Site C, College Lane, Greenogue, Rathcoole, Co. Dublin

Appropriate Assessment Screening Report

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Revision History

Revision Ref/Date	Amendments	Issued to
18/11/2019	Draft Report	Jordanstown Properties Limited
19/11/2019	Final Report	Jordanstown Properties Limited
06/07/2021	Final Report (following design change)	Jordanstown Properties Limited

Contract

This report describes work commissioned by Con McCarthy, on behalf of Jordanstown Properties Limited, by an email dated 24/10/2019. Jordanstown Properties Limited's representative for the contract was Con McCarthy. William Mulville and Mark Desmond of JBA Consulting carried out this work.

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Purpose

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Contents

List of Figures

List of Tables

Abbreviations

AA	Appropriate Assessment
DoEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EPA	Environmental Protection Agency
EU	European Union
GIS	Geographical Information Systems
GSI	Geological Survey Ireland
IROPI	Imperative Reasons of Over-riding Public Interest
NBDC	National Biodiversity Data Centre
NPWS	National Parks and Wildlife Service
PM	Particulate matter
QI	Qualifying Interest
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SPA	Special Protection Area
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant

1 Introduction

1.1 Background

JBA Consulting Ireland Ltd. has been commissioned by Jordanstown Properties Limited to undertake a Screening for Appropriate Assessment in relation to a warehouse development at Site C, College Lane, Greenogue, Rathcoole, Co. Dublin. This warehouse development was originally granted permission (SDCC reg. Ref SD19A/0407) but has since had a change in the developments design.

1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

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

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 / 2011).

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2009). These guidance documents identify a staged approach to conducting an AA, as shown Figure 1-1.

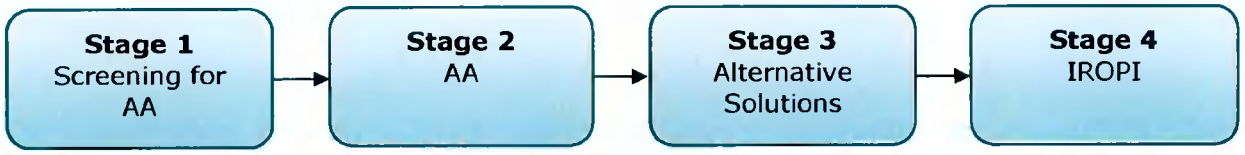


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2009)

1.3.1 Stage 1 - Screening for AA

The initial, screening stage of the Appropriate Assessment is to determine:

- whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation
- if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects

For those sites where potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the sites conservation objectives (i.e. the process proceeds to Stage 2).

1.3.2 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

1.3.3 Stage 3 - Alternative Solutions

Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

1.3.4 Stage 4 - IROPI

Where adverse impacts of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case compensatory measures will be required.

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant impacts are identified, the process stops at stage 1. Throughout the

process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site. This report is for Stage 1 Screening for Appropriate Assessment.

1.4 Methodology

The Screening for Appropriate Assessment has been carried out with reference to the following documents:

- DoEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DoEHLG 2009).
- European Communities (EC) (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission 2000).
- EC (2002) 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, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission et al. 2002).
- EC (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. European Commission (European Commission 2007).
- CIEEM (2016). Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal, Second Ed. (Chartered Institute of Ecology and Environmental Management, 2016)
- Fossitt, J., (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt 2000).

Data has been collected from a range of sources, including:

- Site visit completed by JBA on the 12/11/2019 and discussed in this report
- NPWS website (www.npws.ie);
- EPA maps website (https://gis.epa.ie/EPAMaps/);
- River Basin Management Plans (RBMP) (www.wfdireland.ie);
- NBDC Biodiversity Maps (http://maps.biodiversityireland.ie/#/Map);
- Catchments (www.catchments.ie)

1.4.1 Limitations and Constraints

The screening assessment necessarily relies on some assumptions and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since surveys were undertaken cannot be accounted for.
- Some slight variation in the works methodology may occur, but these will only be minor changes. Where changes to methodology could impact on ecological features, an ecologist will be consulted to determine if the project needs re-screening.

- Adverse weather can cause delays to the schedule and alter the timing of works. This has been accounted for using a worst-case scenario where necessary.

The ecological walkover survey covers Screening for Appropriate Assessment only and does not account for any potential protected species habitats or invasive species outside of Natura 2000 sites.

2 Project Description

2.1 The 'Project'

The proposed development meets the criteria of a 'Project' as defined in the Habitats Directive and is not directly connected with or necessary to the management of any Natura 2000 site. Therefore, the Project is subject to the requirements of the Appropriate Assessment process. Jordanstown Properties intend to apply for permission for development of lands (2.7 hectares) at a site known as 'Site C' College Lane, Greenogue, Rathcoole, Co. Dublin. The development will consist of modifications to a permitted warehouse development (as granted under SDCC Reg. Ref SD19A/0407).

2.2 Site location

The proposed development is located within a former agricultural field adjacent to College Lane (R120), Greenogue, Rathcoole, Co. Dublin (Figure 2-1). Site C is located south of Greenogue Business Park and the R120. Industrial developments are permitted to the east and west of the proposed site under Reg. Refs. SD19A/0065 and SD18A/0265 and will share their road infrastructure to connect to the roundabout on the R120. The site is approximately 0.8km north of Rathcoole town and 1.0km south-east of Newcastle town.

Figure 2-1: Site location (Esri 2021, OSM 2021)

2.3 Proposed project

The proposed development includes the construction of a warehouse and ancillary office space as described in Ref SD19A/0407 but with various design amendments. The amendments principally comprise: an overall increase in the commercial floor area by 15,479 sq m from the permitted 13,959 sq m to 29,438 sq m. The permitted scheme has 3 No. internal ancillary office floor levels, and the proposed alterations provide 2 No. mezzanine levels in the warehouse area (i.e a total of 5 No. internal floor levels). The permitted maximum height of the development at 23.7 metres will remain unchanged.

The additional 15,479 sq m development proposed will comprise an increase in the warehouse floor area from 12,369 sq m to 13,353 sq. m, staff facilities from 548 sq m to 2,582 sq m and ancillary office area from 1,042 sq m to 2,437 sq m. Provision of a 2 No. storey mezzanine warehouse area (9,703 sq m), integrated plant room (434 sq m) and plant area on 2 No. floors (929 sq m).

The development will also include the construction of a 2 No. storey car-parking area (4,057 sq m and 7.8m height) to accommodate an increase from the previously permitted 119 No. ancillary car parking spaces to 190 No. car parking spaces; 13 No. designated van parking spaces (no dedicated van spaces previously proposed); 72 No. permitted cycle parking spaces; reconfiguration of the HGV yard and an increase in the number of HGV dock levellers from 12 No. to 14 No. and the provision of 16 No. van loading level entry doors; sprinkler tank and associated underground pumps; repositioned ESB substation (15 sq m and 3 m height); bin storage (42 sq m and 2.9 m height); amended lighting layout; signage; modifications to hard and soft landscaping and boundary treatments; and associated site development works above and below ground.

Water Supply and Drainage

It is proposed to supply the potable and firefighting water to the development through a connection to the private watermain network proposed as part of granted planning application Ref. SD18A/0265. This will be a new 150mmø watermain connecting to the original watermain on the R120. Fire hydrants and a bulk water meter will be installed on site. A connection application will be made to Irish Water in the normal way

Construction phase

Surface water will be locally attenuated on site with predefined areas of attenuation placed at the beginning of the project. These measures will be in line with the Greater Dublin Regional Code of Practice for Drainage Works (Dublin City Council, 2021). The first objective of the Code of Practice is Compliance with best environmental practices and relevant environmental legislation such as the Water Framework Directive.

Operation Phase

Sustainable Urban Drainage System (SUDS):

The SUDS on site will consist of a series of drainage traps and filters leading to a Stormtech (MC-4500 or equivalent) attenuation system which will be placed under the proposed sites concrete yard. Drainage traps and filters will include attached Klargester Class 1 bypass petrol interceptor (NSBE030 or similar approved) and Surfsep silt trap (SWI0806 or similar approved) to improve the quality of the discharge by capturing all possible debris and hydrocarbons pollution. The attenuation system will store water from rainfall events of any length up to a 1 in 100 year storm event and will allow all adequately filtered storm water to return back into the ground water system. A connection will be made with the existing drain on the R120 but surface water is not expected to leave the site.

The proposed SUDS also complies with Policy IE2 Objective 4 of the South Dublin County Council Development Plan 2016 - 2022 (SDCC, 2016a), to incorporate SUDS within new developments, as set out in the Greater Dublin Regional Code of Practice for Drainage Works (Dublin City Council, 2021). The first objective of the Code of Practice for Drainage

Works is Compliance with best environmental practices and relevant environmental legislation such as the Water Framework Directive. The proposed SUDS is not designed to avoid or reduce any potential harmful effects on any Natura 2000 sites.

Foul water Drainage:

It is proposed to connect two separate foul sewer outfalls from the site to the private foul sewer network constructed as per granted planning application Reg. Ref. SD18A/0265. There will be no trade effluent discharged from the subject development.

A complete water drainage layout plan is shown in Appendix B.

2.3.1 Project Zone of Influence

The project will primarily affect the site only, but a wider area of influence is used for impacts relating to noise disturbance (1km), air pollution (10km), surface water (20km), groundwater (15km) and any supporting habitat for SAC/SPA species (20km).

3 Existing Environment

3.1 Baseline conditions

The ecological walkover survey was conducted on 12th of November 2019 by JBA ecologist William Mulville. A habitat map of the proposed site at that time is provided in Figure 3-1 and Appendix C.

The site was agriculturally based, specifically pastural. It was comprised of mainly unmaintained agricultural grassland and hedgerows. The grassland habitat was removed under the granted planning application (Ref SD19A/0407). This does not impact the outcome of this Appropriate Assessment Screening Report, as this habitat was not identified as supporting QIs of any Natura 2000 site within the ZoI.

3.2 Habitats

The habitats below were recorded during an ecological walkover in November 2019 and are displayed in Figure 3-1. Since November 2019 the site has been cleared and partially excavated under the granted planning application, Ref SD19A/0407. This has resulted in the removal of the GA1 and ED2 habitats and their replacement with a mosaic of 'Spoil and Bare Ground, ED2', Recolonising Bare Ground and 'Buildings and Artificial Surfaces, BL3' as the site was partially excavated and a temporary storage area was installed. The removal of the GA1 and ED2 habitats does not impact the outcome of the screening assessment as these habitats did not support QIs of any Natura 2000 site within the ZoI.

Figure 3-1: Habitat map with ecological species data (November 2019)

3.2.1 Spoil and bare ground (ED2)

A small habitat area of spoil and bare ground was present in the south-eastern corner of the proposed site in 2019. This habitat now extends across most of the site.

3.2.2 Drainage ditches (FW4)

A drainage ditch runs parallel to the southern boundary hedgerow. The flow was relatively fast flowing before backing up and slowing amongst the in-stream vegetation before entering into the culverted system (Figure 3-2). In-stream and bank flora included Fool's Watercress (*Apium nodiflorum*), Brooklime (*Veronica beccabunga*), and Rushes (*Juncus* spp.).

Figure 3-2: The drainage ditch running along the southern site boundary and joins with the unnamed River Griffeen tributary before entering the culverted system.

3.2.3 Improved agricultural grassland (GA1)

The majority of the site was made up of unmaintained improved agricultural grassland (Figure 3-3). The floral community was composed of Perennial Rye-grass (*Lolium perenne*); Yorkshire Fog (*Holcus lanatus*); Sow-Thistle (*Sonchus asper*); Ragwort (*Jacobaea vulgaris*); Hogweed (*Heracleum sphondylium*); Nettle (*Urtica dioica*); Willowherb (*Epilobium* sp.); Thistle (*Cirsium* spp.); Yarrow (*Achillea millefolium*); Creeping Buttercup (*Ranunculus repens*); and Common Field-Speedwell (*Veronica persica*). This habitat was being utilised by several bird species including Hooded Crow (*Corvus cornix*); Blackbird (*Turdus merula*); Skylark (*Alauda arvensis*) and Jack Snipe (*Lymnocryptes minimus*).

This habitat has been removed as part of the granted planning application Ref SD19A/0407, and replaced with both 'Spoil and Bare Ground, ED2' and 'Buildings and Artificial Surfaces' where a storage area is now present.

Figure 3-3: Unmaintained improved grassland and mature hedgerow along the western boundary of the site (November 2019)

3.2.4 Hedgerows (WL1)

This linear habitat strip was present along the western and southern boundaries of the proposed site (Figure 3-3) in November 2019. The floral assemblage of this habitat was mainly composed of Hawthorn (*Crataegus monogyna*); Ash (*Fraxinus excelsior*); Bramble (*Rubus fructicosus*), Nettle; Willowherb sp; Ivy (*Hedera hibernica*); and Hogweed. A solitary Horse Chestnut (*Aesculus hippocastanum*) was also present at the north-west corner of the site. Bird species recorded using these hedgerows included Chaffinch (*Fringilla coelebs*); Pheasant (*Phasianus colchicus*); Skylark; Blackbird; and Wood Pigeon (*Columba palumbus*).

3.3 Protected Flora

No protected floral species were recorded during the ecological walkover survey of the site.

