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Marine & Environmental Consultancy

Ecological Impact Assessment (EclA) for a proposed residential development at Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin.



1st September 2021

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.

On behalf of: Clonkeen Investments DAC

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie

Directors: Bryan Deegan and Sara Corcoran

Company No.427560 VAT No. 9649832U

www.altemar.ie

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Introduction

Background

Ecological Impact Assessment (EclA) has been defined as *'the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components'* (Treweek, 1999). *"The purpose of EclA is to provide decision-makers with clear and concise information about the likely ecological effects associated with a project and their significance both directly and in a wider context. Protecting and enhancing biodiversity and landscapes and maintaining natural processes depends upon input from ecologists and other specialists at all stages in the decision-making and planning process; from the early design of a project through implementation to its decommissioning"* (IEEM, 2010). The following EclA has been prepared by Altemar Ltd. at the request of Clonkeen Investments DAC for a proposed mixed-use development on a 3.3 ha site located at Lands Adjoining Clonkeen College, Blackrock, Co. Dublin. The project relates to an application for planning permission for a proposed strategic housing development and associated site works.

Study Objectives

The objectives of this EclA are to:

1. Outline the project and any alternatives assessed;
2. Undertake a baseline ecological feature, resource and function assessment of the site and zone of influence;
3. Assess and define significance of the direct, indirect and cumulative ecological impacts of the project during its construction, lifetime and decommissioning stages;
4. Refine, where necessary, the project and propose mitigation measures to remove or reduce impacts through sustainable design and ecological planning; and
5. Suggest monitoring measures to follow up the implementation and success of mitigation measures and ecological outcomes.

The following guidelines have been used in preparation of this EclA:

- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2002);
- Draft Guidelines on the information to be contained in EIARs (2018);
- Guidelines for Ecological Impact Assessment (EclA) (IEEM, 2019)
- Advice Notes on current practice in the preparation of EIS's (EPA, 2003);
- Institute of Ecology and Environmental Management Guidelines for EIA (IEEM, 2005).

A separate Appropriate Assessment Screening and Natura Impact Statement, in accordance with the requirements of Article 6(3) of the EU Habitats Directive, has been produced to identify potential impacts of the development on Natura 2000 sites, Annex species or Annex habitats. In summary, it can be objectively concluded that the proposed development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site.

Altemar Ltd.

Since its inception in 2001, Altemar has been delivering ecological and environmental services to a broad range of clients. Operational areas include: residential; infrastructural; renewable; oil & gas; private industry; Local Authorities; EC projects; and, State/semi-State Departments. Bryan Deegan, the managing director of Altemar, is an Environmental Scientist and Marine Biologist with 26 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. He is currently contracted to Inland Fisheries Ireland as the sole "External Expert" to environmentally assess internal and external projects. He is also chair of an internal IFI working group on environmental assessment. Bryan Deegan (MCIEEM) holds a MSc in Environmental Science, BSc (Hons.) in Applied Marine Biology, NCEA National Diploma in Applied Aquatic Science and a NCEA National Certificate in Science (Aquaculture). Bryan Deegan carried out all elements of this Ecological Impact Assessment (EclA).

Project Description

Clonkeen Investments DAC intend to apply to An Bord Pleanála (the Board) for permission for a Strategic Housing Development with a total application site area of c. 3.3 ha, on a site located at Lands Adjoining Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin. The development, with a total gross floor area of c 33,851 sq m, will provide 299 no. residential units and a 1 no. storey 353 sq m childcare facility with dedicated play area 231 sq m. The development will consist of 18 no. ground floor 3 bedroom duplex apartments and 18 no. 2 bedroom apartments above and 12 no. ground floor 2 bedroom apartments with 12 no. 3 bedroom duplex apartments above. The 60 no. duplex units are arranged in 6 no. three storey blocks. The development will also consist of 239 no. apartment units (111 no. 1 bedroom apartments, 120 no. 2 bedroom apartments and 8 no. 3 bed apartments) arranged in 4 no. 6 storey blocks over 1 no. storey basement; public open space, communal open space and private open space (including all balconies, terraces and individual unit gardens at all levels); 614 sq m communal resident facilities including concierge and welcome area (195 sq m), residents' flexible work facility (219 sq m), residents' lounge (100 sq m) and residents' gym area (100 sq m).

The development will also provide for the demolition of the 2 no. storey office building ('St. Helen's', Meadow Vale - 470 sq m) to facilitate new vehicular, pedestrian and cyclist access to the site, to the north of the proposed development via Meadow Vale.

The development will also include the provision of 2 no. designated play areas; internal roads and pathways; bin stores; 248 no. car parking spaces, including 167 no. at basement level and 2 no. shared vehicle (GoCar) spaces, 388 no. bicycle parking spaces, and 10 no. motorcycle parking spaces at basement and surface level; hard and soft landscaping; plant; boundary treatments including the repair and replacement of some existing boundary treatments; the provision of new surface water and foul drainage pipes and any required pipe diversion works; internal foul pumping station; a new internal access road and paths; changes in level; services provision and related pipework, ducting and cabling; electric vehicle charging points; 4 no. stormwater attenuation tanks; 1 no. ESB substation; photovoltaic panels; SUDS including green roof provision; signage; provision for future pedestrian access to Monaloe Park to the east of the development, including the provision of a pedestrian bridge, extending over the drainage ditch; public lighting and all site development and excavation works above and below ground.

Drainage

Existing Storm Water Arrangements

As outlined in the CS Consulting Engineering Services Report: *"Following review of Dún Laoghaire-Rathdown County Council's drainage records and a review of the sites topographical survey indicates that there is an existing ditch to the site southern boundary. The lands drain to the south into the ditch along the southern boundary. The drain from west to east and ultimately discharges to the south east corner of the subject lands."*

Proposed Storm Water Network

"It is proposed to discharge surface water from the development by gravity to the existing watercourse to the southern boundary of the site. This watercourse is the natural greenfield drainage route. (Figure 5)

The use of Suds features, including swales / filter drain, bio retention pits, permeable paving, green roofs and detention basins will provide infiltration and evaporation as much as physical possible and optimise retention time, refer to section 3.7 of this report. Underground stormtech arch'd systems are being proposed throughout the site to provide an attenuation for the 1-100 year storm.

The proposed surface water network shall discharge via hydrobrake manholes at outfalls to limit the flow to the equivalent green field rate runoff with any excess flows surcharging back into the attenuation structures. The onsite attenuation has been designed to cater for the 1-100 year event allowing for 20% increase due to climate change. A petrol interceptor will be installed before any outfall location to the open watercourse.

It is proposed to incorporate a Storm Management Plan through the use of Suds devices and techniques to treat and minimise surface water from the site."

Sustainable Urban Drainage Systems (SuDS)

The proposed development will incorporate SUDS, which is comprised of the following (Figure 9):

- Green roof
- Permeable paving
- Bioretention systems
- Shallow infiltration systems

Foul Water Drainage

As outlined in the CS Consulting Engineering Services Report:

“Following review of Dún Laoghaire-Rathdown County Council’s drainage records indicates that there is a 375mm diameter sewer on passing through the site, which runs from west to east.”

In terms of the proposed foul drainage arrangements (Figure 6), the report states the following:

“The proposed development will require a new separate drainage network to collect and convey the effluent generated by the proposed development. The drainage network for the proposed development has been designed in accordance with:

- *The Regional Code of Practice Drainage Works,*
- *The Greater Dublin Strategic Drainage Study,*
- *Irish Water Code of Practice for Wastewater Infrastructure.*

The drainage network for the development will be in accordance with Part H of the Building Regulations and to the requirements and specifications set out in the Irish Water Code of Practice for Wastewater.”

“All foul effluent generated from the proposed development shall be collected in pipes and flow under gravity into the existing 375mm diameter sewer which crosses the site.

The development proposed pays respect to the required 6m wide wayleave associated with the existing drain.

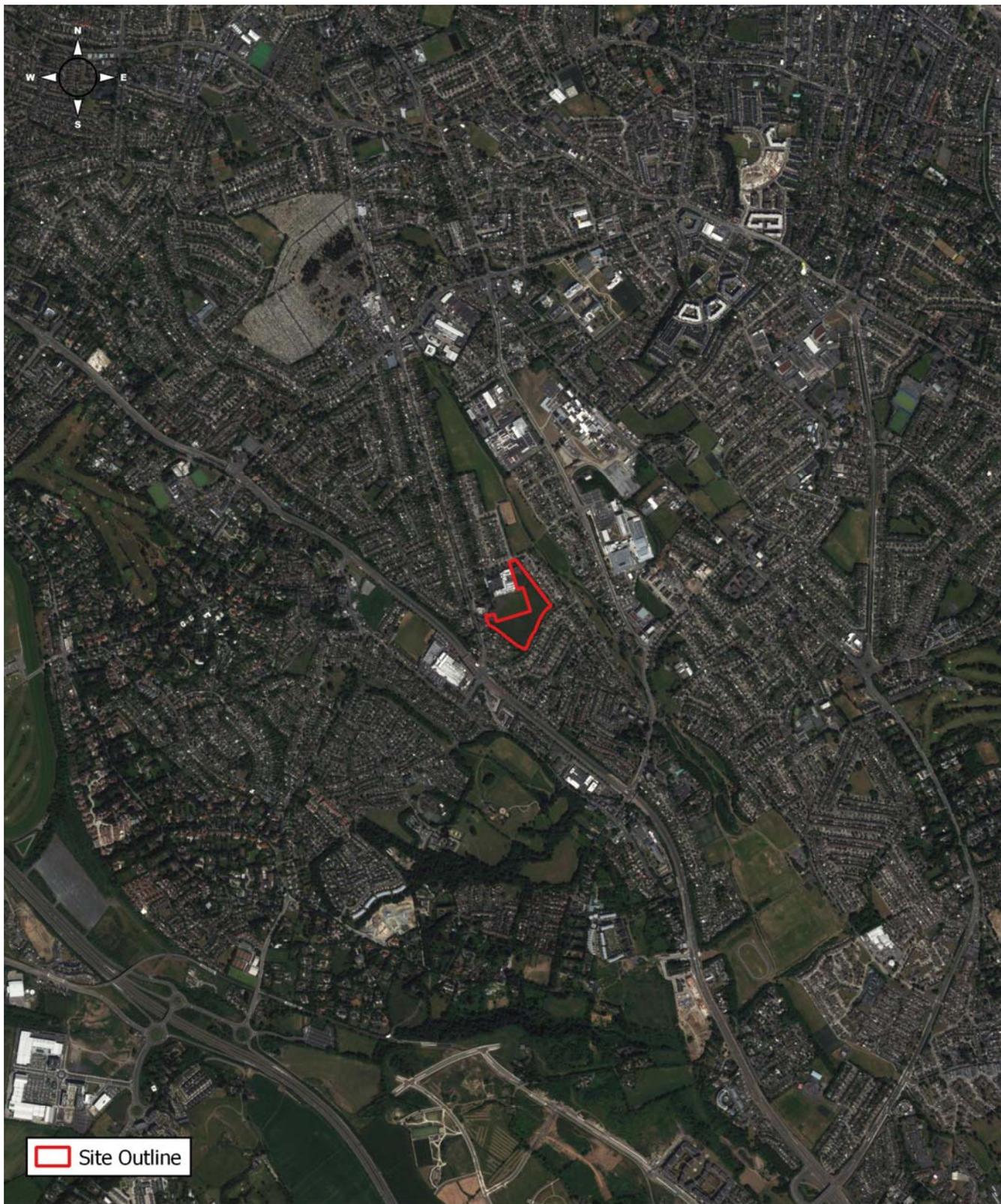
The drainage network for the development will be in accordance with Part H of the Building Regulations and to the requirements and specifications of Irish Water. The proposed foul effluent generated by the subject lands shall be separate from all surface water flows.

For foul flows from the apartment development the effluent will be collected into a foul holding tank and pump station. The foul will be lifted to the gravity drain and standoff manhole outfall then to the existing 375mm diameter sewer.

For the basement level run off from cars and similar, all effluent shall be collected in pipe of 150mm in diameter flowing under gravity to petrol interceptor and then to a pump station located in the basement to a stand-off manhole at ground level.”

