alba*) A149 Dunlin (*Calidris alpina*) A157 Bar-tailed Godwit (*Limosa lapponica*) A162 Redshank (*Tringa totanus*) A179 Black-headed Gull (*Chroicocephalus ridibundus*) A192 Roseate Tern (*Sterna dougallii*) A193 Common Tern (*Sterna hirundo*) A194 Arctic Tern (*Sterna paradisaea)* **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SPA is 3.6km and from the proposed works (Figures 7 & 8). The site is proximal to the River Liffey which has a direct hydrological link to this SPA but, during construction there will be no direct hydrological connection from the site or works to the River Liffey. During operation the surface water drainage from the quayside buildings will discharge via the existing surface water network to the River Liffey, which is currently the case, following attenuation and silt interception which is not currently in place. This is required for SUDs as standard building requirements within the DCC development plan and other building standards regulations and to comply with Irish Water requirements. During operation the drainage from the rafting course will continue to foul. Therefore, there is an indirect link for surface water and foul water discharges via the Ringsend Waste Water Treatment plant during construction and for foul during operation of the WWRC, while there is a direct hydrological link for surface water during operation of the quayside buildings via the existing surface water network. Under the precautionary principle further information is required to determine if there is potential for impact on features of interest of this SPA. **Likely significant effects on this SPA cannot be discounted without additional information. Further information is required to determine the potential for adverse effects. See Section 4.**

NATURA CODE	NAME	Screened In/Out	Details/Reason
IE0004006	North Bull Island SPA	IN	**Conservation Objective:** 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** A046 Light-bellied Brent Goose (*Branta bernicla hrota*) A048 Shelduck (*Tadorna tadorna*) A052 Teal (*Anas crecca*) A054 Pintail (*Anas acuta*) A056 Shoveler (*Anas clypeata*) A130 Oystercatcher (*Haematopus ostralegus*) A140 Golden Plover (*Pluvialis apricaria*) A141 Grey Plover (*Pluvialis squatarola*) A143 Knot (*Calidris canutus*) A144 Sanderling (*Calidris alba*) A149 Dunlin (*Calidris alpina alpine*) A156 Black-tailed Godwit (*Limosa limosa*) A157 Bar-tailed Godwit (*Limosa lapponica*) A160 Curlew (*Numenius arquata*) A162 Redshank (*Tringa tetanus*) A169 Turnstone (*Arenaria interpres*) A179 Black-headed Gull (*Chroicocephalus ridibundus*) A999 Wetlands **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SPA is 4.7km and from the proposed works (Figure 7). The site is proximal to the River Liffey which has a direct hydrological link to this SPA but, during construction there will be no direct hydrological connection from the site or works to the River Liffey. During operation the surface water drainage from the quayside buildings will discharge via the existing surface water network to the River Liffey, which is currently the case, following attenuation and silt interception which is not currently in place. This is required for SUDs as standard building requirements within the DCC development plan and other building standards regulations and to comply with Irish Water requirements. During operation the drainage from the rafting course will continue to foul. Therefore, there is an indirect link for surface water and foul water discharges via the Ringsend Waste Water Treatment plant during construction and for foul during operation of the WWRC, while there is a direct hydrological link for surface water during operation of the quayside buildings via the existing surface water network. Under the precautionary principle further information is required to determine if there is potential for impact on features of interest of this SPA. **Likely significant effects on this SPA cannot be discounted without additional information. Further information is required to determine the potential for adverse effects. See Section 4.**

NATURA CODE	NAME	Screened In/Out	Details/Reason
IE0004016	Baldoyle Bay SPA	Out	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA **Qualifying Interests** A046 Brent Goose (*Branta bernicla hrota*) A048 Shelduck (*Tadorna tadorna*) A137 Ringed Plover (*Charadrius hiaticula*) A140 Golden Plover (*Pluvialis apricaria*) A141 Grey Plover (*Pluvialis squatarola*) A157 Bar-tailed Godwit (*Limosa lapponica*) A999 Wetlands. **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SPA is 9.7km (Figure 7), which is located on the far side of Howth Head. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site. The site would not be expected to be an important area for the features of interest of this SPA. **No significant effects are likely**
IE0004117	Ireland's Eye SPA	Out	**Conservation Objective:** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: **Qualifying Interests** A017 Cormorant (*Phalacrocorax carbo*) A184 Herring Gull (*Larus argentatus*) A188 Kittiwake (*Rissa tridactyla*) A199 Guillemot (*Uria aalge*) A200 Razorbill (*Alca torda*) **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** This SPA and its features of interest are marine/intertidal and are located on the far side of Howth Head Peninsula. The proposed development site is located within a substantial urban area and working port. The nearest point of the site outline to the SPA is 13.4km (Figure 7). There is no direct hydrological link to this SPA. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site **No significant effects are likely**

NATURA CODE	NAME	Screened In/Out	Details/Reason
IE0004113	Howth Head Coast SPA	Out	**Conservation Objective:** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA **Qualifying Interests** A188 Kittiwake (*Rissa tridactyla*) **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and working port. The nearest point of the site outline to the SPA is 12.8km (Figure 7). There is no direct hydrological link to this SPA. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site. The site would not be expected to be an important area for the features of interest of this SPA. **No significant effects are likely**
IE004172	Dalkey Islands SPA	Out	**Conservation Objectives** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Features of Interest** *Sterna dougallii* (Roseate Tern) [A192] *Sterna hirundo* (Common Tern) [A193] *Sterna paradisaea* (Arctic Tern) [A194] **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The development site is located within an urban area 12.4 km from the Dalkey Islands SPA (Figure 7). There is no direct hydrological link to this SPA. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site **No significant e.ffects are likely**
IE0004025	Broadmeadow Swords Estuary SPA	Out	**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. Objective 1: To maintain the favourable conservation condition of the waterbird Special Conservation Interest species listed for Broadmeadow Swords Estuary SPA. Objective 2: To maintain the favourable conservation condition of the wetland habitat at Broadmeadow Swords Estuary SPA as

NATURA CODE	NAME	Screened In/Out	Details/Reason
			a resource for the regularly-occurring migratory waterbirds that utilise it. **Features of Interest** A005 Great Crested Grebe (*Podiceps cristatus*) A046 Brent Goose (*Branta bernicla hrota*) A048 Shelduck (*Tadorna tadorna*) A054 Pintail (*Anas acuta*) A067 Goldeneye (*Bucephala clangula*) A069 Red-breasted Merganser (*Mergus serrator*) A130 Oystercatcher (*Haematopus ostralegus*) A140 Golden Plover (*Pluvialis apricaria*) A141 Grey Plover (*Pluvialis squatarola*) A143 Knot (*Calidris canutus*) A149 Dunlin (*Calidris alpina alpine*) A156 Black-tailed Godwit (*Limosa limosa*) A157 Bar-tailed Godwit (*Limosa lapponica*) A162 Redshank (*Tringa tetanus*) A999 Wetlands **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed works are a minimum of 13.1 km from the Broadmeadow Swords Estuary SPA (Figure 7). There is no direct hydrological link to this SPA. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site. The site would not be expected to be an important area for the features of interest of this SPA. **No significant effects are likely**
IE004040	Wicklow Mountains SPA	Out	**Conservation Objectives** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Features of Interest** *Falco colombarius* (Merlin) [A098] *Falco peregrinus* (Peregrine) [A103] **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The development site is located 12.7 km from the Wicklow Mountains SPA (Figure 7). There is no hydrological connection to this SPA. As a result of the distance any noise levels from site would be expected to be negligible in this Natura 2000 site. The site would not be expected to be an important area for the features of interest of this SPA. **No significant effects are likely**

