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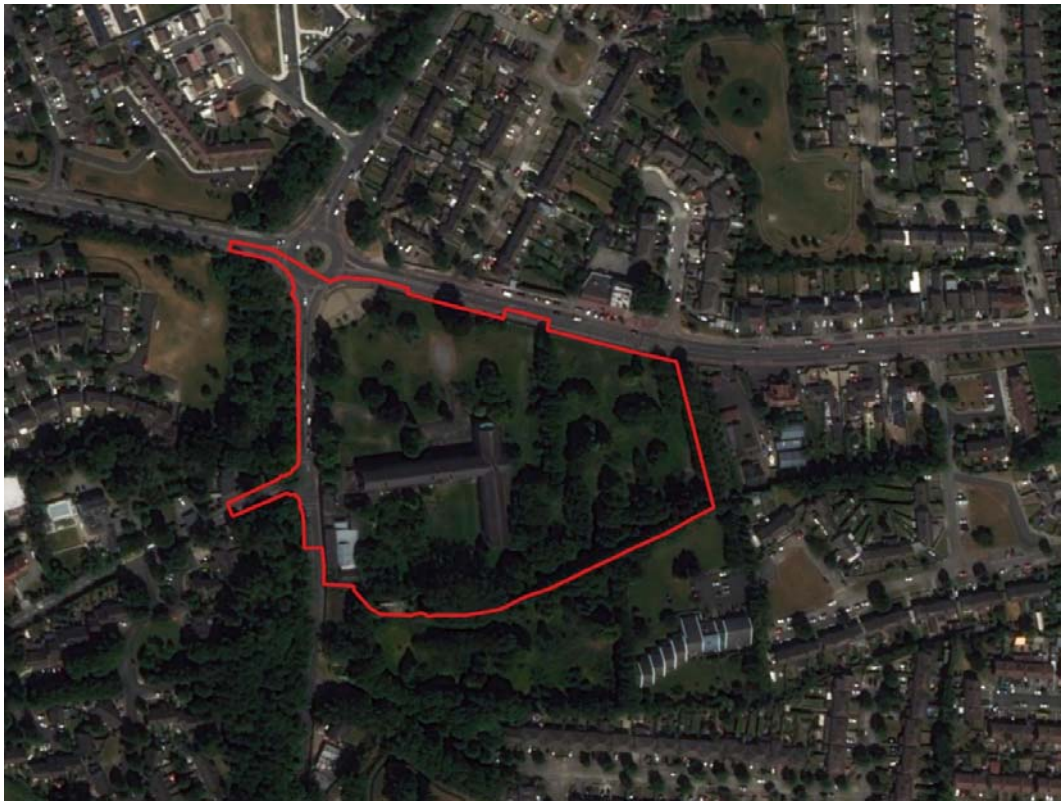
Marine & Environmental Consultancy

Ecological Impact Assessment (EcIA) for a proposed LRD at Taylors Lane, Ballyboden, Dublin 16.



29th March 2023

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Shannon Homes Dublin Unlimited Company

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Document Control Sheet			
Project	Ecological Impact Assessment (EcIA) for a proposed LRD at Taylors Lane, Ballyboden, Dublin 16.		
Report	Ecological Impact Assessment		
Date	29th March 2023		
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Jack Doyle	10th March 2023
Planning	Bryan Deegan		29th March 2023

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Introduction

Background

Ecological Impact Assessment (EcIA) 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 EcIA 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 EcIA has been prepared by Altemar Ltd. at the request of Shannon Homes Dublin Unlimited Company. The project relates to the proposed Large-scale Residential Development (LRD) at Taylors Lane, Ballyboden, Dublin 16.

Study Objectives

The objectives of this EcIA 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 EcIA:

- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2002);
- Guidelines on the information to be contained in EIARs (2022);
- Guidelines for Ecological Impact Assessment (EcIA) (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).

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 28 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).

Hugh Delaney is an ecologist (ornithologist primarily) having completed work on numerous sites with ecological consultancies over 10+ years. Hugh is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Description of the Proposed Project

The proposal is for a large-scale residential development on this site of net 3.5ha comprising the following:

- Demolition of existing former Institutional buildings and associated outbuildings (c.5231 sq.m);
- Construction of 402 residential units within 3 apartment/duplex blocks ranging in height from 2-5 storeys and comprising of 39 no. 1-Beds; 302 no. 2-Beds; and 61 no. 3-Beds all with associated private balconies/terraces to the north/south/east/west elevations;
- Provision of one crèche and two retail units.
- Provision of a new public park along Taylor's Lane
- Provision of 290 no. car parking spaces.
- Vehicular access to the site via Edmondstown Road to the west.
- Pedestrian Access to the site via Edmondstown Road to the west and Taylor's Lane to the north.

The proposed site outline, location, site plan, and elevations are demonstrated in Figures 1-5.

Landscape

The landscape strategy for the proposed development has been designed by Doyle & O'Troithigh Landscape Architecture to accompany this planning application. The proposed overall landscape plan and green infrastructure plan are demonstrated in Figures 6 & 7. Consultation took place between Altemar and Doyle & O'Troithigh Landscape Architecture in relation to biodiversity enhancement measures on site. As outlined in the Landscape Design Report '*The existing drainage ditch shall be cleaned of debris but retained in its current form where it will offer opportunity for new habitats for flora and fauna. The 'opening up' of this space and the removal of the dense heavy shade will provide an opportunity for a greater diversity in plant material. New native woodlands with a shade tolerant wildflower edge mix are proposed along the drainage ditch which will further enhance the green corridor as well as providing a strong and more sustainable boundary in the long term. This will create a feature in the landscape and enhance the ecological diversity locally. All plant material as proposed and as referenced within the supporting landscape plans have been fully reviewed with the Altemar Environmental Consultants.* '

'*In order to ameliorate against the potential loss of green infrastructure, further ecological compensatory measures are proposed as part of the scheme which include developing new compensatory native woodlands (compensating the loss of exotic conifers along the southern boundary), Miyawaki planting and planting of flowering trees, shrubs and herbaceous plants which are beneficial for pollinators. Wildflower meadow mixes and naturalised bulbs shall also be included at appropriate locations through the open green areas, will further enhance the local biodiversity. To the south of the scheme, a low retaining timber crib wall is proposed to locally retain levels along the drainage ditch/former mill race. It is proposed that the retaining feature will include climbing plants, many native including Honeysuckle and Ivy which will create a series of 'micro-habitats' for beneficial insects, birds and pollinators.*

Green roofs (largely sedum) are proposed as part of the scheme which will contribute to local biodiversity. The South Dublin County Council Development Plan 2022-2028 notes that Green roofs 'depending on the mix of plants' can 'contribute to climate change resilience, helping to improve air quality and temperature while also retaining and filtering stormwater to alleviate pressure on drainage infrastructure.'

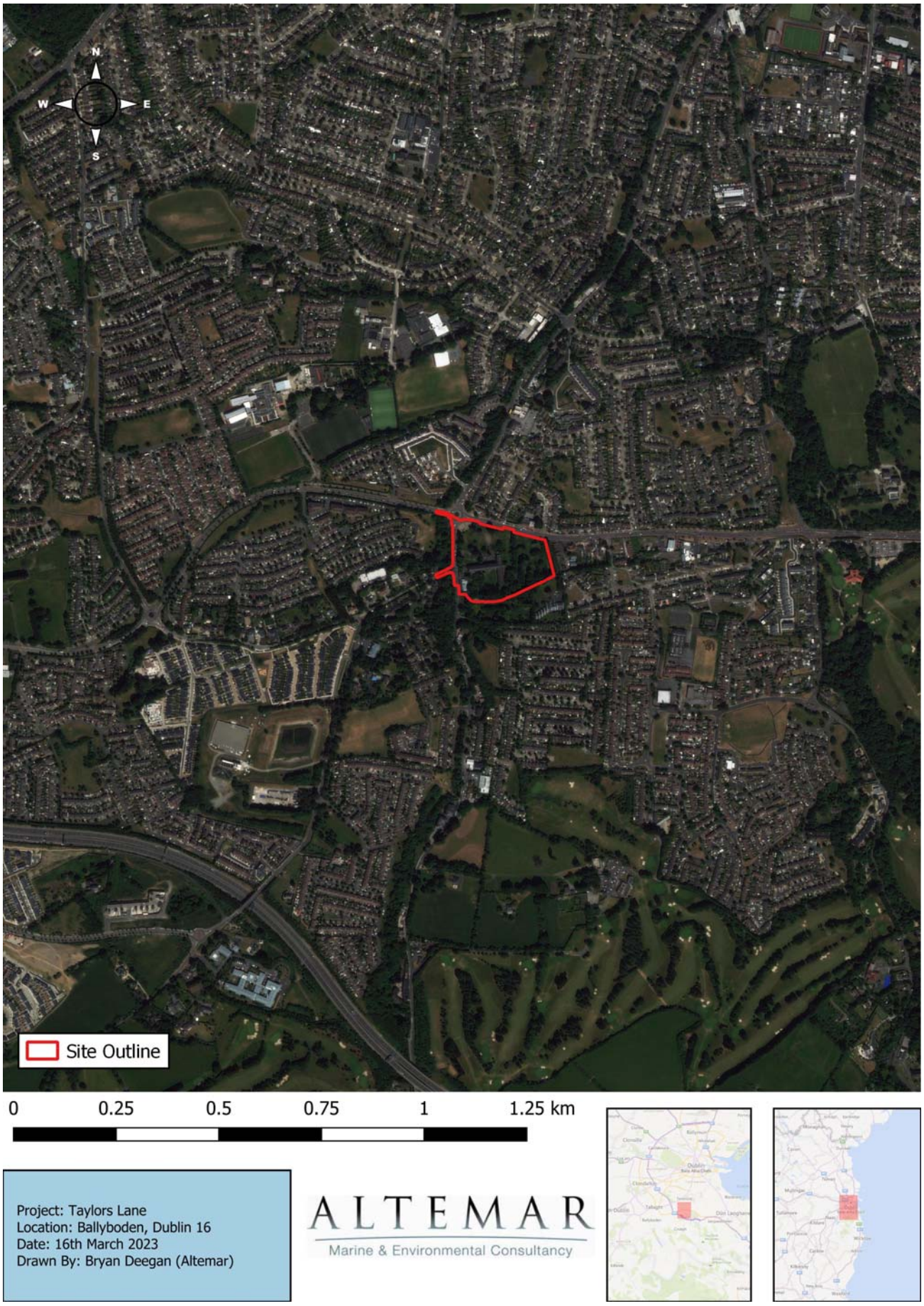


Figure 1. Proposed site outline and location

Figure 2. Proposed site outline

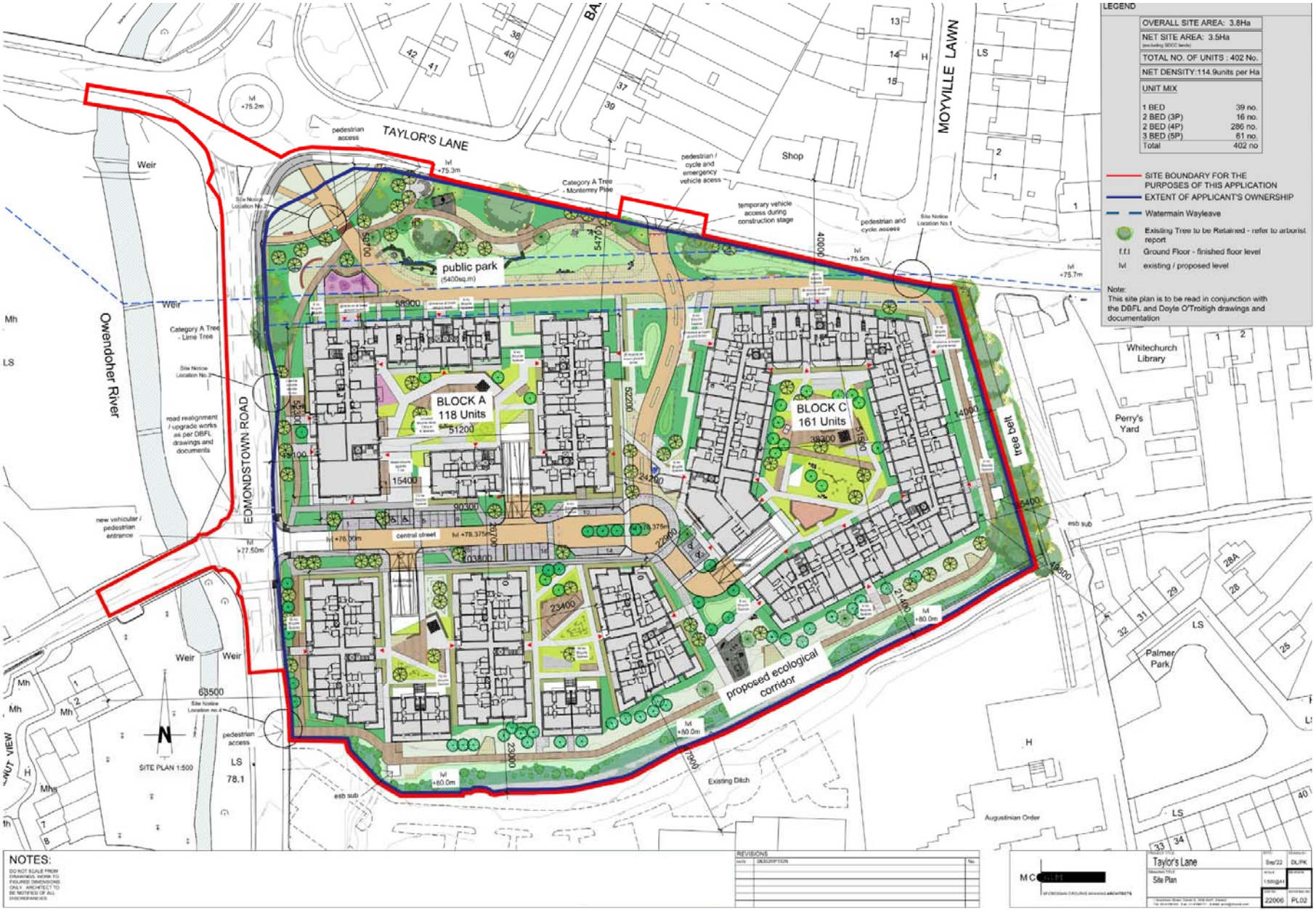
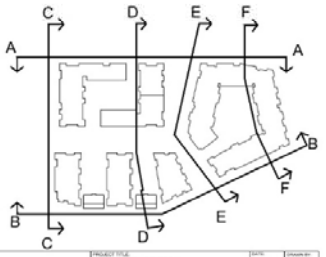


Figure 3. Proposed site plan

CONTEXT ELEVATION D-D (1:400)

CONTEXT ELEVATION E-E (1:400)

CONTEXT ELEVATION F-F (1:400)



NOTES:

DO NOT SCALE FROM DRAWINGS. WORK TO FIGURED DIMENSIONS ONLY. ARCHITECT TO BE NOTIFIED OF ALL DISCREPANCIES.

REVISIONS

Date	Description	No.

TAYLOR'S LANE

Context Elevations Sheet 2

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Figure 4. Proposed elevations (sheet 1)

Figure 5. Proposed elevations (sheet 2)

Figure 6. Proposed overall landscape plan

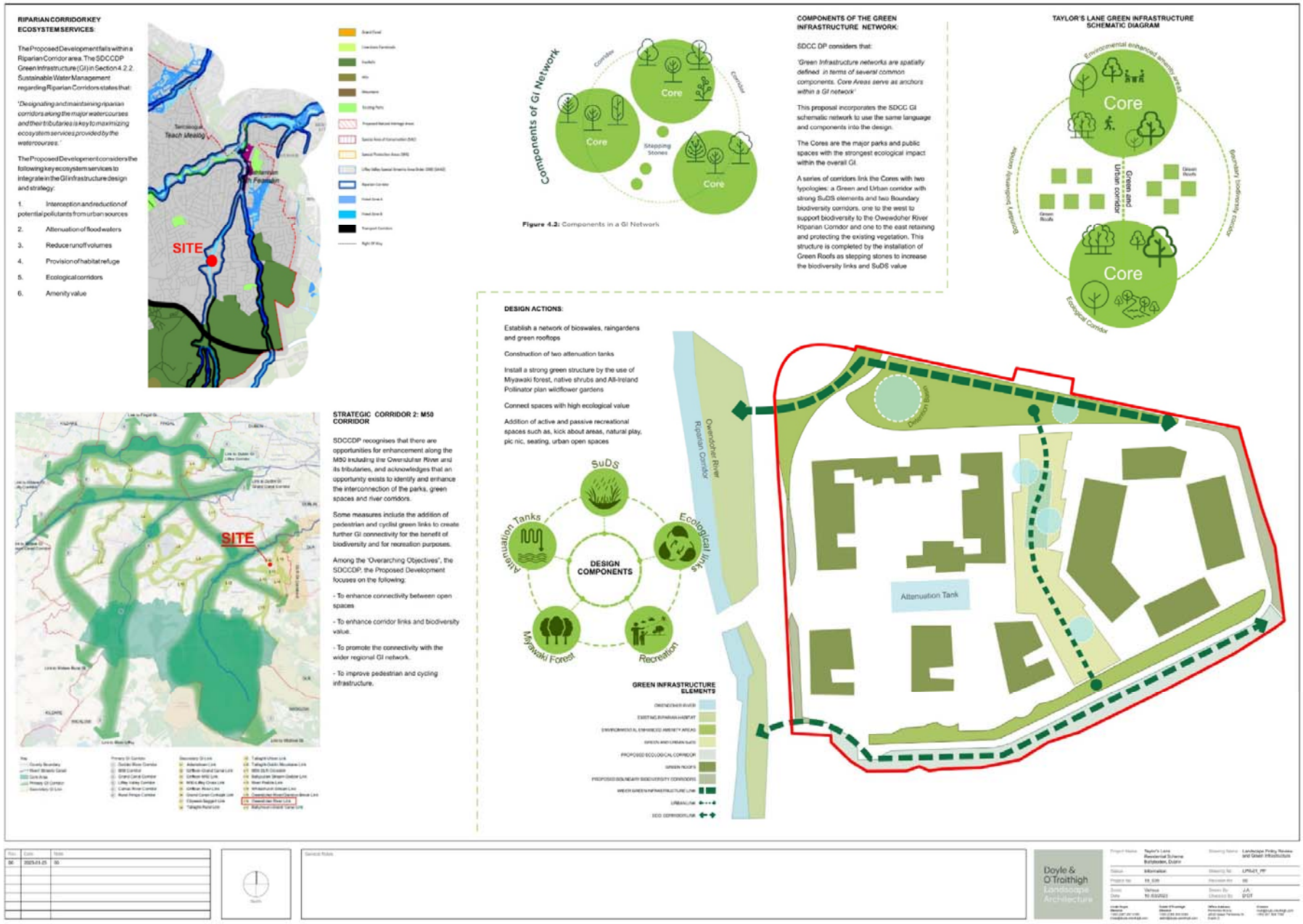


Figure 7. Landscape policy review and green infrastructure

Arborist

A Tree Survey & Planning Report has been prepared by Independent Tree Surveys Ltd. to accompany this planning application. This report details the following arboricultural impact of the proposed development:

'*The scale and density of the proposed new development will require the clearance of most of the existing vegetation cover before this is replaced with a new landscape planting scheme within the new layout. Some of the more prominent mature trees will be retained in the north-western part of the site (including the two category A trees tagged T890 and T909) along with the dense landscape screen of Cypress trees (groups G7, and G18, G19 and G20) along the eastern boundary.*

The number of trees and tree groups proposed for removal from the site is considerable and includes most of the existing tree cover; however, the arboricultural quality and value of most of these trees is comparatively low. The vast majority of the trees proposed for removal are the remnants of the planting scheme established during the creation of the pitch and putt golf course and the planting layout of the tree groups reflects this origin. The trees mostly form narrow linear groups (both straight and sinuous) that were used to divide and separate the individual components of the golf course, the trees are closely spaced and mostly disfigured by the severe pruning regimes to control their size and spread. The planting design, species mix and past treatment limit the management options for the trees and underlie the reasons for their relatively low overall value and low grading in the initial tree survey assessment. Many of the trees planted into the old pitch and putt course has created what are in effect, short sections of hedge which are of little practical use outside of the intended purpose. The individual trees making up the groups are unsuited for retention as individuals because of their growth habit and form and co-dependence with the other members of the group.

The existing pattern of tree cover in the eastern part of the site is thus quite unsuited to incorporation within an efficient revised land use layout for the site, and this makes its removal and replacement unavoidable if the site is to be re-developed for high-density residential use.