3.4 Protected Fauna

Pheasant, Skylark, Wood Pigeon and Jack Snipe were observed during the first ecological walkover survey of the site (see Figure 3-1) in November 2019. The above species are all protected under the Annex II and/or III of the EU's Birds Directive but are not listed as QIs for any of the Natura 2000 sites within the ZoI. Furthermore, both the Skylark and Jack Snipe are listed under the Amber List of Birds of Conservation Concern in Ireland.

3.5 Other species

A desk study of the records of NBDC data within 2km of the site and within the last 10 years (NBDC, 2021; Appendix D) describes the presence of two QIs of the Dublin Bay SPAs, Eurasian Teal *Anas crecca* and Black Headed Gull *Larus ridibundus*. This site does not support adequate breeding, resting or foraging habitat for either of these QIs therefore they are not further considered

3.6 Invasive Non-native Species

There were no recordings of invasive non-native species during the ecological site walkover.

3.7 Waterbodies within the Vicinity of the Proposed Site

The site lies within the Water Framework Directive (WFD) Liffey and Dublin Bay catchment and the sub-catchment Liffey SC 090 (EPA, 2019a). Figure 3-4 outlines the watercourses near the proposed development. The River Griffeen is located approximately 250m north-west of the proposed site flowing north-east. An unnamed, culverted (in situ) tributary of the River Griffeen flows adjacent to the eastern border of the site and 270m beyond this, to the east, lies Baldonnel Stream, another tributary of the River Griffeen. The River Griffeen feeds into River Liffey at Lucan, which is located approximately 7.7km north of the proposed site (EPA, 2019a). The River Camac is located approximately 1.1km to the south-east of the proposed site, flowing in a north-easterly direction. The River Camac feeds into the River Liffey approximately 13.6km to the north-east of the proposed site.

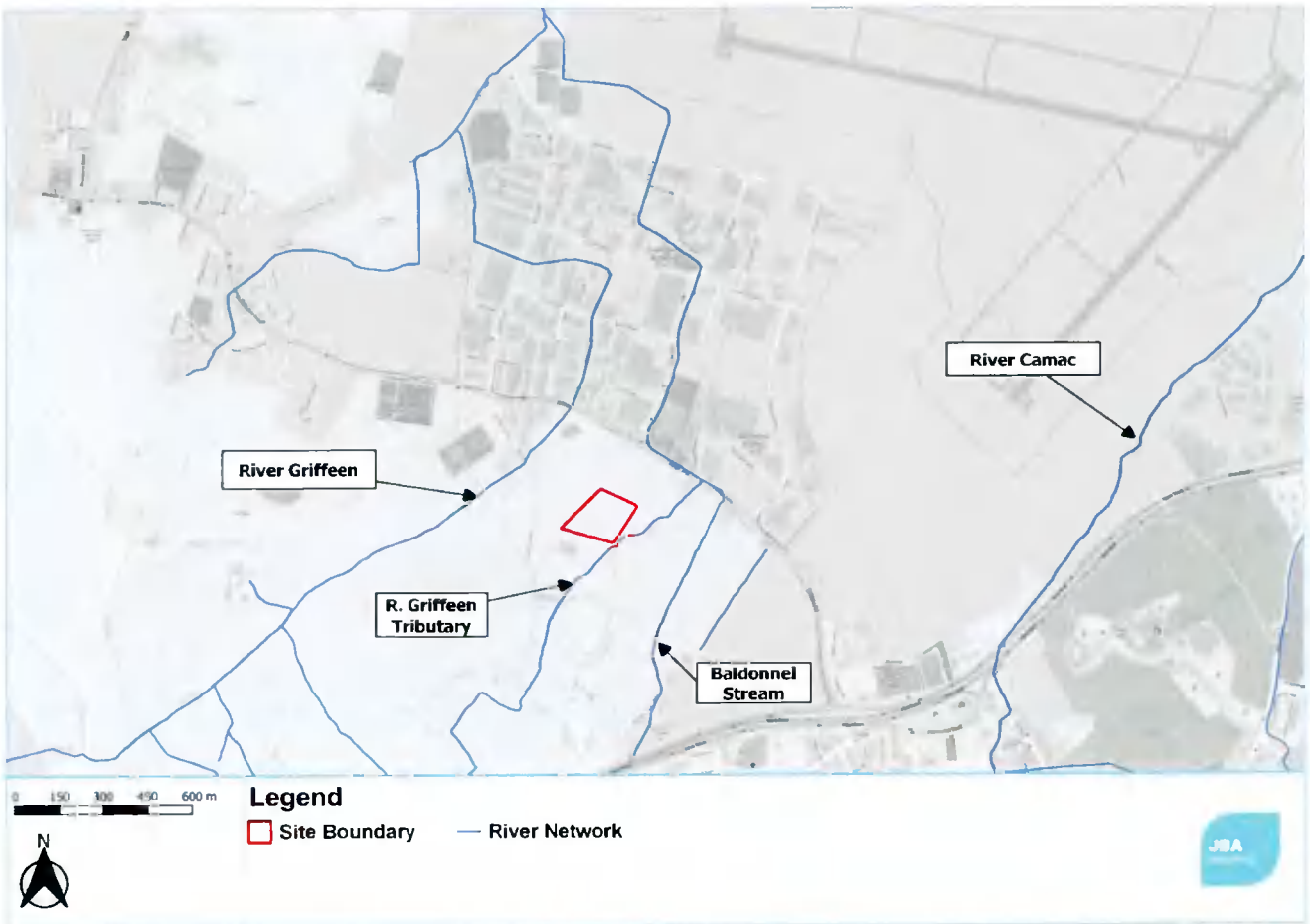


Figure 3-4: Rivers within the vicinity of the proposed site (EPA, 2021; OSM 2021).

4 Natura 2000 Sites

The DEHLG (2009) guidance identifies that Screening for Appropriate Assessment of a plan or project should consider the following Natura 2000 sites:

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of impact of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any Natura 2000 sites that are more than 15km from the plan or project area, but may potentially be impacted upon, for example, through a hydrological connection.

As the proposed works are considered of 'Project' status, only Natura 2000 sites within a 20km range of the proposed development were examined. The Natura 2000 sites within the range are listed in Table 4-1 below and their locations are shown in Figure 4-1.

Table 4-1: Natura 2000 sites located within 15km (general) plus downstream freshwater surface water connectivity, with an additional 2km buffer from connected transitional waters, of the proposed development.

Natura 2000 site	Site Code	Approximate (direct) distance from site	Approximate distance via hydrological connection
Rye Water Valley / Carton SAC	001398	8.1km	No connection
Glenasmole Valley SAC	001209	7.7km	No connection
Red Bog, Kildare SAC	000397	10.9km	No connection
Wicklow Mountains SAC	002122	8.7km	No connection
Poulaphouca Reservoir SPA	004063	11.9km	No connection
Wicklow Mountains SPA	004040	12.1km	No connection
North Dublin Bay SAC	000206	21.0km	34.2km
North Bull Island SPA	004006	21.0km	34.2km
South Dublin Bay and River Tolka Estuary SPA	004024	18.1km	32.7km
South Dublin Bay SAC	000210	18.0km	33.2km

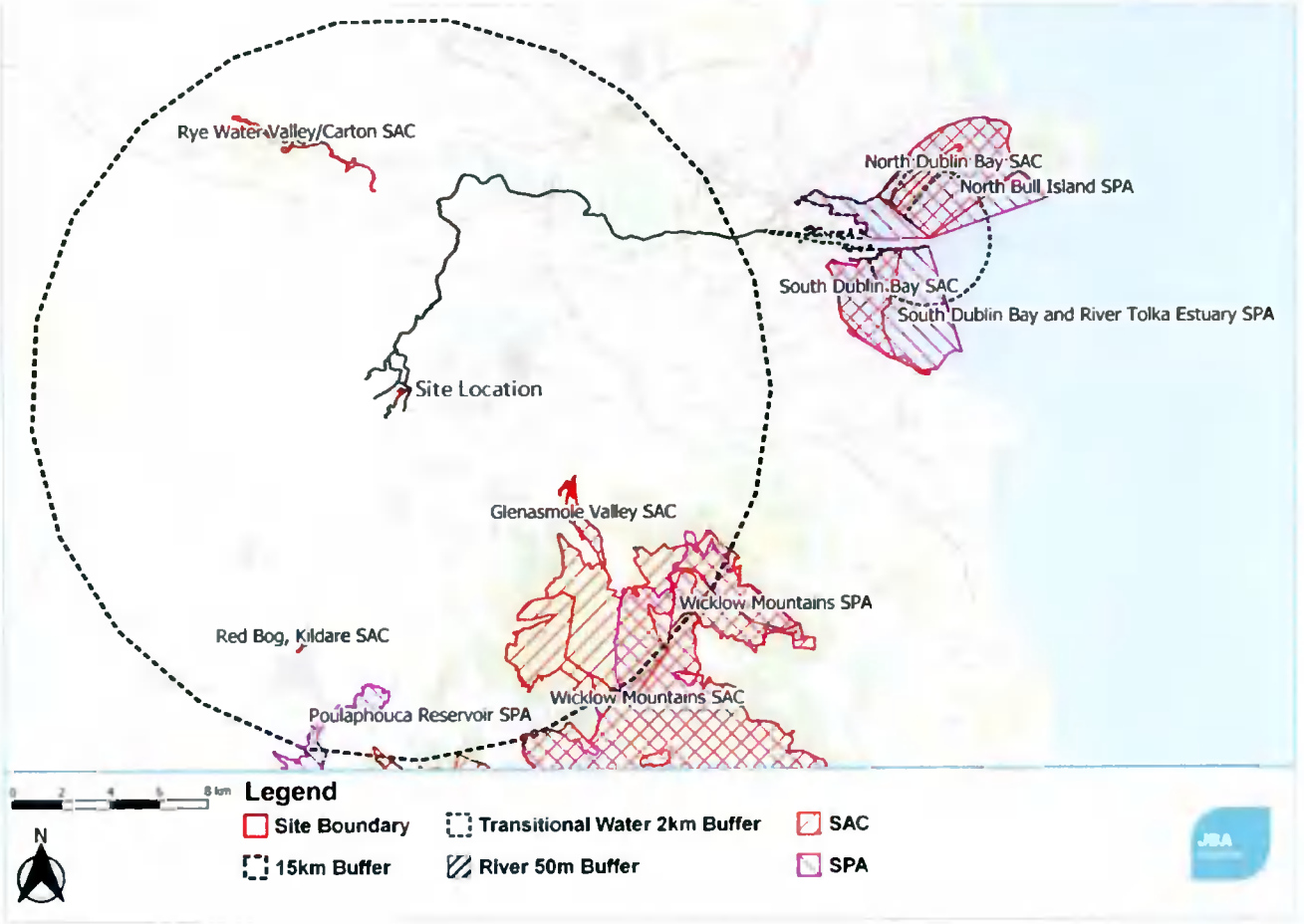


Figure 4-1: Natura 2000 sites and site location (NPWS 2021, OSM 2021).

4.1 Rye Water Valley / Carton SAC (001398)

The Rye Water Valley / Carton SAC is a river valley site, which includes at its western end a large area of estate woodland and an artificial lake. The eastern section of the site includes a section of railway, canal and aquaduct; it continues as far as Leixlip town. The site is underlain by carboniferous limestone over which has been laid a layer of glacial drift (NPWS, 2017a).

The importance of the site lies in the presence of a number of rare plant and animal species and a rare habitat, i.e. thermal, mineral, petrifying spring. The spring gives rise to a calcareous marsh, the habitat for *Vertigo angustior* and *Vertigo moulinsiana*. This marsh is species-rich and holds a number of plant and insect species which are rare or locally uncommon in Ireland. Four Red Data Book plant species have been recorded from the site, two of which, *Hypericum hirsutum* and *Viola hirta* are legally protected. The woods at the eastern end of the site are also of some ornithological interest (NPWS, 2017a).

4.1.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2018a):

- Petrifying Springs* [1130]
- Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1014]
- Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016]

4.1.2 Site Vulnerability

The threats, pressures and activities that impact the Rye Water Valley / Carton SAC (NPWS 2017a) are listed in Table 4-2.

Table 4-2: Threats and pressures posed to the Rye Water Valley / Carton SAC (NPWS 2017a).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Continuous urbanisation	M	o
Dispersed habitation	L	o
Fertilisation	L	o
Modifying structures of inland water courses	M	i
Grazing	L	o
Roads, motorways	L	o
Grazing	L	i
Removal of hedges and copses or scrub	L	i
Sylviculture, forestry	M	i
Fertilisation	L	i

4.2 Glenasmole Valley SAC (001209)

Glenasmole Valley lies at the northern foothills of the Dublin and Wicklow Mountains. It is a glaciated valley, with drift deposits, consisting of fluvioglacial sands and gravels of varying thickness and rich in Carboniferous limestone, occurring on the slopes (NPWS, 2017b). Spring lines occur along both sides of the northern part of the valley. The River Dodder flows through the valley and within the site the river has been impounded to form two reservoirs. Associated with the reservoirs are areas of swamp and marsh vegetation. The valley is heavily wooded, mostly with mixed woodland of both deciduous and coniferous species but also some native woodland. Dry calcareous pasture grassland, improved to varying degrees, is a main habitat of the valley sides and occurs in association with wet grassland and, in places of seepage, fen or marsh type vegetation (NPWS, 2017b).