NATURA CODE	NAME	Screened In/Out	Details/Reason
Special Areas of Conservation			
IE0000210	South Dublin Bay SAC	IN	**Conservation Objectives** 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 targets: • The permanent habitat area is stable or increasing, subject to natural processes. • Maintain the extent of the *Zostera* –dominated community, subject to natural processes. • Conserve the high quality of the *Zostera* –dominated community, subject to natural processes • Conserve the following community type in a natural condition: Fine sands with *Angulus tenuis* community complex. **Feature of Interest** Mudflats and sandflats not covered by seawater at low tide [1140] **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SAC is 2.5km (Figures 9 & 10). The site is proximal to the River Liffey which has a direct hydrological link to this SPA but, during construction there will be no direct hydrological connection from the site or works to the River Liffey. During operation the surface water drainage from the quayside buildings will discharge via the existing surface water network to the River Liffey, which is currently the case, following attenuation and silt interception which is not currently in place. This is required for SUDs as standard building requirements within the DCC development plan and other building standards regulations and to comply with Irish Water requirements. During operation the drainage from the rafting course will continue to foul. Therefore, there is an indirect link for surface water and foul water discharges via the Ringsend Waste Water Treatment plant during construction and for foul during operation of the WWRC, while there is a direct hydrological link for surface water during operation of the quayside buildings via the existing surface water network. Under the precautionary principle further information is required to determine if there is potential for impact on features of interest of this SAC. **Likely significant effects on this SAC cannot be discounted without additional information. Further information is required to determine the potential for adverse effects. See Section 4.**
IE0000206	North Dublin Bay SAC	IN	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Features of Interest** 1140 Mudflats and sandflats not covered by seawater at low tide

NATURA CODE	NAME	Screened In/Out	Details/Reason
			1210 Annual vegetation of drift lines 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1395 Petalwort *Petalophyllum ralfsii* 1410 Mediterranean salt meadows (*Juncetalia maritimi*) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with *Ammophila arenaria* 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) 2190 Humid dune slacks **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SAC is 4.6km (Figure 9) located on the far side of the Bull Wall. The site is proximal to the River Liffey which has a direct hydrological link to this SPA but, during construction there will be no direct hydrological connection from the site or works to the River Liffey. During operation the surface water drainage from the quayside buildings will discharge via the existing surface water network to the River Liffey, which is currently the case, following attenuation and silt interception which is not currently in place. This is required for SUDs as standard building requirements within the DCC development plan and other building standards regulations and to comply with Irish Water requirements. During operation the drainage from the rafting course will continue to foul. Therefore, there is an indirect link for surface water and foul water discharges via the Ringsend Waste Water Treatment plant during construction and for foul during operation of the WWRC, while there is a direct hydrological link for surface water during operation of the quayside buildings via the existing surface water network. Under the precautionary principle further information is required to determine if there is potential for impact on features of interest of this SAC. **Likely significant effects on this SAC cannot be discounted without additional information. Further information is required to determine the potential for adverse effects. See Section 4.**
IE0000202	Howth Head SAC	Out	**Conservation Objectives** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Qualifying Interests** (1230) Vegetated sea cliffs of the Atlantic and Baltic coasts (4030) European dry heaths **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.**

NATURA CODE	NAME	Screened In/Out	Details/Reason
			The proposed development site is located within a substantial urban area and near a working port. The nearest point of the site outline to the SAC is 10.3km (Figure 9) located on the far side of the Bull Wall. There is no direct hydrological link to this SAC. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site No significant adverse effects are likely to this SAC due to the distance to the Natura 2000 site and the fact that the features of interest are terrestrial habitats. **No significant adverse effects are likely**
IE0000199	Baldoyle Bay SAC	Out	**Conservation Objectives** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Qualifying Interests** Salicornia and other annuals colonising mud and sand (1310) Atlantic salt meadows (*Glauco - Puccinellietalia maritimae*) (1330) Mediterranean salt meadows (*Juncetalia maritimi*)(MSM) (1410) The following habitats were recorded during the Coastal Monitoring Project (Ryle *et al.,* 2009) but they are not listed in the qualifying interests for the site: 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 (2130) Humid dune slacks (2190) **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SAC is 9.9km (Figure 9) located on the far side of the Bull Wall and Howth Head. There is no direct hydrological link to this SAC. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site No significant adverse effects are likely to this SAC due to the distance to the Natura 2000 site and the fact that the features of interest are coastal habitats. **No significant effects are likely**

NATURA CODE	NAME	Screened In/Out	Details/Reason
IE0003000	Rockabill to Dalkey Island SAC	Out	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Qualifying Interests** 1170 Reefs 1351 Harbour porpoise *Phocoena phocoena* **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and near a working port. The nearest point of the site outline to the SAC is 10.5km (Figure 9). The proposed works are terrestrial and do not impact on the foreshore. There is no direct hydrological link to this SAC. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site. The site would not be expected to be an important area for the features of interest of this SPA.As a result of the distance and the dilution/mixing in the marine environment any materials from site would be expected to be negligible at this Natura 2000 site. No significant adverse effects are likely to this SAC due to the distance to the Natura 2000 site. **No significant effects are likely**
IE0002193	Ireland's Eye SAC	Out	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Features of Interest** 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and working port. The nearest point of the site outline to the SAC is 13.4km (Figure 9) located on the far side of the Howth Head. There is no direct hydrological link to this SAC. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site. No significant adverse effects are likely to this SAC due to the distance to the Natura 2000 site and the fact that the features of interest are terrestrial/coastal habitats. **No significant effects are likely**

NATURA CODE	NAME	Screened In/Out	Details/Reason
IE0000205	Malahide Estuary SAC	Out	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Qualifying Interests and targets** 1140 Mudflats and sandflats not covered by seawater at low tide. 1310 Salicornia and other annuals colonising mud and sand 1320 Spartina swards (*Spartinion maritimae*) As outlined in NPWS (2013) it not be necessary to assess the likely effects of plans or projects against this Annex I habitat at this site. 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*) 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed development site is located within a substantial urban area and proximal to a working port. The nearest point of the site outline to the SAC is 12.6 km (Figure 9) located on the far side of the Howth Head. There is no direct hydrological link to this SAC. All discharges ultimately enter the marine environment into Dublin Bay. Therefore, there is an indirect link to this SPA via the marine environment. However, as a result of the distance and the dilution/mixing in the marine environment any noise levels and materials (respectively) from site would be expected to be negligible in this Natura 2000 site. No significant adverse effects are likely to this SAC due to the distance to the Natura 2000 site and the fact that the features of interest are terrestrial/coastal habitats **No significant effects are likely**
IE0002122	Wicklow Mountains SAC	Out	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. The favourable conservation status of a species is achieved when: • population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and • the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and • there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis. **Qualifying Interests** 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) 3160 Natural dystrophic lakes and ponds 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 4060 Alpine and Boreal heaths

NATURA CODE	NAME	Screened In/Out	Details/Reason
			6130 Calaminarian grasslands of the *Violetalia calaminariae* 6230 Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)* 7130 Blanket bogs (* if active bog) 8110 Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed works site is a minimum of 12.4 km from this SAC (Figure 9). No potential impact is foreseen. There is no direct or indirect hydrological pathway from the proposed development site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site**.** **No significant effects are likely**
IE0001209	Glenasmole Valley SAC	Out	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. The favourable conservation status of a species is achieved when: • population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and • the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and • there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis. **Qualifying Interests** 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (* important orchid sites)* 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 7220 Petrifying springs with tufa formation (Cratoneurion)* * denotes a priority habitat **Source/Pathway/Receptor links between the works and the Natura 2000 site, with the potential to result in significant adverse effects.** The proposed works are located a minimum of 12.8 km from this SAC (Figure 9). No potential impact is foreseen. There is no direct or indirect hydrological pathway from the proposed development site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects are likely**