The plans for the new development include for the removal of the overgrown Cypress treeline (G21) that runs along the southern boundary region of the site and other trees planted along the bank below the small watercourse. This is proposed as part of plans to improve the conservation value of the riparian corridor by replacing the monocultural stand of conifers with a mix of species able to benefit from the vastly improved growing conditions created by the removal of the heavy shading from the Cypress trees. This work will involve the removal of a considerable number of individual trees and open up the southern boundary region in the short term, however, the trees are of low individual value and the works should bring about a net improvement of tree and vegetation quality over time and into the future.

The trees being proposed for removal include several Ash and Elm trees that are already dead or showing signs of decline as a result of Ash dieback and Dutch Elm disease. It is very likely that these trees would have to be removed at some point within the next few years as they die off due to the disease.

The road re-alignment works to create the necessary access into the new development will require extra space and this will necessitate the removal of many of the existing trees along the Taylors Lane frontage. Many of these trees are of poor quality and/or health, but their removal will constitute a loss of mature tree cover along a well-used public road that will have some visual impact in the short term. The trees will be replaced by a fresh planting scheme as part of the landscape plan; these new trees will add increasing landscape and amenity value as they mature.

In total the plans require the removal of 18 tree groups (17 category C and 1 category U) and 90 trees listed individually on the survey schedule. The trees to be removed include 15 category B, 55 category C and 20 category U trees. As such 75 out of the 90 individual trees (>80%) are of relatively low value or unsuited to long term retention.'

The tree survey and constraints plan and tree protection plan are demonstrated in Figures 8 & 9.

Figure 8. Tree Survey and Constraints Plan

Figure 9. Tree Protection Plan

Drainage

An Engineering Services Report has been prepared by DBFL Consulting Engineers to accompany this planning application. This report outlines the following drainage strategy for the proposed development:

Surface Water Drainage

In relation to existing surface water drainage infrastructure, this report outlines the following:

'*The proposed site is serviced by an existing surface water sewer which crosses Edmondstown Road and discharges to the Owendoher River located to the west of the site. The records also show a 900mm diameter surface water culvert on the north-eastern boundary which crosses Taylors Lane, after investigations it is found the only connection to this culvert is an obsolete surface water drain which serviced an old water feature that is no longer used. No further surface water infrastructure serves the development*.'

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

'*The site investigation shows relatively good infiltration rates to the north of the site with tests recording results between 4x10-4 ms-1 and 4x10-5 ms-1.*

Due to these results, infiltration techniques will be considered if only in part within the SUDS strategy

All runoff from impermeable surfaces on the site will initially drain via source control SUDS features as the first step in the management train. Where feasible, subsequent SUDS features have been linked to increase interception losses along the management train. For the remaining storage requirements, a number of attenuation features have been designed (discussed under section 5.3). A large portion of the open area of the site to the north has been reserved for open conveyance and detention basins. The remaining storage requirements were fulfilled using economical and sustainable underground attenuation features which promote infiltration. Outflows from the development will be restricted to greenfield rates before being discharged via a single outfall to the Owendoher River at the north-western corner of the subject site. The surface water network and the outfall have been designed to ensure that the network can continue to drain during high water levels in the Owendoher River.'

Foul Wastewater Drainage

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

'*By reviewing records, the surrounding area predominately uses a separated drainage network. The subject site is serviced by an existing 225mm diameter foul sewer on Edmondstown Road which runs from south to north, continuing north within Ballyboden Road*.'

In terms of the proposed foul drainage design, this report outlines the following:

'*The proposed foul drainage has been designed to drain via one outfall to the Irish Water combined sewer in Edmondstown Road.*'

The proposed site services layout is demonstrated in Figure 10.

Flood Risk Assessment

A Site Specific Flood Risk Assessment Report was prepared by DBFL Consulting Engineers to accompany this planning application. This report concludes with the following:

- '*The proposed type of development for this site is to be residential and is categorised as* ***highly vulnerable development****.*
- *All Highly vulnerable development is located wholly in Flood Zone C.*
- *Only the north-western corner of the subject site is located in Flood Zone B and due to the infrastructure constraints (watermain wayleave), all proposed development is located well outside Flood Zone B.*
- *As part of the mitigation measures to reduce the associated Flood risk for site users, was by ensuring all 'highly vulnerable' finished floor levels are located above the 0.1% AEP flood level plus 500mm freeboard. As the flood extents relate to overland flows, the CFRAMS flood depth maps and site-specific topographical survey were used to calculate the levels at the flood extents. Where the difference between the calculated flood level and the FFL is not 500mm, landscaping will ensure the 500mm freeboard is included to ensure no further overland flow paths are created within the site.*
- *A possible source of flood risk from the surcharging or blockage of the development's drainage system has been identified. This risk is mitigated by suitable design of the drainage network (as detailed in DBFL Infrastructure Design Report 190068-X-05-X-XXXRP-DBFL-CE-0002), regular maintenance and inspection of the network and establishment of exceedance overland flow routes.*
- *The development's drainage design includes for a 20% climate change allowance.*
- *The proposed development will not increase run-off rate when compared with the existing site and satisfies the requirement of the SFRA to reduce flooding and improve water quality.'*

Lighting

The lighting strategy for the proposed development has been prepared by McElligott Consulting Engineers. The proposed public lighting layout is demonstrated in Figure 11.

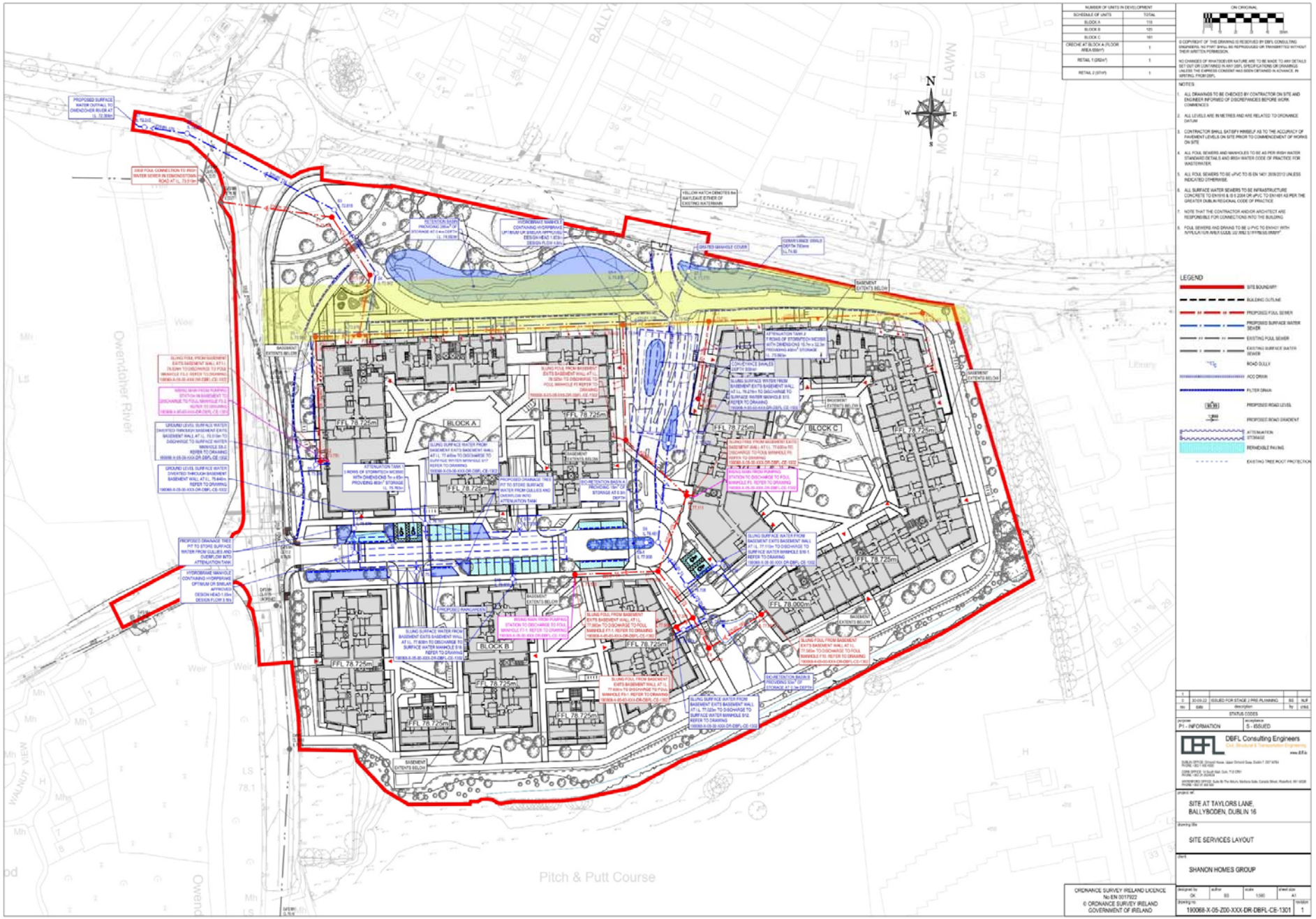


Figure 10. Proposed site services layout

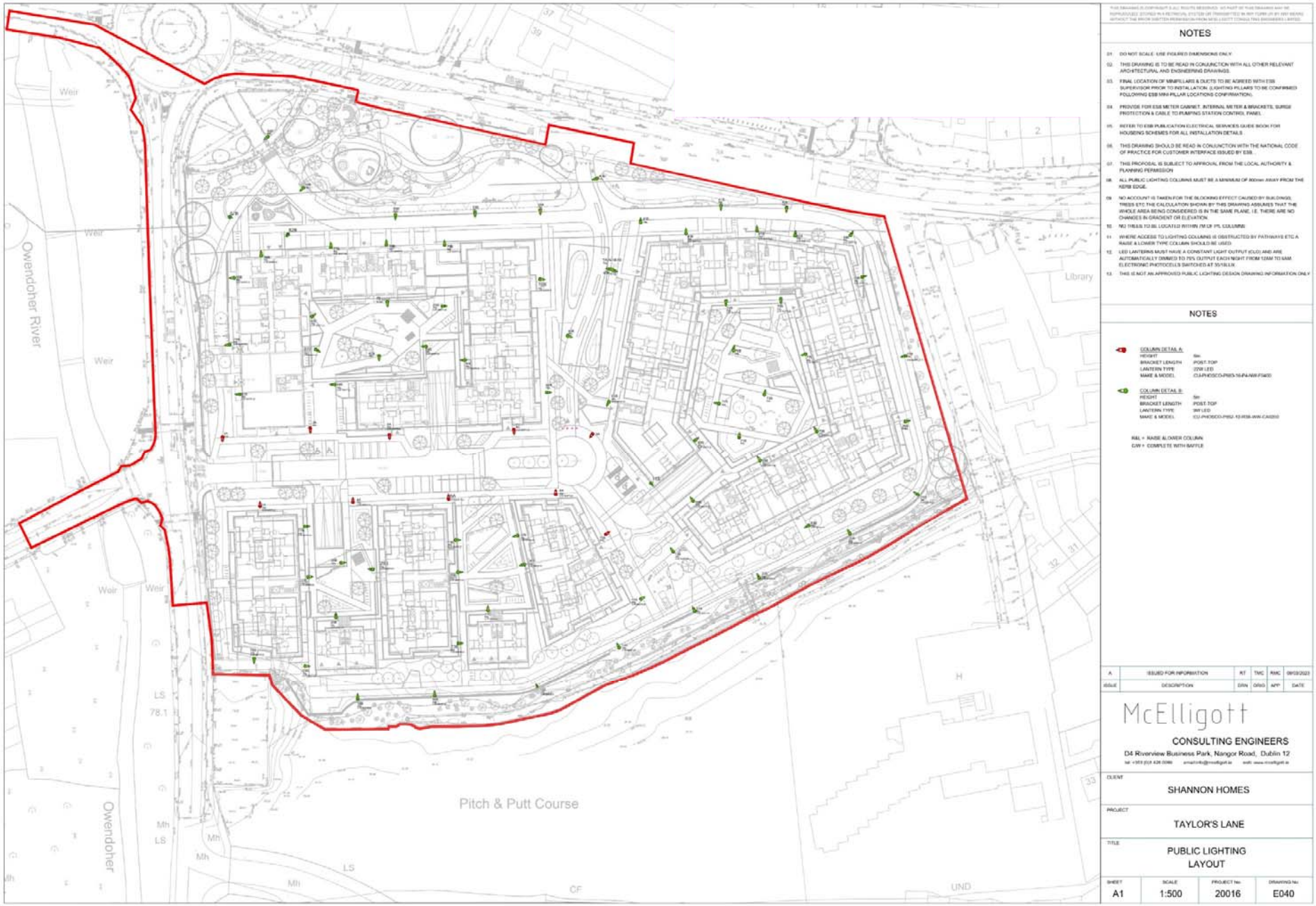


Figure 11. Public lighting layout

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
- Bing (QGIS)

A provisional desk-based assessment of the potential species and habitats of conservation importance was carried out in August 2022 and updated in March 2023. Altemar assessed the project, the proposed construction methodology and the operation of the proposed development.

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).

The potential ZOI of the project, in the absence of mitigation, is deemed to be within the site outline, nearby sensitive receptors including the Owenadoher River (which traverses through a western portion of the site), and designated conservation sites located downstream of the proposed development. The project would also involve demolition, reprofiling, excavations and construction, which may impact beyond the site through dust, surface water, and light impacts. Standard but robust construction phase mitigation measures need to be implemented to limit the potential impact of the proposed development into the surrounding environment.

The ZOI of the operation of the proposed development would be the immediate area of the proposed development site, including the potential for significant impacts on designated conservation sites located downstream of the subject site.

Field Survey

Field surveys of the proposed development site were carried out by Altemar Ltd. on the 6th September 2022, 14th September 2022, 20th September 2022, 13th February 2023 and 12th March 2023. 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 surveys (emergent and detector) were also carried out on the 6th September 2022, 14th September 2022 and 20th September 2022, and assessed the site for evidence of roosting and roosting potential.

Wintering bird surveys were carried out by Hugh Delaney. Between November 2022 and March 2023 10 winter bird surveys were carried out. It should be noted that previous surveys (including walkover, invasive, and bat surveys) have previously been conducted onsite over several dates in 2013, 2014, 2016, and 2019 by Faith Wilson (MCIEEM). Data gathered by Faith Wilson on these dates are demonstrated in Appendix III.

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.

Impact Assessment Significance Criteria

This section of the EcIA 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 effect and typical descriptions

Magnitude of effect (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 effect on attribute or a reduced risk of negative effect 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 Effects	Effect Description
Negative /Adverse Effect	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 Effect	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Positive Effect	A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).

Significance of Effects

Significance of Effect	Description of Potential Effect
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable2 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 effect which obliterates sensitive characteristics.

Duration and Frequency of Effect	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

Describing the Probability of Effects	Description
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.

Results

Proximity to Designated Conservation Sites

Designated conservation sites (National and international) within 15km of the proposed development are seen in Figures (12-15) and Table 4. It should be noted that the proposed development site is not within a designated conservation area. The closest European site with a hydrological pathway to the subject site is the South Dublin Bay and River Tolka Estuary SPA, located 7 km downstream (Figure 13). The nearest SAC with a hydrological connection to the proposed development site is South Dublin Bay SAC, which is located 7.1 km from the subject site (Figure 12). There are no designated Natural Heritage Areas (NHA) within a 15km radius. However, the nearest Proposed NHA (Dodder Valley pNHA) is located 2.2 km from the site (Figure 14). The nearest RAMSAR site (Sandymount Strand/Tolka Estuary) is located 7.1 km from the proposed development site (Figure 15).

The nearest watercourse to the subject site is the Owendoher River, which flows along the western portion of the subject site (Figure 16). There is a direct hydrological connection to this watercourse via surface water drainage. Surface water drainage will be discharged via a single outfall to the Owendoher River at the north-western corner of the subject site. Given that the Owendoher River outfalls to the River Dodder, which in turn outfalls to the marine environment at Dublin Bay, it is considered that there is a direct hydrological connection to designated conservation sites located within Dublin Bay via the proposed surface water drainage strategy.

It should be noted that there is an existing millrace that bounds the southern boundary of the subject site. Following an examination of historical 6-inch mapping, there is a weir located along the Owendoher River that acts as the source of this millrace. This millrace then ultimately outfalls back to the Owendoher River (see Figures 16 & 17). Out of an abundance of caution, it is considered that there is the potential for dust, silt and contaminated runoff to enter the millrace and transport pollutants to the Owendoher River particularly during high rainfall events. There is, therefore, a direct hydrological pathway from the proposed development site to designated conservation sites located within Dublin Bay via surface wastewater drainage and the millrace.

Foul wastewater will be directed to an existing public combined foul network located on Edmondstown Road, which in turn ultimately discharges to Ringsend Wastewater Treatment Plant (WwTP) for treatment. Foul wastewater will be treated at Ringsend WwTP. There is, therefore, an indirect hydrological pathway from the proposed development site to designated conservation sites located within Dublin Bay via foul wastewater drainage.

Watercourses and designated conservation sites with a direct hydrological connection to the subject site are demonstrated in Figures 16-21.

Table 1. European sites within 15km of the proposed site

Code	European Site	Distance	Direct Hydrological / Biodiversity Connection
Special Areas of Conservation			
IE002122	Wicklow Mountains SAC	4.6 km	No
IE001209	Glenasmole Valley SAC	5.2. km	No
IE000210	South Dublin Bay SAC	7.1 km	Yes
IE000725	Knocksink Wood SAC	9.2 km	No
IE000206	North Dublin Bay SAC	11.5 km	Yes
IE000713	Ballyman Glen SAC	11.7 km	No
IE003000	Rockabill to Dalkey Island SAC	13.5 km	No
Special Protection Area			
IE004040	Wicklow Mountains SPA	4.6 km	No
IE004024	South Dublin Bay and River Tolka SPA	7 km	Yes
IE004006	North Bull Island SPA	11.5 km	Yes
IE004172	Dalkey Islands SPA	13.2 km	No

Table 2. (proposed) NHAs within 15km of the proposed development site

Status	Site Name	Distance
Proposed NHA	Dodder Valley	2.2 km
Proposed NHA	Fitzsimon's Wood	4 km
Proposed NHA	Glenasmole Valley	5.2 km
Proposed NHA	Grand Canal	5.4 km
Proposed NHA	Booterstown Marsh	7 km
Proposed NHA	South Dublin Bay	7.1 km
Proposed NHA	Lugmore Glen	7.2 km
Proposed NHA	Royal Canal	8.1 km
Proposed NHA	Ballybetagh Bog	8.5 km
Proposed NHA	Dingle Glen	8.6 km
Proposed NHA	Liffey Valley	8.7 km
Proposed NHA	Dolphins, Dublin Docks	9.3 km
Proposed NHA	North Dublin Bay	9.4 km
Proposed NHA	Slade Of Saggart And Crooksling Glen	9.8 km
Proposed NHA	Glencree Valley	10.2 km
Proposed NHA	Dalkey Coastal Zone And Killiney Hill	11 km
Proposed NHA	Loughlinstown Woods	11.2 km
Proposed NHA	Ballyman Glen	11.6 km
Proposed NHA	Powerscourt Woodland	11.8 km
Proposed NHA	Santry Demesne	13.3 km
Proposed NHA	Dargle River Valley	13.9 km
Proposed NHA	Great Sugarloaf	14.6 km
Ramsar	Sandymount Strand / Tolka Estuary	7.1 km
Ramsar	North Bull Island	11.6 km

Habitats and Species

Site assessments were carried out on the on the 6th September 2022, 14th September 2022, 20th September 2022, 13th February 2023 and 12th March 2023. Habitats within the proposed site were classified according to Fossitt (2000) (Figure 22).

The proposed development site is an unmanaged plot of land that has been unmanaged for several years. Historically, based on an examination of orthophotography and satellite imagery the eastern portion of the site was a pitch and putt golf course until at least July 2013, with greens and bunkers clearly visible at this time. The western portion of the site appears to have also to have been in use until April 2015, with cars parked on the grounds (Google earth Pro). It appears that the site has been relatively unmanaged since these times with the majority of the proposed development site consisting of Dry meadows & Grassy Verges, succumbing to scrub encroachment and a succession to mixed broadleaf woodland. These habitats are surrounded by treelines, including coniferous and deciduous species.