The site has important examples of petrifying springs. The physical and chemical properties of the springs have been studied. Good examples of orchid rich calcareous grassland, including *Pseudorchis albida* (legally protected) and *Orchis morio* (Red Data Book species) are found here. The quality of grassland is variable owing to agricultural improvement. *Molinia* meadows are also represented. Several other Red Data Book plant species occur, along with a host of rare or scarce plant species for Co. Dublin. The site has *Alcedo atthis*, and is important for bats, with four Red Data Book species present (*Pipistrellus pipistrellus*; *Nyctalus leisleri*; *Myotis daubentoni*; and *Plecotus auritus*) (NPWS, 2017b).

4.2.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2018b):

- Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites) [6210]
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]
- Petrifying springs with tufa formation (*Cratoneurion*)* [7220]

4.2.2 Site Vulnerability

The threats, pressures and activities that impact the Glenasmole Valley SAC (NPWS, 2017b) are listed in Table 4-3.

Table 4-3: Threats and pressures posed to Glenasmole Valley SAC (NPWS 2017b).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Forestry clearance	M	o
Leisure fishing	L	i
Peat extraction	L	o
Fertilisation	M	b
Non-intensive sheep grazing	M	o
Diffuse pollution to surface waters due to agricultural and forestry activities	M	o
Forest planting on open ground (native trees)	L	o
Abandonment / lack of mowing	M	b
Diffuse pollution to surface waters due to household sewage and waste waters	M	o
Invasive non-native species	M	i
Car parks and parking areas	L	o
Non-intensive horse grazing	M	o
Mowing / cutting of grassland	L	o
Diffuse groundwater pollution due to non-sewered population	M	o
Roads, paths and railroads	M	i
Forest replanting (non-native trees)	M	o
Grazing	M	b
Non-intensive cattle grazing	M	b
Human induced changes in hydraulic conditions	H	i
Discontinuous urbanisation	M	o
Artificial planting on open ground (non-native trees)	L	o

4.3 Red Bog, Kildare SAC (000397)

The site comprises a relatively small wetland which lies between moranic ridges. Open water is a principal habitat though there are no obvious inflowing or outflowing streams. Open water is fringed by various wetland habitats, with bog (raised type), fens and

freshwater marsh. Some willow (*Salix* spp.) occurs. The surrounding land is improved grassland. An extensive quarrying operation occurs to the east and south of site (NPWS, 2017c).

The site displays a succession from open water (eutrophic in status) to ombrotrophic bog. Transition mire vegetation is considered to be well represented at this site, with some typical species. A small colony of Black-headed gull (*Larus ridibundus)* has bred in the past (current status unknown), which is one of few nesting sites in eastern Ireland, and the site also has breeding Tufted duck (*Aythya fuligula)* and Eurasian coot (*Fulica atra)* (NPWS, 2017c).

4.3.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2018c):

- Transition mires and quaking bogs [7140]

4.3.2 Site Vulnerability

The threats, pressures and activities that impact the Red Bog, Kildare SAC (NPWS, 2017c) are listed in Table 4-4.

Table 4-4: Threats and pressures posed to Red Bog, Kildare SAC (NPWS, 2017c).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Leisure fishing	M	i
Fertilisation	M	o
Grazing	M	o
Hunting	L	i
Sand and gravel extraction	H	o
Dispersed habitation	M	o

4.4 Wicklow Mountains SAC (002122)

An extensive upland site comprising much of the Wicklow Mountains and extending into Co. Dublin. The solid geology is mainly Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area has been glaciated and features fine examples of high corrie lakes, deep valleys and moraines. Most of the site is over 300m, with much ground over 600m and the highest peak of Lugnaquillia at 925m. The site includes the headwaters of several major rivers, including the Liffey, the Dargle and the Slaney. The substrate over much of the site is peat, with poor mineral soil on the slopes and lower ground. Exposed rock and scree are included in the features found in the SAC. The dominant habitats on the site are blanket bog, heaths and upland grassland (NPWS, 2017d).

The site comprises the largest complex of upland habitats in eastern Ireland, with important examples of blanket bog, wet heath and dry heath, extensive in area and mostly of good quality. Alpine heath occurs at high levels, along with calcareous and siliceous rocky habitats harbouring an arctic-alpine flora. A fine series of oligotrophic lakes occur, with some recorded to contain Arctic char (*Salvelinus alpinus*). Several oakwoods of moderate quality, typical of the dry acidic woods of eastern Ireland, are found. Seven Red Data Book plant species occur, including the rare Alpine Lady's-mantle (*Alchemilla alpina*)

and *Nitella gracilis* at its only Irish station. The site supports significant populations of breeding Merlin (*Falco columbarius*) and Peregrine Falcon (*Falco peregrinus*). The site is important for rare breeding passerines of oakwoods, notably Common Redstart (*Phoenicurus phoenicurus*) and Wood Warbler (*Phylloscopus sibilatrix*). The site also has breeding Ring Ouzel (*Turdus torquatus*) and Red Grouse (*Lagopus lagopus*). Eurasian Otter (*Lutra lutra*) occurs on several of the riverine systems (NPWS, 2017d).

4.4.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2017e):

- Otter (*Lutra lutra*) [1355]
- Oligotrophic water containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110]
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorae and/or Isoeto-Nanojuncetea* [3130]
- Natural dystrophic lakes and ponds [3160]
- Northern Atlantic wet heaths with *Erica tetralix [4010]*
- European dry heaths [4030]
- Alpine and Boreal heaths [4060]
- Calaminarian grasslands of the *Violetalia calaminariae [6130]*
- Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) * [6230]
- Blanket bogs (* if active bog) [7130]
- Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110]
- Calcareous rocky slopes with chasmophytic vegetation [8210]
- Siliceous rocky slopes with chasmophytic vegetation [8220]
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]

4.4.2 Site Vulnerability

The threats, pressures and activities that impact the Wicklow Mountains SAC (NPWS, 2017d) are listed in Table 4-5.

Table 4-5: Threats and pressures posed to Wicklow Mountains SAC (NPWS, 2017d).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Off-road motorized driving	H	b
Disposal of household / recreational facility waste	L	i
Damage by herbivores (including game species)	M	i
Grazing in forests / woodlands	H	i
Mountaineering, rock climbing and speleology	L	b
Missing or wrongly directed conservation measures	M	b

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Walking, horse-riding and non-motorised vehicles	M	b
Invasive non-native species	H	b
Erosion	H	i
Grazing	M	b
Wildlife watching	L	i
Trampling, overuse	M	b
Stock feeding	L	i
Urbanised areas, human habitation	M	b
Hunting and collection of wild animals (terrestrial)	M	i
Collapse of terrain, landslide	L	i
Collection (fungi, lichen, berries etc.)	L	i
Vandalism	M	i
Outdoor sports and leisure activities, recreational activities	M	b
Tree surgery, felling for public safety, removal of roadside trees	L	i
Military manoeuvres	M	b
Burning down	H	b
Paths, tracks, cycling tracks	M	b
Peat extraction	M	i
Taking from nest (falcons)	M	b

4.5 Poulaphouca Reservoir SPA (004063)

Poulaphouca Reservoir, located in the western foothills of the Wicklow Mountains, was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of approximately 20 square kilometres and is the largest inland water body in the mid-east and south-east regions. The reservoir receives water from two main sources, the River Liffey at the northern end, and the Kings River at the southern end. The exit is into the Liffey gorge at the western end. Underlying the reservoir are sands and gravels deposited during the last glaciation. The shores of the lake are mostly sandy. When water levels are low exposed lake muds are colonised by an ephemeral flora of annual plant species (NPWS, 2017f).

The site is of national importance for its population of Greylag goose (*Anser anser*), which is one of the largest in the country. The site provides the main roost for the birds, with feeding mostly on improved grassland outside of the site. A range of other waterfowl species occur in relatively low numbers, including Whooper Swan (*Cygnus cygnus*), Eurasian Wigeon (*Anas penelope*) and Common Goldeneye (*Bucephala clangula*). The reservoir attracts roosting gulls during winter, most notably a large population of Lesser black-backed gull (*Larus fuscus*), which in Ireland is rare in winter away from the south coast (NPWS, 2017f).

4.5.1 Qualifying Interests

The site is a Special Protection Area (SPA) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2018d):

- Greylag Goose (*Anser anser*) [A043]
- Lesser Black-backed Gull (*Larus fuscus*) [A183]

4.5.2 Site Vulnerability

The threats, pressures and activities that impact the Poulaphouca Reservoir SPA (NPWS, 2017f) are listed in Table 4-6.

Table 4-6: Threats and pressures posed to Poulaphouca Reservoir SPA (NPWS, 2017f).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Hunting	I	i
Bridge, viaduct	H	i
Forest planting on open ground	H	o
Leisure fishing	L	i
Nautical sports	M	i

4.6 Wicklow Mountains SPA (004040)

This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground over 600 m and the highest peak of Lugnaquillia at 925 m. The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site. The dominant habitats present are blanket bog, heaths and upland grassland. Fine examples of native Oak woodlands are found in the Glendalough area. The site, which is within the Wicklow Mountains National Park, is fragmented into about 20 separate parcels of land (NPWS, 2017h).

The site supports good examples of both upland and woodland bird communities. It has breeding Merlin (*Falco columbarius*) and Peregrine Falcon (*Falco peregrinus*), as well as Ring Ouzel (*Turdus torquatus*) and Red Grouse (*Lagopus lagopus*), both of the latter being Red-listed in Ireland. It is the only site in Ireland where Common Merganser (*Mergus merganser*) breeds regularly. It is important for rare breeding passerines of oakwoods, notably Common Redstart (*Phoenicurus phoenicurus*) and Wood Warbler (*Phylloscopus sibilatrix*). It also has a population of Garden Warbler (*Sylvia borin*) and Eurasian Blackcap (*Sylvia atricapilla*) (NPWS, 2017g).

4.6.1 Qualifying Interests

The site is a Special Protection Area (SPA) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2018e):

- Merlin (*Falco columbarius*) [A098]
- Peregrine Falcon (*Falco peregrinus*) [A103]

4.6.2 Site Vulnerability

The threats, pressures and activities that impact the Wicklow Mountains SPA (NPWS, 2017g) are listed in

Table 4-7.

Table 4-7: Threats and pressures posed to Wicklow Mountains SPA (NPWS, 2017g).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Grazing	M	i
Peat extraction	M	i
Walking, horse-riding and non-motorised vehicles	H	i
Paths, tracks, cycling tracks	M	i
Sylviculture, forestry	H	o

4.7 North Dublin Bay SAC (000206)

The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the island is predominantly glacial in origin and siliceous in nature. Between the island and the mainland there occurs two sheltered intertidal areas which are separated by a solid causeway constructed in 1964. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site. The interior of the island is excluded from the site as it has been converted to golf courses. Nature conservation is a main land use within the site (NPWS, 2017h).

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. Petalwort (*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 Brent Goose (*Branta bernicla hrota*), Red Knot (*Calidris canutus*) and Bar-tailed Godwit (*Limosa lapponica*), plus nationally important numbers of a further 14 species. 20% of the national total of Grey Plover (*Pluvialis squatarola*) also occurs here.

4.7.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2013a):

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Annual vegetation of drift lines [1210]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (*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]
- Petalwort (*Petalophyllum ralfsii*) [1395]

4.7.2 Site Vulnerability

The threats, pressures and activities that impact the North Dublin Bay SAC (NPWS, 2017h) are listed in Table 4-8.

Table 4-8: Threats and pressures posed to North Dublin Bay SAC (NPWS, 2017h).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Diffuse pollution to surface waters due to other sources not listed	M	i
Discharges	H	i
Burning down	M	i
Grazing	M	i
Urbanised areas, human habitation	H	o
Industrial or commercial areas	H	o
Intensive maintenance of public parks /cleaning of beaches	L	i
Nautical sports	M	i
Other point source pollution to surface water	M	i
Bait digging / collection	M	i
Walking, horse-riding and non-motorised vehicles	H	i
Leisure fishing	L	i
Golf course	M	o
Invasive non-native species	M	i
Antagonism with domestic animals	H	i

4.8 South Dublin Bay SAC (000210)

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 (NPWS, 2017i).

The designated 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 faunal assemblage exists within the SAC. The SAC has the largest stand of Dwarf Eelgrass (*Zostera nolti*) on the east coast. It also supports part of the important wintering waterfowl populations of Dublin Bay. It regularly hosts an internationally population of Brent Geese, plus nationally important numbers of at least a further 6 species, including Bar-tailed Godwit. It is also a regular autumn roosting ground for significant numbers of Sterna terns, including Roseate Terns (*S. dougallii*).

4.8.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2013b):

- 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]

4.8.2 Site Vulnerability

The threats, pressures and activities that impact the South Dublin Bay SAC (NPWS, 2017i) are listed in Table 4-9.

Table 4-9: Threats and pressures posed to South Dublin Bay SAC (NPWS, 2017i).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Urbanised areas, human habitation	H	o
Non-motorized nautical sports	M	i
Reclamation of land from sea, estuary or marsh	H	o
Industrial or commercial areas	H	o
Paths, tracks, cycling tracks	M	i
Bait digging / collection	M	i
Marine water pollution	M	b
Nautical sports	M	i
Walking, horse-riding and non-motorised vehicles	H	i
Roads, motorways	L	o
Discharges	M	b
Accumulation of organic material	H	i

4.9 North Bull Island SPA (004006)

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. 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. Nature conservation is a main land use within the site (NPWS, 2017j).