Flood Risk Assessment

As outlined in the Flood Risk Assessment provided by CS Consulting: (Section 6) *“Historically, the site has not been subject to flooding events, as noted by the OPW’s historical flood maps. Dún Laoghaire-Rathdown County Council’s Development Plan locates the site in Flood Zone C. Due to the proposed nature of the development, a Justification Test is not required. Pluvial flooding has been assessed and the proposed use of an attenuation tank to limit the storm water discharge rate from the site to 2l/s/Ha will aid in increasing the capacity of the public combined sewer adjacent to the site. The increased capacity will allow the public drainage system to deal with pluvial flows during extreme storm events. Tidal mapping for the current 1-in-200-year flood & the predicted 1-in- 200-year flood (based on the predicted effect of climate change) indicates that no dwelling will have a finished floor level in the tidal zone. The risk of the site contributing to offsite flooding, or the site’s vulnerability to flooding from the public drainage network, is mitigated by the installation of an attenuation tank to retain the storm volumes experienced on site during high intensity storm events & the existing topography of the site. The sites local geology & hydrogeological conditions do not indicate that flooding from groundwater is an issue at the site.”*



0 0.5 1 1.5 2 2.5 km

Project: Clonkeen SHD
 Location: Blackrock, Co. Dublin
 Date: 8th July 2021
 Drawn By: Bryan Deegan (Altamar)

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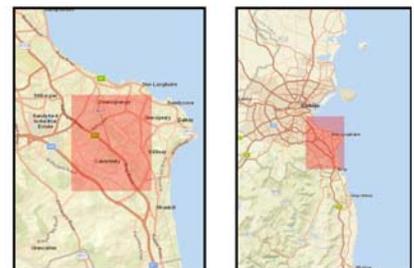


Figure 1. Proposed site outline and location



0 100 200 300 400 500 m

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Figure 2. Proposed site outline

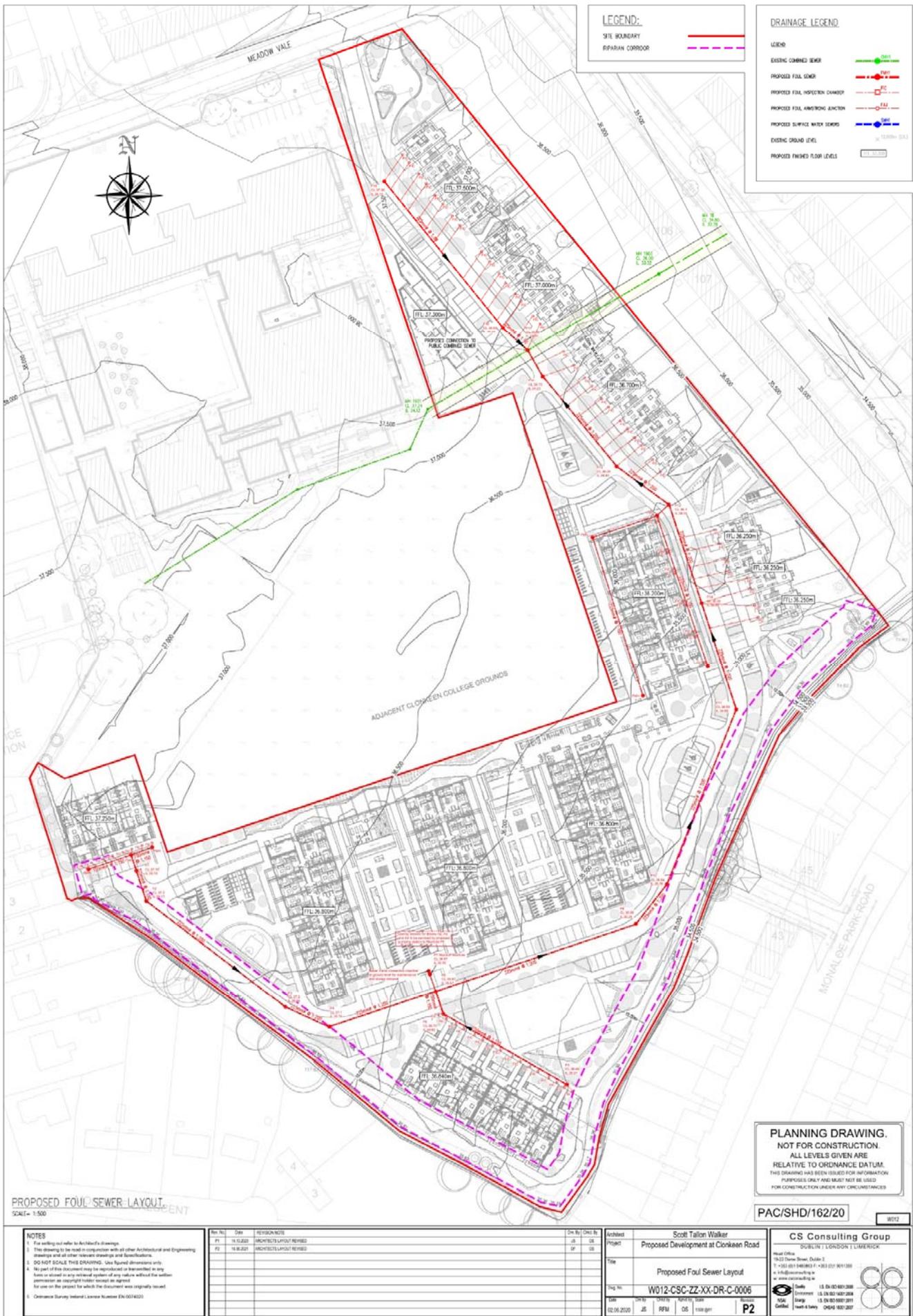


Figure 7. Proposed foul water layout

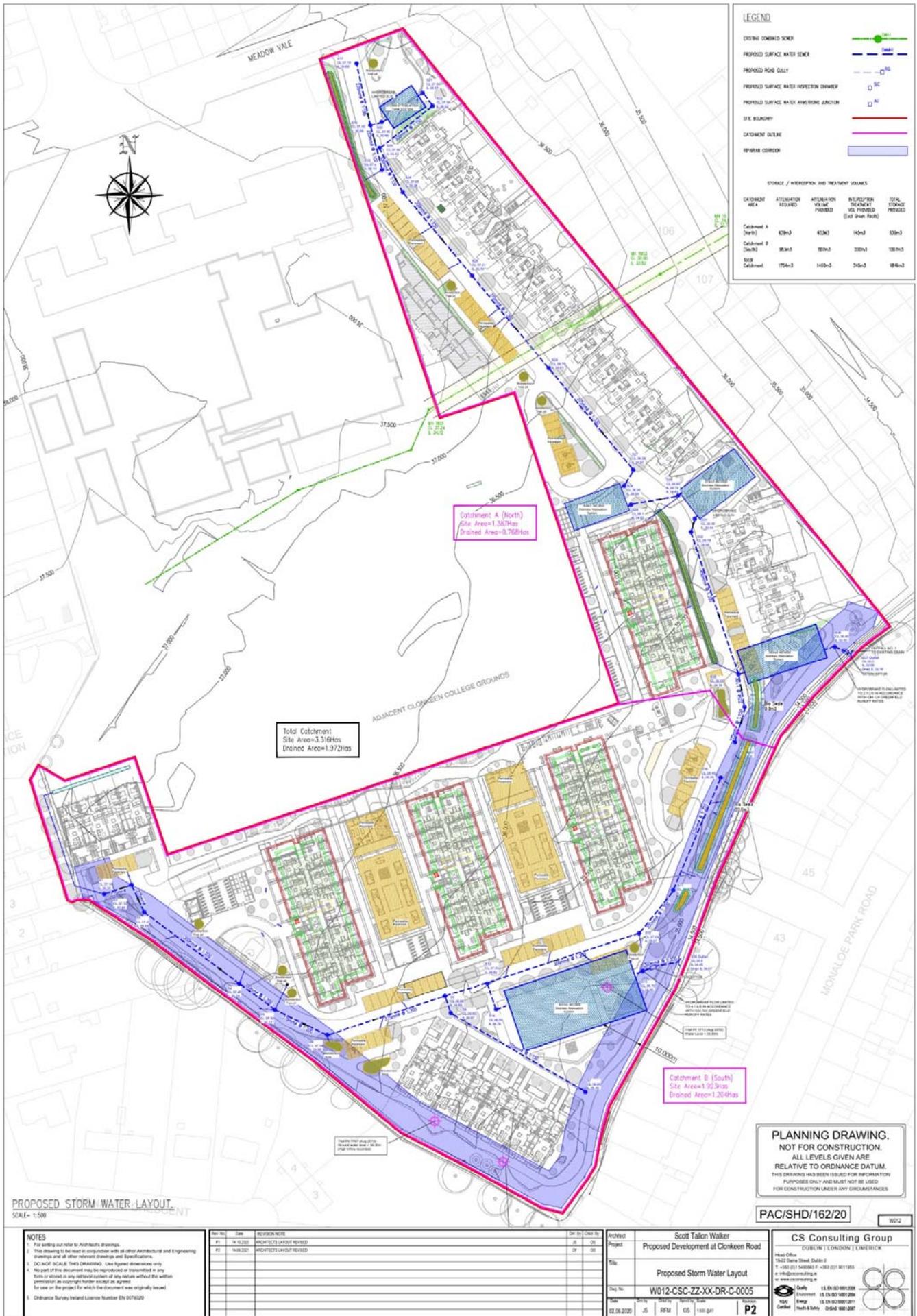


Figure 8. Proposed storm water layout



Figure 9. Proposed SuDS layout plan

Ecological Assessment Methodology

Desk Study

A desk study was undertaken to gather and assess ecological data prior to undertaking fieldwork elements. Sources of datasets and information included:

- The National Parks and Wildlife Service
- National Biological Data Centre
- Satellite, aerial and 6" map imagery
- ESRI Maps (QGIS)

A provisional desk-based assessment of the potential species and habitats of conservation importance was carried out in early July 2019 and reviewed in July 2021.

Spatial Scope and Zone of Influence

As outlined in CIEEM (2018) *'The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries.'* In line with best practice guidance an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995). However, there is a watercourse downstream of the proposed works and there is potential for surface runoff to enter the Kill Of the Grange Stream during construction and operation. This would be seen as the main pathways for impacts beyond the site. This stream enters the Irish Sea at Killiney Bay 3.4km from the site. In addition, as outlined in the accompanying NIS *"In relation to Special Protection Areas, in the absence of any specific European or Irish guidance in relation to such sites, the Scottish Natural Heritage (SNH) Guidance, 'Assessing Connectivity with Special Protection Areas (SPA)' (2016) was consulted. This document provides guidance in relation to the identification of connectivity between proposed development and Special Protection Areas. The guidance takes into consideration the distances species may travel beyond the boundary of their SPAs and provides information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects."* Foul water from the development will discharge to the Shanganagh Waste Water Treatment Plant for treatment, and that this is operating within capacity¹.

Field Survey

A field survey of the proposed development site at was carried out by Altemar Ltd. on the 14th August 2019, 11th March 2020, 26th September 2020, 14th October 2020 and the 31st May 2021. The purpose of the field surveys was to identify habitat types according to the Fossitt (2000) habitat classification and map their extent. In addition, more detailed information on the species composition and structure of habitats, conservation value and other data were gathered. Bat survey (emergent and visual inspection) were also carried out on the 14th August 2019, 26th September 2020 and 31st May 2021 assessed the trees on site for roosting potential and the foraging activity on site. At dusk bat detector surveys were carried out onsite using a Batbox Duet heterodyne/frequency division detector to determine bat activity. In 2021 an Echo Meter Touch 2 bat detector was used. Bats were identified by their ultrasonic calls coupled with behavioural and flight observations. An invasive species assessment was also carried out on the 31st May 2021. A mammal survey was carried out on the 11th March 2020. Wintering Bird assessments were carried out by Scott Cawley on 3rd September 2019, 11th September 2019, 18th September 2019, 25th September 2019, 4th October 2019, 10th October 2019, 18th October 2019, 25th October 2019, 1st November 2019, 6th November 2019, 16th November 2019, 30th November 2019, 5th December 2019, 14th December 2019, 21st December 2019, 27th December 2019, 9th January 2020, 17th January 2020, 25th January 2020, 30th January 2020, 7th February 2020, 15th February 2020, 23rd February 2020, 29th February 2020, 7th March 2020, 15th March 2020 and 20th March 2020. Additional wintering bird assessments were carried out by MKO on 18/10/2020, 29/10/2020, 10/11/2020, 25/11/2020, 01/12/2020, 15/12/2020, 05/01/2021, 22/01/2021, 02/02/2021, 16/02/2021, 11/03/2021 and 30/03/2021.

¹ https://www.water.ie/uuid/cfbdb5b6-84b3-42bf-8f82-09df97f80944/d0038-02_2020_aer.pdf

Survey Limitations

The surveys covered appropriate seasons for flora, wintering bird, mammal and bat assessments. No limitations are foreseen in relation to the surveys carried out on site.

Consultation

The National Parks and Wildlife Service (NPWS) were consulted in relation to species and sites of conservation interest. Data of rare and threatened species were acquired from NPWS. The National Biological Data Centre records were consulted for species of conservation significance.

Ecological Evaluation Criteria

The ecological significance of the potential zone of influence was determined using the site evaluation scheme provided by the National Roads Authority (NRA) Ecological Assessment Guidelines (Tables 1&2) and Impact Matrix (Table 3).

Table 1. Site Evaluation Scheme (NRA, 2006)

Rating	Qualifying Criteria
A	Internationally important Sites designated (or qualifying for designation) as Special Areas of Conservation (SAC) or Special Protection Areas (SPA) under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Major salmon river fisheries.
B	Nationally important Sites or waters designated or proposed as a Natural Heritage Area (NHA) or statutory Nature Reserves. Undesignated sites containing good examples of Annex I habitats (EU Habitats Directive). Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Water bodies with major amenity fishery value.
C	High value, locally important (Regional, County & River Basin District) Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Small water bodies with known salmonid populations or with good potential salmonid habitat. Sites containing any resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive.
D	Moderate value, locally important (Regional, County & River Basin District) Sites containing some semi-natural habitat or locally important for wildlife. Small water bodies with some coarse fisheries value or some potential salmonid habitat. Any water body with unpolluted water (Q-value rating 4-5).
E	Low value, locally important (Regional, County & River Basin District) Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries value and no significant potential fisheries value.

Impact Assessment Significance Criteria

This section of the EclA examines the potential causes of impact that could result in likely significant effects to the species and habitats that occur within the ZOI of the proposed development. These impacts could arise during either the construction or operational phases of the proposed development. The following terms are derived from EPA EIAR Guidance and are used in the assessment to describe the predicted and potential residual impacts on the ecology by the construction and operation of the proposed development.

Magnitude of impact and typical descriptions.

Magnitude of impact (change)		Typical description
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Low	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring
Negligible	Adverse	Very minor loss or alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.