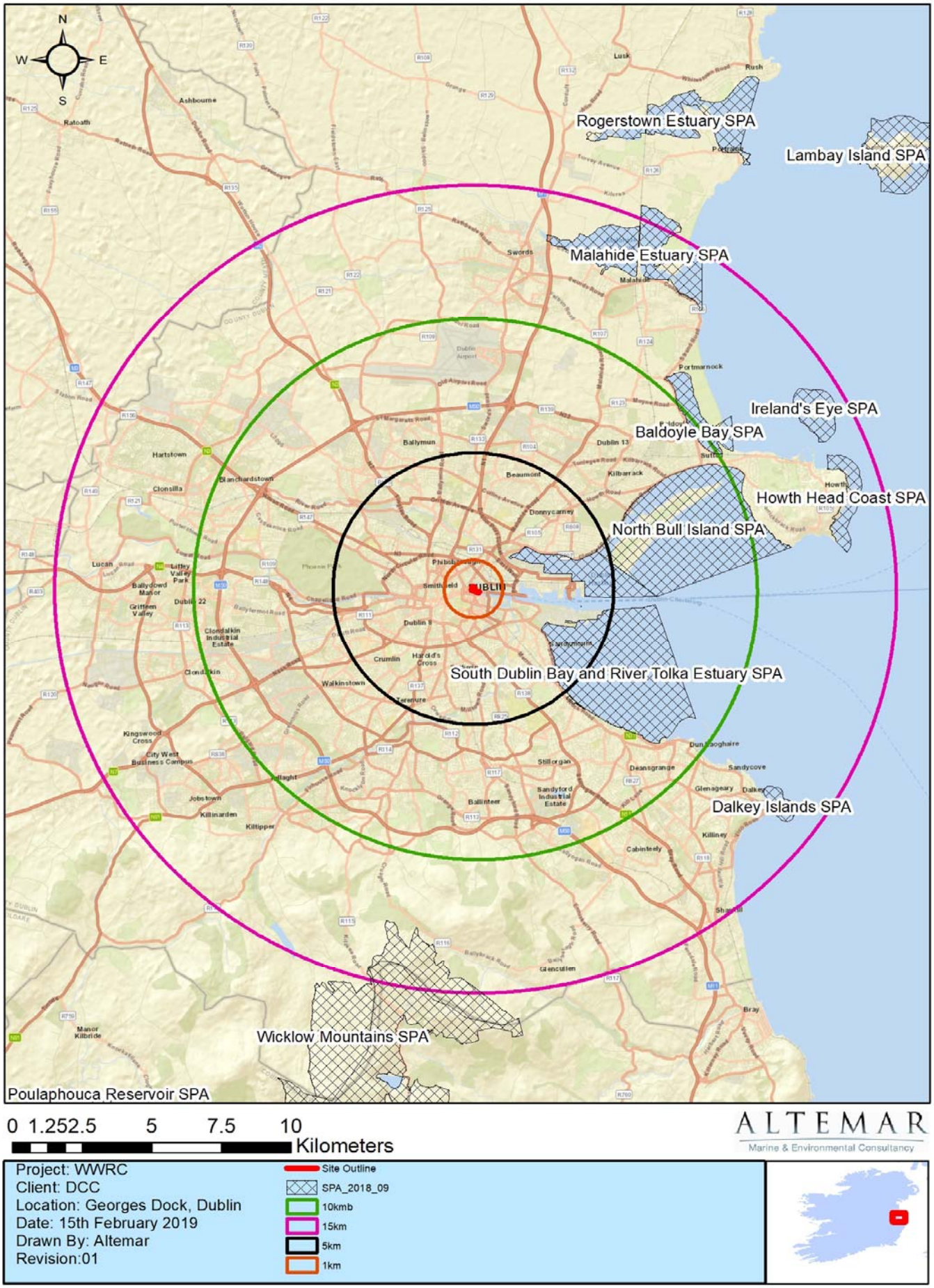

Figure 7. Special Protected Areas located within 5km, 10km and 15km of the proposed development.

Figure 8. Special Protected Areas located within the vicinity of the proposed development.

Figure 9. Special Areas of Conservation located within 5km, 10km and 15km from the proposed development.

Figure 10. Special Areas of Conservation located within the vicinity of the proposed development.

INITIAL SCREENING CONCLUSIONS

An initial screening of the proposed works, using the precautionary principle (without the use of any mitigation measures) and the Source/Pathway/Receptor links between the proposed works and Natura 2000 sites with the potential to result in significant adverse effects on the conservation objectives and features of interest of the Natura 2000 sites was carried out in Table 2. Based on objective information and assessment, the possibility of significant adverse effects caused by the proposed project was excluded for the following Natura 2000 sites.

Special Protection Areas

- Baldoyle Bay SPA [IE0004016]
- Ireland's Eye SPA [004117]
- Howth Head Coast SPA [004113]
- Dalkey Islands SPA [004172]
- Broadmeadow/Swords (Malahide Estuary) SPA [004025]
- Wicklow Mountains SPA [004040]

Special Areas of Conservation

- Baldoyle Bay SAC [000199]
- Howth Head SAC [000202]
- Malahide Estuary SAC [000205]
- Rockabill to Dalkey Island SAC [003000]
- Glenasmole Valley SAC [001209]
- Wicklow Mountains SAC [002122]
- Ireland's Eye SAC [002193]

The project is limited in scale and extent and the potential zone of influence is seen to be restricted to the immediate vicinity of the proposed development. However, it should also be noted that no effects are foreseen on Natura 2000 sites beyond 15km from the proposed development due to the limited scale and nature of the project.

However, despite the fact that potential effects are deemed to be restricted to a very localised zone of influence, under the precautionary principle due to the proximity of the River Liffey (no direct hydrological link) additional information is required for the following Natura 2000 sites to assess if the project has the potential to significantly affect the conservation objectives of the following Natura 2000 sites (in the absence of mitigation measures that "are designed to avoid or reduce the impact of a project or plan on a Natura 2000 site".[3]):

- North Dublin Bay SAC;
- South Dublin Bay SAC;
- South Dublin Bay and River Tolka Estuary SPA; and
- North Bull Island SPA.

[3] https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

4. ADDITIONAL INFORMATION

In the case of the proposed White Water Rafting Course project in order to assess the potential effects of the proposed project on Natura 2000 sites additional information is required for the following Natura 2000 sites which is outlined below:

- South Dublin Bay and River Tolka Estuary SPA; and
- North Bull Island SPA.
- North Dublin Bay SAC;
- South Dublin Bay SAC;

SITE VISITS.

Three site visits were carried out (24th January 2019, 7th February 2019 and 24th May 2019) and the full extent of the proposed development was examined. The proposed development is comprised totally of built land/artificial surfaces. The land surrounding Georges Dock consists primarily of paving and old stone walls from the initial construction of the Dock itself. Upon examining historic satellite and ortho imagery the inside of the dock appears to have a mixed history of being immersed in water or being left dry. Possibly as a result of this immersion/dry cycle, or recent deposition of stone and a concrete platform, it appears that neither terrestrial or aquatic flora are able to take hold, with the exception of some butterfly-bush (*Buddleja davidii*) and hart's-tongue fern (*Asplenium scolopendriumon*) on the higher portions of the walls. Relatively recent infill, concrete and a platform cover the entire extent of Georges Dock and this area is devoid of any flora or obvious fauna (Plate 1). A solid robust concrete poured wall separates the Georges Dock from the River Liffey, thereby breaking the hydrological link. Some *Ulva intestinalis* was noted on the inside of this wall in an area of some minor seepage (Plate 2). No other algae were noted inside the Georges Dock area. No evidence of mammal activity was seen on site. Noted bird activity was solely feral pigeon (*Columba livia f. domestica*) landing within the dock area and nesting under the bridges in the vicinity of the poured concrete wall. No birds of conservation importance were noted on site. It would be expected that herring gull (*Larus argentatus*) and back-headed gull (*Chroicocephalus ridibundus*) would be also seen in the site. A bat emergent detector survey was carried out on the 24th May 2019. This survey was carried out within the optimal survey timing and weather conditions. No bats were noted within the site. It should be noted that bats are protected under the Habitats Directive but, are not a conservation interest of any of the Natura 2000 sites within 15km of the proposed development. No species of conservation importance were noted on site or have been recorded on site by NPWS or NBDC data.