The site is among the top ten sites for wintering waterfowl in the country. It supports internationally important populations of Brent Goose and Bar-tailed Godwit 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 Shelduck (*Tadorna Tadorna*), Pintail (*Anas acuta*), Grey Plover, and Red Knot. The SPA is a regular site for passage waders such as Ruff (*Philomachus pugnax*), Curlew Sandpiper (*Calidris ferruginea*) and Spotted Redshank (*Tringa erythropus*). The site supports Short-eared Owl (*Asio flammeus*) in winter. 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 Petalwort 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.

4.9.1 Qualifying Interests

The site is a Special Protection Area (SPA) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2015a):

- 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]
- Red Knot (*Calidris canutus*) [A143]
- Sanderling (*Calidris alba*) [A144]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Turnstone (*Arenaria interpres*) [A169]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Wetland and Waterbirds [A999]

4.9.2 Site Vulnerability

The threats, pressures and activities that impact the North Bull Island SPA (NPWS, 2017j) are listed in Table 4-10 in overleaf.

Table 4-10: Threats and pressures posed to North Bull Island SPA (NPWS, 2017j).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Discharges	M	o
Walking, horse-riding and non-motorised vehicles	H	i
Nautical sports	M	i
Bait digging / collection	M	i
Bridge, viaduct	H	i
Discharges	M	i
Shipping lanes	M	o
Industrial or commercial areas	M	o
Other patterns of habitation	L	i
Roads, motorways	M	o
Golf course	M	i
Continuous urbanisation	M	o

4.10 South Dublin Bay and River Tolka Estuary SPA (004024)

This designated 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. The sediments are predominantly well-aerated sands. The sands support the largest stand of Dwarf Eelgrass on the east coast of Ireland. Sediments in the Tolka Estuary vary from soft thixotropic muds with a high organic content in the inner estuary to exposed, well aerated sands off the Bull Wall.

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 Brent Geese, which feeds on Dwarf Eelgrass in the autumn. It has nationally important numbers of a further 6 species including: Oystercatcher, Ringed Plover (*Charadrius hiaticula*), Red Knot, Sanderling, Dunlin and Bar-tailed Godwit. It is an important site for wintering gulls, especially Black-headed Gull and Common Gull (*Larus canus*). South Dublin Bay is the premier site in Ireland for Mediterranean Gull (*Larus melanocephalus*), with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including Roseate Terns, Common Tern (*Sterna hirundo*) and Artic Tern (*Sterna paradisaea*).

4.10.1 Qualifying Interests

The site is a Special Protection Area (SPA) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes) (NPWS, 2015b):

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Ringed Plover (*Charadrius hiaticula*) [A137]
- Grey Plover (*Pluvialis squatarola*) [A141]

- Red Knot (*Calidris canutus*) [A143]
- Sanderling (*Calidris alba*) [A144]
- Dunlin (*Calidris alpina*) [A149]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Redshank (*Tringa totanus*) [A162]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Roseate Tern (*Sterna dougallii*) [A192]
- Common Tern (*Sterna hirundo*) [A193]
- Arctic Tern (*Sterna paradisaea*) [A194]
- Wetland and Waterbirds [A999]

4.10.2 Site Vulnerability

The threats, pressures and activities that impact the South Dublin Bay and River Tolka Estuary SPA (NPWS, 2017k) are listed in Table 4-11.

Table 4-11: Threats and pressures posed to South Dublin Bay and River Tolka Estuary SPA (NPWS, 2017k).

Threats and pressures	Rank: Low (L) Moderate (M) High (H)	Source: inside (i) outside (o) both (b)
Roads, motorways	M	o
Leisure fishing	M	i
Industrial or commercial areas	H	o
Eutrophication (natural)	M	i
Nautical sports	M	i
Bait digging / collection	M	i
Urbanised areas, human habitation	H	o
Reclamation of land from sea, estuary or marsh	H	o
Discharges	H	i
Walking, horse-riding and non-motorised vehicles	H	i

5 Other Relevant Plans and Projects

5.1 Cumulative effects

5.1.1 South Dublin County Council Development Plan 2016 - 2022

The South Dublin County Council (SDCC) Development Plan sets out an overall strategy for the proper planning and sustainable development of the County. The objectives include a target of increased population and continuing the consolidation of established urban areas, support and facilitate economic activity, promote the ease of movement by sustainable modes (walking, cycling and public transport). The Plan also aims to protect and enhance surface water quality, to support, improve and protect Natura 2000 sites, and to develop an integrated Green Infrastructure network to enhance biodiversity, provide accessible parks, open spaces and recreational facilities (SDCC, 2016a).

The plan also states that work will be in conjunction with Irish Water to protect existing water and drainage infrastructure, to promote investments aiming to support environmental protection and facilitate the sustainable growth of the county (SDCC, 2016a).

A Screening for Appropriate Assessment was carried out on the plan. This concluded that there are no likely significant direct, indirect or secondary impacts of the project on any Natura 2000 sites (SDCC, 2016b).

5.1.2 Greater Dublin Drainage Plan

The Greater Dublin Drainage Strategy sets out the strategic planning for the development of waste water treatment in the Greater Dublin Area (GDA). This is in relation to the Ringsend Waste Water Treatment Plant (WWTP) Upgrade, Greater Dublin Drainage Project and associated wastewater network drainage projects (Irish Water, 2021). The Ringsend WWTP Upgrade includes plans to expand the WWTP to its ultimate capacity, together with associated network upgrades required. The Greater Dublin Drainage Project is planned to relieve both the Ringsend WWTP and network loading by construction of a new WWTP at Clonshaugh, an orbital sewer and provision of an outfall pipe discharging 1km north east of Ireland's Eye.

The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by the first half of 2021 and the ultimate capacity of 2.4 million PE to be in operation by 2025 (Irish Water, 2021).

The Greater Dublin Drainage Project is strategically important to the GDA in that it will provide capacity for residential and commercial growth (Irish Water, 2021).

The Greater Dublin Drainage Strategy is not anticipated to contribute to cumulative or in-combination effects.

5.1.3 River Basin Management Plan for Ireland 2018-2021

The River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG, 2018). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The first cycle of River Basin Management Plans included the Eastern River Basin District - River Basin Management Plan (ERBDMP) 2009 – 2015 (WFD (2010). The plans summarised the waterbodies that may not meet the environmental objectives of the WFD by 2015 and identified which pressures are contributing to the environmental objectives not being

achieved. The plans described the classification results and identified measures that can be introduced in order to safeguard waters and meet the environmental objectives of the WFD;

- Prevent deterioration of water body status.
- Restore good status to water bodies.
- Achieve protected areas objectives.
- Reduce chemical pollution of water bodies

The ERBD Management Plan (2009-2015) and the River Basin Management Plan for Ireland (2018-2021) aim to improve the management and water quality of the Eastern RBD, and hence the River Boyne and Estuary. Preparation of the 2nd Cycle RBMPs 2018-2021 is now underway.

It is important to note that the Griffeen River has a Good WFD status and the Camac River has a Moderate WFD Status (EPA, 2021a); as well as both being considered to be 'At Risk' (EPA 2021b). The potential effects leading to further degradation of these river bodies will be considered in the Screening Assessment.

The River Basin Management Plan for Ireland 2018-2021 is not anticipated to contribute to cumulative or in-combination effects.

5.1.4 Other Projects

Other projects in the surrounding area are commercial development. As of January 2016, the projects listed below (Table 5-1) which are not retention applications, home extensions and/or internal alterations, have been granted planning permission in the Greenogue area (SDCC, 2019).

Table 5-1: Pertinent development projects for assessment of cumulative effects.

Planning Application Reference	**SD19A/0065**
Development address	Tay Lane, Greenogue, Rathcoole, Co. Dublin
Description: Waste metal facility including waste electrical and electronic equipment (WEEE) and will include the provision of 1 light industrial unit with ancillary office and staff facilities (3,802sq.m with a maximum height of 12.4 metres); screened outdoor storage area (970sq.m) incorporating walls 4.2 metres in height; vehicular access to the site via the Greenogue Roundabout; pedestrian access; 29 ancillary car parking spaces; HGV yard; 10 HGV parking spaces; HGV weight bridge; brush wash and steam wash; hard and soft landscaping; access gate; ESB substation; lighting; cycle parking; boundary treatments; associated site development works above and below ground incorporating an access road on lands at College Lane;; Electrical Waste Management Limited currently have a waste permit (WFP-DS-11-0014-05) with a permitted volume of 82,833 tonnes per annum; an Environmental Impact Assessment Report has been prepared in respect of the proposed development.	
Final Decision on Application	Granted Permission
Decision Date:	23/04/2019
Planning Application Reference	SD15A/0274
Development address	Site 665, Greenogue Business Park, Rathcoole, Co. Dublin
Description: Construction of a warehouse unit and ancillary offices (2.2ha. site area) fronting Newcastle-Rathcoole Road (R120) consisting of 9,080sq.m warehouse unit (max 17m high), 54sq.m of ancillary staff facilities within warehouse area, 816sq.m ancillary offices/staff facilities	

on three floors (max 11.75m high) to front of the unit plus ancillary carparking, HGV marshalling/loading/unloading yard with ancillary HGV parking, services, utilities, landscaping, paving and all site development works, 2 new site entrances/exits from proposed estate access road as granted under planning permission reg. ref. SD15A/0019 & SD08A/0276 incorporating altered cul-de-sac turnabout arrangement to this access road as part of this application.	
Final Decision on Application	Permission with conditions
Decision Date	28/01/2016
Planning Application Reference	SD18A/0044
Development address	Tay Lane, Greenogue, Rathcoole, Co. Dublin
Description: : a) A standalone single storey office building and staffing facilities comprising of an area of 156sq.m; (b) The addition of staff car parking facilities comprising of 14 car parking spaces; (c) The addition of a new onsite bio cycle treatment plant treatment facility to service new office and staffing accommodation; (d) New ESB substation; (e) Landscaping boundary screening and new security fencing along with all ancillary site works.	
Final Decision on Application	Permission with condition
Decision Date	05/04/2018
Planning Application Reference	SD19A/0171
Development address	Greenogue Business Park, Site 601 & 605, Jordanstown Road & Jordanstown Ave, Rathcoole, Co. Dublin
Description: 2 warehouses with ancillary three storey office and staff facilities and associated development. Unit 601 will have a maximum height of 16.1 metres with a gross floor area of 4,922sq.m including a warehouse area (4,224sq.m); ancillary office areas (322sq.m) and staff facilities (376sq.m). Unit 605 will have a maximum height of 15.7 metres with a gross floor area of 8,036sq.m including a warehouse area (7,032sq.m); ancillary office areas (568sq.m) and staff facilities (437sq.m); provision of new vehicular accesses/egresses to the sites with HGV access and egress to both units proposed via Jordanstown Avenue and car access and egress to both units proposed via Jordanstown Road; internal roadways; pedestrian access; 105 ancillary car parking spaces; bicycle parking; HGV yards; level access goods doors; dock levellers; hard and soft landscaping; boundary treatments; associated site development works above and below ground.	
Final Decision on Application	Permission with conditions
Decision Date	22/07/2019
Planning Application Reference	SD19A/0264
Development address	Aerodrome Business Park, Site Q2, Jordanstown Road, Collegeland, Rathcoole, Co. Dublin
Description: Warehouse with ancillary three storey office and staff facilities and associated development. The warehouse will have a parapet height of 17 metres with a gross floor area of 14,649sq.m including a warehouse area (13,494sq.m), ancillary office areas (1099sq.m) and staff facilities (56sq.m); provision of a new vehicular access/egress onto the Jordanstown Road; internal roadways; pedestrian access; 152 ancillary car parking spaces; bicycle parking; HGV yard including 26 HGV parking stands and 18 loading docks; hard and soft landscaping including green walls; lighting; photo-voltaic panels; ESB substation and switch room; plant; boundary	

treatments and associated development works above and below ground.	
Final Decision on Application	Permission with conditions
Decision Date	10/10/2019
Planning Application Reference	SD19A/0263
Development address	Aerodrome Business Park, Lands at Site G, Jordanstown Road & Jordanstown Way, College Land, Rathcoole, Co. Dublin
Description: Warehouse with ancillary three storey office and staff facilities and associated development. The warehouse will have a parapet height of 17 metres with a gross floor area of 11,012sq.m including a warehouse area (10,079sq.m), ancillary office areas (877sq.m) and staff facilities (56sq.m); provision of a new vehicular access/egress onto the Jordanstown Road, and the relocation of the entrance/exit on Jordanstown Way slightly to the west for HGV access; internal roadways; pedestrian access; 108 ancillary car parking spaces; bicycle parking; HGV yard including 13 HGV parking stands and 14 loading docks; hard and soft landscaping including green walls; lighting; photo-voltaic panels; ESB substation and switch room; plant; boundary treatments and associated development works above and below ground.	
Final Decision on Application	Permission with conditions
Decision Date	10/10/2019
Planning Application Reference	SD15A/0178
Development address	Site 522, Grants Hill, Greenogue Business Park, Rathcoole, Co. Dublin.
Description: Construction of a warehousing/light industrial unit totalling 753sq.m, 8.45m high comprising: 308sq.m light industrial area, 154sq.m & 91sq.m ancillary integrated office accommodation & staff facilities respectively, 200sq.m mezzanine storage area, company signage mounted on the front elevation (non-back lit) 2.9sq.m at 3.85m above ground level, ancillary car parking, services, utilities, landscaping, paving & site development works.	
Final Decision on Application	Permission with conditions
Decision Date	15/03/2016
Planning Application Reference	SD17A/0016
Development address	Unit 517, Site 517 Grants Rise/College Road, Greenogue Industrial Estate, Rathcoole, Co. Dublin
Description: Alterations comprising: (1) change of use of 335sq.m of light industrial area at ground floor to ancillary office accommodation fully within existing building; (2) provision of new mezzanine floor at second floor level of 238.6 sq.m providing staff facilities area - also fully contained within existing building; (3) elevation adjustments associated with the above alterations. All other details such as the remaining existing building, car parking, landscaping, site access, drainage layout including surface water attenuation to remain as detailed under previous planning applications SD05A/0140, SD16A/0074 and SD16A/0330.	
Final Decision on Application	Permission with conditions
Decision Date	22/03/2017
Planning Application Reference	SD18A/0036