Criteria for Establishing Receptor Sensitivity/Importance

Importance	Ecological Valuation
International	Sites, habitats or species protected under international legislation e.g. Habitats and Species Directive. These include, amongst others: SACs, SPAs, Ramsar sites, Biosphere Reserves, including sites proposed for designation, plus undesignated sites that support populations of internationally important species.
National	Sites, habitats or species protected under national legislation e.g. Wildlife Act 1976 and amendments. Sites include designated and proposed NHAs, Statutory Nature Reserves, National Parks, plus areas supporting resident or regularly occurring populations of species of national importance (e.g. 1% national population) protected under the Wildlife Acts, and rare (Red Data List) species.
Regional	Sites, habitats or species which may have regional importance, but which are not protected under legislation (although Local Plans may specifically identify them) e.g. viable areas or populations of Regional Biodiversity Action Plan habitats or species.
Local/County	Areas supporting resident or regularly occurring populations of protected and red data listed-species of county importance (e.g. 1% of county population), Areas containing Annex I habitats not of international/national importance, County important populations of species or habitats identified in county plans, Areas of special amenity or subject to tree protection constraints.
Local	Areas supporting resident or regularly occurring populations of protected and red data listed-species of local importance (e.g. 1% of local population), Undesignated sites or features which enhance or enrich the local area, sites containing viable area or populations of local Biodiversity Plan habitats or species, local Red Data List species etc.
Site	Very low importance and rarity. Ecological feature of no significant value beyond the site boundary

Quality of Potential Impacts on Biodiversity

	Impact Description
Negative /Adverse Impact	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
Neutral Impact	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Positive Impact	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).

Significance of Impacts

Significance of Impact	Description of Potential Impact
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An impact which obliterates sensitive characteristics.

Duration of Impact

Duration of Impact	Description
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting less than a year
Short-term	Effects lasting one to seven years.
Medium-term	Effects lasting seven to fifteen years.
Long-term	Effects lasting fifteen to sixty years.
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration
Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Extent of Effects	Description
Extent	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.

Results

Proximity to Designated Conservation Sites

Designated conservation sites (National and international) within 15km of the proposed development are seen in Figures (10-13) and Table 4. It should be noted that the proposed development site is not within a designated conservation area. The closest Natura 2000 sites are South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA both of which are 2.8 km from the proposed development (Figures 10 and 11) and the list of Natura 2000 sites within 15km is seen in Table 4. There are no designated Natural Heritage Areas (NHA) within a 15km

radius, however the nearest Proposed NHA (Dalkey Coastal Zone and Killiney Hill) is 2km from the site (Figure 12). The closest RAMSAR Site is Sandymount Strand/Tolka Estuary at 2.8 km (Figure 13).

Table 2. Natura 2000 sites within 15km of the proposed site

Site Code	NATURA 2000 Site	Distance
Special Areas of Conservation		
IE000210	South Dublin Bay SAC	2.8 km
IE003000	Rockabill to Dalkey Island SAC	4.2 km
IE000713	Ballyman Glen SAC	6.6 km
IE001209	Knocksink Wood SAC	6.9 km
IE000206	North Dublin Bay SAC	8.3 km
IE002122	Wicklow Mountains SAC	8.5 km
IE000714	Bray Head SAC	9.0 km
IE000202	Howth Head SAC	11.2 km
IE001209	Glenasmole Valley SAC	13.4 km
IE000199	Baldoyle Bay	13.8 km
IE000719	Glen of the Downs SAC	13.9 km
Special Protection Area		
IE004024	South Dublin Bay and River Tolka Estuary SPA	2.8 km
IE004172	Dalkey Islands SPA	4.0 km
IE0004006	North Bull Island SPA	8.3 km
IE004040	Wicklow Mountains SPA	8.6 km
IE0004113	Howth Head Coast SPA	12.1 km
IE0004016	Baldoyle Bay SPA	13.8 km

Table 3. National and international conservation sites within 15km of the proposed development

Status	Site Name	Distance
Ramsar	Sandymount Strand/Tolka Estuary	2.8 km
Ramsar	North Bull Island	8.3 km
Ramsar	Baldoyle Bay	13.7 km
Proposed NHA	Dalkey Coastal Zone and Killiney Hill	2.0 km
Proposed NHA	South Dublin Bay	2.8 km
Proposed NHA	Loughlinstown Woods	2.7 km
Proposed NHA	Dingle Glen	3.2 km
Proposed NHA	Fitzsimon's Wood	4.7 km
Proposed NHA	Boooterstown Marsh	5.1 km
Proposed NHA	Ballybetagh Bog	5.6 km
Proposed NHA	Knocksink Wood	6.8 km
Proposed NHA	Ballyman Glen	6.6 km
Proposed NHA	Dolphins, Dublin Docks	8.3 km
Proposed NHA	Grand Canal	9.2 km
Proposed NHA	North Dublin Bay	8.3 km
Proposed NHA	Dargle River Valley	8.8 km
Proposed NHA	Bray Head	9.0 km
Proposed NHA	Powerscourt Woodland	8.4 km
Proposed NHA	Great Sugar Loaf	9.9 km
Proposed NHA	Royal Canal	10.2 km
Proposed NHA	Dodder Valley	11.6 km
Proposed NHA	Howth Head	11.2 km
Proposed NHA	Kilmacanoge Marsh	11.2 km
Proposed NHA	Glenree Valley	11.0 km
Proposed NHA	Powerscourt Waterfall	12.5 km
Proposed NHA	Glenasmole Valley	13.3 km
Proposed NHA	Glen of the Downs	13.9 km
Proposed NHA	Baldoyle Bay	13.8 km

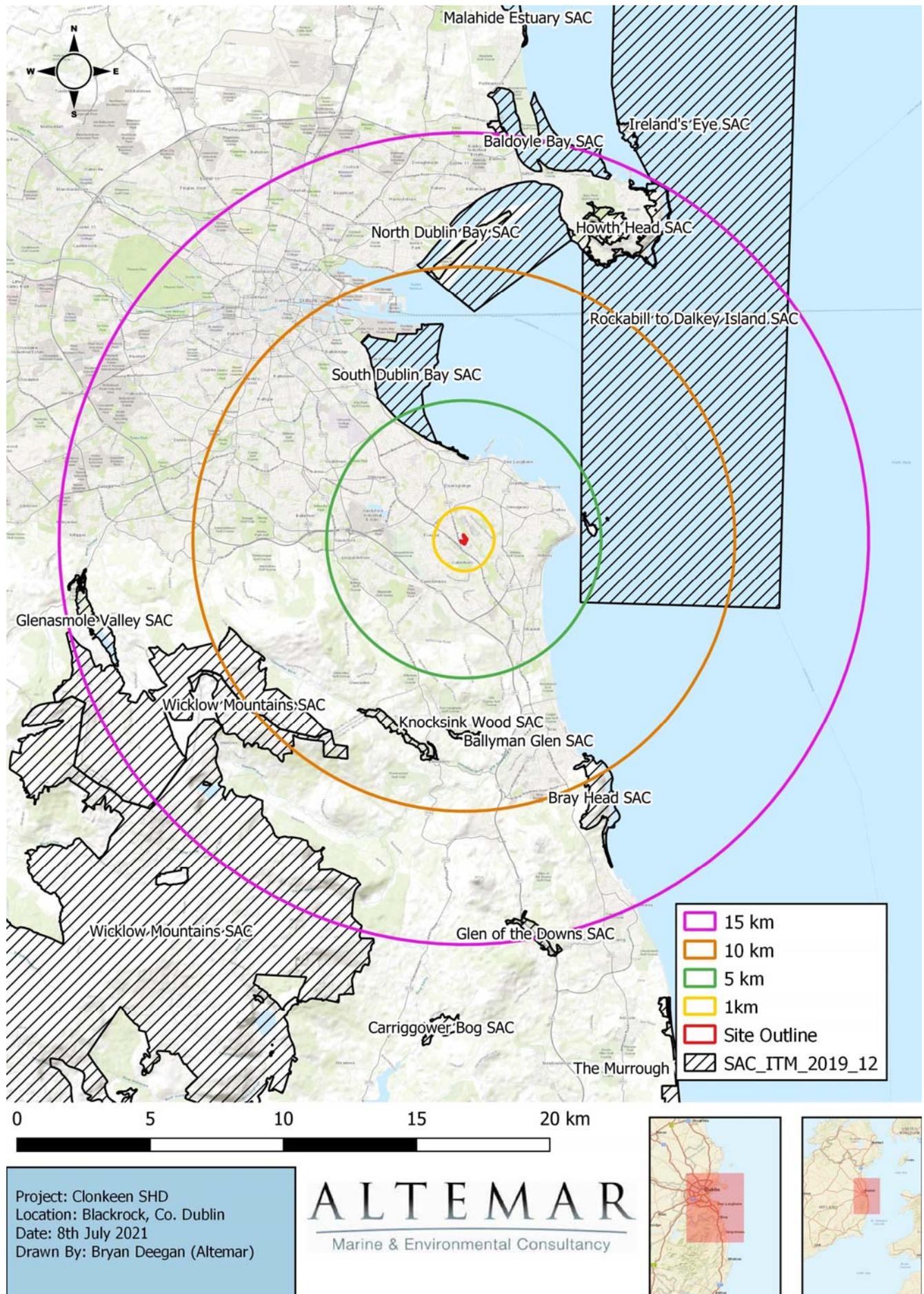


Figure 10. Special Areas of Conservation (SAC) located within 15km of the proposed development

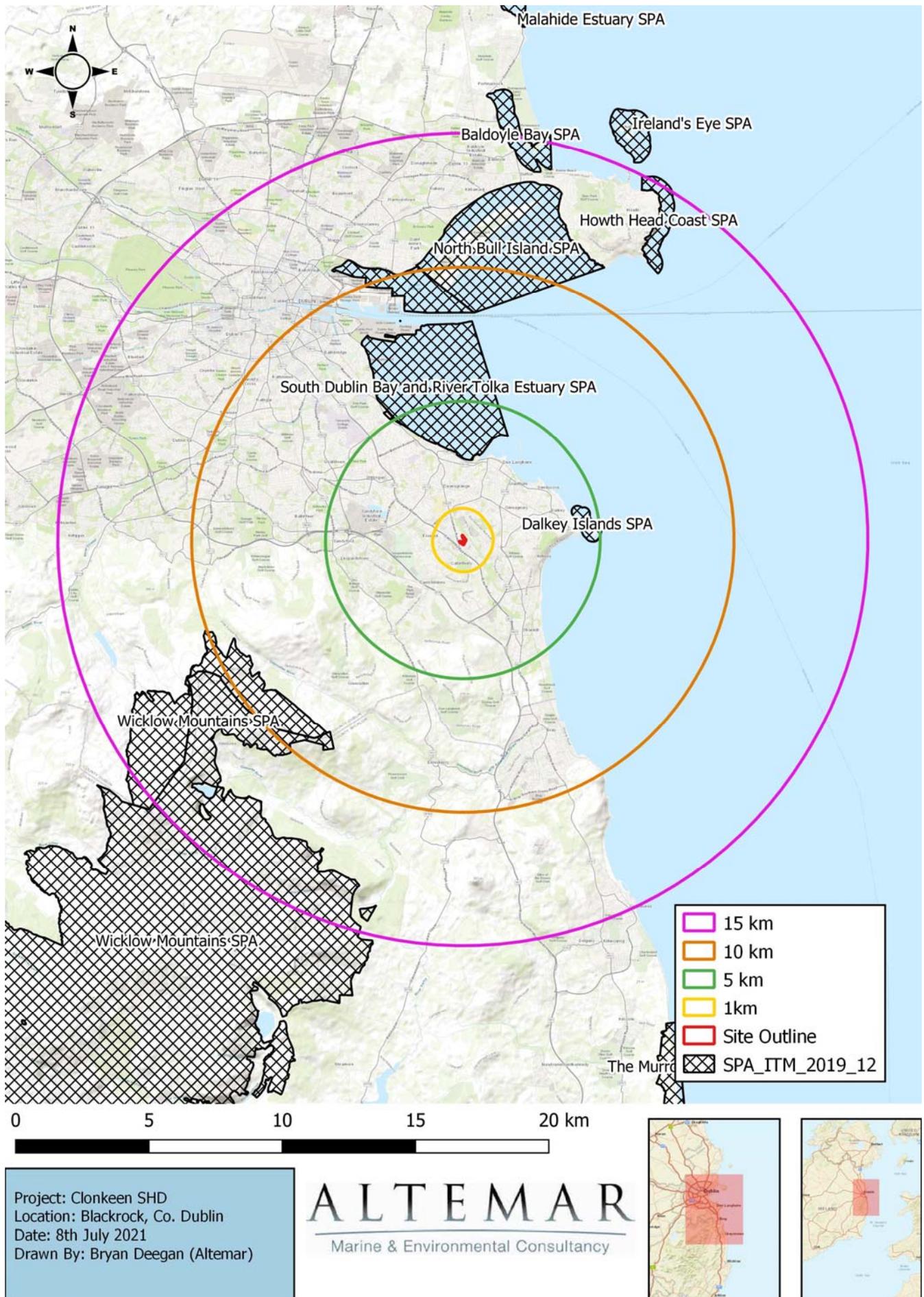


Figure 11. Special Protection Areas (SPA) located within 15km of the proposed development