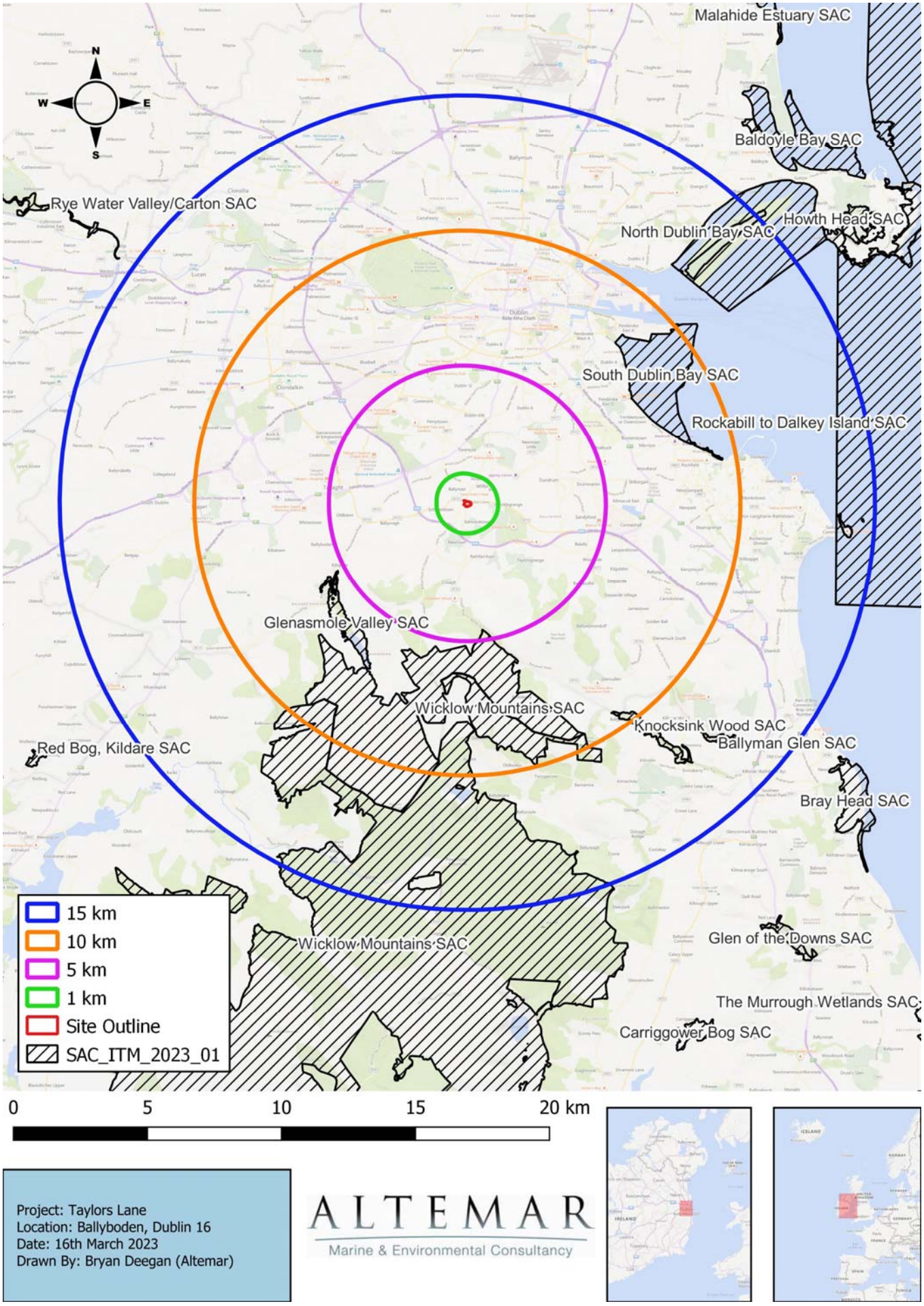


Figure 12. Special Areas of Conservation (SACs) within 15km of the subject site

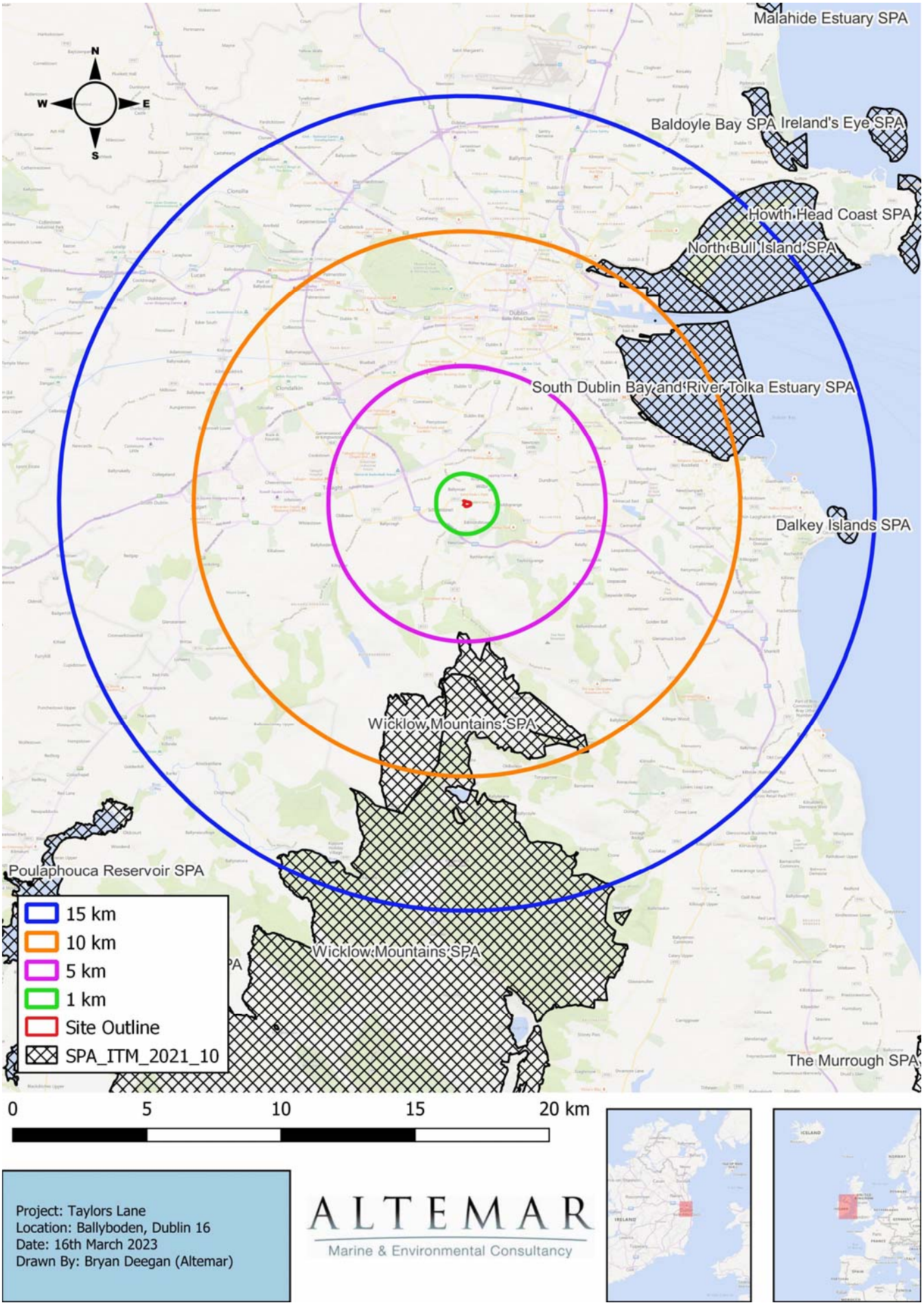


Figure 13. Special Protection Areas (SPA) within 15km of the subject site

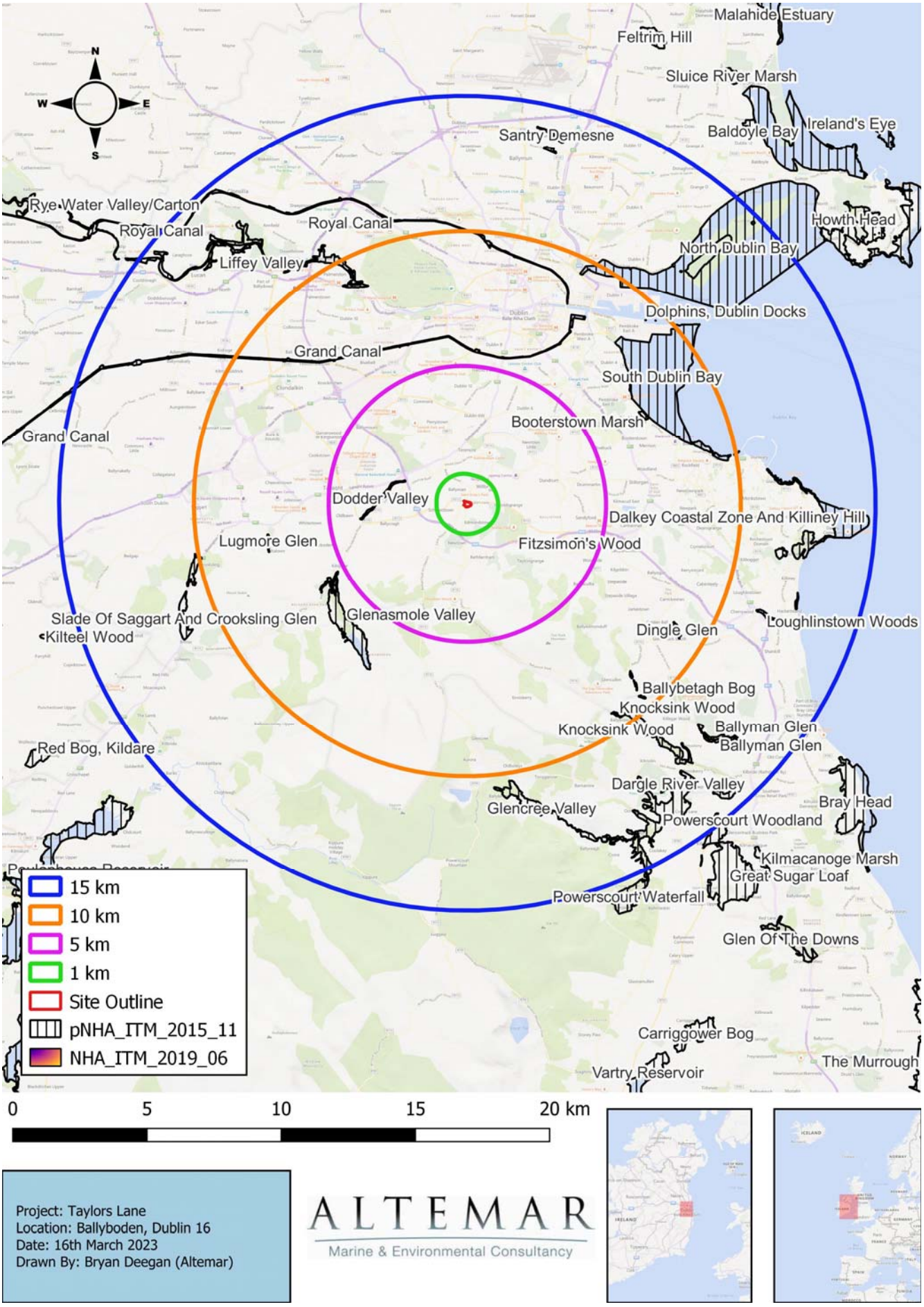


Figure 14. Natural Heritage Areas (NHA) and proposed Natural Heritage Areas (pNHA) within 15km of the subject site

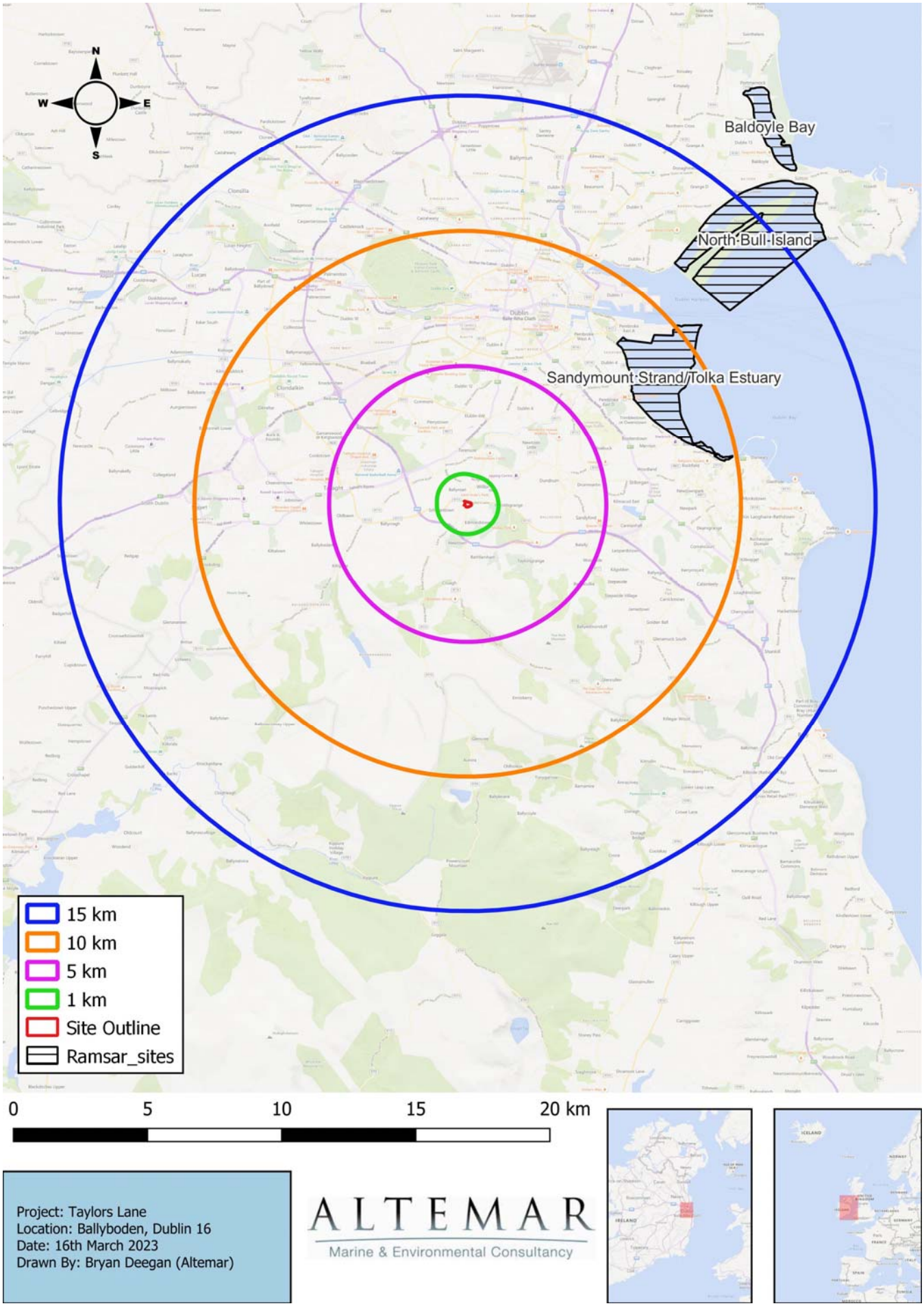


Figure 15. Ramsar sites within 15km of the subject site

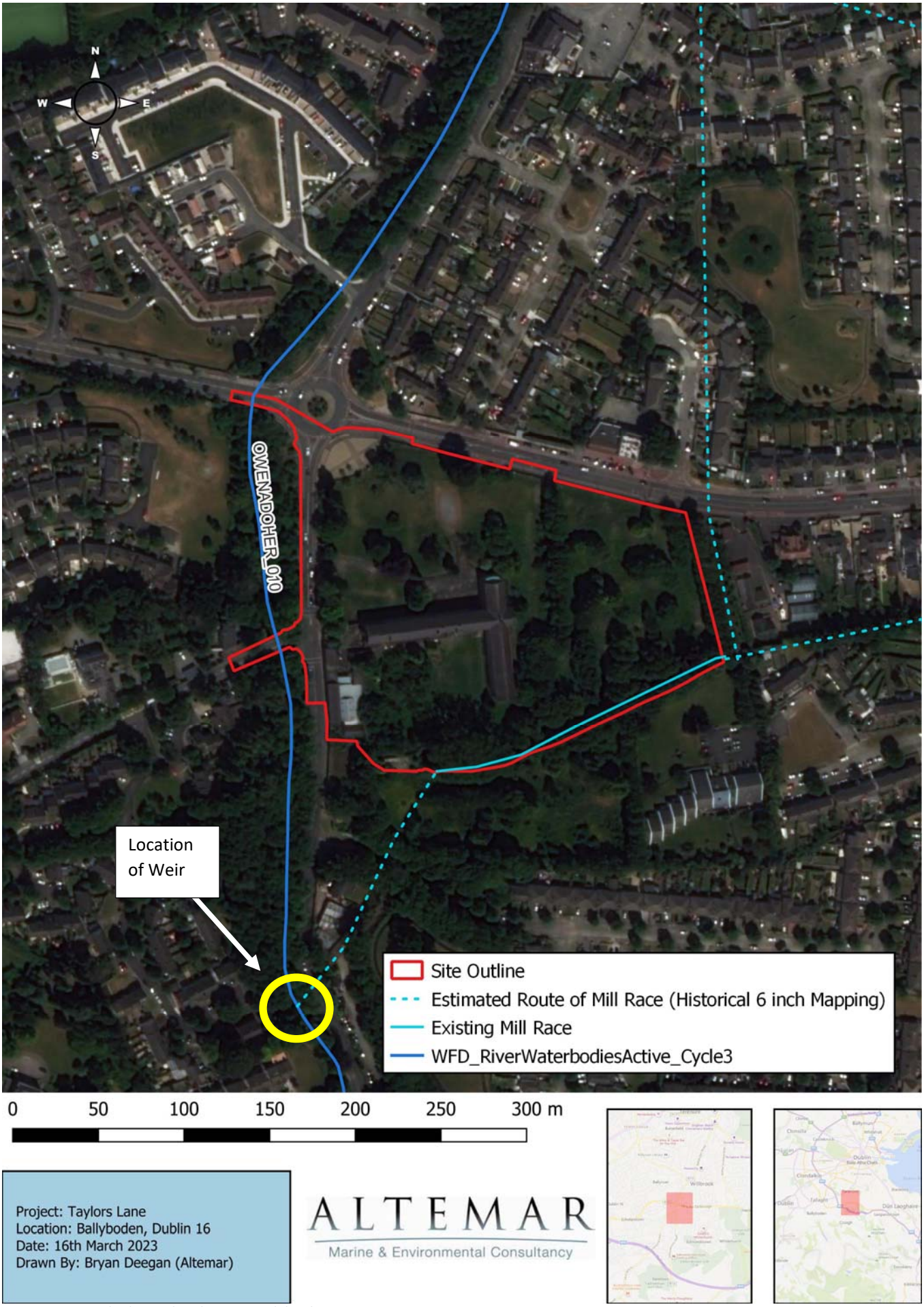


Figure 16. Waterbodies within the proposed development site.

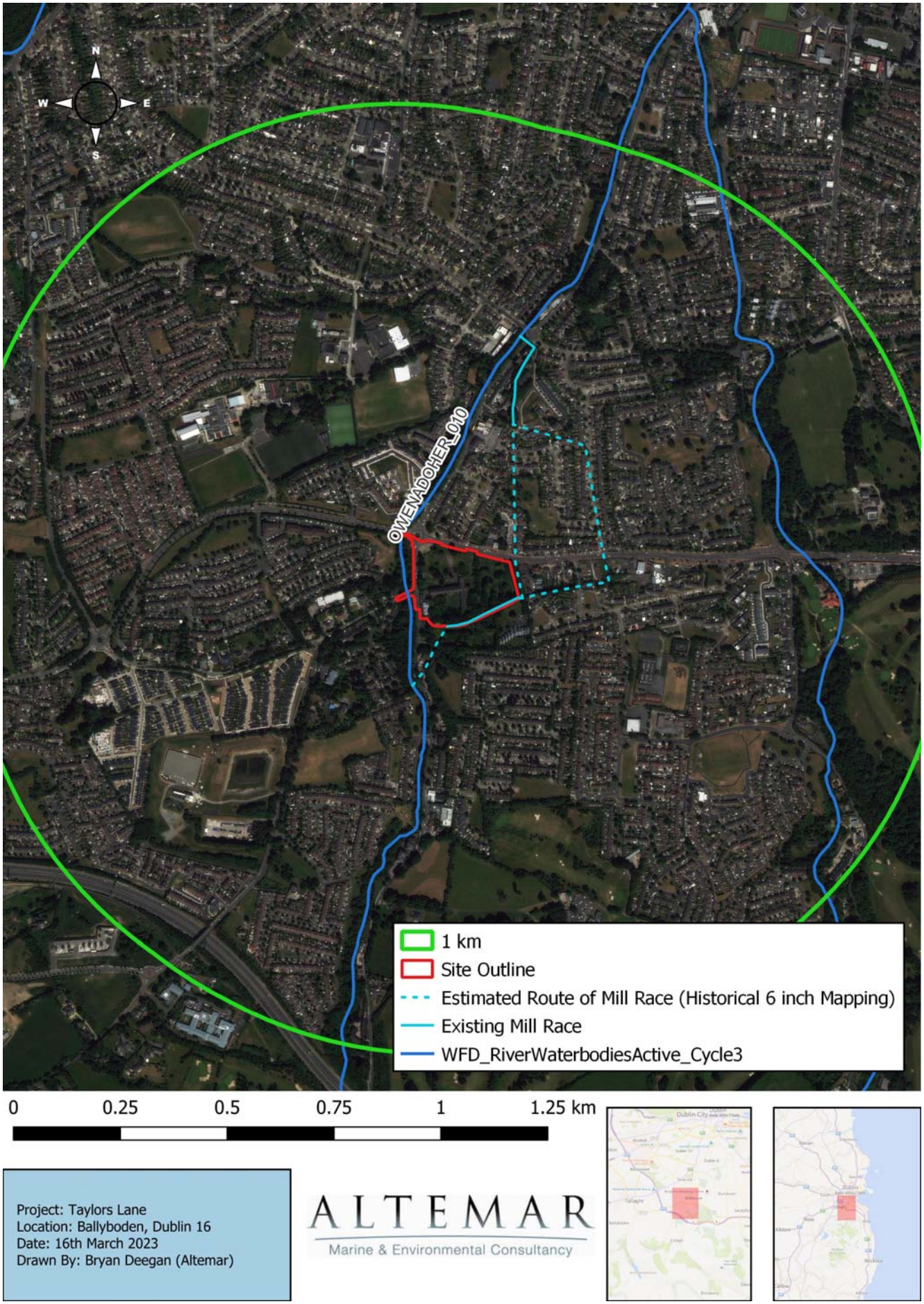


Figure 17. Waterbodies within 1km of the proposed development site.