Development address	Unit 527, Grants Hill, Greenogue Business Park, Greenogue, Rathcoole, Dublin
Description: Warehouse unit 6,461sq.m, 17.40m high with 568sq.m integrated ancillary offices/staff facilities on 3 floors plus 763sq.m mezzanine storage area to warehouse totalling 7,792sq.m. The development will also include: (a) Site access from Grants Hill, (b) On-site security hut 14.50sq.m, 3m high, (c) Ancillary car parking, (d) HGV marshalling yard & HGV parking facility for 12 vehicles 816sq.m, (e) Site landscaping, (f) Flood management measures, (g) Drainage works including underground surface water attenuation facility, (h) all services & utilities including ESB sub-station 9sq.m, 3m high, (i) Plus all associated site development works.	
Final Decision on Application	Permission with conditions
Decision Date	13/06/2018
Planning Application Reference	SD16A/0338
Development address	Block B4, Site B, Aerodrome Business Park, Collegeland, Rathcoole, Co. Dublin
Description: Works to an incomplete part of a previously approved development (previously granted planning permission under South Dublin County Council register reference SD07A/0367, now elapsed). The subject application now comprises: warehousing Block B4 (11.55m high) divided into 8 units totalling 3,484sq.m including 720sq.m ancillary offices/staff facilities on 2 floors and 2,764sq.m warehousing area. The development will also include the completion of ancillary car parking adjacent to the subject block and throughout the overall site, services, utilities, landscaping (including new flood mitigation berm to the northeast and southeast of subject block), drainage works including additional surface water attenuation system plus all site development works.	
Final Decision on Application	Permission with conditions
Decision Date	20/01/2017
Planning Application Reference	SD18A/0022
Development address	Tay Lane, Greenogue, Rathcoole, Co. Dublin.
Description: (a) Building A: Metal transfer building (3,227sq.m, 15.30m high) with 2 storey ancillary offices/staff facilities (383sq.m, 9.00m high) plus single storey annexed staff facilities (114sq.m, 3.90m high), totalling 3,724sq.m; (b) Building B: Ancillary workshop for vehicle maintenance and charging (574sq.m, 12.40m high); (c) Site entrance/exit off Tay Lane, HGV weighbridge, ancillary car parking, HGV parking (680m2), marshalling yard, external storage of waste metal (965sq.m) screened by demountable concrete walls 4.2m high, HGV wash area, associated drainage, landscaping, services and utilities.	
Final Decision on Application	Permission with conditions
Decision Date	23/04/2019
Planning Application Reference	SD18A/0265
Development address	College Lane, Greenogue, Rathcoole, Co. Dublin
Description: Provision of 2 warehouses with ancillary three storey office and staff facilities and associated development. Building A will have a maximum height of 18.3m with a gross floor area of 15,286sq.m including a warehouse area (14,267sq.m), ancillary office area (413sq.m)	

and staff facilities (606sq.m). Building B will have a maximum height of 17.4m with a gross floor area of 26,384sq.m including a warehouse area (23,421sq.m), ancillary office areas (1,870sq.m) and staff facilities (1,093sq.m). The development will also include the provision of a new vehicular access to the site via the Greenogue Roundabout; internal roadways; pedestrian access; 422 ancillary car parking spaces; bicycle parking; HGV yards; level access goods doors; dock levellers; hard and soft landscaping; 2 ESB substations (18sq.m); lighting; boundary treatments; and associated site development works above and below ground.	
Final Decision on Application	Permission with conditions
Decision Date	04/04/2019
Planning Application Reference	SD20A/0258
Development address	College Lane, Greenogue, Rathcoole, Co. Dublin
Description: Demolition of the existing dwelling (252sq.m) and associated domestic garage (49sq.m) and shed (12sq.m) located towards the north-west of the site and the construction of 3 warehouses with ancillary office and staff facilities and associated development as follows: Unit 1 will have a maximum height of 15.75 metres with a gross floor area of 5,619sq.m including a warehouse area (5,041sq.m), ancillary office areas (182sq.m) and staff facilities (396sq.m); Unit 2 will have a maximum height of 16.35 metres with a gross floor area of 6,724sq.m including a warehouse area (6,135sq.m), ancillary office areas (275sq.m) and staff facilities (314sq.m); and Unit 3 will have a maximum height of 18.9 metres with a gross floor area of 10,095sq.m including a warehouse area (9,335sq.m), ancillary office areas (399sq.m) and staff facilities (361sq.m); the development will also include the provision of a new vehicular access to the site from the Aerodrome Roundabout in lieu of the extinguishment of existing multiple access points from the R120 Newcastle to Rathcoole Road; internal roundabout; pedestrian access; 187 ancillary car parking spaces; bicycle parking; HGV yards; level access goods doors; dock levellers; access gates; signage; hard and soft landscaping; lighting; boundary treatments; ESB substations; sprinkler tanks; pump houses and all associated site development works above and below ground.	
Final Decision on Application	Grant Permission
Decision Date	01/04/2021
Planning Application Reference	SD20A/0061
Development address	Unit K2, Jordanstown Way, Aerodrome Business Park, Rathcoole, Co. Dublin
Description: Extensions to front of existing warehouse to include single storey infill enclosure over existing loading bay ramp (floor area to be 44.12sq.m with height to top of parapet of 6.2m above ground level); new single storey goods-in inspection store (floor area to be 55.98sq.m with a height to top of parapet of 4.8m above ground level); both structures complete with roller shutter access door & personnel door within the front/south elevation, together with site works	
Final Decision on Application	Grant Permission
Decision Date	22/06/2020
Planning Application Reference	SD19A/0196
Development address	Tay Lane, Greenogue, Rathcoole, Co. Dublin
Description: Modifications to the previously permitted Ref. SD16A/0406 consisting of the	

change of use of the dry bailing facility to a green waste recycling facility (excluding food and household general waste collection) including renovation and upgrade works to the fire damaged buildings and the addition of new green waste storage area and attenuation tanks (this application will also require a Waste Licence).	
Final Decision on Application	Grant Permission
Decision Date	14/10/2019

5.1.5 Summary

The County Development Plan, RBMP and projects near the proposed project are considered in combination with the currently proposed project in the Screening Assessment section below.

6 Screening Assessment

6.1 Introduction

This screening exercise will focus on assessing the likely adverse effects of the project on the Natura 2000 sites identified in Section 4 above.

This section identifies the potential impacts which may arise as result of the proposed project. It then goes on to identify how these impacts could potentially impact on the Natura 2000 sites of Rye Water Valley / Carton SAC, Glenasmole Valley SAC, Red Bog, Kildare SAC, Wicklow Mountains SAC, Poulaphouca Reservoir SPA, Wicklow Mountains SPA, North Dublin Bay SAC, South Dublin Bay SAC, North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA. The significance of potential impacts is also assessed, with any potential in-combination effects also identified.

6.2 Assessment Criteria

6.2.1 Description of the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites

The potential impacts that could cause a significant effect on the qualifying interests of the SACs and SPAs (Table 4-1) during the operation of the project are via surface water pathways, groundwater pathways and land and air pathways. Surface water pathways can impact on surface water quality and surface water dependent habitat quality. Groundwater pathways can impact on groundwater quality and the quality of groundwater dependent habitats. Land and air pathways can cause impact through the release or discharge of sediment or chemicals to surface or groundwater.

The proposed project is not anticipated to impact on the qualifying interests of any of the identified SACs or SPAs due to the absence of pathways or distance between any potential source of impact and the receiving environment.

6.2.2 Surface Water Pathways

Rye Water Valley / Carton SAC, Glenasmole Valley SAC, Red Bog, Kildare SAC, Wicklow Mountains SAC, Poulaphouca Reservoir SPA, Wicklow Mountains SPA are not located within the same surface water sub-catchment as the proposed site (Liffey_SC_090) and are therefore not hydrologically connected to the site (see Figure 6-1). The QIs of these Natura 2000 sites will therefore not be impacted via a surface water pathway.

There is a surface water connection to the four Natura 2000 sites in Dublin Bay and the rationale for excluding potential impacts is given below.

6.2.2.1 Construction Phase

Works will entail excavation of topsoil and subsoil within the construction site boundary. Any runoff from the site will be contained within the site boundary.

Construction management measures will comply with the Greater Dublin Regional Code of Practice for Drainage Works (Dublin City Council, 2021), which includes South Dublin County Council. The first objective of the Code of Practice is Compliance with best environmental practices and relevant environmental legislation such as the Water Framework Directive.

In the event of a pollutant entering the nearest watercourse it would be subsequently diluted by over approximately 32km of watercourse between the proposed site and the four Natura 2000 sites (South Dublin Bay SAC; North Dublin Bay SAC; North Bull Island SPA; and South Dublin Bay and River Tolka Estuary SPA) within Dublin Bay.

Therefore, given that surface water will be retained during construction, the temporary nature of the construction phase of the project, combined with the proposed sites' distance

via watercourse to any Natura 2000 site, a significant impact on any of the QIs of the Dublin Bay Natura 2000 sites are not expected during construction.

6.2.2.2 Operation Phase

Surface water

During the operation phase a silt trap (SWI 0804 surfsep vortex style silt trap), petrol interceptor (NSBE030 Klargester Class 1 Bypass Petrol Interceptor) and attenuation (Stormtech Attenuation System – 1940m^3) infrastructure within the surface water drainage system of the site, will retain and filter surface water before it leaves the site, thus preventing any adverse impacts on the four Natura 2000 sites within Dublin Bay. Additionally, the design of a series of retaining walls and a vegetated berm will ensure that no surface water from the site enters the southern drainage ditch and other local watercourses.

Given the 32km of diluting watercourse between the proposed site and the Dublin Bay, as well as the appropriate drainage systems in place, the proposed operating phase of the project is not anticipated to have any impact on the QIs of the Dublin Bay Natura 2000 sites.

Foul water

All foul water discharge in the proposed site will connect to the existing foul water storage tank (Ref. SD18A/0265) which is then pumped to the sewer system in Greenogue Business Park and eventually directed to Ringsend WWTP.

In June 2018 Irish Water applied for (and subsequently received) planning permission for upgrade works to the Ringsend WWTP facility. These are currently on-going and will increase the capacity of the facility from 1.6 million PE to 2.4 million PE. This plant upgrade will result in an overall reduction in the final effluent discharge of several parameters from the facility including BOD, suspended soils, ammonia, DIN and MRP. An Environmental Impact Assessment Report (EIAR) (Irish Water 2018) was submitted by Irish Water as part of this application. The EIAR contains sections relating to Marine Biodiversity and Terrestrial Biodiversity, and each contains a section on the 'do-nothing scenario'. These review the effects of the WWTP on biodiversity in Dublin Bay in the absence of the upgrade works and so are relevant to this report.

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

Therefore, it can be concluded that effects on marine biodiversity and the Natura 2000 sites within Dublin Bay from the current operation of Ringsend WWTP are unlikely. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend.

Thus, even in the absence of any upgrading works of the WWTP, significant effects to Natura 2000 sites in Dublin Bay are not likely to arise during operation of the proposed development.