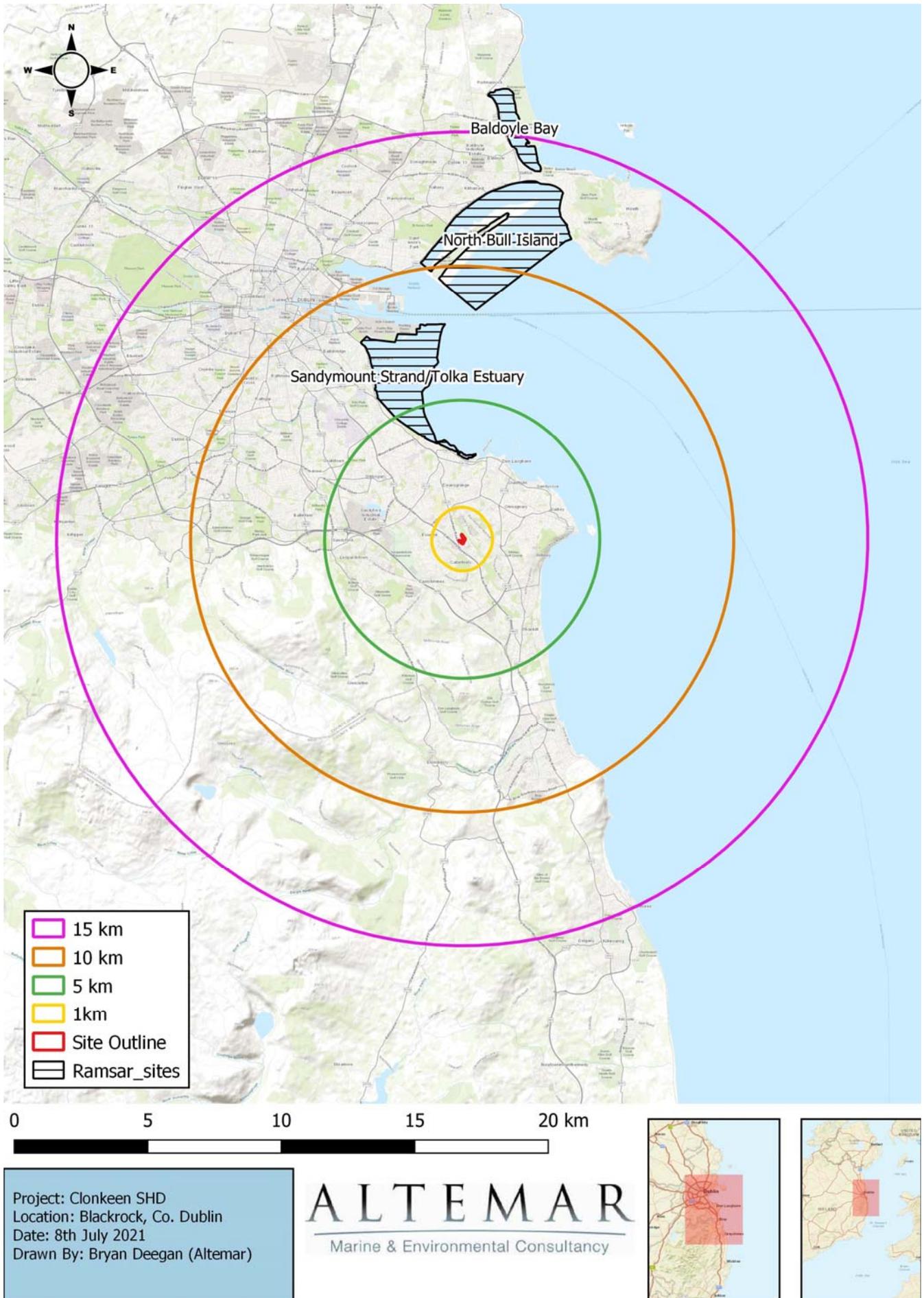


Figure 13. Ramsar sites located within 15km of the proposed development

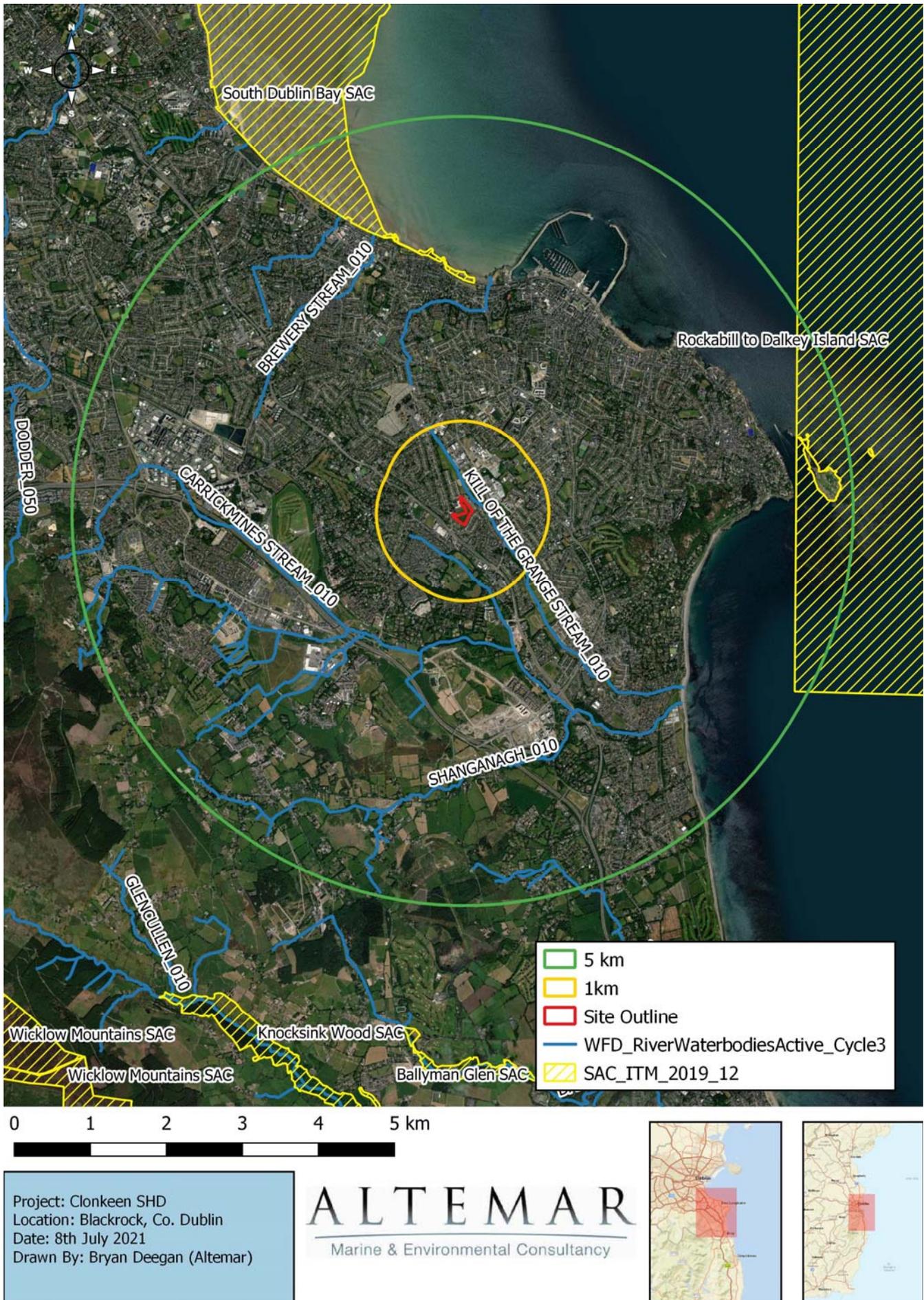


Figure 14. Watercourses and SACs proximate to the proposed development

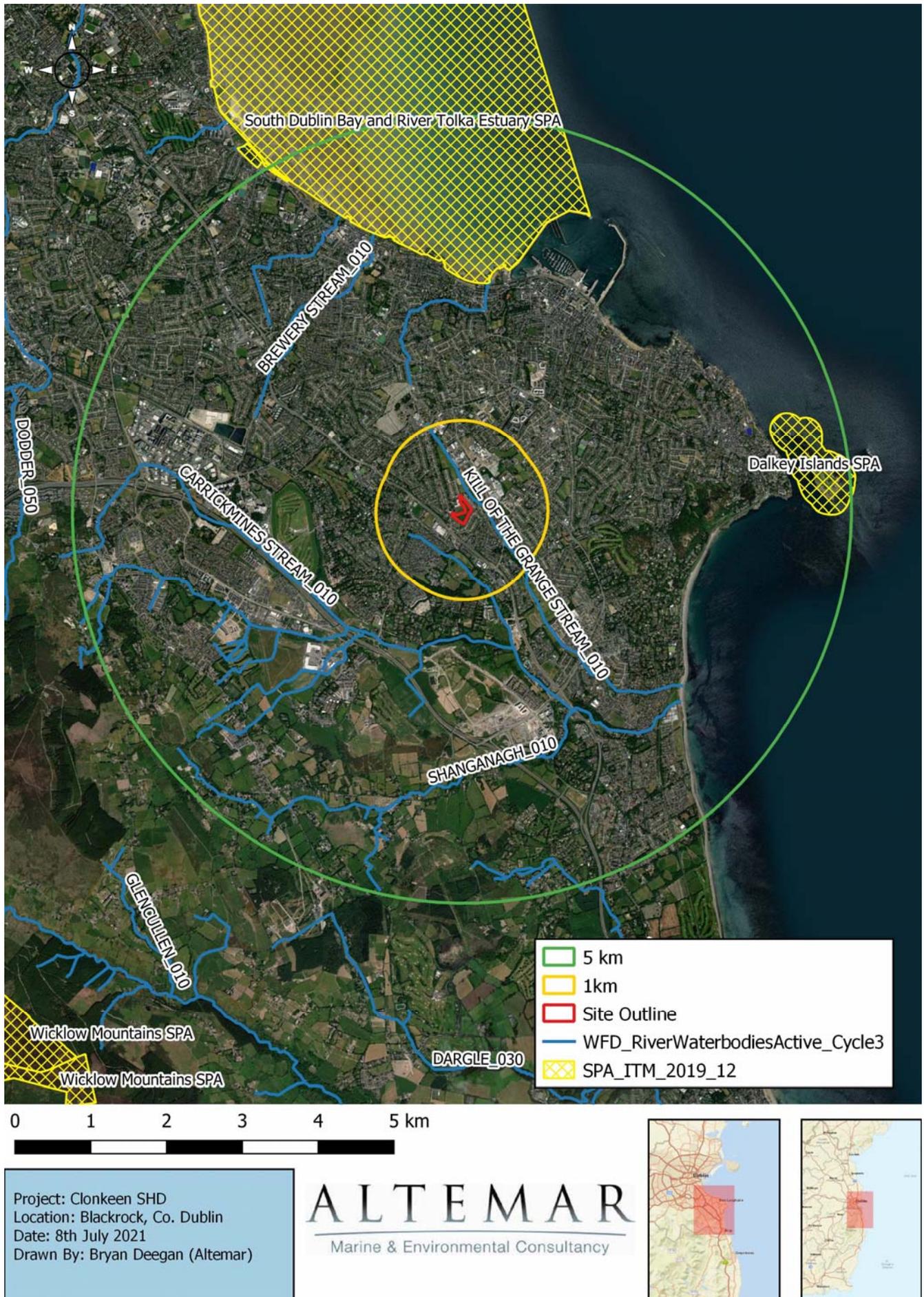


Figure 15. Watercourses and SPAs proximate to the proposed development



Figure 16. Watercourses and pNHAs proximate to the proposed development

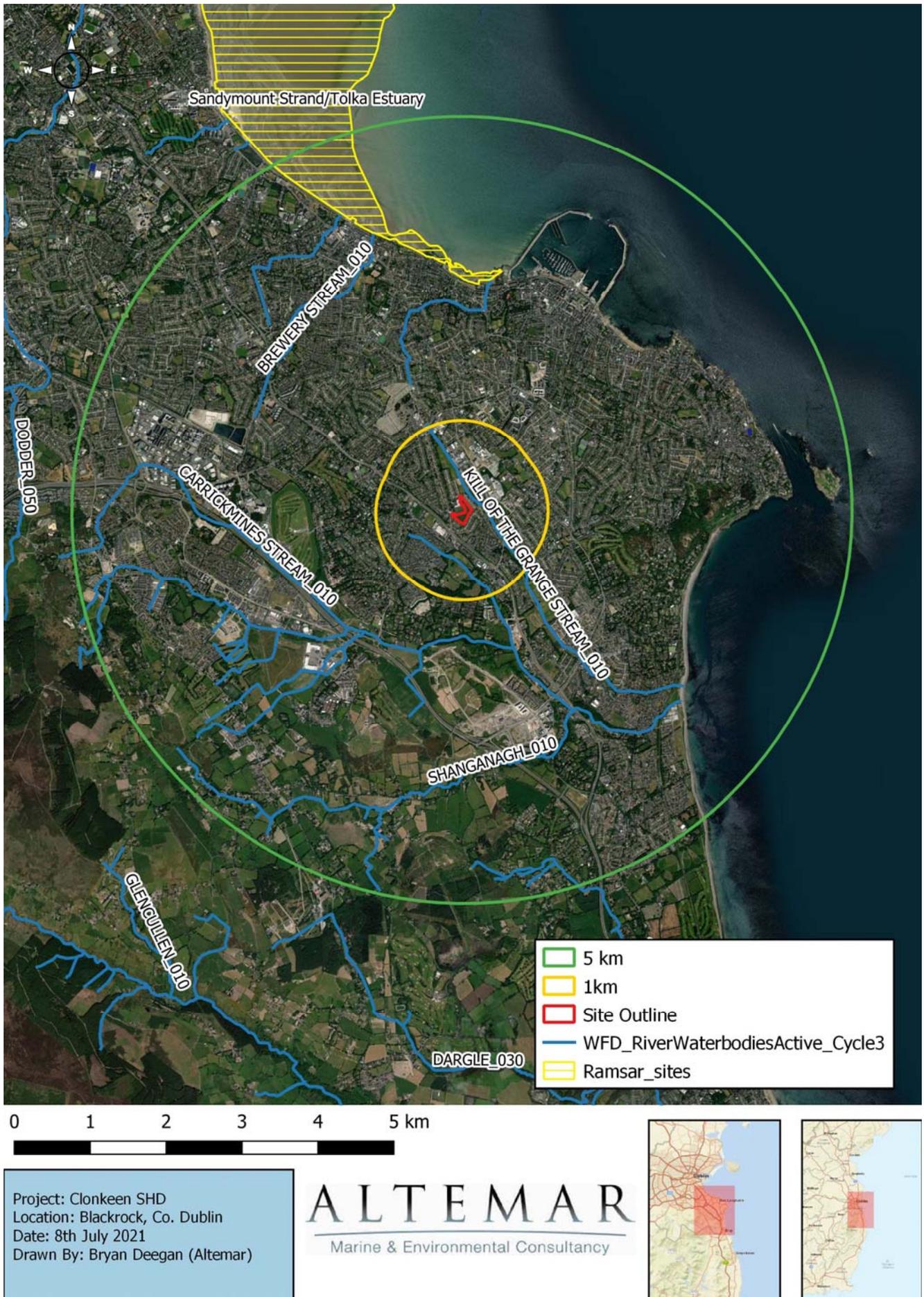


Figure 17. Watercourses and Ramsar sites proximate to the proposed development

Habitats and Species

Habitats within the proposed site outline were classified according to Fossitt (2000) (Figure 18) and species assessments were carried out and mapped according to the site visit on the 31st May 2021.