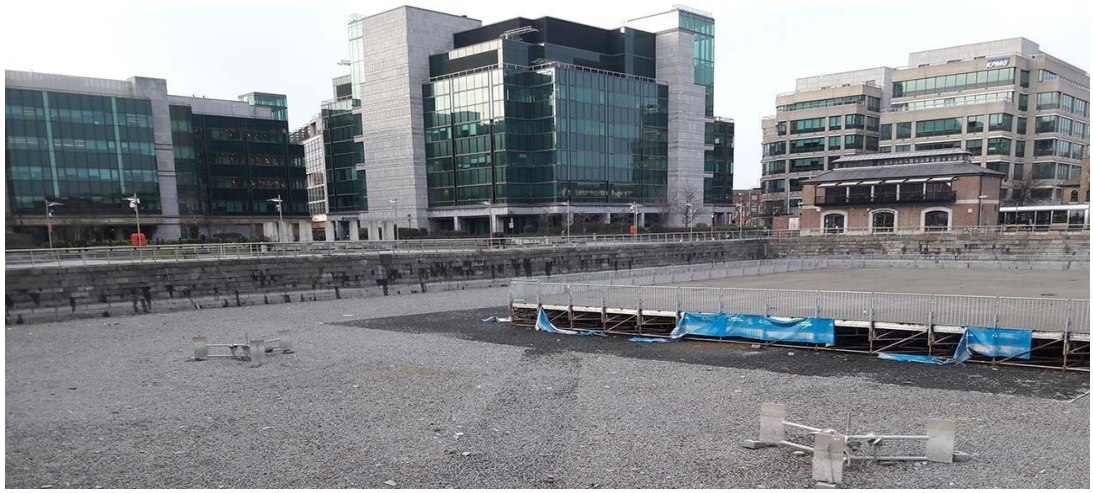

Plate 1. Georges Dock.

Plate 2. Poured Concrete Wall between the dock and River Liffey (left). Eastern wall, dry gravel and platform in Georges Dock (right).

Plate 3. Existing Quay buildings

Data on rare and protected species was acquired from the National Parks and Wildlife Service. No species of conservation importance were located in the vicinity of the proposed works. However, the River Liffey which is located proximal to the proposed development has Atlantic salmon (*Salmo salar*) which are protected (in freshwater) under the Habitats Directive.

SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA

As outlined in the site synopsis (NPWS, 2015) 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." Of particular note to the proposed development "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 (Figure 6). 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."

The Natura 2000 Standard Data Form (2015b) 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*."

NORTH BULL ISLAND SPA

As outlined in the Site Synopsis (NPWS, 2015c) "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.

The Natura 2000 Standard Data Form (NPWS, 2015d) "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 have also been well documented. Future prospects are good owing to various designations assigned to site."

SOUTH DUBLIN BAY SAC

As outlined in the Site Synopsis (NPWS, 2015e) "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."
The Natura 2000 Standard Data Form (NPWS, 2015f) "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."

The "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.

At low tide the inner parts of the south bay are used for amenity purposes. Bait-digging is a regular activity on the sandy flats. At high tide some areas have wind-surfing and jet-skiing. This site is a fine example of a coastal system, with extensive sand and mudflats, and incipient dune formations. South Dublin Bay is also an internationally important bird site."

NORTH DUBLIN BAY CSAC

As outlined in the NPWS Site Synopsis (NPWS, 2016g) "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."

The Natura 2000 Standard Data Form (NPWS, 2015a) 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.

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."

CONSERVATION OBJECTIVES

The Qualifying Interests (QI) (Features of Interest), Special Conservation Interests (SCIs) for the SPA sites and the National conservation status of the QI of four Natura 2000 sites subject to additional information are seen in Table 3. The site specific conservation Objectives for Natura 2000 sites are seen in Table 4.

POTENTIAL ADVERSE EFFECTS ON THE CONSERVATION OBJECTIVES OF NATURA 2000 SITES LIKELY TO OCCUR FROM THE PROJECT (WITHOUT MITIGATION)

The potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites are seen in Table 5. Given the nature of the works in an urban environment isolated from the estuarine element of the River Liffey all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site and would have no effect on South Dublin Bay SAC [000210], North Dublin Bay SAC [000206], North Bull Island SPA [004006] and South Dublin and River Tolka Estuary SPA [004024].

Annex Species and Habitats

No habitats of conservation importance were noted on or in the vicinity of the proposed works area. No species of conservation importance were noted on site.

Table 3. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Current Conservation Status**
South Dublin Bay SAC (IE000210)	*Annex I Habitats (Features of interest):* 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]	 **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate**
North Dublin Bay SAC (IE000206)	*Annex I Habitats (Features of interest):* Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonizing mud and sand [1310] Atlantic salt meadows *Glauco- Puccinellietalia maritimae* [1330] Mediterranean salt meadows *Juncetalia maritimi* [1410] 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] *Annex II species (Features of interest):* Petalwort *Petalophyllum ralfsii* [1395]	 **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Inadequate** **Unfavourable/Bad** **Unfavourable/Inadequate** **Favourable**
Special Protection Areas (SPAs)		
South Dublin Bay and River Tolka Estuary SPA (IE004024)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*)[A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A140] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*)[A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Larus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetlands & Waterbirds [A999]	**Amber** **Amber** **Amber** **Amber** **Red** **Green** **Amber** **Amber** **Red** **Red** **Amber** **Amber** **Amber**

Table 3. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Current Conservation Status**
North Bull Island SPA (004006)	Oystercatcher (*Haematopus ostralegus*) [A130] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Larus ridibundus*) [A179] Wetlands & Waterbirds [A999]	**Amber** **Red** **Amber** **Red** **Green** **Amber** **Amber** **Amber** **Amber** **Amber** **Red** **Amber** **Amber** **Red** **Red** **Green** **Red**

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
South Dublin Bay SAC		
Mudflats and sandflats not covered by 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 type in a natural condition: Fine sands with *Angulus tenuis* 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 (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and oraches (*Atriplex* spp.)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover
Salicornia and other annuals colonising mud and sand [1310] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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: sediment supply	Presence/ absence of physical barriers	Maintain, or where necessary restore, natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
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 subcommunities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species- *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%
Embryonic shifting dunes [2110] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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 sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments 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: plant health of fore dune grasses	Percentage cover	More than 95% of sand couch (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*) should be healthy (i.e. green plant parts above ground and flowering heads present)
Vegetation composition: typical species and subcommunities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch (*Elytrigia juncea*) and/or lymegrass (*Leymus arenarius*)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-native species) to represent less than 5% cover
North Dublin Bay SAC		
Mudflats and sandflats not covered by 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 Mytilus edulis-dominated community, subject to natural processes
Community structure: Mytilus edulis density	Individuals/m^2	Conserve the high quality of the *Mytilus edulis* dominated community, subject to natural processes
Community distribution	Hectares	Conserve the following community types in a natural condition: Fine sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex; Fine sand with *Spio martinensis* community complex
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