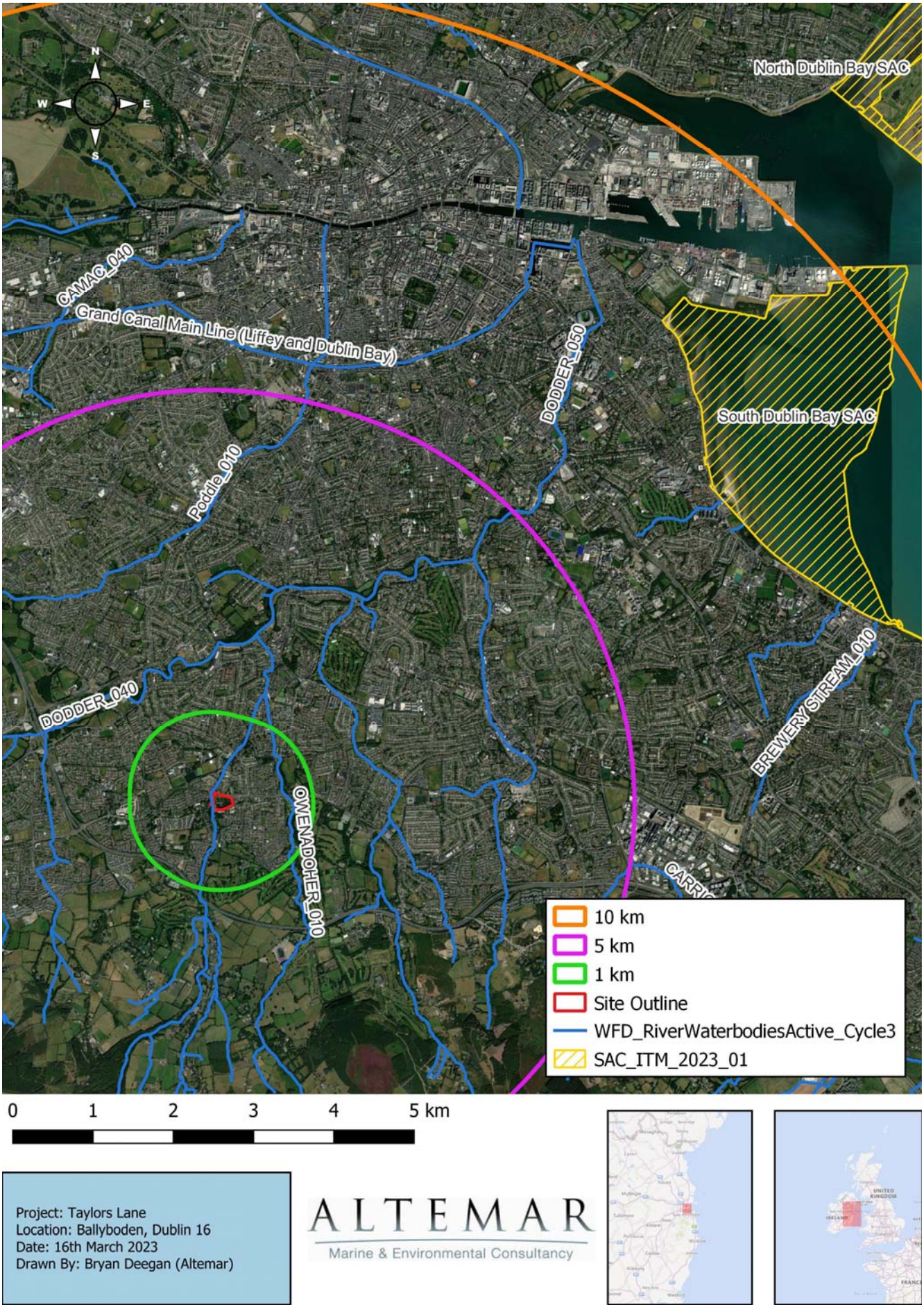


Figure 18. Watercourses and SACs with a direct hydrological connection to the subject site

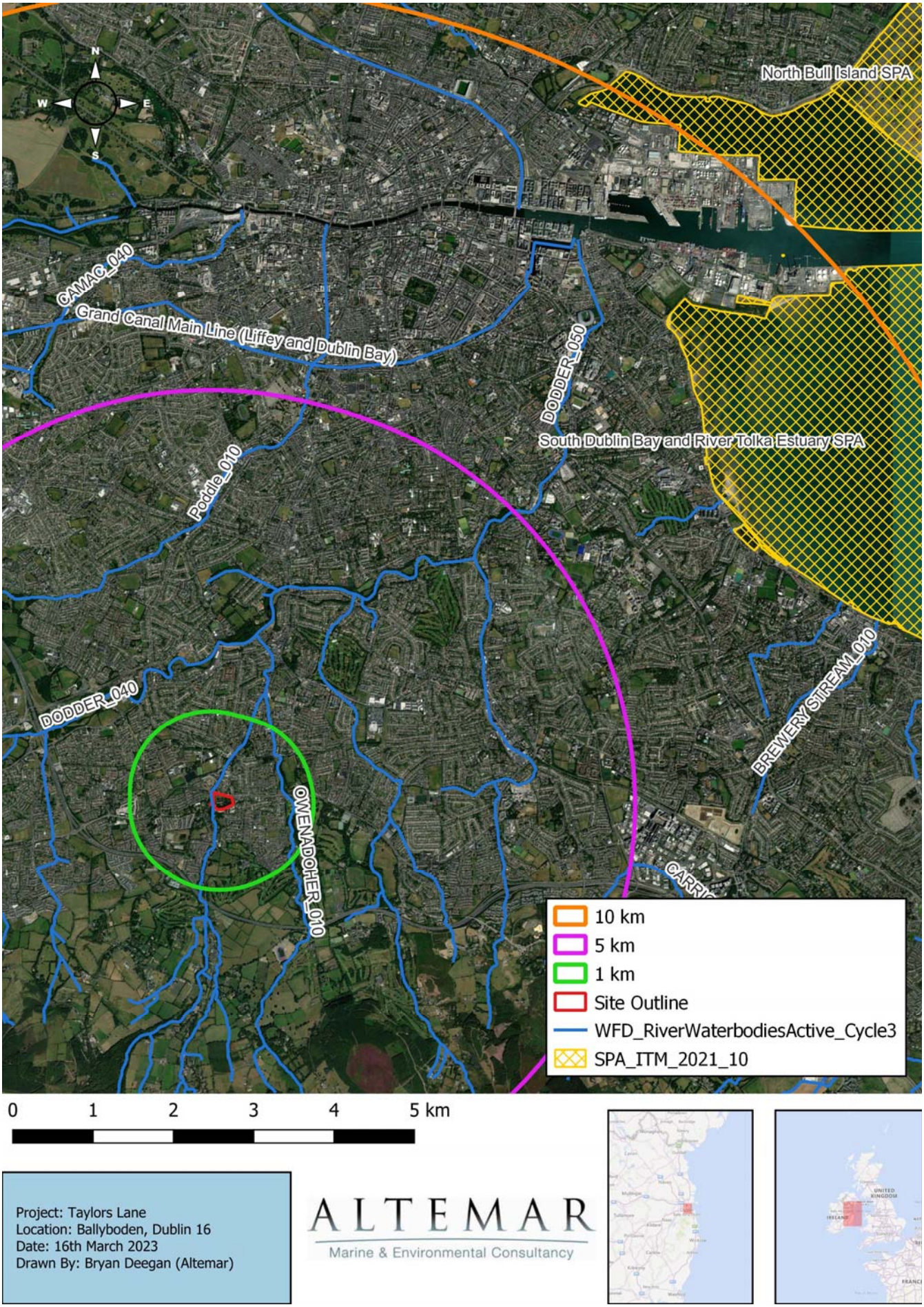


Figure 19. Watercourses and SPAs with a direct hydrological connection to the subject site

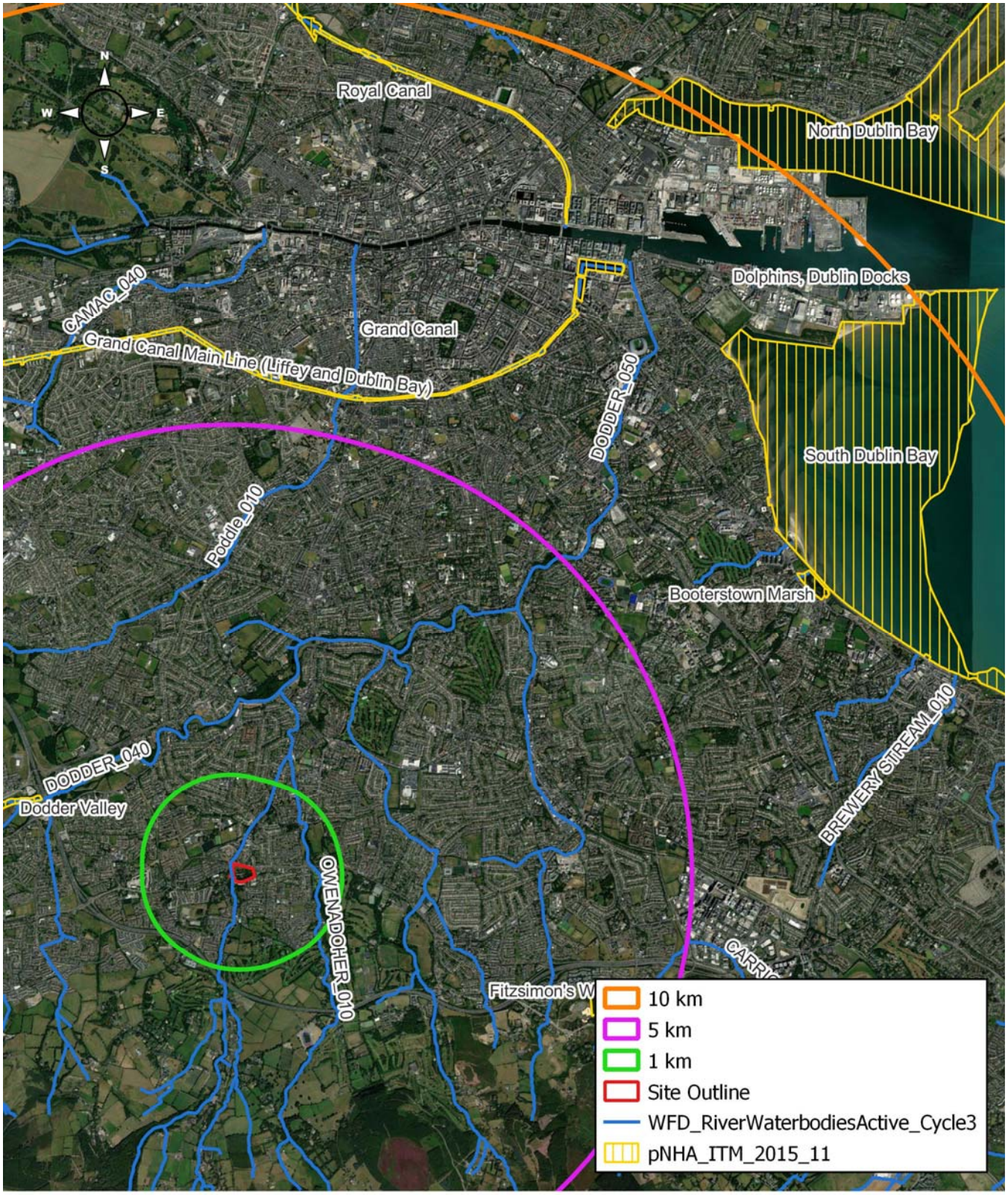


Figure 20. Watercourses and pNHAs with a direct hydrological connection to the subject site

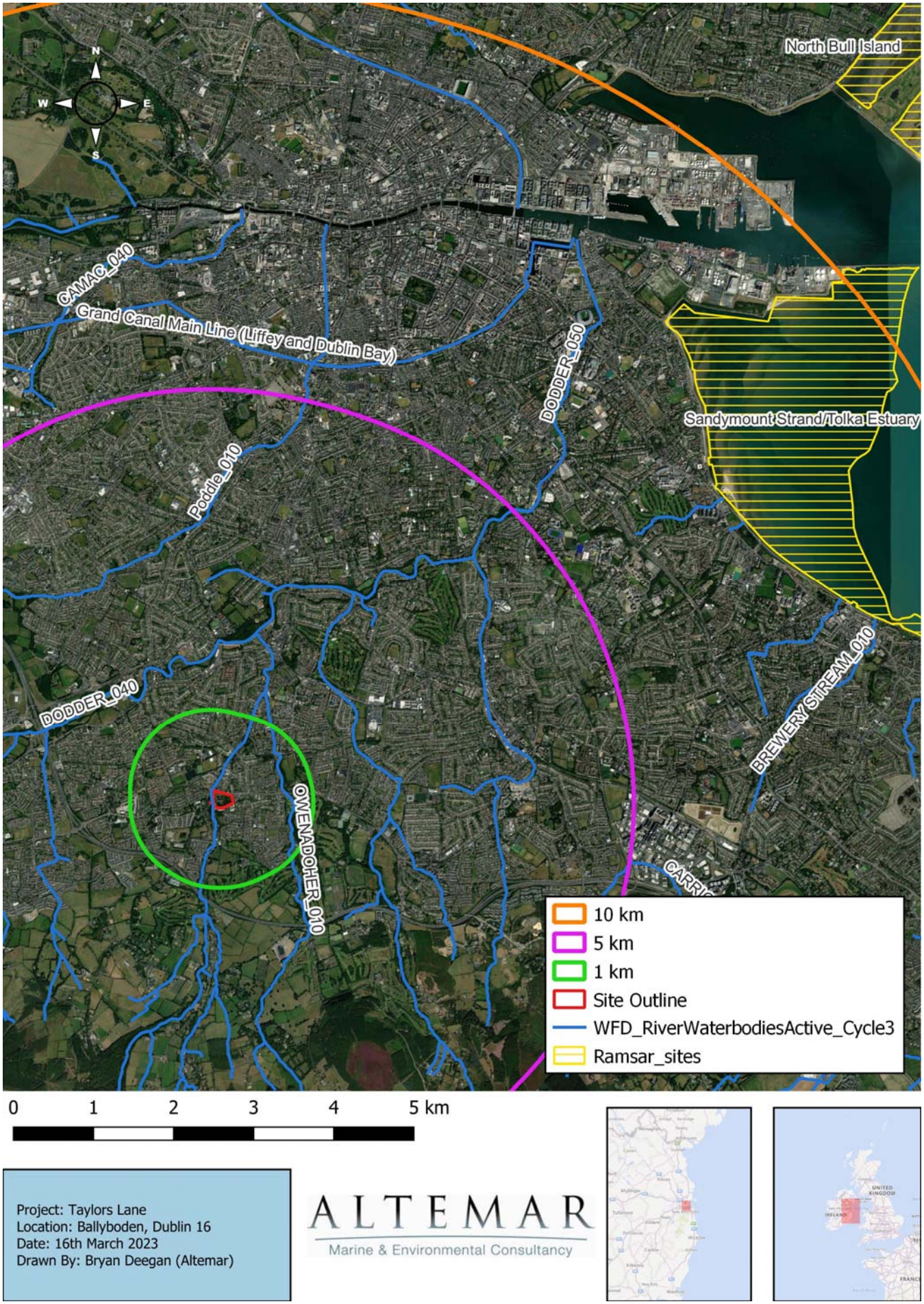


Figure 21. Watercourses and Ramsar sites with a direct hydrological connection to the subject site

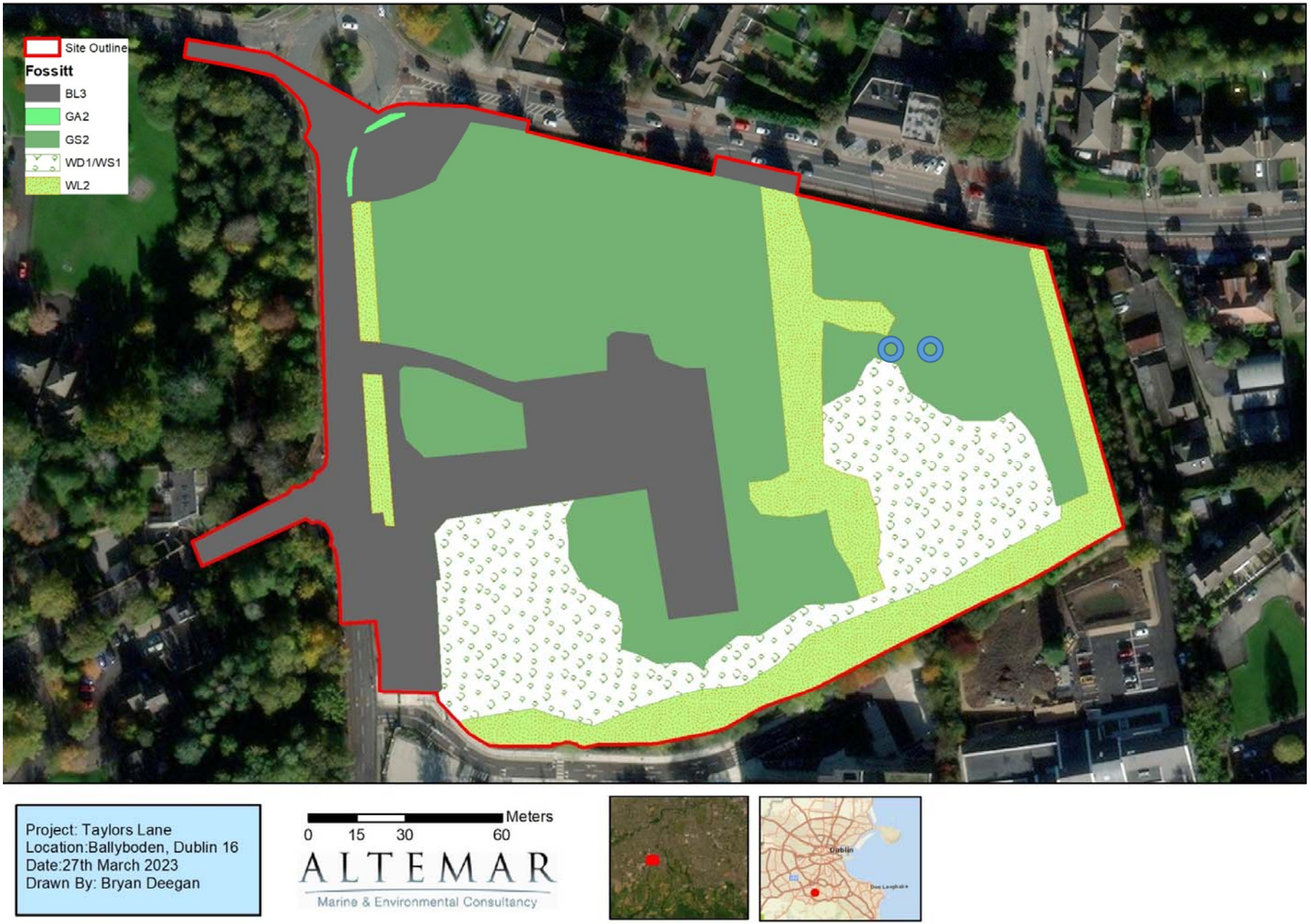


Figure 22. *Fossitt (2000) Habitat map of proposed development site. Location of two small fox dens (blue circles)*

GS2- Dry meadows & Grassy Verges.