Figure 18. Habitats within the proposed development site classified according to Fossitt (2000). (See the Habitat descriptions below for an explanation of the Fossitt Codes)

BL3- Buildings and artificial surfaces)

A modern office building is present on site. The building was inspected for bat presence and no evidence of bats utilising the building was noted. The building is sound in nature and no access points for bats were noted. Roads, paths and carparks consisting of tarmac in addition to a section of an all-weather pitch are present on site and make up approximately 5% of the site. No flora or fauna of conservation importance were noted in these areas.



Plate 1. Existing building on site.

GA2-Amenity grassland

Amenity grassland occupies approximately two thirds of the proposed development site. It is poorly maintained. Species within the amenity grassland included, creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum spp.*), docks (*Rumex spp.*), daisy (*Bellis perennis*), clover (*Trifolium repens*), plantains (*Plantago spp.*), thistles (*Cirsium vulgare*), docks (*Rumex spp.*), ragworts (*Senecio spp.*), Shepherd's-purse (*Capsella bursa-pastoris*), Common Poppy (*Papaver rhoeas*), Cat's-ear (*Hypochoeris radicata*) and nettle (*Urtica dioica*). No flora or fauna of conservation importance were noted in these areas.



Plate 2. GA2 Amenity grassland

GS2- Dry meadows and grassy verges

A section of Dry meadows and grassy verges is noted at the northern end of the site near the building. Species included buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), daisy (*Bellis perennis*), plantains (*Plantago spp.*), thistles (*Cirsium sp.*), docks (*Rumex spp.*), common poppy (*Papaver rhoeas*), cat's-ear (*Hypochaeris radicata*), nettle (*Urtica dioica*), dandelion (*Taraxacum spp.*), cow parsley (*Anthriscus sylvestris*), purple-loosestrife (*Lythrum salicaria*), lesser trefoil (*Trifolium dubium*), bramble (*Rubus fruticosus*), hedge bindweed (*Calystegia sepium*), common ragwort (*Senecio jacobaea*), common knapweed (*Centaurea nigra*), bush vetch (*Vicia sepium*) and raspberry (*Rubus idaeus*). At the boundary edge of the amenity grassland this habitat was also present and included the species above in addition to common mallow (*Malva sylvestris*), hedge bindweed (*Calystegia sepium*) and winter heliotrope (*Petasites pyrenaicus*).



Plate 3. Dry meadows and grassy verges

FW4- Drainage Ditch

There is currently a drainage ditch around the south western and south eastern perimeter of the site which flows into the Kill O The Grange stream. This area is within the treeline and is not classed as a stream under the EPA Waterframework Directive. However, during site visits there was a strong flow of water in the ditch. No aquatic fauna associated with this ditch were observed. Dunlaoghaire Rathdown County Council have indicated that the surrounding land is considered as a riparian corridor. The drainage ditch is currently fenced off and is not accessible to the public. The Landscape Design Rationale Report has incorporated a riparian corridor into the design.

WL2-Treeline

A treeline is present on the southern and western boundaries. As this area is behind a high metal fence it is unmaintained. Species within the treeline area included sycamore (*Acer pseudoplatanus*), Rowan (*Sorbus aucuparia*), Ash (*Fraxinus excelsior*), Leyland Cypress (*X Cupressocyparis leylandii*), wych elm (*Ulmus glabra*), elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), Griselinia littoralis, Common Alder (*Alnus glutinosa*), birch (*Betula sp.*), willow (*salix sp.*), poplar (*Populus sp.*), Common Pear (*Pyrus communis*), cherry plum (*Prunus cerasifera*), maple (*Acer sp.*), thistles (*Cirsium arvense* & *C. vulgare*), ivy (*Hedera helix*), common nettle (*Urtica dioica*), docs (*Rumex spp.*), ragworts (*Senecio spp.*), hedge bindweed (*Calystegia sepium*), Fuchsia (*Fuchsia magellanica*), Pyracantha (*Pyracantha coccinea*), ground elder (*Aegopodium podagraria*), bramble (*Rubus fruticosus* agg.), elder (*Sambucus nigra*), dog-rose (*Rosa canina*), great willowherb (*Epilobium hirsutum*) and devils poker (*Arum maculatum*).



Plate 3. Treeline

Evaluation of Habitats

The proposed development site is primarily on amenity grassland, artificial surfaces and scrub. No habitats of conservation significance were noted within the site outline. A drainage ditch had water flowing through it on the majority of site visits is located within the treeline.

Plant Species

The plant species encountered at the various locations on site are detailed above. No rare or plant species of conservation value were noted during the field assessment. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened plant species were recorded within the proposed development site.

Invasive Plant species

No invasive plant species that could hinder removal of soil from the site during groundworks, such as Japanese knotweed, giant rhubarb, Himalayan balsam or giant hogweed were noted on site.

Fauna

Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened faunal species were recorded within the proposed site.

Bats

Two bat surveys were carried out and the results of the surveys are seen in Appendix I. There were no seasonal or climatic constraints as survey was undertaken within the active bat season in good weather conditions with optimal temperatures after dark. Winds were very light and there was no rainfall. No evidence of a bat roost was found in any of the onsite trees. Detector survey was carried out with a Batbox Duet is a dual-mode bat detector. Foraging activity of two soprano pipistrelle (*Pipistrellus pygmaeus*) and a Leisler's bat (*Nyctalus leisleri*) were noted proximate treeline areas.

Amphibians/Reptiles

The common frog (*Rana temporaria*) was not observed on site. However, given the fact that there is a drainage ditch on site that contains water during the summer months, it is likely that frogs may be present on site. The common lizard (*Zootoca vivipara*) or smooth newt (*Lissotriton vulgaris*) were not recorded on site.

Terrestrial Mammals

A mammal survey was carried on the 11th March 2020. Fox activity was noted on site. Badgers have been noted within the 10km² grid and 700m to the south east (2011 road kill survey). No mammals or signs of mammals of conservation importance were noted on site.

Birds

The bird species noted on site are seen in Table 6. The site is a large greenfield site proximate to the South Dublin Bay and River Tolka SPA with potential for being of importance to qualifying interests of the SPA. Wintering bird surveys have been carried out by Scott Cawley in 2019/2020 and additional wintering bird surveys were carried by MKO in 2020/2021. As outlined in the 2019/2020 survey report (Appendix II) “Qualifying interests of SPA’s within Dublin Bay were noted on site. All counts of Brent geese, curlew and oystercatcher were below the respective 1% national or 1% international population estimates. The site is not historically known as an important Brent goose foraging site. The proposed development will result in a loss of an existing foraging resource for the qualifying interests of South Dublin Bay and River Tolka SPA (Brent geese and Oystercatcher) of North Dublin Bay SPA (Brent geese, curlew and oystercatcher). However, wintering bird surveys and historic data have shown that this site is not considered to be of high or major importance for any of the species listed as qualifying interests of these SPA’s.” Following discussions with Dunlaoghaire Rathdown County Council Biodiversity officer an additional full season of wintering bird surveys were requested.

As observed in the MKO wintering bird data in Appendix III species observed included Black-headed Gull (Red Listed (peak 21 seen within and in adjacent site), Brent Goose (Amber Listed) (peak 316 adjacent to site only), Curlew (Red Listed) (peak 92 adjacent site only), Herring Gull (Red Listed)(Peak 7 within site) and Lesser Black-backed Gull (Amber Listed (Peak 1 adjacent site only) -

Table 6: Bird Species noted in the vicinity of the proposed development.

Common Name	Scientific Name
Curlew	<i>Numenius arquata (red listed)</i>
Light bellied brent geese	<i>Branta bernicla hrota (amber listed)</i>
Oystercatcher	<i>Haematopus ostralegus (amber listed)</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>
Robin	<i>Erithacus rubecula</i>
Blackbird	<i>Turdus merula</i>
Blue tit	<i>Parus caeruleus</i>
Starling	<i>Sturnus vulgaris</i>
Great tit	<i>Parus major</i>
Rook	<i>Corvus frugilegus</i>
Song Thrush	<i>Turdus philomelos</i>
Black-headed Gull	<i>Croicocephalus ridibundus</i>

Historic Records of Biodiversity

The National Biodiversity Data Centre’s online viewer was consulted in order to determine the extent of biodiversity and/or species of interest in the area. First, an assessment of the site specific area was carried out to determine whether any sighting reports existed, however this recorded no species of conservation importance in the site area.

Following this a 2km² grid was assessed. The subject site is located within grid square reference number O22H, for which a report based on the NBDC data was generated and reviewed. Table 7 provides a list of all species recorded in this grid area that possess a special designation status, such as Invasive Species or Protected Species as per NBDC records.

Table 7. Recorded species as per NBDC records

Eastern Grey Squirrel (*Sciurus carolinensis*); Floating Pennywort (*Hydrocotyle ranunculoides*); Giant Hogweed (*Heracleum mantegazzianum*); Nuttall's Waterweed (*Elodea nuttallii*); Brown Rat (*Rattus norvegicus*); Butterfly-bush (*Buddleja davidii*); Hairy Rocket (*Erucastrum gallicum*); Himalayan Honeysuckle (*Leycesteria formosa*); Sycamore (*Acer pseudoplatanus*); Traveller's-joy (*Clematis vitalba*); Three-cornered Garlic (*Allium triquetrum*); European Otter (*Lutra lutra*); Brown Long-eared Bat (*Plecotus auritus*); Daubenton's Bat (*Myotis daubentonii*); Lesser Noctule (*Nyctalus leisleri*); Natterer's Bat (*Myotis nattereri*); Pipistrelle (*Pipistrellus pipistrellus sensu lato*); Soprano Pipistrelle (*Pipistrellus pygmaeus*); Common Frog (*Rana temporaria*); Eurasian Badger (*Meles meles*); West European Hedgehog (*Erinaceus europaeus*); Little Egret (*Egretta garzetta*); Peregrine Falcon (*Falco peregrinus*); European Golden Plover (*Pluvialis apricaria*); Mediterranean Gull (*Larus melanocephalus*); Rock Pigeon (*Columba livia*); Common Wood Pigeon (*Columba palumbus*); Mallard (*Anas platyrhynchos*); Common Coot (*Fulica atra*); Eurasian Teal (*Anas crecca*); Eurasian Wigeon (*Anas penelope*); Tufted Duck (*Aythya fuligula*); Greater Scaup (*Aythya marila*); Northern Lapwing (*Vanellus vanellus*); Barn Swallow (*Hirundo rustica*); Common Kestrel (*Falco tinnunculus*); Common Linnet (*Carduelis cannabina*); Common Starling (*Sturnus vulgaris*); Common Swift (*Apus apus*); Eurasian Oystercatcher (*Haematopus ostralegus*); House Martin (*Delichon urbicum*); House Sparrow (*Passer domesticus*); Little Grebe (*Tachybaptus ruficollis*); Mew Gull (*Larus canus*); Black-headed Gull (*Larus ridibundus*); Common Redshank (*Tringa totanus*); Herring Gull (*Larus argentatus*); Bifid Crestwort (*Lophocolea bidentata*); Conocephalum salebrosum; Endive Pellia (*Pellia endiviifolia*); Forked Veilwort (*Metzgeria furcata*); Overleaf Pellia (*Pellia epiphylla*); White Earwort (*Diplophyllum albicans*); Common Feather-moss (*Eurhynchium praelongum*); Common Striated Feather-moss (*Eurhynchium striatum*); Common Tamarisk-moss (*Thuidium tamariscinum*); Elegant Silk-moss (*Pseudotaxiphyllum elegans*); Fern-leaved Hook-moss (*Cratoneuron filicinum*); Fox-tail Feather-moss (*Thamnobryum alopecurum*); Rusty Feather-moss (*Sciuro-hypnum plumosum*); Swan's-neck Thyme-moss (*Mnium hornum*); Swartz's Feather-moss (*Oxyrrhynchium hians*); Small Heath (*Coenonympha pamphilus*); Large Red Tailed Bumble Bee (*Bombus (Melanobombus) lapidarius*); Moss Carder-bee (*Bombus (Thoracombus) muscorum*); Cornflower (*Centaurea cyanus*), Alexanders (*Smyrniolum olusatrum*), Annual Wall-rocket (*Diplotaxis muralis*), Coltsfoot (*Tussilago farfara*), Flowering Currant (*Ribes sanguineum*), Green Alkanet (*Pentaglottis sempervirens*), Ivy-leaved Speedwell (*Veronica hederifolia*), Lesser Celandine (*Ranunculus ficaria*), Winter Heliotrope (*Petasites fragrans*), Wood Anemone nemorosa, Yelloe Archangel (*Lamiasstrum galeobdolon*), 7-spot Ladybird (*Coccinella septempunctata*), Peacock (*Inachis io*), Small Tortoiseshell (*Agais urticae*)

An assessment of files received from the NPWS (Code No. 2020_185) which contain records of rare and protected species and grid references for sightings of these species was carried out as part of this EclA for the proposed development. There are no recorded sightings within the site itself, however there are a number of recorded sightings of species in locations within a kilometre radius of the site. The following table provides a summary of the species identified, the year of identification, survey name and Grid Reference.