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation 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 (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and oraches (*Atriplex* spp.)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover
Salicornia and other annuals colonising mud and sand [1310] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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: sediment supply	Presence/ absence of physical barriers	Maintain, or where necessary restore, natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and subcommunities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%
Atlantic salt meadows (Glauco-Puccinellietalia maritimae [1330] (Maintain the favourable conservation condition)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and subcommunities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%
Mediterranean salt meadows (*Juncetalia maritimi*) [1410] (Maintain the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
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 subcommunities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%
Embryonic shifting dunes [2110] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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 sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments 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: plant health of for dune grasses	Percentage cover	More than 95% of sand couch (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*) should be healthy (i.e. green plant parts above ground and flowering heads present)
Vegetation composition: typical species and subcommunities (*Leymus arenarius*)	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch (*Elytrigia juncea*) and/or lymegrass
Vegetation composition: 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) [2120] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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 sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments 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: 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)

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Vegetation composition: typical species and subcommunities	Percentage cover at a representative number of Monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (*Ammophila arenaria*) and/or lymegrass (*Leymus arenarius*)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-native species) to represent less than 5% cover
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or 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 sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes
Vegetation structure: sward height	Centimetres	Maintain structural variation in the sward
Vegetation composition: typical species and subcommunities	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 Hippophae rhamnoides)	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
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within the sward
Vegetation composition: typical species and subcommunities	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 condition)		
Distribution of populations	Number and geographical spread of populations	No decline
Population size	Number of individuals	No decline
Area 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 Estuary SPA		
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*) [A130], Ringed Plover (*Charadrius hiaticula*) [A137], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Dunlin (*Calidris alpina alpina*) [A149], Bar-tailed Godwit (*Limosa lapponica*) [A157], Redshank (*Tringa totanus*) [A162], Black-headed Gull (*Chroicocephalus ridibundus*) [A179] (Maintain the favourable conservation condition) Note: Grey Plover (*Pluvialis squatarola*) [A141] is proposed for removal from the 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 areas	No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Roseate Tern *Sterna dougallii* [A192]		
Passage population: individuals	Number	No significant decline
Distribution: roosting areas	Number; location; area (ha)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns
Common Tern *Sterna hirundo* [A193]		
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline
Productivity rate: fledged young per breeding pair	Mean number	No significant decline
Passage population: individuals	Number	No significant decline
Distribution: breeding colonies	Number; location; area (Hectares)	No significant decline
Distribution: roosting areas	Number; location; area (hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns
Arctic Tern *Sterna paradisaea* [A194]		
Passage population: individuals	Number	No significant decline
Distribution: roosting areas	Number; location; area (hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline

Table 4. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns
Wetlands [A999] (Maintain the favourable conservation condition)		
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		
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Shelduck (*Tadorna tadorna*) [A048], Teal (*Anas crecca*) [A052], Pintail (*Anas acuta*) [A054], Shoveler (*Anas clypeata*) [A056], Oystercatcher (*Haematopus ostralegus*) [A130], Golden Plover (*Pluvialis apricaria*) [A140], Grey Plover (*Pluvialis squatarola*) [A141], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Dunlin (*Calidris alpina alpina*) [A149], Black-tailed Godwit (*Limosa limosa*) [A156], Bar-tailed Godwit (*Limosa lapponica*) [A157], Curlew (*Numenius arquata*) [A160], Redshank (*Tringa totanus*) [A162], Turnstone (*Arenaria interpres*) [A169], Black-headed Gull (*Chroicocephalus ridibundus*) [A179] (Maintain the favourable conservation condition)		
Population trend	Percentage change	Long term population trend stable or increasing
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation
Wetlands [A999] (Maintain the favourable conservation condition)		
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713ha, other than that occurring from natural patterns of variation

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
South Dublin Bay SAC (IE000210)	*Annex I Habitats (Features of interest):* 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]	The use of plant and machinery on site could lead to localised dust and/or pollution impacts. Surface water runoff on site during construction or operation may require pumping to the existing foul/surface water. Concrete, silt or pollution would not be expected to enter the foul/surface water network during dewatering. However, in the unlikely event that they did enter the drainage network, existing drainage networks in the vicinity of the proposed works drain to the Ringsend WWTP for processing. The demolition of onsite structures may lead to localised dust and noise emissions. However, as seen in Plate 3 much of the existing building is composed of glass double glazed units which will be dismantled manually and would not be expected to emit significant quantities of dust. Removal of material from the site and the introduction of new materials will lead to increased traffic volumes, dust and noise temporarily. In the absence of any control measures on site, works on the quayside buildings could lead to silt-laden water from demolition or construction to enter the public stormwater sewer and into the River Liffey. This section of the River Liffey is estuarine where complex mixing takes place, with varying quantities of less dense freshwater lying above a denser saltwater wedge of water underneath. This mixing varies on the quantity of freshwater in the River Liffey, the tidal cycle and weather events. It would be expected that silt would begin to settle upon reaching the river and be carried in the overlying freshwater layer for a period of time, depending on the particle size of the silt fractions and flow strength, where finer silt would travel further within the upper freshwater layer. As particles pass through the freshwater layer they would enter the more dense salt water wedge where the flow regime becomes tidal, in and out, rather than a uniform downstream flow so the progression of silt particles would be expected to be significantly reduced or reversed depending on the tidal strength. Given the scale of the project on the quayside buildings and proposed works the suspended solids will naturally settle prior to reaching the Natura 2000 site, located at minimum 3.9km from the proposed works. In the event of an oil/diesel spillage from machinery on site, in the absence of standard control measures including spill kits, containment etc., and assuming that the spillage is significant, beside the surface water drain the oil/diesel would directly enter the River Liffey via the surface water network. In the absence of any controls on site significant and robust existing oil pollution controls are in place between the proposed development and Natura 2000 sites at Dublin Port. Dublin port currently has an Emergency Response Plan, the remit of which, amongst other areas, is to mitigate against "Damage to the environment" and this Plan covers "Major oil spill at sea or oil entering the port <u>from a source upriver</u>." The main WWRC would be within an existing self-contained, hydrologically isolated dock and any discharges are fully controllable and will use the existing surface/foul water network.

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
		The environment within the dock will become a freshwater with good water quality status. Water will not be sourced from/discharged to the River Liffey due to water quality requirements. During construction and operation of the proposed project surface and foul water from the WWRC will enter the DCC drainage network leading ultimately to Ringsend WWTP. Surface water runoff from the Quayside Buildings will enter the existing surface water network (which is currently the case) following attenuation and silt interception, which enters the River Liffey. Localised noise and lighting impacts may occur in the direct vicinity of the proposed facility. However, these would not be expected to impact on the conservation objectives of this Natura 2000 site due to, the distance to the conservation site, the hydrological isolation of the site, the drainage of WWRC and quayside foul networks to Ringsend WWTP and the presence of the facility within an urban environment already with significant noise and lighting. Standard surface water controls including, a temporary connection to the combined sewer, silt interception and oil spill containment will be included on site during works. However, as outlined above these measures that form part of a project or plan, are not designed or necessary to avoid or reduce the impact of a project or plan on a Natura 2000 site. Given the nature of the potential effects outlined above, the proposed project would not be expected to effect the: 1) Habitat area, Community extent on Community Structure: Zostera density Community distribution of *Mudflats and sandflats not covered by water at low tide* [1140]. 2) Habitat area, Physical structure: functionality and sediment supply, Habitat distribution, Vegetation structure: zonation, Vegetation composition: typical species and subcommunities, Vegetation composition: negative indicator species of *Annual vegetation of drift lines* [1210]. 3) Habitat area, Habitat distribution, Physical structure: sediment supply, Physical structure: creeks and pans, Physical structure: flooding regime, Vegetation structure: zonation, Vegetation structure: vegetation height, Vegetation structure: vegetation cover, Vegetation composition: typical species and subcommunities, Vegetation structure: negative indicator species-*Spartina anglica* of *Salicornia and other annuals colonising mud and sand* [1310]. 4) Habitat area, Habitat distribution, Physical structure: functionality sediment supply, Vegetation structure: zonation, Vegetation composition: plant health of fore dune grasses, Vegetation composition: typical species and subcommunities Vegetation composition: negative indicator species of *Embryonic shifting dunes* [2110]. The level of effect on South Dublin Bay SAC, is not deemed to be significant due to the lack of direct hydrological connection to the River Liffey during construction of the project and the operation of the WWRC,