The area is unmanages a very long sward. Species included buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), dandelion (Taraxacum agg.), daisy (*Bellis perennis*), plantains (*Plantago spp*.), thistles (*Cirsium sp*.), docks (*Rumex spp*.), common vetch (*Vicia sativa*), yellow clover (Trifolium dubium), nettle (*Urtica dioica*), dandelion (*Taraxacum spp*.), Yorkshire fog (*Holcus l*anatus), yarrow (*Achillea millefolium*), hogweed (*Heracleum sphondylium*), At the fringes of the habitat rosebay willowherb (*Epilobium angustifolium*) was noted in some large stands. Scattered trees were also noted in this habitat.

Plate 1. Dry meadows & Grassy Verges.

BL3- Buildings and artificial surfaces.

A large derelict building is present on the western section of the site. The main building appears sound and is well boarded up. However there are numerous potential emergent points for bats. A bat survey was carried out (Appendix I). Despite the favourable nature of the buildings on site the buildings do not form a bat roost and will not require a derogation licence from the National Parks and Wildlife Service, prior to works being carried out on the structures. All areas of the buildings, including attic spaces, were inspected in September 2022. The favourable nature for the building and lack of bats roosting on site was also confirmed by Faith Wilson in Appendix III in a series of surveys in 2015, 2016 and in 2019.

Plate 2. Build Land (derelict house)

Plate 3. Birch growing on built land.

WD1-(Mixed) broadleaved woodland / WS1-Scrub

As can be seen from the Fossitt Habitat map a portion of the proposed development site consists of an area of Mixed Broadleaved Woodland and scrub. This is gradually getting larger over time with grassland areas becoming overgrown by scrub which is connecting treelines on site forming a wider more woodland habitat. Species in this habitat include birch (*Betula sp*.), elder (*Sambucus nigra*), crab apple (*Malus sylvestris*), hazel (*Corylus avellana*), sycamore (*Acer pseudoplatanus*), cherry (*Prunus sp..),* Lawson cypress (*Chamaecyparis lawsoniana*), wych elm (*Ulmus glabra*), Monterey pine (*Pinus radiata*), cider gum (*Eucalyptus g*unnii), holm oak (*Quercus ilex*), copper beech (*Fagus sylvatica 'Purpurea'*), crack willow (*Salix fragilis*), large-leaved lime *(Tilia platyphyllos*), sessile oak (*Quercus petraea*), ash (*Fraxinus excelsior*), horse chestnut (*Aesculus hippocastanum*), Monterey cypress (*Cupressus macrocarpa*), hybrid black poplar (*Populus x canadensis*) and Norway maple (*Acer platanoides*). Ground flora included rosebay willowherb (*Epilobium angustifolium*), bramble (*Rubus fructicosus*), St. John's wort (*Hypericum perforatum),* nettle (*Urtica dioica*), lords-and-ladies (*Arum maculatum*), herb-robert (*Geranium robertianum*), cow Parsley (*Anthriscus sylvestris*) and hedge bindweed (*Calystegia sepium*). Giant hogweed (*Heracleum mantegazzianum)* was not observed within the site outline in 2022. However, it was previously observed on site by Faith Wilson. This species is an invasive species listed on the third Schedule of regulation 49 & 50 in the European Communities (Birds and Natural Habitats) Regulations 2011.

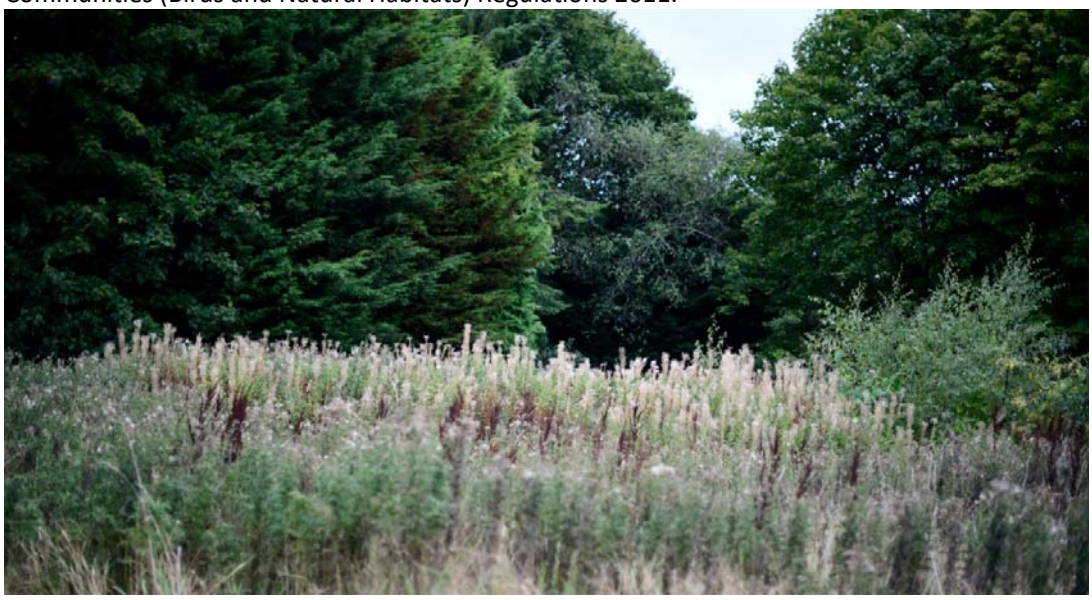


Plate 4. WD1 Mixed broadleaved woodland and Scrub

WL2-Treelines

Treelines are noted on the southern, eastern and western perimeter in addition to the old internal site boundary. The dominant treeline on the southern boundary over the mill race consists of Lawson Cypress (*Chamaecyparis lawsoniana*). The western boundary consists of Lombardy poplar (*Populus nigra 'Italica'*), Lawson Cypress (*Chamaecyparis lawsoniana*), mountain ash (Sorbus aucuparia), horse chestnut (*Aesculus hippocastanum*), sycamore (*Acer pseudoplatanus*), London plane (*Platanus X hispanica*), ash (*Fraxinus excelsior*). The internal treeline consists of Norway maple (*Acer platanoides*), silver birch (*Betula pendula*), ash (*Fraxinus excelsior*), Leyland cypress (*X Cupressocyparis leylandii*).

Plate 5. Treeline of Lawson Cypress (*Chamaecyparis lawsoniana*).

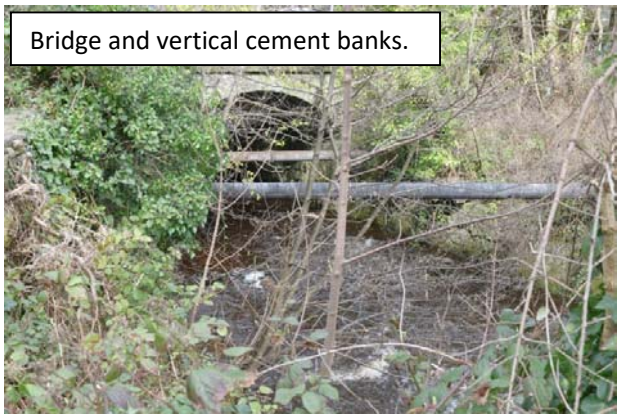
FW3-Canals

To the south of the site on elevated ground is a millrace. This is an artificial waterbody that is canalised in nature. The waterbody within the site consists of a single glide with no pool or riffle areas. The millrace is heavily silted and has a paucity of instream biodiversity. No fauna or flora were noted within the millrace within the site outline. It should be also noted that the millrace beneath a dense treeline of Lawson Cypress (*Chamaecyparis lawsoniana*) which occludes a significant portion of the daylight. The flow is intermittent (no flow observed during summer surveys) and appears to be directly related to water levels within the Owendoher River.

Plate 5. Millrace to the south of the site.

Owendoher River

In order to help understand the flow dynamics of the millrace and the potential for this area of the River to support otter (*Lutra lutra*), the main Owendoher River was visited. The weirs and structures on the sections of Owendoher River proximate to the site are seen in Plates 6 (a-h). The weir (plates 6 a +b) holds the water back to allow the water enter the millrace pipe through a grate (6 e). Despite flood level flows observed in February 2023 the flows to the millrace appeared slow and sluggish. The section of the Owendoher River between the mill race and the bridge where the proposed discharge of the surface water is heavily modified with three overtopping weirs and two bridges. The lower limits of this section have tall poured concrete walls for banks and there are no features along this section that would allow otters to move up or down the river. There are no mammal passes at road crossings and access in this area for otters is poor. This poor access continues downstream of the surface water connection where poured concrete walls again form the banks of the watercourse (Plate 6 d). As seen in Plate 6h, further downstream the watercourse does open to allow easier access to the watercourse. No signs of otters e.g. spraints were noted along the watercourse. However, a single disused burrow was noted upstream of the proposed surface water connection proximate to the watercourse and a pipe that crosses the river. The area in the vicinity of the surface water connection is extremely poor habitat for otter dur to the high vertical poured concrete banks and poor access beneath bridges. Otters however, may be present downstream of the works, but no evidence of otter activity was noted.



Plates 6 (a-h anticlockwise from top left). Highly modified nature of the Owendoher River with poor connectivity or infrastructure for otters.

Evaluation of Habitats
The proposed development site consists primarily of several derelict buildings, dry meadows & grassy verges, scrub, mixed broadleaf woodland with, treelines around the perimeter and internally within the site. The millrace to the south of the site has an inconstant flow, is heavily silted and is beneath a dense conifer treeline. No habitats of conservation importance were noted on site.

Plant Species

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

Invasive Plant species
Giant hogweed (*Heracleum mantegazzianum*) was previously noted on site by Faith Wilson. This species was not recorded in 2022. This species is listed on the third Schedule of regulation 49 & 50 in the European Communities (Birds and Natural Habitats) Regulations 2011. Out of an abundance of caution mitigation will be carried out in relation to invasive species.

Fauna
Foxes (*Vulpes vulpes*) and two fox dens were noted on site. No signs of badgers were found on site. *During this survey, otter signs were found on the River Dargle just to the east of the confluence with the County Brook Stream, and one sprainting site was found on the County Brook Stream to the west of the Motorway.*

A millrace is noted on site. No ponds or pools were found on site. Frogs may forage over the grassland areas on site and in scrub areas also on occasion.

Bats
Bat assessment was carried out and the results of the surveys are seen in Appendix I. There were no seasonal or climatic constraints as surveys were undertaken within the active bat season in good weather conditions with temperatures of 10°C after dark. Winds were very light and there was no rainfall. Surveys were carried out with an Echo Meter Touch Pro 2 bat detector. Bat foraging was noted across the site by three species of bat (Leisler's Bat (*Nyctalus leisleri*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Common pipistrelle (*Pipistrellus pipistrellus sensu stricto*). Foraging activity was relatively low considering the nature of the site with wooded areas and open grassland habitats. Minor bat activity was noted proximate to the main building on site over the grassland habitat. No evidence of bats roosting on site were noted. However, several trees of high roosting potential were noted on site. A single pass of a brown long eared bat (*Plecotus auratus*) was previously recorded by Faith Wilson on site.

Birds
As outlined in Appendix IV '*In total 37 Bird species were recorded overall at the Taylor's Lane site in Ballyboden during 10 surveys over the course of the winter bird survey period 2022-2023. Species recorded that are red listed as a wintering species of conservation concern (Birdwatch Ireland's birds of conservation concern in Ireland 2020-2026) that were recorded on-site were Redwing, recorded in small numbers (less on 20 foraging on-site on all visits).*

Results suggest that the site is not significant ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). Species of more significant interest in the context of the site's location such as Brent Geese, Curlew, Oystercatcher etc. were not recorded passing over the site. Herring Gull were noted to regularly pass over especially the north side of the site, none were noted foraging on-site with the few small open areas on-site noted as sub-optimal for foraging (long rough grass type). A selection of passerines typical of parkland in suburban Dublin were recorded, and remained consistent throughout the surveys.

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 and it recorded no species of interest in the site area. Following this a 2km^2 grid (O12I) was assessed. Table 7 provides a list of all species recorded in both grid areas that possess a specific designation, such as Invasive Species or Protected Species.

Table 7. Recorded species, associated designations and grid references

Date of Record	Species Name	Designation
31/05/1974	*Smooth Newt (Lissotriton vulgaris)*	*Protected Species: Wildlife Acts*
31/07/1991	*Common Starling (Sturnus vulgaris)*	*Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List*
31/07/1991	*Common Wood Pigeon (Columba palumbus)*	*Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species*
31/07/1991	*House Sparrow (Passer domesticus)*	*Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List*
31/12/2004	*Arthurdendyus triangulatus*	*Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species*
04/06/2013	*Butterfly-bush (Buddleja davidii)*	*Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species*
31/01/2018	*Japanese Knotweed (Fallopia japonica)*	*Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)*
26/06/2008	*Parrot's-feather (Myriophyllum aquaticum)*	*Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> EU Regulation No. 1143/2014 || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)*
21/04/2020	*Three-cornered Garlic (Allium triquetrum)*	*Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)*
28/06/2015	*Large Red Tailed Bumble Bee (Bombus (Melanobombus) lapidarius)*	*Threatened Species: Near threatened*
15/06/2019	*Common Lizard (Zootoca vivipara)*	*Protected Species: Wildlife Acts*
11/07/2022	*Eastern Grey Squirrel (Sciurus carolinensis)*	*Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> EU Regulation No. 1143/2014 || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)*
05/12/2022	*European Otter (Lutra lutra)*	*Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex II || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts*
24/05/2007	*Lesser Noctule (Nyctalus leisleri)*	*Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts*
21/10/2010	*Pipistrelle (Pipistrellus pipistrellus sensu lato)*	*Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts*
25/04/2021	*West European Hedgehog (Erinaceus europaeus)*	*Protected Species: Wildlife Acts*

An assessment of files received from the NPWS (Code No. 2022_120) which contain records of rare and protected species and grid references for sightings of these species was carried out as part of this EcIA. There are no recorded sightings within the site itself, however there are some records for grids that are in close proximity to the subject site. The following table provides a summary of the species identified, the year of identification, survey name and Grid Reference.

Table 8. Recorded species within NPWS Records proximate to the site.

Sample ID	Species	Survey Name	Sample Year
27916	Smooth Newt (*Lissotriton vulgaris*)	AFF Mammals, Reptiles & Amphibians Distribution Atlas 1978	1974
22053	Common Frog (*Rana temporaria*)	Frog – National Frog Survey 2011 additional records	2011
26687	West European Hedgehog (*Erinaceus europaeus*)	AFF Mammals, Reptiles & Amphibians Distribution Atlas 1978 (II)	1973

Potential Impacts

This report has been prepared to outline the construction and operational phase measures in addition to detailing the potential impacts on sensitive receptors within the Zone of Influence (ZOI) in the absence of mitigation measures.

Potential Construction Impacts

The overall development of the site is likely to have direct negative impacts upon the existing habitats, fauna and flora. Direct negative effects will be manifested in terms of the removal of the site's internal habitats. The removal of these habitats will result in a loss of species of low biodiversity importance. However, the due to the substantial vegetation on site, the site forms a nesting resource for birds. There is the potential for contaminants and pollutants to enter the Owendoher River (a watercourse that traverses along the western portion of the application lands) and impact on downstream biodiversity.

Designated Conservation sites within 15km

The proposed development is not within a designated conservation site. The nearest designated conservation site is the Dodder Valley pNHA (2.2 km). The nearest Natura 2000 sites are Wicklow Mountains SAC & SPA (4.6 km).

The nearest watercourse to the subject site is the Owendoher River, which flows along the western portion of the subject site (Figure 16). The Owendoher River outfalls to the River Dodder, which in turn outfalls to the marine environment at Dublin Bay. Given that the Owenadoher River will be connected to the surface water drainage and flows proximate to the western boundary, it is considered that there is a direct hydrological connection to designated conservation sites located within Dublin Bay, namely, South Dublin Bay (SAC & pNHA), North Dublin Bay (SAC & pNHA), South Dublin Bay and River Tolka Estuary SPA, Sandymount Strand/Tolka Estuary Ramsar site, and North Bull Island (SPA & Ramsar Site). During construction, there is the potential for dust and contaminated surface water runoff to enter the Owendoher River and transport to downstream conservation sites within Dublin Bay.

It should be noted that there is an existing millrace that bounds the southern boundary of the subject site, which ultimately outfalls to the Owendoher River downstream of the subject site. Out of an abundance of caution, it is also considered that there is the potential for silt and contaminated runoff to enter this waterbody and transport pollutants to the Owendoher River and, ultimately, downstream conservation sites.

Impacts in the absence of mitigation: Minor adverse / International / Negative Impact / Not significant / short term.
Mitigation measures are required to ensure that there will be no significant impacts on downstream conservation sites via contaminated surface water runoff and dust during the construction stage of development.

Biodiversity

In the absence of mitigation, the impact of the development during construction phase will be a loss of existing habitats and species on site and potential impacts on biodiversity adjacent to and downstream of the site. It would be expected that the flora and fauna associated with these habitats within the site would also be displaced.

Further, given that the Owendoher River flows through a western portion of the subject site, and that there is an existing millrace that bounds the southern boundary of the site (which in turn outfalls to the Owendoher River), and that excavation and reprofiling works are proposed during the construction phase of development, there is potential for negative effects on downstream biodiversity in the absence of mitigation measures. There is the potential for dust, pollution and contaminated surface water runoff to enter the Owendoher River and impact on downstream biodiversity and on the water quality of the watercourse and potentially the River Dodder, which is a salmonid river.

Terrestrial mammalian species

No badger setts are present on-site. Otter presence was not noted on the Owenadoher River to the west of the site, which is a heavily modified watercourse that has few accessible passes for otters. No otter holts were found on site and none are expected onsite. A number of active and disused fox dens were noted onsite. It should be noted that a loss of habitat and habitat fragmentation may affect some common mammalian species.

Potential Impacts in the absence of mitigation: Low adverse / local / Negative Impact / Not significant / short term. Mitigation is needed in the form of a pre-construction inspection for terrestrial mammals of conservation importance and control of silt and pollution form the site.

Flora

No flora of conservation importance or invasive species (Habitats Directive, 2011) were noted on site during the 2022 and 2023 site surveys. The majority of the proposed area consists of overgrown grassland with large areas of dense bramble scrub.

It should be noted that a several standing dead stems of Giant Hogweed (*Heracleum mantegazzianum*) were noted onsite during a 2014 survey conducted by Faith Wilson (see Appendix III). There was no evidence of this species during a 2019 survey of the lands conducted by Faith Wilson or in 2022 carried out by Altemar.

Impacts: Low adverse/ site / Negative Impact / Not significant / long-term. Mitigation is needed in the form of a pre-construction inspection for invasive species.

Bat Fauna

A number of bat surveys were carried out onsite, and proximate to the site, between 2013 and 2019 by Faith Wilson (MCIEEM) (see Appendix III). A number of bat surveys were carried out onsite in 2022 by Bryan Deegan (Altemar) (see Appendix I).

Three species of bat were noted in 2016 (Common pipistrelle, Soprano pipistrelle and Leisler's Bat). As outlined in Appendix III: '*Bat activity was mostly focused on the southern and south eastern side of the building which was in darkness with the exception of a security light over the door. No bats were recorded either entering or exiting the building and it would not appear to have been used by bats for roosting purposes at this time*.'

Four species of bat were noted in 2019 (Common pipistrelle, Soprano pipistrelle, Brown Long-eared Bat, and Leisler's Bat). As outlined in Appendix III: '*There was no evidence of bats roosting in the buildings on site but as noted above there is potential for bats to roost in a number of locations within the buildings. The detector survey recorded four species of bats foraging in the grounds of the property. These were Leisler's bat, which was first recorded flying south to north over Taylor's Lane and the Owendoher River corridor. This bat is unlikely to have been roosting in the property but would be availing of foraging habitat in the grounds. Common and soprano pipistrelles were recorded foraging over much of the grounds as previously recorded. A single pass of a brown long-eared bat was recorded at the corner of the chapel. This species is very hard to detect on a bat detector as it makes quite quiet calls. The design and structure of the attic of the building would be very favourable to brown long eared bats.*'

Three species of bat were noted on the 14th September 2022 (Leisler's, Common pipistrelle and Soprano pipistrelle). Two species of bat were noted foraging onsite on the 20th September 2022 (Common pipistrelle and Soprano pipistrelle). Bat activity was concentrated to two trees located to the south of the site. Given that these trees are covered in ivy and have a number of hollows, they are considered to be of bat roosting potential. Lighting during construction has the potential to impact on bat foraging. It should be noted that no bat roosts were noted in the buildings or trees on site.

Potential Impacts in the absence of mitigation: Moderate adverse /local / Negative Impact / Not significant / short term. Mitigation is needed in the form of a pre-construction inspections of building and trees and control of light spill during construction.

Aquatic Biodiversity

The Owendoher River is a watercourse that traverses along the western portion of the subject site. A drainage connection for surface water will be made to the watercourse. No additional works are proposed to the watercourse. However, in the absence of mitigation measures there is potential for effects on this watercourse due to the potential for dust, polution and contaminated surface water runoff to enter the watercourse and cause downstream impacts on biodiversity.