On examination of the above it is considered that there are no means during the construction and operation for the proposed project that would cause any likely significant effects on any Natura 2000 sites within Dublin Bay via foul water discharge

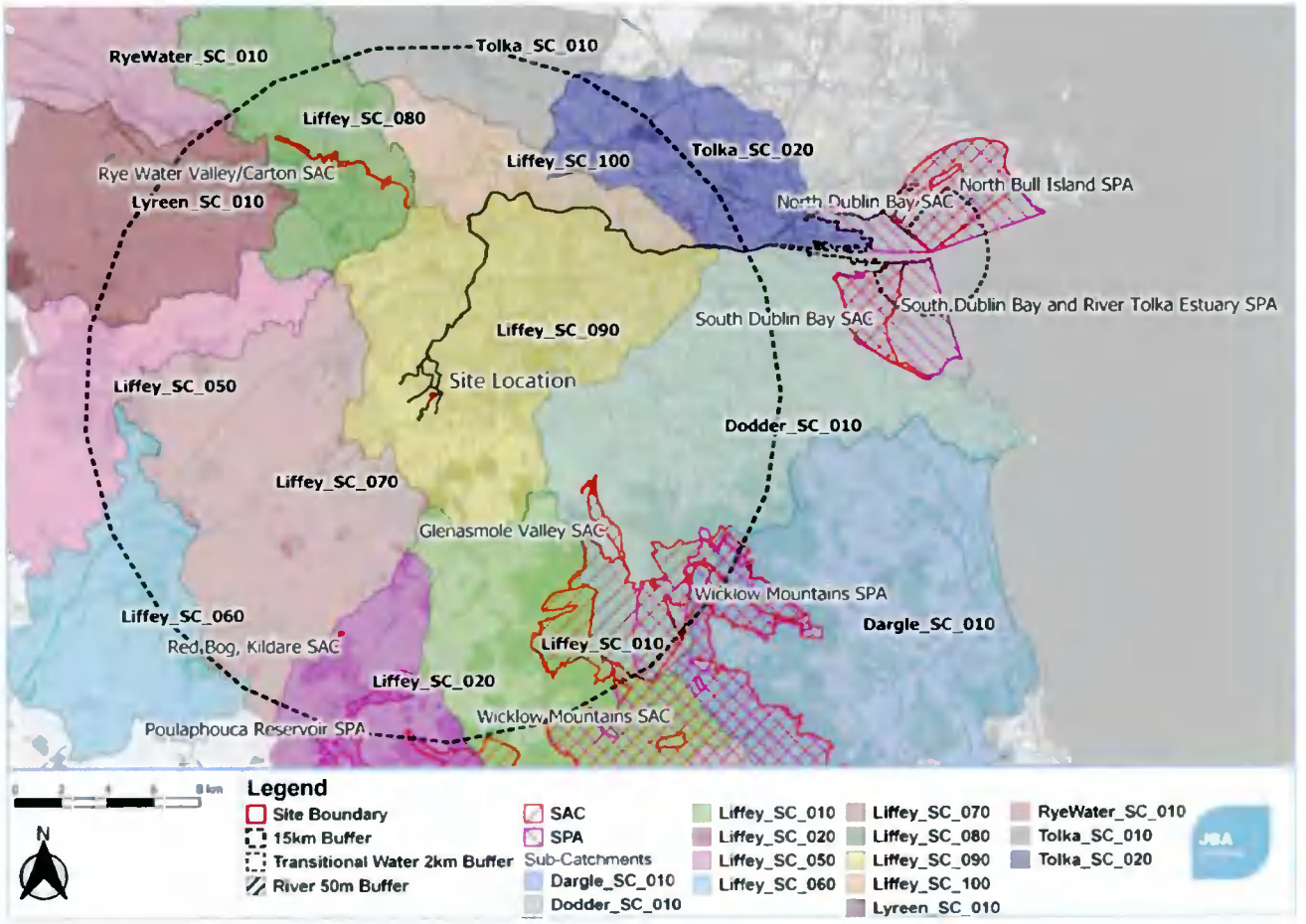


Figure 6-1: Site location and Natura 2000 sites, with surface water sub-catchment connectivity.

6.2.3 Groundwater

The aquifer vulnerability in the area of the proposed site is ranked as 'Extreme' and could lead to groundwater-based impacts on the Dublin Bay Natura 2000 sites (Figure 6-2 in overleaf). The site is located within the Dublin Urban - IE_EA_G_008 groundwater body, which underlies most of the greater Dublin area. The site shares this groundwater body with five of the Natura 2000 sites, namely the Rye Water Valley/Carton SAC; South Dublin Bay SAC; North Dublin Bay SAC; North Bull Island SPA; and South Dublin Bay and River Tolka Estuary SPA. The strike orientation (south-easterly) and dip (30°) angle (GSI, 2019), of the underlying dark limestone and shale bedrock would transport any potential pollutant seepages away from the Natura 2000 sites which share the same groundwater body as the proposed site (Figure 6-3). Therefore, significant impacts are not anticipated for these five Natura 2000 sites. The remaining, non-Dublin Bay SACs and SPAs do not share the same groundwater body as the proposed site (Figure 6-4 in overleaf), and thus, will not be significantly impacted via this pathway.

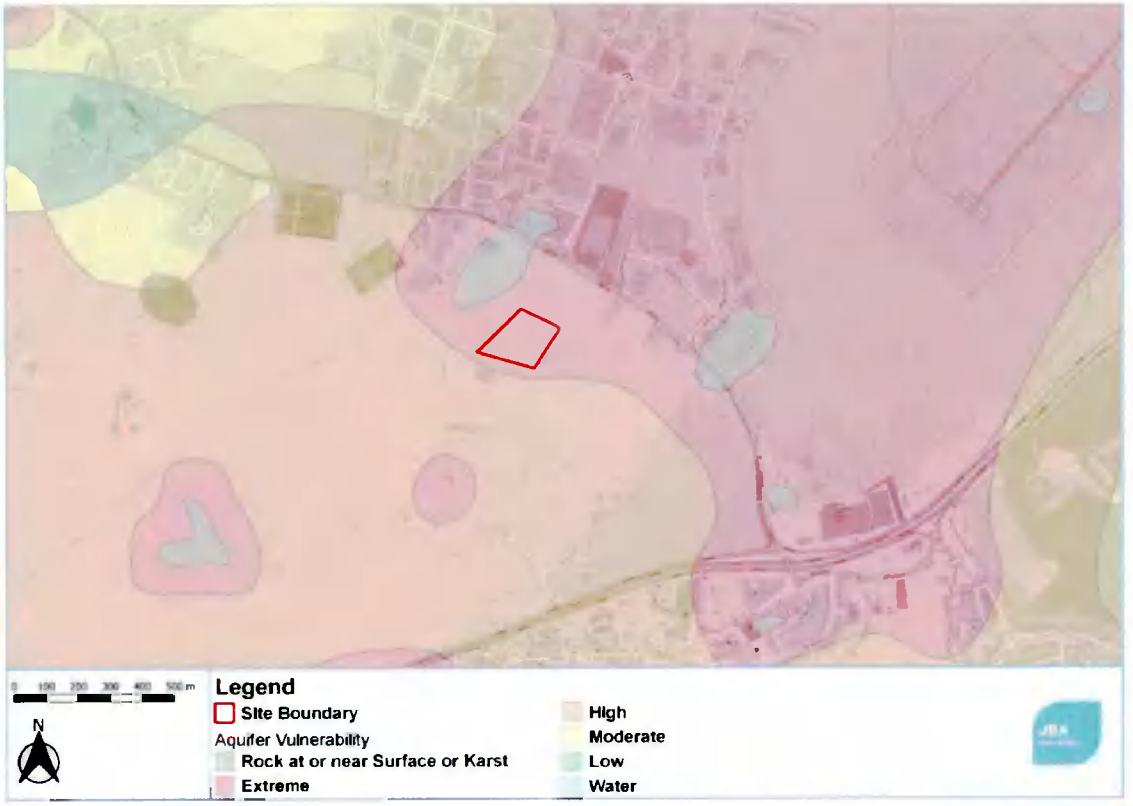


Figure 6-2: Aquifer vulnerability of proposed site (EPA, 2019b).

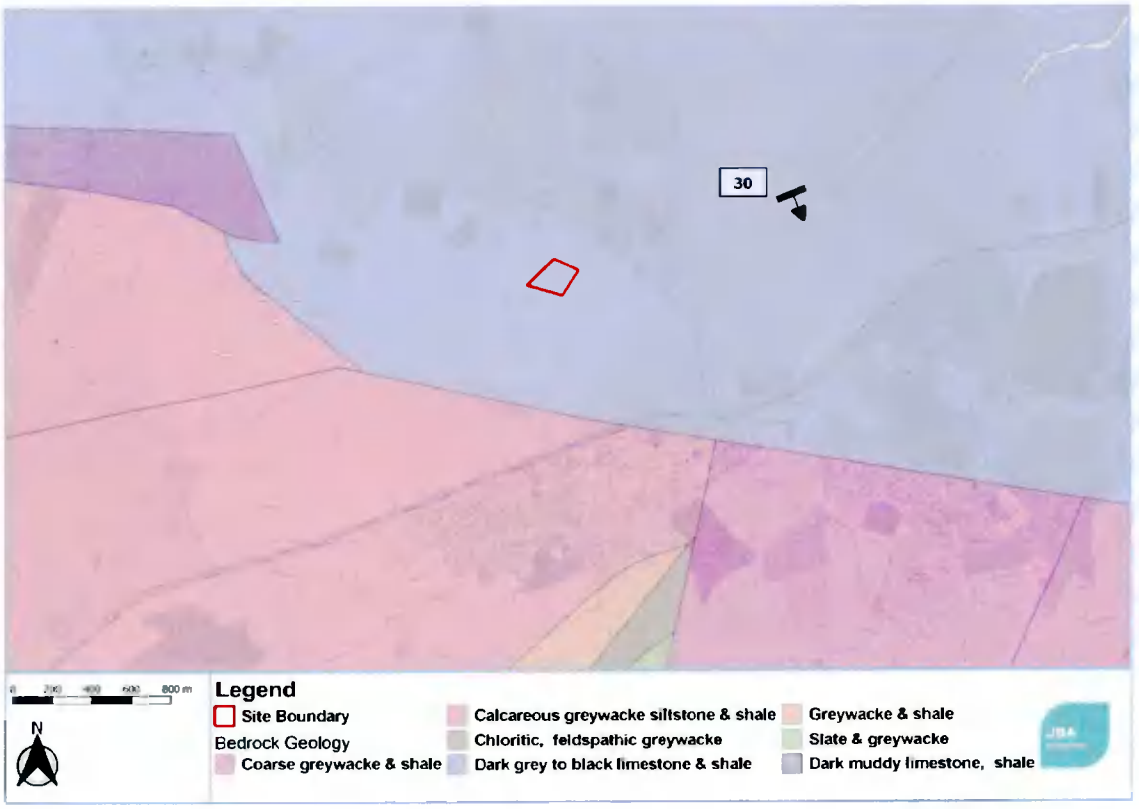


Figure 6-3: Site bedrock geology with strike orientation and dip angle (GSI, 2019).

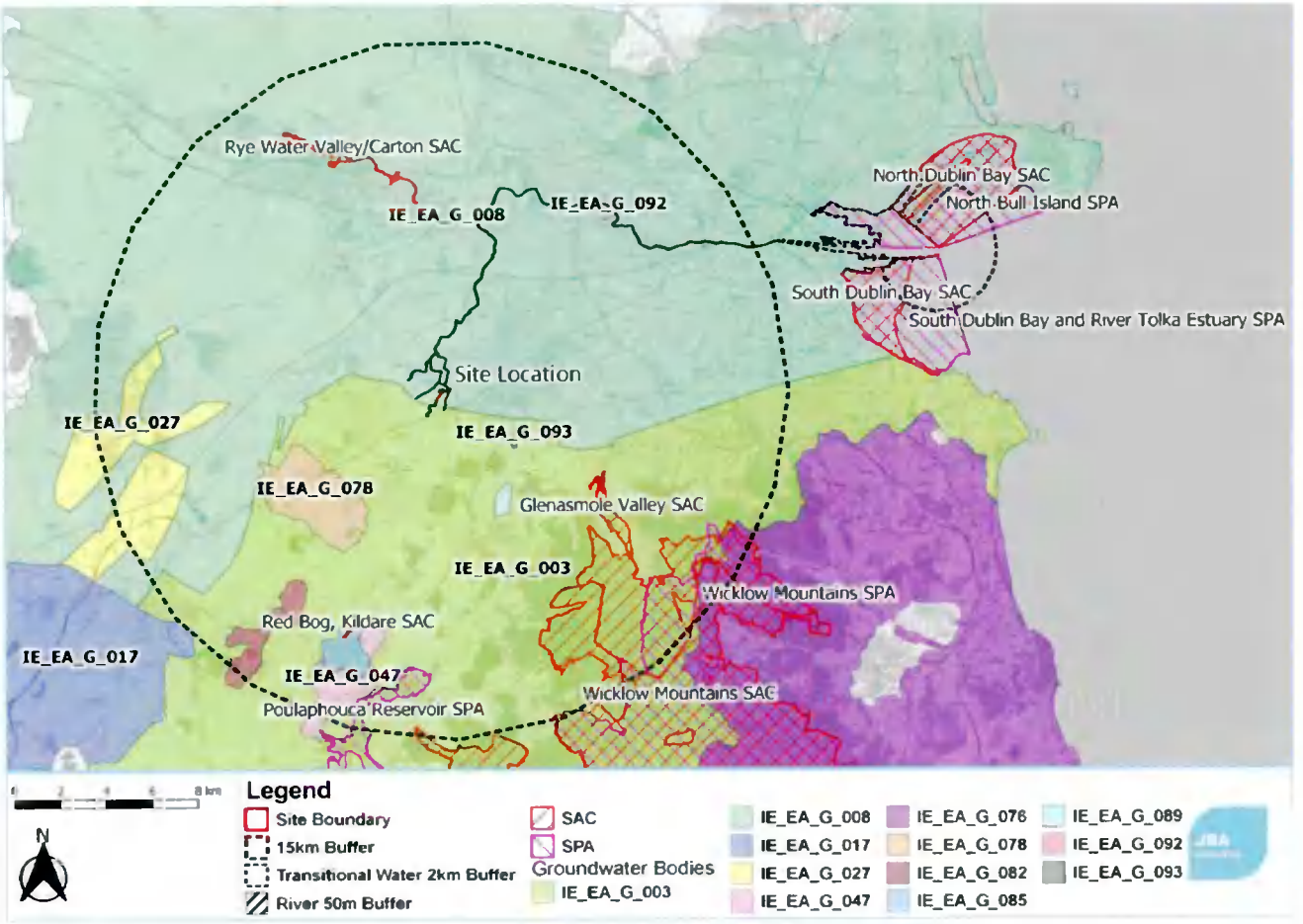


Figure 6-4: Site location and Natura 2000 sites, with groundwater body connectivity.