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
		existing background noise and lighting, the large distance to the SAC and the significant mixing of treated foul and surface water in the estuarine element of the River Liffey and within Dublin Bay. As outlined above, the measures that form part of a project or plan, are not designed or necessary to avoid or reduce the impact of a project or plan on a Natura 2000 site. **No significant effects are likely**
North Dublin Bay SAC (IE000206)	*Annex I Habitats (Features of interest):* Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonizing mud and sand [1310] Atlantic salt meadows *Glauco- Puccinellietalia maritimae* [1330] Mediterranean salt meadows *Juncetalia maritimi* [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	The use of plant and machinery on site could lead to localised dust and/or pollution impacts. Surface water runoff on site during construction or operation may require pumping to the existing foul/surface water. Concrete, silt or pollution would not be expected to enter the foul/surface water network during dewatering. However, in the unlikely event that they did enter the drainage network, existing drainage networks in the vicinity of the proposed works drain to the Ringsend WWTP for processing. The demolition of onsite structures may lead to localised dust and noise emissions. However, as seen in Plate 3 much of the existing building is composed of glass double glazed units which will be dismantled manually and would not be expected to emit significant quantities of dust. Removal of material from the site and the introduction of new materials will lead to increased traffic volumes, dust and noise temporarily. In the absence of any control measures on site, works on the quayside buildings could lead to silt-laden water from demolition or construction to enter the public stormwater sewer and into the River Liffey. This section of the River Liffey is estuarine where complex mixing takes place, with varying quantities of less dense freshwater lying above a denser saltwater wedge of water underneath. This mixing varies on the quantity of freshwater in the River Liffey, the tidal cycle and weather events. It would be expected that silt would begin to settle upon reaching the river and be carried in the overlying freshwater layer for a period of time, depending on the particle size of the silt fractions and flow strength, where finer silt would travel further within the upper freshwater layer. As particles pass through the freshwater layer they would enter the more dense salt water wedge where the flow regime becomes tidal, in and out, rather than a uniform downstream flow so the progression of silt particles would be expected to be significantly reduced or reversed depending on the tidal strength. Given the scale of the project on the quayside buildings and proposed works the suspended solids will naturally settle prior to reaching the Natura 2000 site, located at minimum 3.9km from the proposed works. In the event of an oil/diesel spillage from machinery on site, in the absence of standard control measures including spill kits, containment etc., and assuming that the spillage is significant, beside the surface water drain the oil/diesel would directly enter the River Liffey via the surface water network. In the absence of any controls on site significant and robust existing oil pollution controls are in place between the proposed development and Natura 2000 sites at Dublin Port. Dublin port currently has an Emergency Response Plan, the remit of which,

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] *Annex II species (Features of interest):* Petalwort *Petalophyllum ralfsii* [1395]	amongst other areas, is to mitigate against "Damage to the environment" and this Plan covers "Major oil spill at sea or oil entering the port <u>from a source upriver</u>." The WWRC would be within an existing self-contained, hydrologically isolated dock and any discharges are fully controllable and will use the existing surface/foul water network. The environment within the dock will become a freshwater with good water quality status. Water will not be sourced from/discharged to the River Liffey due to water quality requirements. During operation of the proposed project and foul water from the WWRC will enter the DCC drainage network leading ultimately to Ringsend WWTP. Surface water runoff from the Quayside Buildings will enter the existing surface water network (which is currently the case) following attenuation and silt interception, which enters the River Liffey. Localised noise and lighting impacts may occur in the direct vicinity of the proposed facility. However, these would not be expected to impact on the conservation objectives of this Natura 2000 site due to, the distance to the conservation site, the hydrological isolation of the site, the drainage of WWRC and quayside foul networks to Ringsend WWTP and the presence of the facility within an urban environment already with significant noise and lighting. The potential impacts outlined above would not be expected to impact on the: 1) Habitat area, Community extent on Community Structure: Zostera density Community distribution. *Mudflats and sandflats not covered by water at low tide* [1140]. 2) Habitat area, Habitat distribution, Physical structure: functionality and sediment supply, Vegetation structure: zonation, Vegetation composition: typical species and subcommunities, Vegetation composition: negative indicator species of *Annual vegetation of drift lines* [1210] 3) Habitat area, Habitat distribution, Physical structure: sediment supply, Physical structure: creeks and pans, Physical structure: flooding regime, Vegetation structure: zonation, Vegetation structure: vegetation height, Vegetation structure: vegetation cover, Vegetation composition: typical species and subcommunities, Vegetation structure: negative indicator species-*Spartina anglica* of *Salicornia and other annuals colonising mud and sand* [1310]. 4) Habitat area, Habitat distribution, Physical structure: sediment supply, Physical structure: creeks and pans, Physical structure: flooding regime, Vegetation structure: zonation, Vegetation structure: vegetation height, Vegetation structure: vegetation cover, Vegetation composition: typical species and subcommunities, Vegetation structure: negative indicator species -Spartina anglica of Atlantic salt meadows Glauco- Puccinellietalia maritimae [1330]. 5) Habitat area, Habitat distribution, Physical structure: sediment supply, Physical structure: creeks and pans, Physical structure: flooding regime, Vegetation structure: zonation, Vegetation structure:

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
		vegetation height, Vegetation structure: vegetation cover, Vegetation composition: typical species and subcommunities, Vegetation structure: negative indicator species -Spartina anglica of Mediterranean salt meadows Juncetalia maritimi [1410] 6) Habitat area, Habitat distribution, Physical structure: functionality sediment supply, Vegetation structure: zonation, Vegetation composition: plant health of for dune grasses, Vegetation composition: typical species and subcommunities (Leymus arenarius), Vegetation composition: negative indicator species of Embryonic shifting dunes [2110] 7) Habitat area, Habitat distribution , Physical structure: functionality sediment supply, Vegetation structure: zonation, Vegetation composition: plant health of dune grasses, Vegetation composition: typical species and subcommunities, Vegetation composition: negative indicator species of Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] 8) Habitat area, Habitat distribution, Physical structure: functionality sediment supply, Vegetation structure: zonation, Vegetation structure: bare ground, Vegetation structure: sward height, Vegetation composition: typical species and subcommunities, Vegetation composition: negative indicator species (including *Hippophae rhamnoides*), Vegetation composition: scrub/trees of Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] 9) Habitat area, Habitat distribution, Physical structure: functionality sediment supply, Physical structure: hydrological and flooding regime, Vegetation structure: zonation, Vegetation structure: bare ground, Vegetation structure: vegetation height, Vegetation composition: typical species and subcommunities, Vegetation composition: cover of *Salix repens*, Vegetation composition: negative indicator species, Vegetation composition: scrub/trees of Humid dune slacks [2190] 10) Distribution of populations, Population size, Area of suitable habitat, Hydrological conditions: soil moisture, Vegetation structure: height and cover of Petalwort *Petalophyllum ralfsii* [1395] The level of effect on North Dublin Bay SAC, without the use of control measures, is not deemed to be significant due to the lack of direct hydrological connection to the River Liffey during construction of the project and the operation of the WWRC, existing background noise and lighting, the large distance to the SAC and the significant mixing of treated foul and surface water in the estuarine element of the River Liffey and within Dublin Bay. As outlined above, the measures that form part of a project or plan, are not designed or necessary to avoid or reduce the impact of a project or plan on a Natura 2000 site. As outlined above, the measures that form part of a project or plan, are not designed or necessary to avoid or reduce the impact of a project or plan on a Natura 2000 site. **No significant effects are likely**