It should be noted that there is an existing millrace that bounds the southern boundary of the subject site, which ultimately outfalls to the Owendoher River downstream of the subject site. Out of an abundance of caution, it is considered that there is the potential for silt and contaminated runoff to enter this waterbody and transport pollutants to the Owendoher River.

Potential Impacts in the absence of mitigation: Moderate adverse / county/ Negative Impact / Slight Effects / short term. Robust mitigation is needed in the form of control of silt, petrochemicals and dust entering the watercourse during construction. A pre-construction survey should be carried out for frogs.

Bird Fauna

A series of wintering bird surveys were carried out in 2022 and 2023 by Hugh Delaney (Ornithologist). As outlined in Appendix II "*In total 37 Bird species were recorded overall at the Taylor's Lane site in Ballyboden during 10 surveys over the course of the winter bird survey period 2022-2023*." Due to the presence of breeding birds on site the construction will result in a loss of foraging and nesting habitat for breeding habitat for breeding birds.

Potential Impacts in the absence of mitigation: Moderate adverse / site / Negative Impact / Not significant / long term. Mitigation is needed in the form of control site clearance outside bird nesting season and the provision of compensatory foraging and nesting habitat.

Potential Operational Impacts

Once developed, the site would be seen as a stable ecological environment. Planting of native species will be important to re-establish nesting and foraging habitats lost. Proximate bat species will be sensitive to light spill.

Appropriate measures should be taken to prevent light spill, contaminated surface water run-off and dust entering into adjacent riparian habitats, and in particular the Owendoher River needs to be protected due to the potential for downstream impacts on the watercourse. The new drainage networks will have to comply with SUDS requirements and standard petrochemical interception will be in place.

Designated Conservation sites within 15km

The proposed Project will comply with drainage requirements and the Water Pollution Acts. Standard compliance mitigation measures will be in place to prevent downstream impacts. No significant impacts on designated sites are likely during operation.

Potential Impacts in the absence of mitigation: 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 in the site outline.

Potential Impacts in the absence of mitigation: Low adverse / local/ Negative Impact / Not significant / long term.

Flora

No protected flora was noted on site. Landscaping will increase flora diversity. Invasive species on site will be removed on site.

Potential Impacts in the absence of mitigation: Neutral / site / Not significant / long-term

Bat Fauna

The proposed development will change the local environment as new structures are to be erected and some of the existing vegetation will be removed. Species expected to occur onsite should persist. Sensitive lighting and landscape strategies have been prepared in consultation with Altemar, to incorporate bat foraging on site. Potential Impacts in the absence of mitigation: Low adverse / Local /Negative Impact / Not significant / long term.

Aquatic Biodiversity

Standard measures will be in place in relation to surface water discharges. No additional mitigation is required during operation. Potential Impacts in the absence of mitigation: Low adverse / local / 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. As landscaping matures in the medium to long term the nesting and foraging resources will improve. 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 breeding birds to forage.

Potential Impacts in the absence of mitigation: Low adverse / site / Negative Impact / Not significant / long term. Mitigation is required to offset nesting resource loss.

Mitigation Measures & Monitoring

Standard construction and operational controls will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the Zone of Influence (ZoI) including Owendoher River, downstream biodiversity, and local biodiversity within / proximate to the subject site are outlined in Table 9. It should be noted that the measures in relation to the protection of the Owendoher River will be robust.

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
Owendoher River River Dodder South Dublin Bay (SAC & pNHA) North Dublin Bay (SAC & pNHA) South Dublin Bay and River Tolka Estuary SPA Sandymount Strand/Tolka Estuary Ramsar site North Bull Island (SPA & Ramsar Site)	• Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream impacts • Negative impacts on aquatic fauna	**Construction Phase Mitigation** • A project ecologist will be appointed to oversee works from prior to commencement of works on site to the completion of all drainage and landscape elements. • Local silt traps established throughout site. • Mitigation measures on site include dust control, stockpiling away from drains • Stockpiling of loose materials will be kept to a minimum of 20m from drains. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses. • Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches, excavations and other locations where it may cause pollution. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations that require pumping will not directly discharge to the public network. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality. • Mitigation measures on site include dust control, stockpiling away from drains • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system. • Fuel, oil and chemical storage will be sited within a bunded area. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. • During the construction works silt traps will be put in place in the vicinity of all runoff channels to prevent sediment entering the public network. • Petrochemical interception and bunds in refuelling area • Maintenance of any drainage structures (e.g. de-silting operations) will not result in the release of contaminated water to the surface water network. • No entry of solids to the associated millrace or drainage network during the connection of pipework to the public water system • Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks. • The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained. • The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. • A project ecologist will be appointed and be consulted in relation to all onsite drainage during construction works. • Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains.

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		• Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis. **Air & Dust** Dust may enter the Owendoher River and surface water network via air or surface water with potential downstream impacts. Mitigation measures will be carried out to reduce dust emissions to a level that avoids the possibility of adverse effects on downstream biodiversity. The main activities that may give rise to dust emissions during construction include the following: • Excavation of material; • Materials handling and storage; • Movement of vehicles (particularly HGV's) and mobile plant. • Contaminated surface runoff *DUST & DIRT GENERATION* *The pro-active control of fugitive dust will ensure the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the dust management plan. Air quality and dust generation mitigation measures are described in the following chapter and will be implemented for the project in accordance with best practice.* • *An independent environmental consultant shall be appointed by the contractor to prepare a dust control and monitoring method statement prior to the commencement of site activities and to witness all demolition activities to ensure that the specified dust mitigation measures are implemented.* • *The Contractor shall put in place a regime for weekly monitoring of dust levels in the vicinity of the site during the works. The level of monitoring and adoptions of mitigation measures will vary throughout the construction works depending on the type of activities being undertaken and the prevailing weather conditions at the time.* • *The Construction team will monitor the Contractor's regime on an ongoing basis throughout the project to endeavour to minimise impact on a surrounding community.* • *If dust levels become an issue, then all dust generating activities on site will cease until such time as weather conditions improve (e.g. wind levels drop or rain falls) or mitigation measures such as damping down of the ground are completed.* • *Avoid unnecessary vehicle movements and manoeuvring, and limit speeds on site so as to minimise the generation of airborne dust.* • *Buildings shall be demolished by approved methods and in a manner that reduces the impact on air quality.* • *Manual Stripping of buildings of internal fixings, metals, glass and asbestos.* • *A 2.4m high solid wooden fencing shall be erected around the construction site perimeter as required.* • *Use of rubble chutes and receptor skips during construction/demolition activities.*

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		• *All buildings in which asbestos has been identified shall be sealed during the asbestos removal process. Asbestos shall only be removed by an appropriately permitted company. All asbestos waste shall be double bagged, stored in a dedicated sealed waste container/skip prior to removal off-site for disposal at an appropriately permitted/licenced facility. Records of all asbestos waste removed from site shall be maintained by the site manager and certificates of destruction shall be provided by the asbestos removal contractor. Asbestos surveys shall be conducted by an appropriately HSE approved contractor.* • *All buildings shall be thoroughly wetted down prior to commencement of building demolition to suppress high level dust emissions.* • *All demolition plant shall be fitted with high pressure water sprays to direct water onto demolition point.* • *Mobile crushing units (if utilised on-site) shall be fitted with spray bars to suppress dust generated by the crushing activity.* • *Temporary dust screens shall be fitted around all mobile crushing plant (if used on-site).* • *Demolition stockpiles shall be kept to an absolute minimum and all C&D waste shall be promptly removed from site.* • *Demolition stockpiles shall be covered by tarpaulin during dry and windy weather.* • *During dry periods, dust emissions from heavily trafficked locations (on and off site) will be controlled by spraying surfaces with water and wetting.* • *Re-suspension in the air of spillages material from trucks entering or leaving the site will be prevented by limiting the speed of vehicles within the site to 10kmh and by use of a mechanical road sweeper.* • *Wheel wash facilities will be provided at the egress point from the site. During peak vehicle movements, where there is a likelihood of dirt on construction vehicles exiting the site, a dedicated road sweeper will be put in place until these works are competed.* • *If dirt generation extends onto public roads, road sweeping will be carried out as well, including if necessary, cleaning of silt from road gullies.* • *Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods. Material stockpiles containing fine or dusty elements shall be covered with tarpaulins. Aggregates will be transported to and from the site in covered trucks.* • *Where drilling or pavement cutting, grinding or similar types of stone finishing operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers. All concrete cutting equipment shall be fitted with a water dampening system.* • *The overloading of tipper trucks exiting the site shall not be permitted.* • *Aggregates will be transported to and from the site in covered trucks.* • *Where the likelihood of windblown fugitive dust emissions is high and during dry weather conditions, dusty site surfaces will be sprayed by a mobile tanker bowser.* • *Wetting agents shall be utilised to provide a more effective surface wetting procedure.*

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		• *Exhaust emissions from vehicles operating within the construction site, including trucks, excavators, diesel generators or other plant equipment, will be controlled by the contractor by ensuring that emissions from vehicles are minimised by routine servicing of vehicles and plant, rather than just following breakdowns; the positioning of exhausts at a height to ensure adequate local dispersal of emissions, the avoidance of engines running unnecessarily and the use of low emission fuels.* • *All plant not in operation shall be turned off and idling engines shall not be permitted for excessive periods.* • *Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.* • *Material stockpiles containing fine or dusty elements including top soils shall be covered with tarpaulins.* • *Where drilling or pavement cutting, grinding or similar types of stone finishing operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers. All concrete cutting equipment shall be fitted with a water dampening system.* • *A programme of air quality monitoring shall be implemented at the site boundaries for the duration of construction/demolition phase activities to ensure that the air quality standards relating to dust deposition and PM10 are not exceeded. Where levels exceed specified air quality limit values, dust generating activities shall immediately cease and alternative working methods shall be implemented.* • *A complaints log shall be maintained by the construction site manager and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.* ***Pollution Control*** *Contamination of Watercourses and ground water is a risk during the construction phase of the development. Detailed construction method statements will need to be approved by the Client's design team. A detailed Site Specific Construction and Environmental Management Plan will be developed and implemented during the construction phase. Site inductions will include reference to the procedures and best practice as outlined in the Construction and Environmental Management Plan.* *Identified risks include spillages into water courses and unprotected ground, allowing pollutants to enter watercourses or ground water. The measures proposed to be put in place to mitigate this risk would be the use of exclusion zones where practicable and exclusion of construction vehicles from areas near the stream. Exclusion zones would the defined by erecting a 1m high barrier along the watercourse formed by steel road pins supporting an orange PVC barrier with warning signs appropriately fixed at regular intervals.* *Sediment and Erosion – Similar to the above, adjacent watercourses/groundwater need to be protected from sedimentation and erosion due to direct surface water runoff generated onsite during the construction phase. To prevent this from occurring surface water discharge from 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 shall be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction.*

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate. *The extent of sub-soil and topsoil stripping to be minimised to reduce the rate and volume of the run-off during construction until the topsoil and vegetation are replaced.* *Accidental Spills and Leaks – All oils, fuels, paints and other chemicals will be stored in a secure bunded construction hardstand area. Refueling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water features e.g. The old mill race (when not possible to carry out such activities off site). A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment.* *Concrete – Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete is not to be disposed of on site. Pumped concrete will be monitored to ensure there is no accidental discharge. Mixer washings are not to be discharged into surface water drains.* *Disposal of Wastewater from Site – Discharge from any vehicle wheel wash areas is to be directed to on-site settlement tanks/ponds, debris and sediment captured by vehicle wheel washes are to be disposed off-site at a licensed facility.* *Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.* *In the event of groundwater being encountered during the construction phase, mitigation measures will include dewatering by pumping to an appropriate treatment facility prior to discharge. Other measures would include excluding contaminating materials such as fuels and hydrocarbons from sensitive parts of the site i.e. highly vulnerable groundwater areas.* *Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.* *In the event of groundwater being encountered during the construction phase, mitigation measures will include dewatering by pumping to an appropriate treatment facility prior to discharge. Other measures would include excluding contaminating materials such as fuels and hydrocarbons from sensitive parts of the site i.e. highly vulnerable groundwater areas.* ***Biodiversity*** *Tree Protection* *Protective fencing will be erected in advance of any construction works commencing outside the drip-line of the canopy of retained trees and vegetation within and along the site boundaries in order to prevent damage by machinery, compaction of soil, etc. in accordance with BS 5837:2012. This will be signed off on by a qualified arborist*

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		or ecologist to ensure it has been erected properly before any machinery is allowed on site. No ground clearance, earth moving, stock-piling or machinery movement will occur within these protected areas. *<u>Lighting Design</u>* *Many species of bats and other mammals are sensitive to lighting and will avoid areas which are illuminated. The design recommendations from the BCT (2010) for wildlife-friendly lighting will be incorporated into the lighting design for the scheme which will be prepared for the next application stage. The lighting on site will be shielded to ensure the spill light into ecological area at below 1 lux.* . *<u>Planting of Native Species</u>* *The landscaping proposals for the development (including the planting of trees and shrubs) were developed in conjunction with the project ecologist and include the use of native and local plant species such as hawthorn, blackthorn, spindle, Wych elm, holly, hazel, guelder rose, willows, oak, ash, and elder – the planting along the watercourse at the southern boundary of the site will be diversified following the removal of the cypress trees to improve this feature for wildlife. The species used will be native and of local origin, certified stock is available from nurseries who supply stock for the Native Woodland Scheme. Additional planting was recommended to strengthen areas within the site for wildlife and biodiversity and to reinstate green infrastructure across the site where feasible. Further details are provided in the accompanying landscaping drawings.* *<u>Provision of Roosting and Nesting Opportunities</u>* *Nesting and roosting opportunities will be provided for both bats and birds within the new development as appropriate. These will include the erection of 25 no. artificial nest boxes and 15 no. bat boxes, which will be accommodated on trees within the site. These will be specified by an ecologist and erected under their supervision.* *<u>Minimising site disturbance</u>* *Design to avoid excessive cut and fill, unnecessary clearing of vegetation and to preserve existing site drainage patterns. Clear only those areas necessary for building work to occur. Preserve grassed areas and vegetation where possible. This helps filter sediment from storm water run off before it reaches the drainage system and stops rain turning exposed soil into mud. Delay removing vegetation or commencing earthworks until just before building activities start. Avoid building activities that involve soil disturbance during periods of expected heavy or lengthy rainfall.* *<u>Contractor Briefing</u>* *All site contractors should be briefed regarding the biodiversity value of the retained trees and vegetation to ensure that there are no accidental or unintentional actions conducted during the project construction that could lead to a reduction in water quality/damage to same. Such matters often arise through ignorance or by accident rather than as a result of an intentional action.*

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		<u>Protection Measures for Fisheries</u> *Measures will be in place to ensure that there is no deterioration in water quality to the millrace along the southern boundary of the site or the Owendoher River arising from the development. These relate mainly to the control of dust, pollution, silt and sediment runoff during construction and the installation of hydrocarbon/petrol interceptors on surface water drainage systems leaving the development. For any instream works the guidelines presented in the Eastern Regional Fisheries Board 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites' should be reviewed and followed where applicable and the contractor informed of the sensitivity of the catchment.* *Storage/Use of Materials, Plant & Equipment* • Materials, plant and equipment shall be stored in the proposed site compound location; • All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater; • Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages; • Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use. • Drip trays will be turned upside down if not in use to prevent the collection of rainwater; • Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips; • No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction; *Drainage on-site* a) Channels will be prepared on site, in the vicinity of future access roads. Within these channels silt fences/barriers will be placed and will consist of woven/terram style material of suitable density to remove the majority of silt from runoff. These will be maintained throughout the construction phase to ensure efficiency, prior to the installation of the permanent drainage network. b) Appropriate storage and settlement facilities will be provided on site. This could include the provision of silt and petrochemical interception for water pumped on site (if required). c) Fuel, oils and Chemicals will be stored on an impervious base with a bund. Under LEED there will be a strategy put in place to prevent pollution of watercourses.

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		Soil Handling Soil should be handled with care as it is a living entity. The topsoil and subsoil layers will be stripped, stored and maintained separately. Topsoil will be temporarily stored upon geotextile such as Terram 1000 (www.terram.com). The contractor should submit proposals for supplier and product, which should be a nonwoven geotextile manufactured from UV stabilised, high tenacity, virgin polypropylene fibres that have been both mechanically and thermally bonded with a minimum of 5 years lifespan in all soil conditions. Note that soil levels within the root spread of those trees that are to be retained should not be raised. From this temporary storage heap the topsoil should be distributed as required for landscaping purposes. In general the topsoil should not be firmed, consolidated or compacted when laying. Tipping and grading to approximate levels should be done in one operation with minimum of trafficking by plant. The topsoil, which is to be retained and reused should not be mixed with: subsoil, stone, hardcore, rubbish or material from demolition work, or the other grades of topsoil, including those contaminated with non-native invasive species. The topsoil should be handled in the driest condition possible. Topsoil should not be handled during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2. **Construction/Demolition Phase - Noise** With regard to construction/demolition activities, best practice control measures for noise and vibration from construction sites are found within BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2. Whilst construction noise and vibration impacts are expected to vary during the construction/demolition phase depending on the distance between the activities and noise sensitive buildings, the contractor will ensure that all best practice noise and vibration control methods will be used, as necessary in order to ensure impacts at off-site noise sensitive locations are minimised. The best practice measures set out in BS 5228 (2009) Parts 1 and 2 includes guidance on several aspects of construction site mitigation measures, including, but not limited to: • Selection of quiet plant. • Noise control at source. • Screening. • Liaison with the public • Monitoring

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		A detailed comment is offered on these items in the following paragraphs. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise and vibration monitoring, where required. **Ecological Clerk of Works** An ecological clerk of works will be appointed to oversee and sign off on the various mitigation measures outlined in this report during the construction phase. **Operational Phase Mitigation** • A project ecologist will be appointed to oversee completion of all landscape and drainage works. • Petrochemical interception will be inspected by the project ecologist to ensure compliance with Water Pollution Acts.
Birds (National Protection)	• Removal nesting habitat. • Removal foraging habitat. • Destruction and/or disturbance to nests (injury/death). • Predation .	• "Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent. • 20 Nest boxes placed on site to compensate for resource loss. • Planting will provide suitable cover for nesting birds and encourage insect diversity that would sustain birds. • During construction light falling upon any areas of benefit to birds such will not exceed 3 lux to ensure that resting and nesting species are not unnecessarily disrupted. All lighting during construction phase will be to the satisfaction of the project ecologist, will be point inwards to the site and will be downward facing so as not to impact on surrounding habitats.
Bats (International Protection)	• Removal roosting/foraging habitat. • Lighting Impacts	*<u>Protection Measures for Bats – Buildings</u>* *Although no roosts were confirmed within the buildings in the site they have high potential to support roosting bats. The buildings, which are scheduled for demolition, will be resurveyed for bats prior to any proposed demolition works as some time may have elapsed between the present survey and these works once planning permission is granted. Should bats be discovered during these works a bat derogation licence will then be sought.A precautionary approach to the demolition of these buildings can then be prepared whereby the roof will be stripped manually with the expectation that bats may be present. One side of the roof will be removed and then the building left overnight before the other side is removed. This work will be done during the winter months (i.e. October – March) when bat numbers are known to be lower in buildings and will also avoid the bird breeding season.* *<u>Protection Measures for Bat Foraging Habitat</u>*

Table 9. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation for ecology
		It is recommended that as much native vegetation, immature and mature trees are retained within, adjoining and surrounding the site as possible. It is likely that these areas support large numbers of invertebrates on which both bats and birds rely for feeding and foraging and also provide cover and shelter for a variety of species. *<u>Felling of Potential Bat Roosts in trees</u>* *All trees will be subject to appropriate felling measures as detailed in NRA Guidelines for the Treatment of Bats during the Construction of National Road Schemes (National Roads Authority 2006). The felling/clearance of trees will be scheduled for the autumn months of September/October when bats are less likely to be using trees. This also avoids the bird breeding season. Suitable trees include the mature sycamore, horse chestnut, and ash along the western site boundary. Other trees with roosting potential include the cherry trees, the copper beech and the mature poplars. Prior to tree felling works the trees will be inspected by a bat specialist in the presence of the tree surgeons and an appropriate felling methodology agreed. The felling of those trees, which have been identified as potential bat roosts, must be supervised by a bat specialist holding a bat handling licence issued by the National Parks and Wildlife Service, (Department of Environment, Heritage and Local Government). If bats are encountered they should be removed by the licence holder to a bat box, to be sited on a nearby tree and the NPWS notified. Identified trees must be felled carefully. Specific advice in relation to individual trees will be given on site by a bat specialist. Gradual dismantling of some mature trees may be necessary to ensure the safety of any bats which may be roosting within significant sized boughs or in the trunk. The tree should be inspected by a bat specialist, and depending on the structure of the tree they may need to be left intact on the ground for 24 hours to allow any bats within them to escape prior to processing.* • Compliance with conditions of a bat derogation licence (if required). • Fifteen bat boxes will be placed on site. • Lighting at all stages should be done sensitively on site with no direct lighting of treelines. • Post Construction assessment/compliance with proposed lighting strategy.
Amphibians	• Death/injury	• A pre-construction survey will be carried out. • Initial lighting and landscaping have taken into account the light spill from the site and the protection of bat foraging areas. It is recommended, as an enhancement measure, that the ecologist reviews the landscaping on the southern boundary following the installation of lighting and landscaping to assess if additional trees could be planted between the development and the mill run.
Invasive Species	• Spread of invasive species distribution	• A pre-site clearance invasive species inspection will be carried out by the project ecologist.
Mammals	• Death/injury	• A pre-construction inspection will be conducted to ensure that there are no badger setts in any areas of scrub on site. Badgers may also construct new setts in the period between this survey and development proceeding.