Table 8. Rare and protected species noted in vicinity of proposed development (NPWS)

Grid Ref.	Species	Survey Name	Sample Year
O2225	West European Hedgehog (<i>Erinaceus europaeus</i>)	AFF Mammals, Reptiles & Amphibians Distribution Atlas 1978 (II)	1972
O230255	Common Frog (<i>Rana temporaria</i>)	Frog IPCC data	2003
O22	Red Squirrel (<i>Sciurus vulgaris</i>)	Badger and Habitat Survey of Ireland	1993

Analysis of the Potential Impacts

Foul and surface water systems for the site will be separate and designed in accordance with the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS). SuDS will be incorporated into the design of the proposed development and will be limited to greenfield runoff rates (Qbar) in accordance with the GDSDS. Surface water runoff rates will again be limited to greenfield runoff rates (Qbar). The surface water will then discharge to a drainage ditch located to the south of the subject site, which in turn outfalls to the Kill Of The Grange Stream located to the east of the site.

The proposed development will involve the removal of the existing terrestrial habitats on site, re-profiling, excavations and the construction of roads, dwellings and associated services.

Construction Phase

In the absence of mitigation, the construction of the proposed development, would impact on the existing ecology of the site and the surrounding area. These construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development including the works proximate to the drainage ditch. Construction phase mitigation measures are required on site particularly as reprofiling of the site is proposed which will remove existing terrestrial habitats of poor biodiversity importance and can lead to silt laden and contaminated runoff.

- Designated Conservation sites within 15km

There is no direct pathway to Natura 2000 sites. The South Dublin Bay SAC and South Dublin Bay and River Tolka SPA are the nearest Natura 2000 sites, and there is an indirect pathway to these sites via the public surface water and foul water networks. There is an indirect pathway to Rockabill to Dalkey SAC via the surface water network and marine environment. There is potential for silt laden runoff and pollution to enter the adjacent watercourse with potential for downstream impacts into the marine environment. Mitigation measures will be in place on site.

Impacts: Negligible Adverse/International/Neutral Impact/Not significant/Temporary. Mitigation is required.

Biodiversity

The impact of the development during construction phase will be a loss of existing habitats and species on site. It would be expected that the flora and fauna associated with these habitats would also be displaced.

- Terrestrial mammalian species

No protected terrestrial mammals were noted on site. Loss of habitat and habitat fragmentation may affect some common mammalian species including foxes that were observed on site.

Impacts: Low adverse/site/Negative Impact/Not significant/short term. Mitigation is needed in the form of a pre-construction survey for terrestrial mammals of conservation importance.

- Flora

No protected flora were noted on site. Site clearance will remove the flora species on site.

Impacts: Low adverse/site/Negative Impact/Not significant/short term.

- Bat Fauna

Two bat species were noted foraging on site. No bats were noted roosting on site. No bats were noted emerging from trees of buildings on site. No significant impacts are foreseen. Lighting during construction could impact on foraging activity.

Impacts: Low adverse/site/Negative Impact/Not significant/short term. Mitigation is needed in the form of a pre construction survey and control of light spill during construction.

- Aquatic Biodiversity

Due to the presence of the drainage ditch on site and the pathway to the Kill O the Grange stream, there is potential for downstream impacts on biodiversity due to silt or petrochemicals being introduced in to the drainage ditch on site. Frogs were not observed on site, however, as there is an aquatic habitat in the adjacent ditch frogs may be present within the drainage ditch located to the south of the subject site.

Impacts: Low adverse/local/Negative Impact/Slight Effects /short term. Mitigation is needed in the form of control of silt and petrochemical and dust during construction. A pre-construction survey should be carried out for frogs in the vicinity of the drainage ditch.

Bird Fauna

Due to the presence of the wintering birds and breeding birds on site the construction will result in a loss of foraging habitat for wintering bird and breeding habitat for breeding birds. The treelines on site will remain. However, the majority of the grassland will be lost and some nesting resource will be lost. However, it should be noted that outlined in the NIS *“There is potential for disturbance and displacement of ex situ SCI species from South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and Baldoyle Bay SPA during the construction and operational phases of the proposed development to through movement of machinery, personnel, noise, vibration and/or noise associated with domestic dwellings in the absence of mitigation. Pathways for effect were identified for light-bellied brent goose, oystercatcher, black-headed gull and curlew, which have all been recorded commuting or foraging on, or within 500m of the proposed development.”*

Impacts: Low adverse/International/Negative Impact/Not significant/long term. Mitigation is needed in the form of control disturbance, impacts via pathways to designated sites, environmental monitoring, biosecurity, noise and dust.

Operational Phase

Following construction all surface water runoff will comply with SUDS. The biodiversity value of the site would be expected to improve as the landscaping matures. Surface water discharge from site will be developed in accordance with the requirements of the Drainage Division as set out in the Greater Dublin Strategic Drainage Study's 'Technical Document on New Development' with regard to SUDS and Water Pollution Acts. The proposed development site is located within a significant suburban area. During operation, surface water will discharge to a drainage ditch located to the south of the subject site (which in turn outfalls to the Kill Of The Grange Stream), while foul drainage will connect to the existing public network.

Designated Conservation sites within 15km

The drainage on site will be carried out to modern SuDS and water pollution prevention standards. The accompanying Natura Impact Statement prepared by MKO found that, following the implementation of mitigation measures, no significant effects are likely for all Natura 2000 sites. No significant impacts on designated sites are likely. Again, Foul drainage will be going to the Shanganagh Waste Water Treatment Plant for treatment and this WwTP is operating within capacity.

Impacts: Negligible /International/Neutral Impact/Not significant/Long-term.

Biodiversity

Biodiversity value of the site will improve as landscaping matures.

– Terrestrial mammalian species

No protected terrestrial mammals were noted on site. Additional habitat will be created on site.

– Impacts: Low adverse/site/Negative Impact/Not significant/long term.

- Flora

No protected flora were noted on site. Landscaping will increase flora diversity on site.

Impacts: Negligible beneficial/site/Negative Impact/Not significant/long term.

- Bat Fauna

The proposed development will change the local environment as new structures are to be erected, new roads and parking areas constructed and some of the existing vegetation will be removed. The removal of the onsite building will not negatively impact bats as none are present. No bat roosts will be lost due to this development and the species expected to occur onsite should persist.

Operational Impact: Low adverse/International/Negative Impact/Not significant/long term.

- Bird Fauna

The proposed development will change the local environment as new structures are to be erected. The buildings are comprised of solid materials consisting of a solid material on the exterior which includes sections of concrete and glass. These buildings would be clearly visible to bird species and would not pose a significant collision risk. However, the presence of buildings on site and increased human activity may reduce the potential for wintering birds to forage in adjacent lands.

Operational Impact: Impacts: Low adverse/site/Negative Impact/Not significant/long term.

- Aquatic Biodiversity

Due to the presence of the drainage ditch on site and the pathway to the Kill O the Grange stream, there is potential for downstream impacts on biodiversity due to silt or petrochemicals being introduced in to the drainage ditch on site. Standard controls will be in place.

Impacts: Low adverse/local/Negative Impact/Not significant/long term.

Avoidance, Remedial and Mitigation Measures

Incorporated Design Mitigation

Standard SUDS drainage and measures such as permeable paving, green roofs, shallow infiltration systems, and bioretention systems are included on site and will be managed in accordance with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS).

Demolition and Construction Phase Mitigation

Designated Conservation sites

There is no direct pathway to conservation sites. However, there is an indirect pathway to the Shanganagh WWTP and to the Kill Of The Grange Stream. During construction measures will be in place to remove silt and petrochemicals prior to discharge into the drainage ditch located to the south of the subject site. The measures outlined below have been designed to ensure that the project will comply with the Water Pollution Acts in relation to construction and drainage.

Construction Mitigation

As outlined in section 7 of the CEMP the construction phase mitigation will be as follows:

Construction Lighting

Construction work will generally be confined to daylight hours and lightning will generally not be required for the construction phase. There will however be occasions where the provision of portable lighting will be required (works on roadways and power floating floors as examples). Where possible and without jeopardising site safety lights will be pointed down at a 45-degree angle and away from sensitive receptors. The site compound will have external lights for safety and security. These lights will be pointed down at a 45-degree angle and away from sensitive receptors where possible.

Air Quality

This section describes the site policy with regard to dust management and the specific mitigation measures which will be put in place during construction works. The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the measures set out below have been formulated by drawing on best practice guidance from Ireland and the UK such as:

- Department of Environment, Heritage and Local Government (DOEHLG), Quarries and Ancillary Activities, Guidelines for Planning Authorities (2004);
- The Scottish Office – Development Department, Planning Advice Note PAN50 Controlling the Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings (1996) and
- Institute of Air Quality Management (IAQM), Guidance on the Assessment of Dust from Demolition and Construction (2014).

Site Management

The site activities will be undertaken with due consideration of the surrounding environment and the close proximity of sensitive receptors such as residents and pedestrians. Dust management during the construction phase will be the most important aspect in terms of minimising the impacts of the project on the surrounding air quality. The following measures will also be implemented to ensure impacts are minimised:

- Complaint registers will be kept detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;*
- Equipment and vehicles used on site will be in good condition such that emissions from diesel engines etc. are not excessive; and*
- Pre-start checks will be carried out on equipment to ensure they are operating efficiently and that emission controls installed as part of the equipment are functional.*

Dust deposition levels will be monitored on a regular basis in order to assess the impact that site activities may have on the local ambient air quality. The following procedure will be implemented:

- The dust deposition rate will be measured by positioning Bergerhoff Dust Deposit Gauges at strategic locations near the boundaries of the site for a period of 30 (+/- 2) days if required. Monitoring will be conducted as required during periods when the highest levels of dust are expected to be generated i.e., during site preparation works and soil stripping activities.*
- The exact locations will be determined after consideration of the requirements of Method VDI 2119 with respect to the location of the samplers relative to obstructions, height above ground and sample collection and analysis procedures.*
- After each 30 (+/- 2 days) exposure period, the gauges will be removed from the sampling location, sealed and the dust deposits in each gauge will be determined gravimetrically by an accredited laboratory and expressed as a dust deposition rate in mg/m²/day in accordance with the relevant standards.*
- Technical monitoring reports detailing all measurement results, methodologies and assessment of results shall be subsequently prepared and maintained by the Site Manager.*

A limit value of 350 mg/m²/day will be used in comparison with recorded values.

Demolition

- All hazardous materials will be removed by an appropriately qualified contractor for disposal at an appropriate licensed waste collection facility.*
- All non-structural items will be removed segregated for re-use or re-cycling where possible.*
- The remainder of the building structure will be removed in an approved sequence outlined in a Method Statement prepared by the Demolition Contractor's Structural Engineer (to be selected).*
- The best practice measures described above will be compiled in a Construction and Demolition Waste Management Plan in accordance with the "Department of the Environment Heritage and Local Government Best Practice Guidelines on the preparation of Waste Management Plans for construction and demolition projects" by the appointed demolition contractor*

Measures to avoid the run-off of silt and suspended solids to surface waters

- All construction works will be informed by best practice guidance from Inland Fisheries Ireland on the prevention of pollution during development projects (Control of Water Pollution from construction Sites, Guidance for consultants and contractors (C532); Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (2016), Environmental Good Practice on Site (3rd edition) (C692)).*
- A water and sediment management plan will be drawn up to ensure that surface water run-off is controlled such that no silt or other pollutants enter local water courses or drains.*
- There will be no in-stream works. No building structures will be located within 10m of the existing surface water drains.*
- Works shall not take place at periods of high rainfall and shall be scaled back or suspended if heavy rain is forecast during excavation works.*
- It will be ensured that exposed soil surfaces are stable to minimise erosion.*
- All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts.*

- *No construction will be undertaken directly adjacent to open water.*
- *No significant dewatering will be required during the construction phase which would result in the localised lowering of the water table. There may be localised pumping of surface run-off from the excavations during and after heavy rainfall events to ensure that the excavation is kept relatively dry.*
- *Surface water discharge from the site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete. A temporary drainage system will be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction.*
- *A number of geotextile lined settling basins and temporary moundings and/or silt fences will be installed to ensure silts do not flow off site during the construction stage. This temporary surface water management facility will throttle runoff and allow suspended solids to be settled out and removed. All inlets to the settling basins will be 'riprapped' to prevent scour and erosion in the vicinity of the inlet.*
- *Any temporary storage of spoil, hardcore, crushed concrete or similar material will be stored as far as possible from any surface water drains and also stored in receptacles where possible. In order to minimise the risk of contamination, the stockpiled material will be removed off-site as soon as possible. Surface water drain gratings in areas near or close to where stockpiles are located will be covered by appropriate durable polyurethane covers or similar.*
- *There will be no direct pumping of silty water from the works to any watercourse. Sediment entrapment facilities will be installed to reduce sediment discharges to downstream properties and receiving waters. All run-off leaving a disturbed area will pass through a sediment entrapment facility before it exits the site and flows downstream such as straw bales, silt fencing, silt barriers and diversion dams.*