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
South Dublin Bay and River Tolka Estuary SPA (IE004024)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*)[A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A140] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*)[A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Larus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetlands & Waterbirds [A999]	The use of plant and machinery on site could lead to localised dust and/or pollution impacts. Surface water runoff on site during construction or operation may require pumping to the existing foul/surface water. Concrete, silt or pollution would not be expected to enter the foul/surface water network during dewatering. However, in the unlikely event that they did enter the drainage network, existing drainage networks in the vicinity of the proposed works drain to the Ringsend WWTP for processing. The demolition of onsite structures may lead to localised dust and noise emissions. However, as seen in Plate 3 much of the existing building is composed of glass double glazed units which will be dismantled manually and would not be expected to emit significant quantities of dust. Removal of material from the site and the introduction of new materials will lead to increased traffic volumes, dust and noise temporarily. In the absence of any control measures on site, works on the quayside buildings could lead to silt-laden water from demolition or construction to enter the public stormwater sewer and into the River Liffey. This section of the River Liffey is estuarine where complex mixing takes place, with varying quantities of less dense freshwater lying above a denser saltwater wedge of water underneath. This mixing varies on the quantity of freshwater in the River Liffey, the tidal cycle and weather events. It would be expected that silt would begin to settle upon reaching the river and be carried in the overlying freshwater layer for a period of time, depending on the particle size of the silt fractions and flow strength, where finer silt would travel further within the upper freshwater layer. As particles pass through the freshwater layer they would enter the more dense salt water wedge where the flow regime becomes tidal, in and out, rather than a uniform downstream flow so the progression of silt particles would be expected to be significantly reduced or reversed depending on the tidal strength. Given the scale of the project on the quayside buildings and proposed works the suspended solids will naturally settle prior to reaching the Natura 2000 site, located at minimum 3.9km from the proposed works. In the event of an oil/diesel spillage from machinery on site, in the absence of standard control measures including spill kits, containment etc., and assuming that the spillage is significant, beside the surface water drain the oil/diesel would directly enter the River Liffey via the surface water network. In the absence of any controls on site significant and robust existing oil pollution controls are in place between the proposed development and Natura 2000 sites at Dublin Port. Dublin port currently has an Emergency Response Plan, the remit of which, amongst other areas, is to mitigate against "Damage to the environment" and this Plan covers "Major oil spill at sea or oil entering the port <u>from a source upriver</u>." The WWRC course would be within an existing self-contained, hydrologically isolated dock and any discharges are fully controllable and will use the existing foul water network.

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
		The environment within the dock will become freshwater with good water quality status. During operation of the proposed project surface water from all surfaces and foul water from the WWRC will enter the DCC drainage network leading ultimately to Ringsend WWTP. Following standard silt interception and SUDS the surface water from the quayside buildings will enter the surface water network terminating in the River Liffey. Localised noise and lighting impacts may occur in the direct vicinity of the proposed facility. However, these would not be expected to impact on the conservation objectives of this Natura 2000 site due to, the distance to the conservation site, the hydrological isolation of the WWRC, the drainage of WWRC networks to Ringsend WWTP and the presence of the facility within an urban environment already with significant noise and lighting. Given the nature of the potential effects outlined above, the proposed project would not be expected to effect the: 1) Distribution and Range, timing and intensity of use of areas of the SPA for Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*)[A130], Ringed Plover (*Charadrius hiaticula*) [A137], Grey Plover (*Pluvialis squatarola*) [A140], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Dunlin (*Calidris alpina*) [A149], Bar-tailed Godwit (*Limosa lapponica*)[A157], Redshank (*Tringa totanus*) [A162], Black-headed Gull (*Larus ridibundus*) [A179] 2) Breeding population abundance: apparently occupied nests (AONs), Productivity rate: fledged young per breeding pair, Passage population: individuals, Distribution: breeding colonies Distribution:roosting areas, Barriers to connectivity, Disturbance at breeding site, Disturbance at roosting site for Common Tern *Sterna hirundo* [A193] and Prey biomass available. 3) Passage population: individuals, Distribution: roosting areas, Barriers to connectivity, Disturbance at roosting site Arctic Tern *Sterna paradisaea* [A194] and Prey biomass available 4) Passage population: individuals, Distribution: roosting areas, Barriers to connectivity, Disturbance at roosting site and the Prey biomass available of Roseate Tern *Sterna dougallii* [A192]. 5) The area of Wetlands [A999] The level of effect on South Dublin Bay and River Tolka Estuary SPA, without the use of control measures, is not deemed to be significant due to the lack of direct hydrological connection from the WWRC to the River Liffey, existing background noise and lighting, the large distance to the SAC and the significant mixing of foul and surface water via the indirect link through Ringsend WWTP, standard SUDS and water quality controls, and the substantial volume of water and mixing in the estuarine element of the River Liffey and within Dublin Bay. As outlined above, the measures that form part of a project or plan, are not designed or necessary to avoid or reduce the impact of a project or plan on a Natura 2000 site. **No significant effects are likely**

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
North Bull Island SPA (004006)	Oystercatcher (*Haematopus ostralegus*) [A130] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Larus ridibundus*) [A179]	The use of plant and machinery on site could lead to localised dust and/or pollution impacts. Surface water runoff on site during construction or operation may require pumping to the existing foul/surface water. Concrete, silt or pollution would not be expected to enter the foul/surface water network during dewatering. However, in the unlikely event that they did enter the drainage network, existing drainage networks in the vicinity of the proposed works drain to the Ringsend WWTP for processing. The demolition of onsite structures may lead to localised dust and noise emissions. However, as seen in Plate 3 much of the existing building is composed of glass double glazed units which will be dismantled manually and would not be expected to emit significant quantities of dust. Removal of material from the site and the introduction of new materials will lead to increased traffic volumes, dust and noise temporarily. In the absence of any control measures on site, works on the quayside buildings could lead to silt-laden water from demolition or construction to enter the public stormwater sewer and into the River Liffey. This section of the River Liffey is estuarine where complex mixing takes place, with varying quantities of less dense freshwater lying above a denser saltwater wedge of water underneath. This mixing varies on the quantity of freshwater in the River Liffey, the tidal cycle and weather events. It would be expected that silt would begin to settle upon reaching the river and be carried in the overlying freshwater layer for a period of time, depending on the particle size of the silt fractions and flow strength, where finer silt would travel further within the upper freshwater layer. As particles pass through the freshwater layer they would enter the more dense salt water wedge where the flow regime becomes tidal, in and out, rather than a uniform downstream flow so the progression of silt particles would be expected to be significantly reduced or reversed depending on the tidal strength. Given the scale of the project on the quayside buildings and proposed works the suspended solids will naturally settle prior to reaching the Natura 2000 site, located at minimum 3.9km from the proposed works. In the event of an oil/diesel spillage from machinery on site, in the absence of standard control measures including spill kits, containment etc., and assuming that the spillage is significant, beside the surface water drain the oil/diesel would directly enter the River Liffey via the surface water network. In the absence of any controls on site significant and robust existing oil pollution controls are in place between the proposed development and Natura 2000 sites at Dublin Port. Dublin port currently has an Emergency Response Plan, the remit of which, amongst other areas, is to mitigate against "Damage to the environment" and this Plan covers "Major oil spill at sea or oil entering the port <u>from a source upriver</u>." The WWRC would be within an existing self-contained, hydrologically isolated dock and any discharges are fully controllable and will use the existing surface/foul water network. The environment within the dock will become a freshwater with good water quality status. Water will not be sourced from/discharged to the River Liffey due to water quality requirements.