6.2.4 Land and Air

The loss of supporting habitat outside the identified SACs and SPAs via land-based impacts could have potential adverse impacts on a number of the QIs associated with these Natura 2000 sites. Regarding adverse air-based impacts, the releasing of dust and vehicle emissions can sometimes travel up to 10km and could potentially affect the Annex 1 habitats Floating River Vegetation [3260], Dry Heath [4030], Hydrophilous Tall Herb Communities [6430], Petrifying Springs [7220], Old Oak Woodlands [91A0] and Alluvial Forests [91E0], even if they are not located within close distance to the proposed project. Typically dust emissions are divided into settleable dust, respirable dust and PM10's and PM2.5 (10 um and 2.5 um respectively). Settleable dust will, depending on its size and weather conditions, settle out close to the source. The respirable fraction can travel a little further but typically settles out close to production. The lighter smaller PM10 and PM 2.5 fraction can travel up to 10km. The distance and direction of travel is dependent upon wind speed and direction.

Rye Water Valley / Carton SAC

Rye Water Valley / Carton SAC is located approximately 8.0km from the proposed site. This Natura 2000 site is designated for Petrifying Springs*; Narrow-mouthed Whorl Snail; and Desmoulin's Whorl Snail. The main pressures to these QIs are changes in hydrological conditions and land use / changes, such as forestry and continued growth of urban areas.

However, given the distance to the SAC, the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site and that the site is not connected hydrologically to Rye Water Valley / Carton SAC, impacts via land and air pathways from the proposed works are not anticipated.

Glenasmole Valley SAC

Glenasmole Valley SAC is located approximately 7.6km from the proposed site. This Natura 2000 site is designated for Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites); *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils; and Petrifying springs with tufa formation (*Cratoneurion*)*. The main pressures on these QIs are changes to hydraulic conditions, several forms of grazing, and activities related to forestry and agriculture. Though, given the distance to the SAC, the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site and that the site is not connected hydrologically to Glenasmole Valley SAC, impacts via land and air pathways from the proposed works are not anticipated.

Red Bog, Kildare SAC

Red Bog, Kildare SAC is located approximately 10.9km from the proposed site. This Natura 2000 site is designated for Transition mires and quaking bogs; and the main pressures related to this QI are Sand and gravel extraction, fertilisation, grazing, fishing and dispersion of habitation. Given the distance to the SAC, the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site and that the site is not connected hydrologically to Red Bog, Kildare SAC, impacts via land and air pathways from the proposed works are not anticipated.

Wicklow Mountains SAC

Wicklow Mountains SAC is located approximately 8.6km from the proposed site. This Natura 2000 site is designated for Otter and 13 Annex I habitats, including the priority habitats Blanket bogs (*if active) and Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and sub-mountain areas, in Continental Europe) *. The main pressures to these QIs are changes peat extraction, burning, erosion, invasive non-native species, grazing and off-road motorised driving. However, given the distance to the SAC, the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site and that the site is not connected hydrologically to Wicklow Mountains SAC, impacts via land and air pathways from the proposed works are not anticipated.

Poulaphouca Reservoir SPA

Poulaphouca Reservoir SPA is located approximately 11.9km from the proposed site. This Natura 2000 site is designated for Greylag Goose and Lesser Black-backed Gull. The main pressures to these QIs are forest planting on open ground and bridge structures. However, given the distance to the SAC, the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site and that the site is not connected hydrologically to Poulaphouca Reservoir SPA, impacts via land and air pathways from the proposed works are not anticipated.

Wicklow Mountains SPA

Wicklow Mountains SPA is located approximately 12.0km from the proposed site. This Natura 2000 site is designated for Merlin and Peregrine Falcon. The main pressures facing these QIs are forestry and trail hiking, horse-riding and biking. Though, given the distance to the SAC, the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site and that the site is not connected hydrologically to Wicklow Mountains SPA, impacts via land and air pathways from the proposed works are not anticipated.

North Dublin Bay SAC

North Dublin Bay SAC is located approximately 20.9km from the proposed site. This Natura 2000 site is designated for Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Salicornia and other annuals colonising mud and sand; Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Mediterranean salt meadows (*Juncetalia maritimi*); Embryonic shifting dunes; Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); Humid dune slacks; and Petalwort (*Petalophyllum ralfsii*). The main pressures facing these QIs are urbanised, industrial and commercial areas; discharges; walking, horse-riding and non-motorised vehicles; and antagonism with domestic animals. Given the distance from the proposed site, this SAC will not be impacted via land-based impacts. And while the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site would transport dust towards this SAC, the Natura 2000 site is 10km outside the furthest reaching dust settlement area. Therefore, significant impacts are not anticipated for North Dublin Bay SAC via land and air pathways.

South Dublin Bay SAC

South Dublin Bay SAC is located approximately 18.0km from the proposed site. This Natura 2000 site is designated for Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Salicornia and other annuals colonising mud and sand; and Embryonic shifting dunes. The main pressures facing these QIs are urbanised, industrial and commercial areas; reclamation of land from sea, estuary or marsh; walking, horse-riding and non-motorised vehicles; and accumulation of organic material. Given the distance from the proposed site, this SAC will not be impacted via land-based impacts. And while the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site would transport dust towards this SAC, the Natura 2000 site is 7.1km outside the furthest reaching dust settlement area. Therefore, significant impacts are not anticipated for South Dublin Bay SAC via land and air pathways.

North Bull Island SPA

North Bull Island SPA is located approximately 20.9km from the proposed site. This Natura 2000 site is designated for Light-bellied Brent Goose (*Branta bernicla hrota*); Shelduck (*Tadorna tadorna*); Teal (*Anas crecca*); Pintail (*Anas acuta*); Shoveler (*Anas clypeata*); Oystercatcher (*Haematopus ostralegus*); Golden Plover (*Pluvialis apricaria*); Grey Plover (*Pluvialis squatarola*); Red Knot (*Calidris canutus*); Sanderling (*Calidris alba*); Dunlin (*Calidris alpina*); Black-tailed Godwit (*Limosa limosa*); Bar-tailed Godwit (*Limosa lapponica*); Curlew (*Numenius arquata*); Redshank (*Tringa totanus*); Turnstone (*Arenaria interpres*); Black-headed Gull (*Chroicocephalus ridibundus*); and Wetland and Waterbirds. The main pressures facing these QIs are walking, horse-riding and non-motorised vehicles; and bridge/ viaduct. Given the distance from the proposed site, this SPA will not be impacted via land-based impacts. And while the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site would transport dust towards this SPA, the Natura 2000 site is 7km outside the furthest reaching dust settlement area. Therefore, significant impacts are not anticipated for North Bull Island SPA via land and air pathways.

South Dublin Bay and River Tolka Estuary SPA

South Dublin Bay and River Tolka Estuary SPA is located approximately 18.0km from the proposed site. This Natura 2000 site is designated for Light-bellied Brent Goose (*Branta bernicla hrota*); Oystercatcher (*Haematopus ostralegus*); Ringed Plover (*Charadrius hiaticula*); Grey Plover (*Pluvialis squatarola*); Red Knot (*Calidris canutus*); Sanderling (*Calidris alba*) [A144]; Dunlin (*Calidris alpina*); Bar-tailed Godwit (*Limosa lapponica*); Redshank (*Tringa totanus*); Black-headed Gull (*Chroicocephalus ridibundus*); Roseate Tern (*Sterna dougallii*); Common Tern (*Sterna hirundo*); Arctic Tern (*Sterna paradisaea*); and Wetland and Waterbirds. The main pressures facing these QIs are urbanised, industrial and

commercial areas; and the reclamation of land from sea, estuary or marsh. Given the distance from the proposed site, this SPA will not be impacted via land-based impacts. And while the prevailing wind directions (SW at Casement Aerodrome (Windfinder, 2019)) at the location of the proposed site would transport dust towards this SPA, the Natura 2000 site is 7.1km outside the furthest reaching dust settlement area. Therefore, significant impacts are not anticipated for South Dublin Bay and River Tolka Estuary SPA via land and air pathways.

6.2.5 Cumulative Impact

Given the proximity of the other relevant plans and project developments in Section 5.1, to the proposed site, their connectivity in terms of surface water, groundwater and land & air pathways to the Natura 2000 sites is likely to similar to the proposed site. With this in consideration, it can be stated that no cumulative impacts are likely to occur should the works on proposed site be carried out.

6.2.6 Summary

Due to the site location, and the nature and scale of the proposed project, impacts via surface water, groundwater and land and air pathways to the **SACs or SPAs are not** anticipated, both alone and in combination with other projects.

6.2.7 Description of likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 sites

Project Elements	Comment
Size and scale	The proposed development includes the construction of a warehouse and ancillary office space as described in Ref SD19A/0407 but with various design amendments. The amendments principally comprise: an overall increase in the commercial floor area by 15,479 sq m from the permitted 13,959 sq m to 29,438 sq m. The permitted scheme has 3 No. internal ancillary office floor levels, and the proposed alterations provide 2 No. mezzanine levels in the warehouse area (i.e a total of 5 No. internal floor levels). The permitted maximum height of the development at 23.7 metres will remain unchanged. The additional 15,479 sq m development proposed will comprise an increase in the warehouse floor area from 12,369 sq m to 13,353 sq. m, staff facilities from 548 sq m to 2,582 sq m and ancillary office area from 1,042 sq m to 2,437 sq m. Provision of a 2 No. storey mezzanine warehouse area (9,703 sq m), integrated plant room (434 sq m) and plant area on 2 No. floors (929 sq m).The development will also include the construction of a 2 No. storey car-parking area (4,057 sq m and 7.8m height) to accommodate an increase from the previously permitted 119 No. ancillary car parking spaces to 190 No. car parking spaces; 13 No. designated van parking spaces (no dedicated van spaces previously proposed); 72 No. permitted cycle parking spaces; reconfiguration of the HGV yard and an increase in the number of HGV dock levellers from 12 No. to 14 No. and the provision of 16 No. van loading level entry doors; sprinkler tank and associated underground pumps; repositioned ESB substation (15 sq m and 3 m height); bin storage (42 sq m and 2.9 m height); amended lighting layout; signage; modifications to hard and soft landscaping and boundary treatments; and associated site development works above and below ground.
Land-take	There will be no land take from the SACs and SPAs.

Project Elements	Comment
Distance from Natura 2000 site or key features of the site	The Natura 2000 site of closest proximity to the proposed site is at a distance of approximately 7.6km - Glenasmole Valley SAC. Other Natura 2000 sites within the zone of interest are present within the range of 8.0km – 20.9km. Rye Water Valley / Carton SAC (8.0km); Wicklow Mountains SAC (8.6km); Red Bog, Kildare SAC (10.9km); Wicklow Mountains SPA (12.0km); Poulaphouca Reservoir SPA (11.9km); North Dublin Bay SAC (20.9km); South Dublin Bay SAC (18.0km); North Bull Island SPA (20.9km); and South Dublin Bay and River Tolka Estuary SPA (18.0km).
Resource requirements (water abstraction etc.)	No permanent groundwater extraction.
Emissions (disposal to land, water or air)	*Temporary Impacts:* **Water Quality** A berm running along the southern boundary and small section of the eastern boundary will ensure that no water from the site enters the southern drainage ditch and other local watercourses. *Permanent Impacts:* **Water Quality** The silt trap (SWI 0806 surfsep vortex style silt trap), petrol interceptor (NSBE030 Klargester Class 1 Bypass Petrol Interceptor) and attenuation (Stormtech Attenuation System MC-4500 1,940m^3) standard infrastructure within in the surface water drainage system of the site, will negate any potential operational impacts from surface water as exits the site. The foul water drainage of the proposed site will connect with the existing foul water drainage system within Greenogue area. Ultimately, the foul waste is treated at the Ringsend WWTP [D0034-01] which services the greater Dublin area. Surface water and foul water drainage plans are detailed in Appendix B. The site-specific surface and foul water drainage system will connect to the existing surface and foul water system for Greenogue area.
Excavation Requirements	The approximate excavation cut volumes are 33,100m^3. The maximum excavation depth will be no more than 4.8m to accommodate the Stormtech attenuation tank. The base of this tank will be set at 95.70m AOD, and the proposed placement area is at 100.05m AOD. There is a possibility of encountering bedrock at this excavation depth, but as groundwater pathways are not expected to significantly affect any Natura 2000 site or their QIs, these excavation requirements are also not expected to pose any effect.
Transportation requirements	*Temporary Impacts:* Levels of traffic to the site during the operational phase will increase traffic to the Greenogue Business Park area. Given the distance to the Natura 2000 sites and the size and scale of the proposed project, transportation requirements are not anticipated to affect the SACs or SPAs within the ZoI. *Permanent Impacts:* Traffic to and from the proposed project will be on pre-existing

Project Elements	Comment
	roads. Given the distance to Natura sites and the size and scale of the proposed project, transportation requirements will not affect Natura 2000 sites.
Duration of construction, operation, decommissioning etc.	Construction will last approximately 12 months. Operation will be permanent, and no decommissioning is anticipated.
Other	None

6.2.8 Description of likely changes to the Natura 2000 sites

Potential Impact	Comment
Reduction of habitat area	There will be no reduction in habitat area of Natura 2000 sites.
Disturbance to key species	*Temporary Impacts:* No significant impacts are anticipated to key species during construction given scale and temporary nature of the construction phase. *Permanent Impacts:* No disturbance to key species is anticipated during operation of the project.
Habitat or species fragmentation	No habitat or species fragmentation is anticipated.
Reduction in species density	No reduction in species density is anticipated.
Changes in key indicators of conservation value (water quality etc.)	*Temporary Impacts:* **Water Quality** Given the scale and temporary nature of the construction works there will be no impacts on water quality. *Permanent Impacts:* **Water Quality** Given the environmentally appropriate design (silt trap, petrol interceptor and attenuation system) of the operational surface water and foul water drainage systems, there will be no impacts on water quality during the operational phase.
Climate change	N/A

6.2.9 Description of likely impacts on the Natura 2000 sites as a whole

Potential Impact	Comments
Interference with the key relationships that define the structure of the site	None anticipated.
Interference with key relationships that define the function of the site	None anticipated.