Table 9. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation for ecology
	• Destruction of resting/breeding places • Disturbance	• All scrub clearance will be monitored to ensure that no badger setts are present in areas that could not be searched in this survey and in the pre-construction survey Pre Construction building inspection for mammals • Post Construction assessment/compliance with proposed lighting strategy will be carried out.

Cumulative Impacts

The following is a list of planning application(s) as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Database' portal:

Table 10. Approved planning applications proximate to the subject site

Ref. No.	Address	Proposal
SHD3ABP-311616-21	Stocking Lane, Ballyboden, Dublin 16.	131 residential units including 21 houses (1 three bed, 11 four bed, 9 five bed)
SD20A/0059	Taylor's Lane, Ballyboden, Dublin 16	Alteration and additions (increasing the overall floor area from 2042.3sq.m to 2
SHD3ABP-308763-20	Stocking Lane, Ballyboden, Dublin 16.	131 residential units including: 21 houses, 51 duplex apartment units
SD18A/0225	2.4 ha, Stocking Lane, Ballyboden, Dublin 16.	Three apartment blocks, two and three storeys in height
SD13A/0222/EP	Grounds adjoining St. Augustines Priory, Edmondstown Road, Dublin 16.	Erection of a new Primary Care Centre of 3,841sq.m. of 1-4 storeys; construction of new vehicle/bicycle entranceway in Edmondstown Road to replace the existing entrance; a new pedestrian entranceway on Edmondstown Road and two new pedestrian entranceways on Moyville; extensive new site landscaping works to include new boundary treatment, pedestrian and cycle paths and planting and parking for 81 cars, 2 ambulances and 26 bicycles; site signage to be erected at Edmonstown Road entrance.
SD13A/0222	Grounds adjoining St. Augustines Priory, Edmondstown Road, Dublin 16.	Erection of a new Primary Care Centre of 3,841sq.m. of 1-4 storeys; construction of new vehicle/bicycle entranceway in Edmondstown Road to replace the existing entrance; a new pedestrian entranceway on Edmondstown Road and two new pedestrian entranceways on Moyville; extensive new site landscaping works to include new boundary treatment, pedestrian and cycle paths and planting and parking for 81 cars, 2 ambulances and 26 bicycles; site signage to be erected at Edmonstown Road entrance.

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

No significant cumulative impacts are likely in relation to the proposed development.

Adverse Effects likely to occur from the project (post mitigation)

Standard construction and operational mitigation measures are proposed. These would ensure that water entering the Owenadoher River is clean and uncontaminated, bats are protected and that mitigation in relation to bird nesting and foraging will be in place. However, early implementation of ecological supervision, prior initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation, bat mitigation and the protection of riparian habitats.

With the successful implementation of standard mitigation measures to limit surface water impacts on the watercourses, biodiversity mitigation/supervision, no significant impacts are foreseen from the construction or operation of the proposed project on terrestrial or aquatic ecology. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works. It would be expected that bat foraging may be reduced within the site, but this would deemed not to be significant.

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on terrestrial biodiversity, aquatic biodiversity and bats through the application of the standard construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts and prevent silt, dust and pollution entering the Owenadoher River will satisfactorily address the potential impacts on downstream biodiversity. No significant adverse impacts on the conservation objectives of European sites are likely in the absence of mitigation measures outlined above.

It is essential that these measures outlined are complied with, to ensure that the proposed development does not have "downstream" environmental impacts and significant impacts on biodiversity on site.

Residual Impacts and Conclusion

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on the sensitive receptors through the application the standard construction and operational phase controls. The overall impact on the ecology of the proposed development will result in a long term minor adverse not significant residual impact on the ecology of the area and locality overall. This is primarily as a result of the loss of terrestrial habitats on site, supported by the creation of additional biodiversity features including sensitive landscaping and lighting strategies.

References

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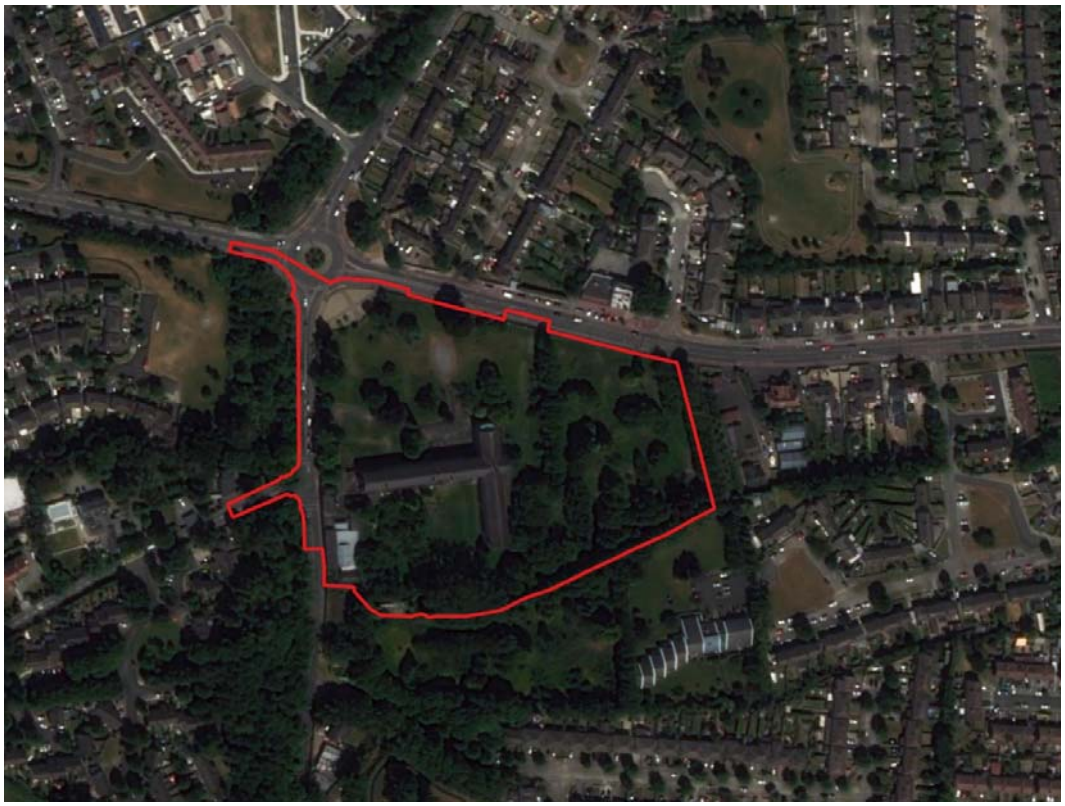
Marine & Environmental Consultancy

Appendix I. Bat fauna impact assessment for a Proposed LRD at Taylors Lane, Ballyboden, Dublin 16.



29th March 2023

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Shannon Homes Dublin Unlimited Company

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Document Control Sheet			
Client	Shannon Homes Dublin Unlimited Company		
Project	Bat fauna impact assessment for a proposed LRD at Taylors Lane, Ballyboden, Dublin 16.		
Report	Bat Fauna Assessment		
Date	29th March 2023		
Version	Author	Reviewed	Date
Planning	Bryan Deegan		29th March 2023

SUMMARY

Site:	Mixed greenfield and brownfield containing trees, dense scrub and hedgerows. There is a watercourse (Owendoher River) traversing to the west of the subject site, and a millrace that bounds the southern boundary. There are a number of derelict buildings (former institutional buildings) and associated outbuildings located onsite.
Location:	Taylors Lane, Ballyboden, Dublin 16.
Bat species present:	Leisler's Bat (*Nyctalus leisleri*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Common pipistrelle (*Pipistrellus pipistrellus sensu stricto)*. Historically, a single brown long eared bat (Plecotus auratus) was also noted on site.
Proposed work:	Large-scale Residential Development (LRD).
Impact on bats:	The present survey found no evidence of roosting bats in any onsite tree or structure therefore the proposed development will not result in the loss of any bat roost as no bats are roosting onsite. However, three trees and the buildings on site are considered to be of moderate to high bat roosting potential and mitigation measures are required in relation to roosting. The proposed development will change the local environment as existing building is to be demolished and vegetation removed. Based on the small number of common species found using the site and the measures that have been implemented, this development will not have any significant effect on local bat populations. In the medium-long term bat foraging would be expected to continue on site and in areas proximate to the site and no significant effect would be foreseen.
Survey by:	Bryan Deegan MCIEEM
Survey date:	Bat surveys (emergent and detector) were also carried out on the 6th September 2022, 14th September 2022 and 20th September 2022, and assessed the site for evidence of roosting and roosting potential.

Description of the Proposed Project

The proposal is for a large-scale residential development on this site of net 3.5ha comprising the following:

- Demolition of existing former Institutional buildings and associated outbuildings (c.5231 sq.m);
- Construction of 402 residential units within 3 apartment/duplex blocks ranging in height from 2-5 storeys and comprising of 39 no. 1-Beds; 302 no. 2-Beds; and 61 no. 3-Beds all with associated private balconies/terraces to the north/south/east/west elevations;
- Provision of one crèche and two retail units.
- Provision of a new public park along Taylor's Lane
- Provision of 290 no. car parking spaces.
- Vehicular access to the site via Edmondstown Road to the west.
- Pedestrian Access to the site via Edmondstown Road to the west and Taylor's Lane to the north.

The proposed site outline, location, site plan, and elevations are demonstrated in Figures 1 & 2.

Landscape

The landscape strategy for the proposed development has been designed by Doyle & O'Troithigh Landscape Architecture to accompany this planning application. The proposed overall landscape plan and green infrastructure plan are demonstrated in Figures 3 & 4.

Figure 1. Proposed site outline

Figure 2. Proposed site plan

Figure 3. Proposed overall landscape plan

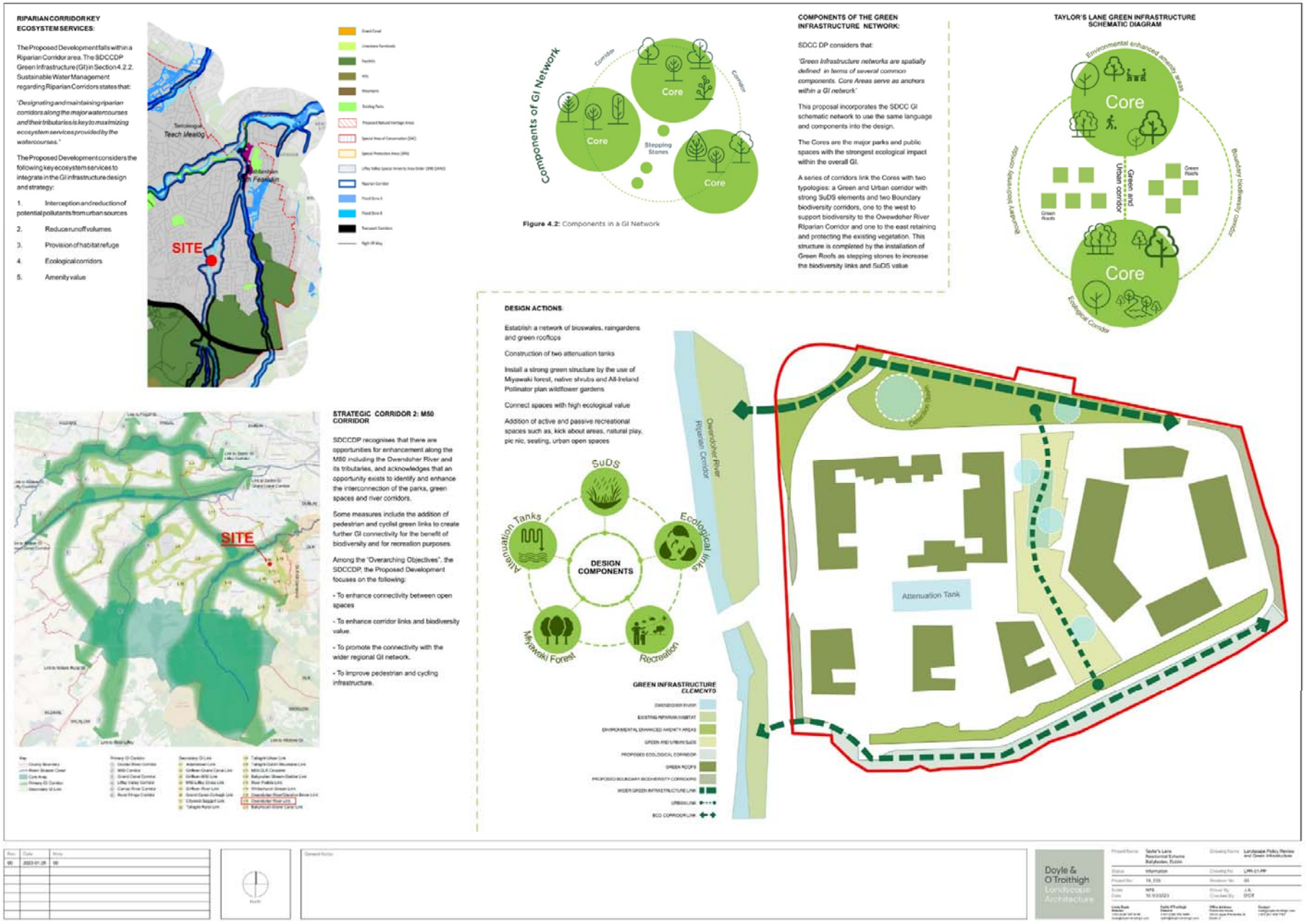

Figure 4. Landscape policy review and green infrastructure

Arborist

A Tree Survey & Planning Report has been prepared by Independent Tree Surveys Ltd. to accompany this planning application. This report details the following arboricultural impact of the proposed development:

'*The scale and density of the proposed new development will require the clearance of most of the existing vegetation cover before this is replaced with a new landscape planting scheme within the new layout. Some of the more prominent mature trees will be retained in the north-western part of the site (including the two category A trees tagged T890 and T909) along with the dense landscape screen of Cypress trees (groups G7, and G18, G19 and G20) along the eastern boundary.*

The number of trees and tree groups proposed for removal from the site is considerable and includes most of the existing tree cover; however, the arboricultural quality and value of most of these trees is comparatively low. The vast majority of the trees proposed for removal are the remnants of the planting scheme established during the creation of the pitch and putt golf course and the planting layout of the tree groups reflects this origin. The trees mostly form narrow linear groups (both straight and sinuous) that were used to divide and separate the individual components of the golf course, the trees are closely spaced and mostly disfigured by the severe pruning regimes to control their size and spread. The planting design, species mix and past treatment limit the management options for the trees and underlie the reasons for their relatively low overall value and low grading in the initial tree survey assessment. Many of the trees planted into the old pitch and putt course has created what are in effect, short sections of hedge which are of little practical use outside of the intended purpose. The individual trees making up the groups are unsuited for retention as individuals because of their growth habit and form and co-dependence with the other members of the group.

The existing pattern of tree cover in the eastern part of the site is thus quite unsuited to incorporation within an efficient revised land use layout for the site, and this makes its removal and replacement unavoidable if the site is to be re-developed for high-density residential use.

The plans for the new development include for the removal of the overgrown Cypress treeline (G21) that runs along the southern boundary region of the site and other trees planted along the bank below the small watercourse. This is proposed as part of plans to improve the conservation value of the riparian corridor by replacing the monocultural stand of conifers with a mix of species able to benefit from the vastly improved growing conditions created by the removal of the heavy shading from the Cypress trees. This work will involve the removal of a considerable number of individual trees and open up the southern boundary region in the short term, however, the trees are of low individual value and the works should bring about a net improvement of tree and vegetation quality over time and into the future.

The trees being proposed for removal include several Ash and Elm trees that are already dead or showing signs of decline as a result of Ash dieback and Dutch Elm disease. It is very likely that these trees would have to be removed at some point within the next few years as they die off due to the disease.

The road re-alignment works to create the necessary access into the new development will require extra space and this will necessitate the removal of many of the existing trees along the Taylors Lane frontage. Many of these trees are of poor quality and/or health, but their removal will constitute a loss of mature tree cover along a well-used public road that will have some visual impact in the short term. The trees will be replaced by a fresh planting scheme as part of the landscape plan; these new trees will add increasing landscape and amenity value as they mature.

In total the plans require the removal of 18 tree groups (17 category C and 1 category U) and 90 trees listed individually on the survey schedule. The trees to be removed include 15 category B, 55 category C and 20 category U trees. As such 75 out of the 90 individual trees (>80%) are of relatively low value or unsuited to long term retention.' The tree survey and constraints plan and tree protection plan are demonstrated in Figures 5-6.

Lighting

The lighting strategy for the proposed development has been prepared by McElligott Consulting Engineers. The proposed public lighting layout is demonstrated in Figure 7. Colour Temperature is 3000k. The lanterns are directional and are pointing away from vegetation with baffles fitted to further reduce spill. These lights are dark sky friendly, and we have left the tilt at zero % in areas close to vegetation. All luminaires are CU-Phosco LED type which lack UV/IP elements. The black line on the report shows the 1 lux contour and this is as tight as possible to the footpaths.

Figure 5. Tree Survey and Constraints Plan (Trees of moderate to high bat roosting potential (blue circle))

Figure 6. Tree Protection Plan (Trees of moderate to high roosting potential to be removed.)

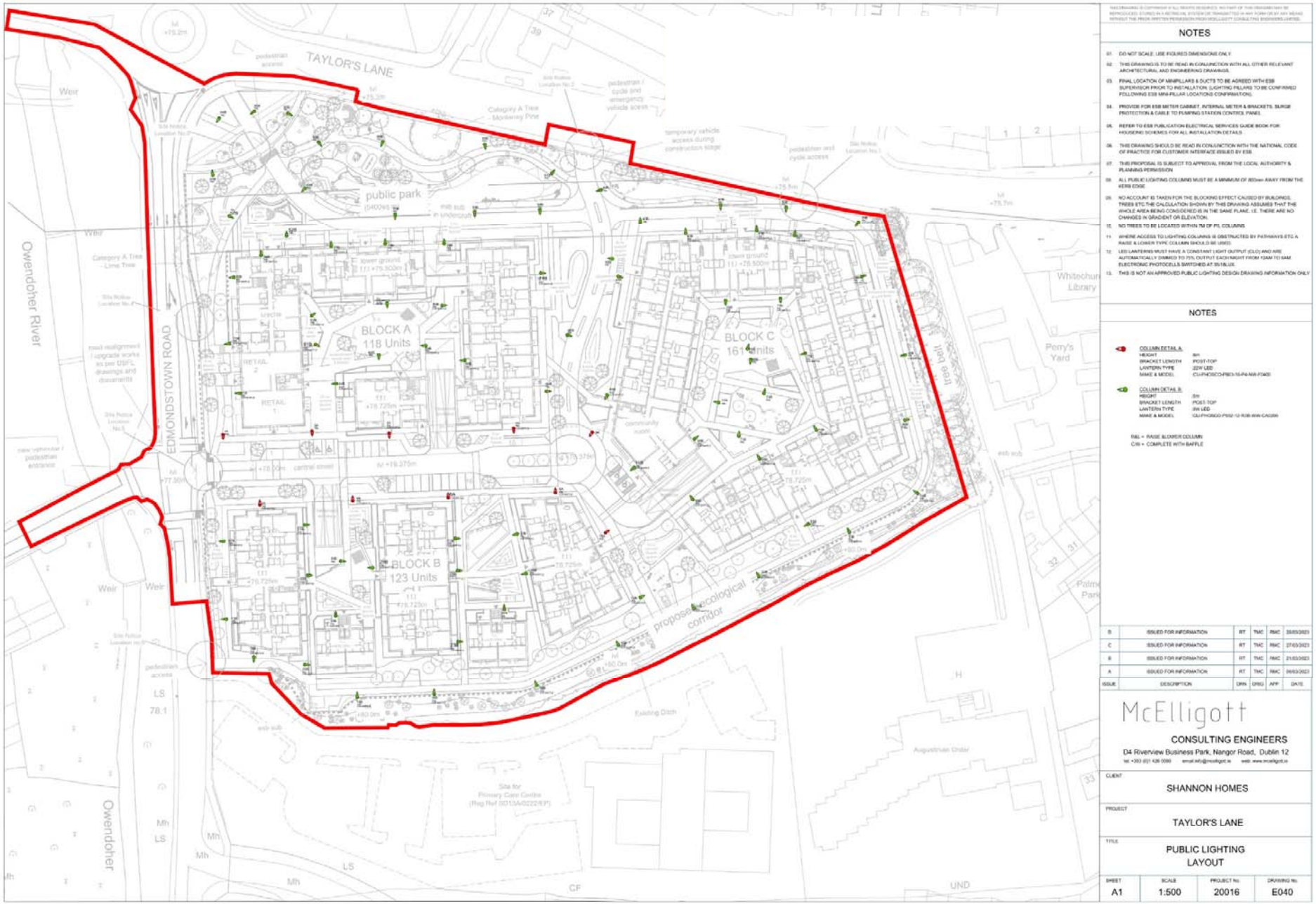

Figure 7. Public lighting layout

Figure 8. Public lighting (Spill)

Competency of Assessor

This report has been prepared by Bryan Deegan MSc, BSc (MCIEEM). Bryan has over 26 years of experience providing ecological consultancy services in Ireland. He has extensive experience in carrying out a wide range of bat surveys including dusk emergence, dawn re-entry and static detector surveys. He also has extensive experience reducing the potential impact of projects that involve external lighting on Bats. Bryan trained with Conor Kelleher author of the Bat Mitigation Guidelines for Ireland (Kelleher and Marnell (2022)) and Bryan is currently providing bat ecology (impact assessment and enhancement) services to Dun Laoghaire Rathdown County Council primarily on the Shanganagh Park Masterplan. The desk and field surveys were carried out having regard to the guidance: Bat Surveys for Professional Ecologists – Good Practice Guidelines 3rd Edition (Collins, J. (Ed.) 2016) and Marnell, Kelleher and Mullen (2022), Bat Mitigation Guidelines for Ireland V2 (which update and replace the Bat Mitigation Guidelines for Ireland published in 2006).