Measures to avoid pollution of surface waters through spills and leaks

- *An emergency plan for the construction phase to deal with accidental spillages will be contained within Emergency Response Plan.*
- *No bulk chemicals will be stored within the active construction areas. Temporary oil and fuel storage tanks will be kept in the material storage area in suitable containers and will be appropriately bunded as required.*
- *Refuelling of vehicles and the addition of hydraulic oils or lubricants to vehicles will be undertaken off site where possible. If refuelling on site cannot be avoided, this will take place in designated areas of the site away from surface water drains.*
- *Refuelling on site will be with mobile fuel bowsers. Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use as will the pump or valve.*
- *Portable generators or similar fuel containing equipment will be placed on suitable drip trays.*
- *Spill kits will be available in each item of plant required.*
- *All plant and machinery will be serviced before being mobilised to site.*
- *The plant used will be regularly inspected for leaks and fit for purpose fuel volumes stored on site will be minimised.*
- *Any fuel storage areas will be bunded appropriately for the fuel storage volume for the time period of the construction and fitted with a storm drainage system and an appropriate oil interceptor.*
- *No refueling of machinery or overnight parking of machinery is permitted in areas adjacent to on-site drainage infrastructure.*
- *Only dedicated trained and competent personnel will carry out refueling operations. Spill protection equipment such as absorbent mats, socks and sand will be used in the event of an accidental release during refuelling. Training will be given to appropriate site workers in how to manage a spill event.*
- *Equipment will not be left unattended during refueling.*

Measures to avoid the release of cement-based material during construction

- *No batching of wet-cement products will occur on site.*
- *Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place. Where possible pre-cast elements for culverts and concrete works will be used.*
- *No wash-down or wash-out of ready-mix concrete vehicles will be carried out at the site within 10 meters of an existing surface water drainage point.*

- *Washing out of plants will only be allowed in designated areas with an impervious surface.*
- *No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed.*
- *Weather forecasting will be used to plan dry days for pouring concrete.*
- *It will be ensured that the pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event.*

Services and utilities

- *Welfare facilities (canteens, toilets etc.) will be available within the construction compound and will remain in place for the construction of the proposed development.*
- *The offices and site amenities will initially need to have their own power supply (generator), water deliveries and foul water collection until connections are made to the mains networks.*
- *Water supply required for welfare facilities, dust suppression and general construction activities will be sourced from the existing public piped supplies running into the site.*
- *Before connections are established to the water supply it may need to be trucked onto site.*
- *Foul water from the offices and welfare facilities on the site will discharge into the existing sewer on site.*
- *The cabins may initially need to have the foul water collected by a licensed waste sewerage contractor holding valid Waste Collection Permits as issued under the Waste Management (Collection Permit) Regulations 2007, as amended before connection to the sewer line can be made.*

Material Handling and Storage

- *Key materials which will be ordered by specific order for the project, a 'Just in Time' delivery system will operate to minimise storage of materials, the quantities of which are unknown at this stage.*
- *Aggregate materials such as sands and gravels will be stored in clearly marked receptacles in the compound area within the site.*
- *Liquid materials will be stored within temporary bunded areas, doubled skinned tanks or bunded containers (all bunds will conform to standard bunding specifications – BS EN 1992-3:2006) to prevent spillage.*
- *Material will be removed from site regularly to ensure there is minimal need for stockpiling.*

Waste Management

- *Demolition waste will be exported off site by a licenced haulier to an authorised waste facility.*
- *All waste will be collected in skips and the site will be kept tidy and free of debris at all times.*
- *Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or recycling.*
- *All construction waste materials will be stored within the confines of the site, prior to removal from the site to a licenced waste facility.*
- *All waste receptacles leaving site will be covered or enclosed.*

Environmental Monitoring

- *The contractor will assign a member of the site staff as the environmental officer with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.*
- *Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items, and that all storage is located at least 10m from surface water receptors.*
- *A regular log of inspections will be maintained, and any significant blockage or spill incidents will be recorded for root cause investigation purposes and updating procedures to ensure incidents do not reoccur.*
- *All work completed will be conducted in compliance with the Wildlife Acts, 1976 – 2019.*

Biosecurity

- *Good construction site hygiene will be employed to prevent introduction of problematic invasive alien plant species (e.g., Japanese knotweed, Rhododendron, Giant Rhubarb etc.) by thoroughly washing vehicles prior to entering the site.*
- *Any soil and topsoil required on the site will be sourced from a stock that has been screened for the presence of any invasive species and where it is confirmed that none are present.*

- *The treatment and control of invasive alien species will follow guidelines issued by the National Roads Authority – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads (NRA 2010).*

Disturbance Limitation Measures

- *All areas of construction will be fenced/hoarded off. All works will be located within the confines of this fencing.*
- *Diesel generators will be enclosed in sound proofed containers to minimise the potential for noise impacts.*
- *All construction plant and equipment to be used on-site will be modern equipment and will comply with the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1998, and any subsequent amendments.*
- *Regular maintenance of plant will be carried out in order to minimise noise emissions.*
- *All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works.*
- *Compressors will be of the “sound reduced” models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.*
- *Machines, which are used intermittently, will be shut down during those periods when they are not in use.*
- *Site development and building works will only be carried out between the hours of 0700 to 1900 Mondays to Fridays inclusive and between 0800 and 1600 hours on Saturdays There will be no construction works carried out on Sundays or public holidays. Deviation from these times will only take place when written approval is granted by DLRCC in exceptional circumstances.*
- *Where possible and without jeopardising site safety lights will be pointed down at a 45-degree angle and away from sensitive receptors.*
- *The site compound will have external lights for safety and security. These lights will be pointed down at a 45-degree angle and away from sensitive receptors where possible.*
- *All work completed will be conducted in compliance with the Wildlife Acts, 1976 – 2019.2” Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds will need to be followed e.g. do not remove trees or shrubs during the nesting season (1st March to 31st August).*

Operational Phase Mitigation

No significant effects are predicted for the operational phase thus mitigation measures are not proposed. Standard pollution control measures in the drainage network are built in to the design.

Residual Impact Assessment

It is considered that the proposed development has satisfactorily addressed the current ecology on site into its design so that application of the standard construction and operational phase controls in this EclA will help reduce its impact on the local ecology to an adequate level.

The overall impact on the ecology of the proposed development will result in a negligible/adverse/international/ negative impact/Not significant/long term residual impact on the ecology of the site and locality overall. This is primarily as a result of the paucity of biodiversity on site, the implementation of SUDS measures on site, supported by the creation of a landscaping strategy. It should be noted that outlined in the NIS “*The detailed and comprehensive bird surveys carried out and related assessment have found no evidence of any significant effect on SPA qualifying interests species. It can therefore be concluded that the proposed development will not result in any adverse effect on the long term population trend of qualifying interests within or outside the SPA*”.

Monitoring

Monitoring during the construction phase is recommended, in particular in relation to the quality of discharges from site and dust. Pre construction mammal, amphibian and bat survey will be carried out.

Cumulative Impacts

The Department of Housing, Local Government and Heritage's 'National Planning Application Database' portal² was consulted to identify planning applications located in close proximity to the subject site. With the exception of the application outlined in the table below, planning applications in the vicinity of the proposed project are small scale projects involving individual houses and small-scale developments.

Table 10. Planning applications in vicinity of proposed development

Ref. No.	Address	Proposal
D19A/0904	Amgen site, Pottery Road, Dun Laoghaire	Permission for development of their existing site. The proposed developments consist of an expansion of their current Pharmaceutical facility with two no. manufacturing extensions to their existing facility. A 10 year permission is being sought for this proposed development. The proposed development comprises of the following; 1. 3 storey Pharmaceutical extension sized approximately 17,000 square metres and approximately 19 metres high (to match the height of the existing cold warehouse) located to the North of the existing Admin/Laboratory facility. 2. 3 storey Pharmaceutical extension sized approximately 5,000 square metres and approximately 19 metres high located to the rear of the existing production facility including the removal of a section of the existing berm adjacent to the proposed extension. 3. Additional Plant and Equipment located to the West of the existing CUB building and a new boiler stack (circa. 18 metres high) to match existing stacks. 4. Carparking for approximately 515 additional cars located to the North of the current site, revisions to the existing carpark (including the removal of approximately 138 carpaking spaces) and a pedestrian and bicycle link to the existing pedestrian entrance off Rochestown Avenue. The proposed works include site works, fencing stacks, landscaping, two underground surface water attenuation tanks and site lighting, roof mounted plant and vent stacks on both manufacturing building extensions and yard-based plant and equipment and single storey production links. 5. The proposed works include modifications to existing internal road layouts, single storey covered walkway to match existing and temporary contractors' compounds and carparking and modified entrance gates to Rochestown Avenue. 6. It's anticipated that the proposed extensions will be built in phases. This application consists of development for an activity for which a licence under Part IV of the Environmental Protection Agency Act 1992 (as amended by the Protection of the Environment Act, 2003) is required.

An Appropriate Assessment Screening Report prepared as part of application reference D19A/0904 concludes with the following:

“Through an assessment of the pathways for effects and an evaluation of the project characteristics, taking account of the processes involved and the distance of separation from European sites, it has been evaluated that there are no likely significant adverse effects on the qualifying interests, special conservation interest or the conservation objectives of any European site.

Given the site context in relation to other projects identified as well as the nature of the development, its scale, and the temporary nature of the construction effects identified as potential sources the proposed development will not lead to significant in-combination effect with any other plans or projects.”

The projects that have been identified as proximate to the proposed development site are not considered to have a negative in-combination effect with the proposed development on Natura 2000 sites.

² <https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de>

In addition the developments outlined in the NIS were also assessed for potential cumulative impact. These included

- Planning reference D17A/1064: Permission for a single storey dwelling with a floor area of 284m² and a height not exceeding 5.05m, consisting of four bedrooms with en-suites, bathroom, living room, kitchen, dining room, study, utility space, storage along with no. 2 roof lights to north facing roof, no. 2 roof lights to south facing roof, along with no. 2 car parking spaces with an access through existing entrance 3.5m wide and ancillary site works.
- Planning reference D19A/0980: Permission for (1) the construction of front and rear extension and (2) widening of the existing vehicular entrance to the existing dwelling.
- Planning reference D17B/008: Permission to demolish a detached double shed to the rear of existing house. Construct a two storey side extension, single storey front extension and a single storey rear extension with various minor internal alterations on ground and first floor levels.
- Planning reference D18A/1018: Permission for a new two-storey detached house with new vehicular access and associated landscaping, including new boundary walls.
- Planning reference D19A/0980: Permission for (1) the construction of front and rear extensions and (2) widening of the existing vehicular entrance to the existing dwelling.
- Planning reference D18A/0024: Permission for: 1. Construction of single storey dwelling (including 4 bedrooms, living and kitchen areas). 2. New vehicular entrance to front with access driveway and parking area. 3. Construct new boundary fencing (some up to 2.5m high), soakaway and services.
- Planning reference D17A/0702: Permission is sought for 1. Demolition of the following; side shed to rear (shared with neighbouring dwelling), single storey granny flat extension to rear and side, porches to front and rear. 2. Construction of single storey extension to front and rear including porch to front. 3. Alterations to the existing dwelling to including widen existing window to front and new front door position. Rooflights to front and rear, demolish chimney and reconfigure inside. Widen window to side to create corner window. 4. Widen vehicular entrance and create parking area to front and construct front boundary wall and piers. 5. Construct new boundary fence to side and rear.
- Planning reference D16A/0687: Permission for proposed alterations and extension to house, to include porch to front with tiled roof, first floor extension over existing converted garage and single and 2 storey extension to rear, new pedestrian site entrance to side.
- Planning reference D19A/0726: Full planning permission. The development will consist of the demolition of 46.9m² single storey side and rear extensions. The construction of a 54.2m² two storey side extension in smooth render, with roof tiles to match existing, a brick porch to the front, a 61.3m² single storey flat roofed rear extension in brick and render (split roof level) with clerestory glazing to perimeter. The construction of a dormer window in metal cladding to rear main pitch for a study/storage space of 26.6m². Modification of existing openings to main house. Widening of existing entrance gate. Modified foul and surface water drainage to connect to new soak-away to rear and existing foul and surface water sewers to front. Along with associated site works.
- Planning reference D16A/0364: Permission to amend a previously permitted scheme (DLRCC Reg. Ref. D11A/0582) on a site measuring 1,274 ha, approximately (reduced from the permitted site area of 1.373 ha to reflect the implementation of the Pottery Road Improvement Scheme to the south-west). The proposed development will consist of amendments to the south-west and north-west elevations of permitted Building A (service centre and motor sales building) and the realignment of the permitted south-west boundary to Pottery Road to reflect the position of the implemented Pottery Road Improvement Scheme. The development will also consist of the provision of 3 no. illuminated signs on the south-west elevation (totalling circa 10.15m²) of Building A.
- Planning reference D19A/0032: Permission for: 1. A single storey extension (gross floor area of 37m²) and alterations to elevations to the existing Security Building. 2. an extension (gross floor area of 186m²) to the existing PM2 building under croft to provide workshops. 3. 2 no. internally illuminated signs, of 6m² and 4.7m², at the Pottery Road entrance gate, 1 no. mounted on new feature wall clad in stone and 1 no. mounted on existing wall clad in stone. There will be alterations to soft and hard landscaping surrounding these areas, along with other site associated works. The application consists of a variation to a previously permitted development of an activity for which a licence under Part IV

on the Environmental Protection Agency Act 1992 is required and will be notified to the Environmental Protection Agency.