Table 5. Potential for adverse effects on the qualifying Interests and conservation objectives of Natura 2000 sites.		
Natura 2000 Site Name & Site Code	**Qualifying Interests**	**Potential for adverse effects**
	Wetlands & Waterbirds [A999]	During operation of the proposed project surface water from all surfaces and foul water from the WWRC will enter the DCC drainage network leading ultimately to Ringsend WWTP. Following standard silt interception and SUDS the surface water from the quayside buildings will enter the surface water network terminating in the River Liffey. Localised noise and lighting impacts may occur in the direct vicinity of the proposed facility. However, these would not be expected to impact on the conservation objectives of this Natura 2000 site due to, the distance to the conservation site, the hydrological isolation of the WWRC, the drainage of WWRC networks to Ringsend WWTP and the presence of the facility within an urban environment already with significant noise and lighting. Given the nature of the potential effects outlined above, the proposed project would not be expected to effect the: 1) Distribution and Range, timing and intensity of use of areas of the SPA for Oystercatcher (*Haematopus ostralegus*) [A130], Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Shelduck (*Tadorna tadorna*) [A048], Teal (*Anas crecca*) [A052], Pintail (*Anas acuta*) [A054], Shoveler (*Anas clypeata*) [A056], Golden Plover (*Pluvialis apricaria*) [A140], Grey Plover (*Pluvialis squatarola*) [A141], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Dunlin (*Calidris alpina*) [A149], Black-tailed Godwit (*Limosa limosa*) [A156], Bar-tailed Godwit (*Limosa lapponica*) [A157], Curlew (*Numenius arquata*) [A160], Redshank (*Tringa totanus*) [A162], Turnstone (*Arenaria interpres*) [A169], Black-headed Gull (*Larus ridibundu*s) [A179]. 2) The area Wetlands & Waterbirds [A999] The area of Wetlands [A999] The level of effect on North Bull Island SPA, without the use of control measures, is not deemed to be significant due to the lack of direct hydrological connection from the WWRC to the River Liffey, existing background noise and lighting, the large distance to the SAC and the significant mixing of foul and surface water via the indirect link through Ringsend WWTP, standard SUDS and water quality controls, and the substantial volume of water and mixing in the estuarine element of the River Liffey and within Dublin Bay. As outlined above, the measures that form part of a project or plan, are not designed or necessary to avoid or reduce the impact of a project or plan on a Natura 2000 site. **No significant effects are likely**

POTENTIAL IN-COMBINATION EFFECTS

Recent planning permissions were interrogated on www.myplan.ie. Planning permission was granted for development at the eastern mezzanine level of Unit 1, the CHQ Building, George's Dock, Dublin 1 on 6/9/2018. Planning permission was granted for Conservatory B and Vault D of The CHQ Building, North Wall Quay, Dublin 1. Subdivision of Conservatory B and change of use from Conservatory B2 and Vault D from restaurant / bar use to a gym. (ii) The provision of a mezzanine level to Conservatory B2 of circa 89 sq.m, with associated staircase access, to increase the overall floorspace of Conservatory B2 to circa 235 sq.m; (iii) All associated and ancillary fit-out works to Conservatory B2 and Vault D to facilitate a gym use, including provision of toilet and changing facilities at vault level; mechanical, ventilation and other services provision; and insertion of new partitions/doors at vault level; (iv) Provision of signage comprising of 1 no. steel signage sculpture, to include integrated lighting on the 28/07/17. Retention of existing 83 m2 outdoor seating area including provision of 18 no. tables, 62 no. seats, 7 planters and 15 windbreakers and existing folding umbrellas all within the demise of the tenancy was granted on 10/07/18.

No significant cumulative impact from these proposals in tandem with the current application is likely.

APPROPRIATE ASSESSMENT SCREENINGS CONCLUSIONS

The level of effect of the proposed project on Natura 2000 sites, without the use of mitigation that is "designed to avoid or reduce the impact of a project or plan on a Natura 2000 site" is deemed not to be significant due to the location in an urban environment, lack of direct hydrological connection to the River Liffey during construction and operation of the WWRC, existing background noise and lighting within Dublin City, the distance to the Natura 2000 sites, and the significant mixing of foul and surface water via the indirect link through Ringsend WWTP, the estuarine element of the River Liffey and within Dublin Bay. The drainage of the surface water the River Liffey from the quayside buildings is minor (80m^2) and will use the existing network currently in place. Any silt or potential hydrocarbon impacts from the works in the quayside buildings, in the absence of any control measures, would not be deemed to have a significant impact on Natura 2000 sites, due to the minor scale of this element of the project, the settlement of silt in the estuarine element of the River Liffey and the existing Emergency Management Plan in place in Dublin Port to contain oil spill from entering Dublin Port from upstream sources, prior to reaching the Natura 2000 sites.

This AA Screening has involved the examination, analysis and evaluation of all relevant information including, a description of the proposed project, its construction methodology, the environment in which the project will be placed (i.e. infill), water quality and GI studies, Natura 2000 sites within 15km and has applied the precautionary principle in the preparation of the conclusion. It is the professional opinion of the author of this report that there will be no adverse effects on the integrity of any Natura 2000 sites.

This report presents a Stage 1 Appropriate Assessment Screening for the Proposed Development, outlining the information required for the competent authority to screen for appropriate assessment and to determine whether or not the Proposed Development, either alone or in combination with other plans and projects, in view of best scientific knowledge, is likely to have a significant effect on any European or Natura 2000 site.

On the basis of the content of this report, the competent authority is enabled to conduct a Stage 1 Screening for Appropriate Assessment and consider whether, in view of best scientific knowledge and in view of the conservation objectives of the relevant European sites, the Proposed Development, individually or in combination with other plans or projects is likely to have a significant effect on any European site.

There is no possibility of significant effects by the proposed development, either alone or in combination with any other plan or project. A Natura Impact Statement is not required.

Accordingly, having carried out the Stage 1 Appropriate Assessment Screening, the competent authority may determine that a Stage 2 Appropriate Assessment of the Proposed Development is not required as it can be excluded, on the basis of objective scientific information following screening under this Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, that the Proposed Development, individually or in combination with other plans or projects, will have a significant effect on any European site.

DATA USED FOR THE AA SCREENING

NPWS site synopses and Conservation objectives of sites within 15km, in addition to the Dublin Port Emergency Management Plan, were examined. The most recent SAC and SPA boundary shapefiles were downloaded and overlaid on Bing road map and satellite imagery. A site visit was carried out including survey to determine if the site contained possible threats to a NATURA 2000 site.

REFERENCES

The following references were used in the preparation of this AA screening report.

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4. 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; http://ec.europa.eu/environment/nature/Natura2000management/docs/art6/Natura_2000_assess_en.pdf
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16. NPWS (2015) Conservation objectives for Howth Head Coast SPA [004113]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.
17. NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
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19. NPWS (2015) Conservation objectives for Ireland's Eye SAC [002193]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.
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21. NPWS (2013b) Rockabill to Dalkey Island SAC (site code: 3000)Conservation objectives supporting document. -Marine Habitats and Species Version 1