Provide indicators of significance as a result of the identification of effects set out above in terms of:

Potential Impact	Indicators
Loss (Estimated percentage of lost area of habitat)	No loss of habitat area is anticipated.
Fragmentation	No fragmentation of habitat and/or species is anticipated.
Disruption & disturbance	No disruption and/ or disturbance is anticipated.
Change to key elements of the site (e.g. water quality etc.)	No changes to key elements of the site are anticipated. The proposed works will follow best practice guidelines during the construction phase. Site-specific drainage plans will be in situ during the operation of the project (Appendix B).

6.2.10 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown

Based upon best scientific judgement, no significant impacts are expected from the elements mentioned above; and that no significant gaps in knowledge of the scale or magnitude of potential impacts from the proposed site exist.

6.3 Concluding Statement

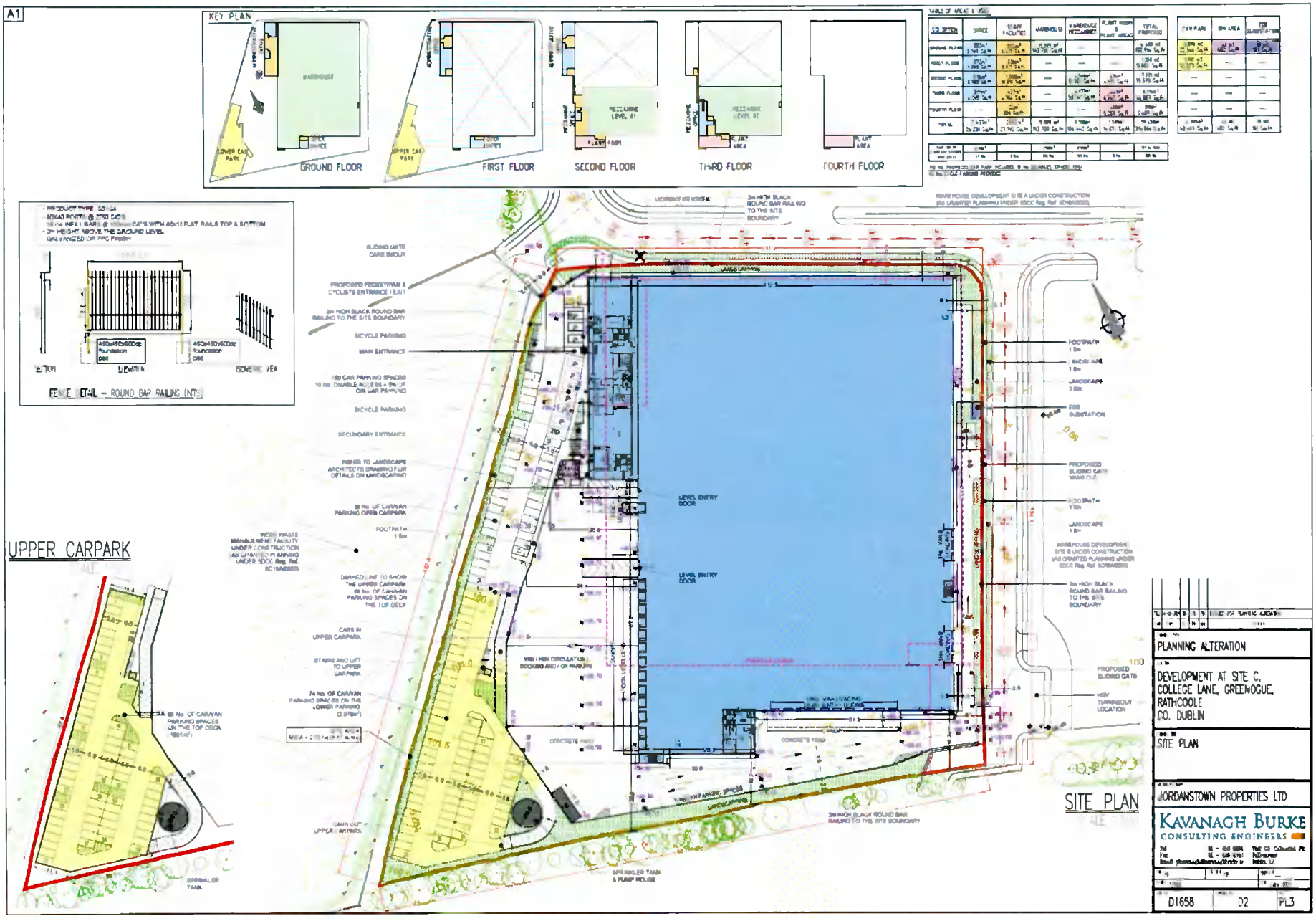
Following this initial screening, it can be concluded that given the lack of connectivity through the potential pathways of impact (surface water; groundwater; and land & air), and distance from the proposed site, significant negative impacts are **not anticipated** to occur on the following Natura 2000 sites:

- Rye Water Valley/Carton SAC (001398)
- Glenasmole Valley SAC (00120)
- Red Bog, Kildare SAC (000397)
- Wicklow Mountains SAC (002122)
- Poulaphouca Reservoir SPA (004063)
- Wicklow Mountains SPA (004040)
- North Dublin Bay SAC (000206)
- South Dublin SAC (000210)
- North Bull Island SPA (004006)
- South Dublin Bay and River Tolka Estuary (004024)

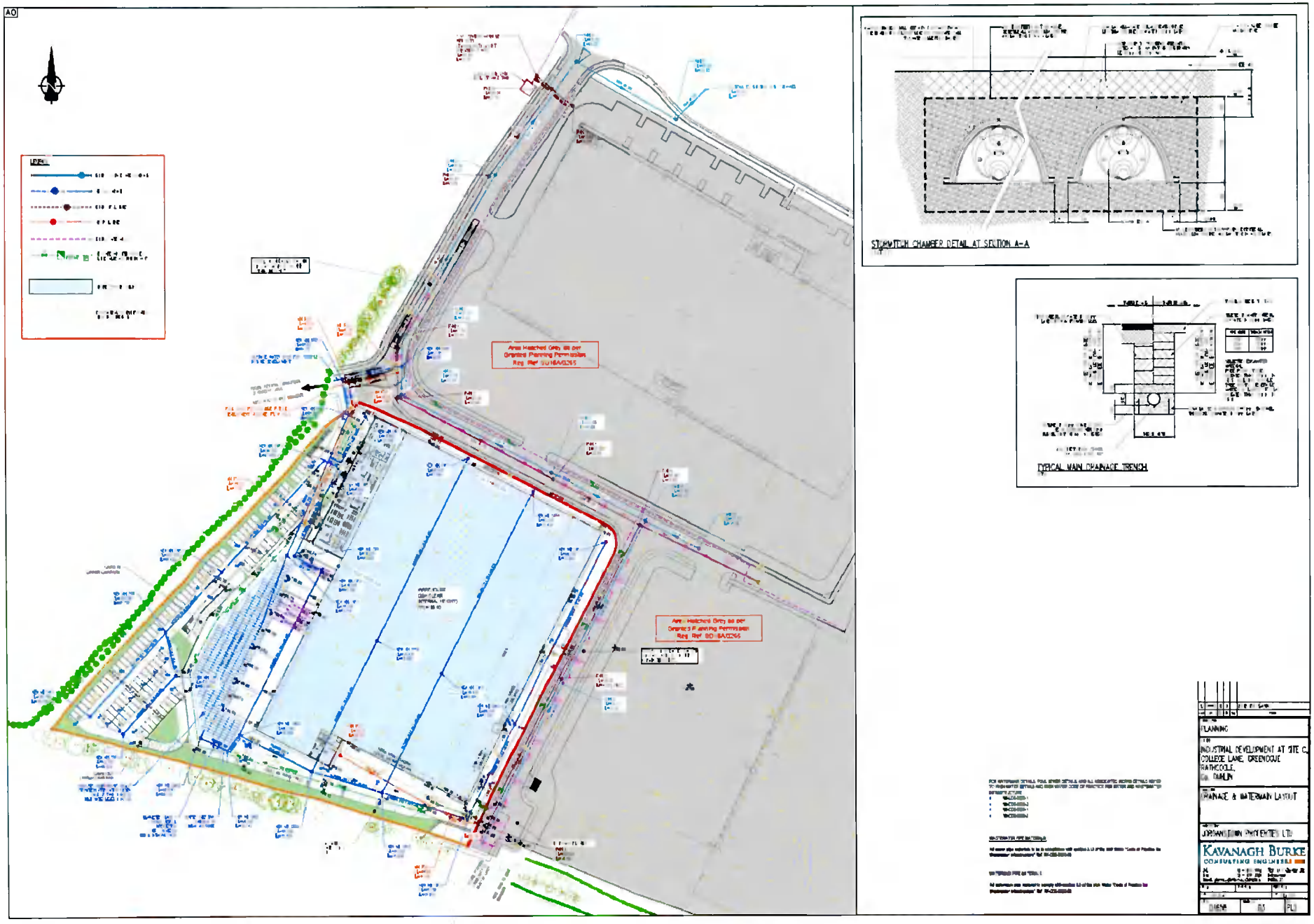
If any changes occur in the design of these works, a new Screening for Appropriate Assessment is required.

Appendices

A Site Plan



B Drainage Plan



C Habitat Map (November 2019)

D – NBDC records dated after 2010 and within 2km of the proposed site:

Species group	Species name	Date of last record	Title of dataset	Designation
Amphibian	Common Frog (*Rana temporaria*)	14/03/2020	Amphibians and reptiles of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex V || Protected Species: Wildlife Acts
Bird	Barn Swallow (*Hirundo rustica*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Black-headed Gull (*Larus ridibundus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Bird	Common Coot (*Fulica atra*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Common Goldeneye (*Bucephala clangula*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Kestrel (*Falco tinnunculus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Kingfisher (*Alcedo atthis*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Linnet (*Carduelis cannabina*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Pheasant (*Phasianus colchicus*)	23/03/2016	Birds of Ireland	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >>

				Annex III, Section I Bird Species
Bird	Common Sandpiper (*Actitis hypoleucos*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Snipe (*Gallinago gallinago*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Starling (*Sturnus vulgaris*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Common Swift (*Apus apus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Common Wood Pigeon (*Columba palumbus*)	23/03/2016	Birds of Ireland	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
Bird	Corn Crake (*Crex crex*)	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Bird	Eurasian Teal (*Anas crecca*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Eurasian Tree Sparrow (*Passer montanus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Eurasian Woodcock (*Scolopax rusticola*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Great Black-backed Gull (*Larus marinus*)	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Great Cormorant (*Phalacrocorax carbo*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Great Crested Grebe (*Podiceps cristatus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Greylag Goose (*Anser anser*)	31/12/2011	Bird Atlas 2007 - 2011	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Herring Gull (*Larus argentatus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Bird	House Martin (*Delichon urbicum*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	House Sparrow (*Passer domesticus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Lesser Black-backed Gull (*Larus fuscus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Little Egret (*Egretta garzetta*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species
Bird	Little Grebe (*Tachybaptus ruficollis*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Mallard (*Anas platyrhynchos*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
Bird	Mew Gull (*Larus canus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Mute Swan (*Cygnus olor*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Northern Lapwing (*Vanellus vanellus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Bird	Northern Wheatear (*Oenanthe oenanthe*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Peregrine Falcon (*Falco peregrinus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species
Bird	Red Grouse (*Lagopus lagopus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern

				>> Birds of Conservation Concern - Red List
Bird	Rock Pigeon (*Columba livia*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
Bird	Sand Martin (*Riparia riparia*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Sky Lark (*Alauda arvensis*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Spotted Flycatcher (*Muscicapa striata*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Tufted Duck (*Aythya fuligula*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Water Rail (*Rallus aquaticus*)	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Whinchat (*Saxicola rubetra*)	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Bird	Whooper Swan (*Cygnus cygnus*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Bird	Yellowhammer (*Emberiza citrinella*)	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Terrestrial mammal	Lesser Noctule (*Nyctalus leisleri*)	29/06/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Terrestrial mammal	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	29/06/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Terrestrial mammal	Soprano Pipistrelle (*Pipistrellus pygmaeus*)	29/06/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts

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