- Planning reference D17A/0580: Permission is sought for development at existing manufacturing facility comprising extension to provide new single storey main entrance (45m²) at ground floor of Production Module 1 building; two storey staircase from ground to first floor together with link corridor (170m²) to rear of existing Personnel Support Facility building; staff changing 1 area extension (126m²) at first floor of Production Module 2 building; alteration and extension (1,330m²) of existing internal mezzanine of Production Module 1 building to provide for office/laboratory and other ancillary use; alterations to elevations including new cladding, glazing, visual and solar screening and roof lights; demolition of existing projecting staircase on south elevation together with associated alterations to existing hard and soft landscape areas. The development will include the removal of some existing temporary 'cabin' office accommodation. The application consists of a variation to a Previously permitted development of an activity for which a license under Part IV on the Environmental Protection Agency Act 1992 is required and will be notified to the Environmental Protection Agency.
- Planning reference D19A/0904: Permission for development of their existing site. The proposed developments consist of an expansion of their current Pharmaceutical facility with two no. manufacturing extensions to their existing facility. A 10-year permission is being sought for this proposed development. The proposed development comprises of the following; 1. 3 storey Pharmaceutical extension sized approximately 17,000m² and approximately 19m high (to match the height of the existing cold warehouse) located to the North of the existing Admin/Laboratory facility. 2. 3 storey Pharmaceutical extension sized approximately 5,000m² and approximately 19m high located to the rear of the existing production facility including the removal of a section of the existing berm adjacent to the proposed extension. 3. Additional Plant and Equipment located to the West of the existing CUB building and a new boiler stack (ca. 18m high) to match existing stacks. 4. Carparking for approximately 515 additional cars located to the North of the current site, revisions to the existing carpark (including the removal of approximately 138 carpaking spaces) and a pedestrian and bicycle link to the existing pedestrian entrance off Rochestown Avenue. The proposed works include site works, fencing stacks, landscaping, two underground surface water attenuation tanks and site lighting, roof mounted plant and vent stacks on both manufacturing building extensions and yard-based plant and equipment and single storey production links. 5. The proposed works include modifications to existing internal road layouts, single storey covered walkway to match existing and temporary contractors' compounds and carparking and modified entrance gates to Rochestown Avenue. 6. It's anticipated that the proposed extensions will be built in phases. This application consists of development for an activity for which a licence under Part IV of the Environmental Protection Agency Act 1992 (as amended by the Protection of the Environment Act, 2003) is required. An Environmental Impact Assessment Report ("EIAR") accompanies this application.
- Planning reference D20A/0772: Permission for development at this site. The development will consist of installation of 218no PV panels on the roof of existing Block B, of the IT Centre and all associated site works.

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

Residual Impacts and Conclusion

The proposed site is located in a suburban environment 2.8 km from the nearest Natura 2000 site. Watercourses and surface runoff are seen as the main potential pathway for impacts on biodiversity outside of the site. The site is proximate to drainage ditch which flows into the Kill Of The Grange Stream which flows to Killiney Bay. However, no designated sites are located downstream of the proposed development and foul water will discharge to the Shanganagh WWTP. There is no direct or indirect hydrological pathway from the proposed development site to a designated site. Mitigation measures have been developed to reduce impacts on biodiversity to non significant levels. The overall impact on the ecology of the proposed development will result

in a Negligible/adverse/international/ negative impact/Not significant/long term residual impact on the ecology of the site and locality overall.

Qualifying interests of SPA's within Dublin Bay were noted on or adjacent to the proposed development site As outlined in the NIS "This NIS has provided an assessment of all potential direct or indirect pathways for adverse effects on the QI habitat and species of Rockabill to Dalkey Island SAC and the SCIs of South Dublin Bay and River Tolka Estuary SPA, Dalkey Islands SPA, North Bull Island SPA and Baldoyle Bay SPA.

Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction and operation of the proposed development does not adversely affect the integrity of European Sites.

Therefore, it can be objectively concluded that the proposed development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site.

The construction and operation of the proposed development will not impact on the conservation objectives of qualifying interests of Natura 2000 sites. In addition, no in-combination effects are foreseen."

No significant environmental impacts are likely in relation to the construction or operation of the proposed development.

References

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Boyd, I. and Stebbings, R.E. 1989 Population changes in brown long-eared bats (*Plecotus auritus*) in Bat Boxes at Thetford Forest. *Journal of Applied Ecology* **26**: 101 - 112

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982

Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979

EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive) 1992

Jefferies, D.J. 1972 Organochlorine insecticide residues in British bats and their significance. *Journal of Zoology*, London **166**: 245 - 263

Kelleher, C. 2004, Thirty years, six counties, one species – an update on the lesser horseshoe bat *Rhinolophus hipposideros* (Bechstein) in Ireland – *Irish Naturalists' Journal* **27**, No. 10, 387 – 392

Kelleher, C. 2015 *Proposed Residential Development, Church Road, Killiney, Dublin: Bat Fauna Study*. Report prepared for Altemar Marine and Environmental Consultants

Marnell, F., Kingston, N. and Looney, D. 2009 *Ireland Red List No. 3: Terrestrial Mammals*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin

Racey, P.A. and Swift, S.M. 1986 The residual effects of remedial timber treatments on bats. *Biological Conservation* **35**: 205 – 214

Smal, C.M. 1995 *The Badger & Habitat Survey of Ireland*. The Stationery Office, Dublin

Wildlife Act 1976 and Wildlife [Amendment] Act 2000. Government of Ireland

CIEEM, 2019. Guidelines for Ecological Impact Assessment (EIA) <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.1Update.pdf>

Appendix I. Bat fauna impact assessment for a proposed residential development at Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin.



9th July 2021

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.

On behalf of: Clonkeen Investments DAC

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie

Directors: Bryan Deegan and Sara Corcoran

Company No.427560 VAT No. 9649832U

www.altemar.ie

Document Control Sheet			
Client	Clonkeen Investments DAC.		
Project	Bat fauna impact assessment for a proposed residential development at Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin.		
Report	Bat Fauna Assessment		
Date	9 th July 2021		
Project No:		Document Reference: DPRP-2001	
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Jack Doyle	9 th July 2021

SUMMARY

Structure:	Office Building
Location:	Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin.
Bat species present:	None Roosting. Foraging soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) and transiting Leisler (<i>Nyctalus leisleri</i>) on site
Proposed work:	Development of site.
Impact on bats:	None based on successful implementation of mitigation of light spill and recreation of pond in unlit area.
Survey by:	Bryan Deegan MCIEEM
Survey date:	14 th August 2019, 26 th September 2020 and 31 st May 2021 .

Introduction

Clonkeen Investments DAC intend to apply for planning permission for a residential development on a 3.3 ha site located at Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin.

Bat survey

This report presents the results of site visits by Bryan Deegan (MCIEEM) on the 14th August 2019, 26th September 2020 and the 31st May 2021 during which all of the onsite trees were inspected for signs of bat use or presence. Bat emergent surveys were also carried out.

Survey methodology

Survey of bat fauna was carried out by means of a search of trees using a powerful torch (320 Lumens) – Led Lenser *H14.2 Head Torch*. The presence of bats is assessed with reference to their signs; principally staining, droppings, feeding signs such as invertebrate prey remains and the presence of bat fly *Nycteribiidae* pupae, although direct observations are also occasionally made. The nature and type of habitats present onsite are also indicative of the species likely to be present.

At dusk, a bat detector survey was carried out onsite using a *Batbox Duet* heterodyne/frequency division detector to determine bat activity. The 2021 survey was carried out using an Echo Meter Touch 2 bat detector. Bats were identified by their ultrasonic calls coupled with behavioural and flight observations. Surveys were carried out having regard to the following guidelines:

- Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016);
- Bat Mitigation Guidelines for Ireland (NPWS, 2006); and,
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (NRA, 2006).



Site Outline

0 50 100 150 200 m

Project: Clonkeen SHD
Location: Blackrock, Co. Dublin
Date: 8th July 2021
Drawn By: Bryan Deegan (Altamar)

ALTEMAR
Marine & Environmental Consultancy





Project: Clonkeen SHD
 Location: Blackrock, Co. Dublin
 Date: 17th December, 2020
 Drawn By: Bryan Deegan (Altamar)



Figure 1: Site outline soprano pipistrelle foraging (yellow) and Leisler bat transiting (orange).

Survey constraints

The detector surveys were undertaken during the active bat season. Weather conditions were good with mild temperatures of greater than 10oC after sunset. Winds were light and there was no rainfall.

Bat assessment findings

Review of local bat records

NBDC records show sightings of bat species in locations that are in close proximity to the subject site, namely:

- Sightings of Soprano Pipistrelle (*Pipistrellus pygmaeus*) were recorded approximately 0.8km south of the subject sight on 01/05/2012, grid reference O236249.
- Sightings of Soprano Pipistrelle (*Pipistrellus pygmaeus*) were recorded approximately 1.0km south-west of the subject sight on 01/05/2012, grid reference O227247.
- Sightings of Brown Long-eared Bat (*Plecotus auritus*) were recorded approximately 1.0km south of the subject sight on 01/05/2012, grid reference O236249.
- Sightings of Brown Long-eared Bat (*Plecotus auritus*) were recorded approximately 1.2km south-west of the subject sight on 01/05/2012, grid reference O227247.
- Sightings of Daubenton's Bat (*Myotis daubentonii*) were recorded approximately 1.8km south-east of the subject sight on 01/07/2004, grid reference O245245.
- Sightings of Natterer's Bat (*Myotis nattereri*) were recorded approximately 2.0 km south-east of the subject sight on 17/09/2005, grid reference O220240.

Detector survey

Foraging activity on site was relatively low on site with a soprano pipistrelle (*Pipistrellus pygmaeus*) beside the western treeline in 2019 and in 2021 and in the northern end of the site in 2020. The Leisler bat transiting the site was noted in 2020.

Potential impacts of proposed redevelopment on bats

No roosts or bats emerging from the onsite trees or buildings were observed. The trees on and adjacent to the site have no features that would act as potential roosting areas. Light spill has the potential to reduce foraging activity for bats.

Mitigation measures

As no evidence of a bat roost was noted in any of the onsite structures or trees, no mitigation measures in regard to these animals are needed during the proposed works. There is also no requirement for a *National Parks and Wildlife Service* derogation licence application to allow the planned works.

Predicted and residual impact of the proposal

There is no evidence of a current or past bat roost in the structures therefore no negative impacts on roosts these animals are expected to result from the proposed redevelopment. The proposed development is within a built-up area with existing lighting and light spill has been reduced significantly during the design process. The likelihood bat collision is not significant as the materials proposed for the apartment blocks are generally solid and would have good acoustic properties to reflect echolocation signals. As a result the buildings would be clearly visible to bat species. The impact of the proposed development on bats will be negligible in the long term based on the successful implementation of the lighting design strategy and planting as outlined in the landscape strategy.

Legal status and conservation issues – bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Acts (2000 and 2010). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat *Rhinolophus hipposideros* is further listed under Annex II. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat is further listed under Annex II.

The current status and legal protection of the known bat species occurring in Ireland is given in the following table.

Common and scientific name	Wildlife Act 1976 & Wildlife (Amendment) Acts 2000/2010	Irish Red List status	Habitats Directive	Bern & Bonn Conventions
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Yes	Least Concern	Annex IV	Appendix II
Soprano pipistrelle <i>P. pygmaeus</i>	Yes	Least Concern	Annex IV	Appendix II
Nathusius pipistrelle <i>P. nathusii</i>	Yes	Not referenced	Annex IV	Appendix II
Leisler's bat <i>Nyctalus leisleri</i>	Yes	Near Threatened	Annex IV	Appendix II
Brown long-eared bat <i>Plecotus auritus</i>	Yes	Least Concern	Annex IV	Appendix II
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	Yes	Least Concern	Annex II Annex IV	Appendix II
Daubenton's bat <i>Myotis daubentonii</i>	Yes	Least Concern	Annex IV	Appendix II
Natterer's bat <i>M. nattereri</i>	Yes	Least Concern	Annex IV	Appendix II
Whiskered bat <i>M. mystacinus</i>	Yes	Least Concern	Annex IV	Appendix II
Brandt's bat <i>M. brandtii</i>	Yes	Data Deficient	Annex IV	Appendix II

Also, under existing legislation, the destruction, alteration or evacuation of a known bat roost is a notifiable action and a derogation licence has to be obtained from the *National Parks and Wildlife Service* before works can commence.

It should also be noted that any works interfering with bats and especially their roosts, including for instance, the installation of lighting in the vicinity of the latter, may only be carried out under a licence to derogate from Regulation 23 of the Habitats Regulations 1997, (which transposed the EU Habitats Directive into Irish law) issued by NPWS. The details with regards to appropriate assessments, the strict parameters within which derogation licences may be issued and the procedures by which and the order in relation to the planning and development regulations such licences should be obtained, are set out in Circular Letter NPWS 2/07 "*Guidance on Compliance with Regulation 23 of the Habitats Regulations 1997 - strict protection of certain species/applications for derogation licences*" issued on behalf of the Minister of the Environment, Heritage and Local Government on the 16th of May 2007.

Furthermore, on 21st September 2011, the Irish Government published the European Communities (Birds and Natural Habitats) Regulations 2011 which include the protection of the Irish bat fauna and further outline derogation licensing requirements re: European Protected Species.

References

- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979
- EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive) 1992
- European Communities (Birds and Natural Habitats) Regulations 2011 Government of Ireland, Dublin
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- Wildlife Act 1976 and Wildlife Amendment Acts 2000 and 2010. Government of Ireland

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Bat Mitigation Guidelines for Ireland (NPWS, 2006)

<https://www.npws.ie/sites/default/files/publications/pdf/IWM25.pdf>

Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (NRA, 2006).

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