Legislative Context

Wildlife Act 1976 (as amended by, inter alia, the Wildlife (Amendment) Act 2000).

Bats in Ireland are protected by the Wildlife (Amendment) Act 2000. Based on this legislation it is an offence to wilfully interfere with or destroy the breeding or resting place of any species of bat. Under this legislation it is an offence to "*Intentionally kill, injure or take a bat, possess or control any live or dead specimen or anything derived from a bat, wilfully interfere with any structure or place used for breeding or resting by a bat, wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose. "*

Habitats Directive- Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora has been transposed into Irish Law, including, via, *inter alia*, the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). See Art.73 of the 2011 Regulations which revokes the 1997 Regulations.

Annex II of the Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) lists animal and plant species of Community interest, the conservation of which requires the designation of Special Areas of Conservation (SACs); Annex IV lists animal and plant species of Community interest in need of strict protection. All bat species in Ireland are listed on Annex IV of the Directive, while the Lesser Horseshoe Bat (*Rhinolophus hipposideros*) is protected under Annex II which related to the designation of Special Areas of Conservation for a species.

Under the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), all bat species are listed under the First Schedule and, pursuant to, *inter alia*, Part 6 and Regulation 51, it is an offence to:

- Deliberately capture or kill a bat;
- Deliberately disturb a bat particularly during the period of breeding, hibernating or migrating;
- Damage or destroy a breeding site or resting place of a bat;
- Keep, sell, transport, exchange, offer for sale or offer for exchange any bat taken in the wild.

Bat survey

This report presents the results of site visits by Bryan Deegan (MCIEEM) on the 6th September 2022, 14th September 2022 and 20th September 2022, and assessed the site for evidence of roosting and roosting potential.

A bat emergent and detector survey was carried out. Trees on site were examined for bat roosting potential.

Survey methodology

As outlined in Marnell et al. 2022 '*The presence of a large maternity roost can normally be determined on a single visit at any time of year, provided that the entire structure is accessible and that any signs of bats have not been removed by others. However, most roosts are less obvious. A visit during the summer or autumn has the advantage that bats may be seen or heard. Buildings (which for this definition exclude cellars and other underground structures) are rarely used for hibernation alone, so droppings deposited by active bats provide the best clues. Roosts of species which habitually enter roof voids are probably the easiest to detect as the droppings will normally be readily visible. Roosts of crevice-dwelling species may require careful searching and, in some situations, the opening up of otherwise inaccessible areas. If this is not possible, best judgement might have to be used and a precautionary approach adopted. Roosts used by a small number of bats, as opposed to large maternity sites, can be particularly difficult to detect and may require extensive searching backed up by bat detector surveys (including static detectors) or emergence counts.'* In relation to the factors influencing survey

results the guidelines outlines the following *'During the winter, bats will move around to find sites that present the optimum environmental conditions for their age, sex and bodyweight and some species will only be found in underground sites when the weather is particularly cold. During the summer, bats may be reluctant to leave their roost during heavy rain or when the temperature is unseasonably low, so exit counts should record the conditions under which they were made. Similarly, there may be times when females with young do not emerge at all or emerge only briefly and return while other bats are still emerging thus confusing the count. Within roosts, bats will move around according to the temperature and may or may not be visible on any particular visit. Bats also react to disturbance, so a survey the day after a disturbance event, may give a misleading picture of roost usage.'*

The survey involved the methodologies outlined in Collins (2016) which included the roost inspection methodologies i.e. external methodology outlined in section 5.2.4.1 and the internal survey outlines in section 5.2.4.2 of the guidelines. In addition, the methodologies for Presence absence surveys (Section 7) was carried out for dust emergent surveys.'

As outlined in Collins (2016) 'The bat active period is generally considered to be between April and October inclusive (although the season is likely to be shorter in northern latitudes). However, because bats wake up during mild conditions, bat activity can also be recorded during winter months.'

Survey Results

Trees as potential bat roosts.

A ground level roost assessment was carried and used to examine the trees on site for features that could form bat roosts. Potential roosting features include heavy ivy growth, broken limbs, areas of decay, vertical or horizontal cracks, cracks in bark etc. All trees on site were assessed. Three trees (Hybrid Black Poplar (Populus x canadensis) (938,939 & 941) located to the south of the site had features that are considered to be of moderate to high importance to roosting bats. No bats, evidence of bats or bat roost were identified in any of the onsite trees. A derogation license is therefore not required for the removal of trees on site.. No evidence of bats were noted roosting onsite. However, pre construction inspections should be carried on these trees prior to felling.

Plate 1: Hollow of bat roosting potential.

Plate 2: Hollow of bat roosting potential.

Buildings as potential bat roosts.

The buildings onsite consist of a three-storey building and adjoining chapel, with associated outbuildings. These are considered to be of moderate to high bat roosting potential. The buildings were examined for evidence of bat activity. No evidence of bats or bat roosting was noted within the buildings on site.

Plate 3. Attic within main building on site.

Emergent/detector surveys.

Emergent/detector surveys were carried out by Bryan Deegan on the 6th September 2022, 14th September 2022 and 20th September 2022. The detector surveys were undertaken within the active bat season and the transects covered the entire site multiple times during the night. Weather conditions were good with mild temperatures of greater than 10°C after sunset. Winds were light and there was no rainfall. Insects were observed in flight during surveys.

As outlined in Collins (2016) in relation to weather conditions '*The aim should be to carry out surveys in conditions that are close to optimal (sunset temperature 10°C or above, no rain or strong wind.), particularly when only one survey is planned…. Where surveys are carried out when the temperature at sunset is below 10°C should be justified by the ecologist and the effect on bat behaviour considered.*' There were no constraints in relation to the surveys carried out. All areas of the site were accessible and weather conditions were optimal for bat assessments.

At dusk, bat detector surveys were carried out onsite using a*n Echo meter touch 2 Pro* detector to determine bat activity. Bats were identified by their ultrasonic calls coupled with behavioural and flight observations.

Leisler's Bat (*Nyctalus leisleri*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Common pipistrelle (*Pipistrellus pipistrellus*) were noted on site. On the 20th September 2022 bat activity was concentrated to three trees of moderate to high bat roosting potential located to the south of the site. No bats were observed emerging from onsite trees or structures proximate to the subject site. No foraging activity was noted within the northern or eastern portions of the subject site.

Figure 5. Bat activity on site (Leisler's Bat (blue), Soprano Pipistrelle (yellow) and Common pipistrelle (green). Trees of high bat roosting potential (blue circle).

Bat Assessment Findings

Review of local bat records

The review of existing bat records (sourced from Bat Conservation Ireland's National Bat Records Database) within a 2km^2 grid (Reference grid O21P) encompassing the study area reveals that none of the nine known Irish species have been observed locally. The National Biodiversity Data Centre's online viewer was consulted in order to determine whether there have been recorded bat sightings in the wider area. This is visually represented in Figures 5-7. The following species were noted in the wider area: Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (*Myotis daubentonii*), Natterer's Bat (*Myotis nattereri*), Whiskered Bat (*Myotis mystacinus*), Lesser Noctule (*Nyctalus leisleri*), Nathusius's Pipistrelle (*Pipistrellus nathusii*), and Soprano Pipistrelle (*Pipistrellus pygmaeus*) (Figures 5-7).

Figure 5. Daubenton's Bat (*Myotis daubentonii*) (purple), Brown Long-eared Bat (*Plecotus auritus*) (yellow), and both Daubenton's Bat and Brown Long-eared Bat (orange) (Source NBDC) (Site location – red circle)

Figure 6. Whiskered Bat (*Myotis mystacinus*) (yellow) and Natterer's Bat (*Myotis nattereri*) (purple) (Source NBDC) (Site location – red circle)

Figure 7. Lesser Notule (*Nyctalus leisleri*) (purple), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (yellow), and both Soprano Pipistrelle and Lesser Noctule (orange) (Source NBDC) (Site location – red circle)

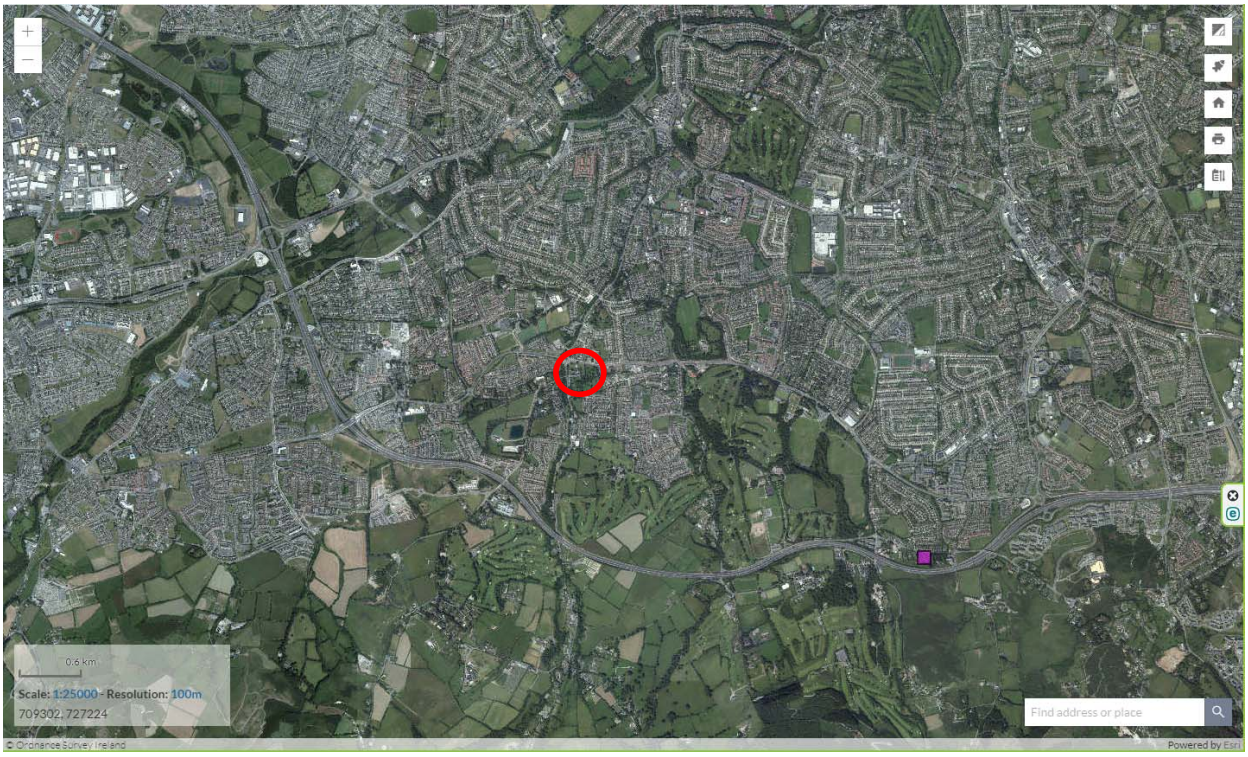

Figure 7. Nathusius's Pipistrelle (*Pipistrellus nathusii*) (purple) (Source NBDC) (Site location – red circle)

Evaluation of Results

The bat surveys comply with bat survey guidance documentation including Marnell et al (2022) and Collins (2016). No bats were observed emerging from trees or the building on site. No evidence of bats roosting in buildings was noted. Minor bat activity was noted on site. In general bat activity on site was low. However, moderate levels of bat activity were noted to the south of the site proximate to trees of bat roosting potential.

Potential Impact of the development on Bats

The west and north areas of the site are lit by existing street lighting. The tall treelined on site reduce the lighting spill from streetlighting. However, foraging activity on site will be reduced in the short-medium term during construction due to the loss of vegetation on site..

Three bat species were noted foraging on site during the 2022 site visits. No bats were noted roosting on site. Three trees of moderate to high roosting potential were noted to the south of the site. The proposed development will change the local environment as new structures are to be erected and some of the existing vegetation will be removed. The development is likely to displace bats from foraging at the site during construction. Based on the small number of common species found using the site, the displacement from this site it will not have any significant effect on local bat populations, and that any such effect will be only significant at the site level. No bat roosts will be lost due to this development and the species expected to occur onsite should persist. Three trees of bat roosting potential will be lost and mitigation measures are required. The potential for collision risk and impact on flight paths in relation to bats is considered is considered low due to the low level of bat activity on site and the buildings would be deemed to be clearly visible to bats.

Mitigation Measures

As outlined in Marnell et al. (2022) "*Mitigation should be proportionate. The level of mitigation required depends on the size and type of impact, and the importance of the population affected*." In addition as outlined in Marnell et. al (2022) '*Mitigation for bats normally comprises the following elements:*

- *Avoidance of deliberate, killing, injury or disturbance – taking all reasonable steps to ensure works do not harm individuals by altering working methods or timing to avoid bats. The seasonal occupation of most roosts provides good opportunities for this*
- *Roost creation, restoration or enhancement – to provide appropriate replacements for roosts to be lost or damaged*
- *Long-term habitat management and maintenance – to ensure the population will persist*
- *Post-development population monitoring – to assess the success of the scheme and to inform management or remedial operations.*'

However, no bats were noted roosting on site. Three trees of bat roosting potential are noted to the south of the site. The level of activity on site is low with common bat species foraging on site. As a result, the following mitigation will be implemented:

- Pre Construction building inspection for bats
- Pre Construction tree inspection of trees of moderate to high bat roosting potential.
- Compliance with conditions of a bat derogation licence (if required).
- Lighting at all stages would be done sensitively on site with no direct lighting of treelines.
- Post Construction assessment/compliance with proposed lighting strategy .
- A pre-construction survey will be carried out.
- Initial lighting and landscaping have taken into account the light spill from the site and the protection of bat foraging areas.
- 10 bat boxes will be placed on site and positions agreed with the project ecologist prior to the commencement of works on site.

Predicted Residual Impact of Planned Development on Bats

The present survey found no evidence of roosting bats in any onsite tree or structure therefore the proposed development will not result in the loss of any bat roost as no bats are roosting onsite. However, three trees and the buildings on site are considered to be of moderate to high bat roosting potential and mitigation measures are required in relation to roosting. The proposed development will change the local environment as existing

building is to be demolished and vegetation removed. Based on the small number of common species found using the site and the measures that have been implemented, this development will not have any significant effect on local bat populations. In the medium-long term bat foraging would be expected to continue on site and in areas proximate to the site and no significant effect would be foreseen.

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Appendix II -Taylor's Lane Winter Bird Surveys 2022-2023

Introduction

Between November 2022 and March 2023 10 winter bird surveys (two per month) were undertaken at lands at off Taylor's Lane, Ballyboden, in South County Dublin, by Hugh Delaney, a freelance Ecologist (Birds primarily) having completed work on numerous sites with ecological consultancies over 10+ years. Hugh is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Winter Bird Survey Methodology

Winter bird surveys are conducted from soon after sunrise until late in the afternoon, or alternatively started later in the day until sunset, the site is monitored throughout the survey period and all bird species utilizing the site recorded, including species flying through overhead. Checks are also made on suitable habitat nearby or adjacent the site for comparative purposes and to monitor any interchange of birds between sites. Target species (species of more special interest) utilizing the site will be mapped and estimates of the time these species frequented the site recorded.

Site Location

Fig 1. Taylor's Lane site. Indicative site outlined in red, yellow 'x' marking the primary site for vantage point or 'VP' observations, providing a good overview of the site.

Site Description

Site located in urban South County Dublin, site dominated by a large building situated at the west side of the site surrounded by rough grass and bramble/willowherb with trees interspersed widely across the site (mainly deciduous), especially towards the east side of the site.

Specific site survey methodology

Vantage point observations were undertaken at several locations around the site, the primary VP location being the position marked 'x' in yellow on map above, this location giving optimal views of species passing over the site and also to note any species foraging in this surrounding area. Additionally, the entire site was traversed over (generally clockwise from west to east then south of the building and back towards the west) every 1.5-2 hours during surveys in order to collect any further data on species utilizing the site. Early survey visits and later survey visits were made alternatively between surveys to ascertain bird movements early in the day and later in the day.

November 17th, 2022

Sunrise- 07.54hrs/Sunset 16.26hrs. Weather – Wind F2 Southwest, Cloud 6/8, Dry, 5c, Excellent visibility. On-site 08.00hrs – 15.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Goldcrest, Chaffinch, Goldfinch, Greenfinch, Siskin, Linnet, Blue Tit, Coal Tit, Long-tailed Tit, Blackbird, Starling, Grey Wagtail, Hooded Crow, Magpie, Jackdaw, Feral Pigeon.

08.00hrs-12.00hrs – Observing from VP from 08.00-12.00hrs, also site traversed twice. Herring Gull (<30) noted passing mainly over the north end of the site, foraging around houses north of the site, none observed to land on-site. Siskin (<18), Grey Wagtail (<1), Dunnock (<1), Greenfinch (<1) Chaffinch (<3), Linnet (<5), Goldcrest (<4), Coal Tit (<2), Blue Tit (<1), Long-tailed Tit (<6), Jackdaw (<15 mainly on building), noted foraging on-site. Most passerines observed in the larger trees at east side of the site. No other target species recorded.

12.00hrs-15.00hrs – Monitoring from VP from 12.30-15.00hrs, site traversed also twice, Herring Gull (<22) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Chaffinch (<4), Linnet (<2), Goldfinch (<7), Goldcrest (<5), Dunnock (<2), Robin (2), Long-tailed Tit (<19), Blue Tit (<3), Coal Tit (<1), Blackbird (<2), Starling (<10 passing through site only), Hooded Crow (<4), Feral Pigeon (<6) noted on-site. No other target species noted on-site.

November 27th, 2022

Sunrise- 08.11hrs/Sunset 16.14hrs. Weather – Wind F3 Southwest, Cloud 2/8, Dry, 10c, Excellent visibility. On-site 10.00hrs – 16.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Goldcrest, Blackcap, Chaffinch, Greenfinch, Goldfinch, Siskin, Blue Tit, Long-tailed Tit, Blackbird, Song Thrush, Redwing, Starling, Grey Wagtail, Pied Wagtail, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

10.00hrs-12.00hrs – Observing from VP from 08.00-12.00hrs, also site traversed once. Herring Gull (<15) noted passing mainly over the north end of the site, none observed to land on-site. Siskin (<4), Grey Wagtail (<1 foraging around building), Dunnock (<2), Robin (<4), Greenfinch (<1) Chaffinch (<1), Linnet (<5), Blackcap (<1 at east side), Goldcrest (<4 at east side), Coal Tit (<2), Blue Tit (<3), Long-tailed Tit (<12 at east side), Jackdaw (<10 mainly on building), noted foraging on-site. No other target species recorded.

12.00hrs-16.00hrs – Monitoring from VP from 12.30-16.00hrs, site traversed also twice, Herring Gull (14) and also Black-headed Gull (<3) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<5), Chaffinch (<4), Goldcrest (<3 at east side), Dunnock (<2), Wren (<2), Robin (2), Long-tailed Tit (<17 in two foraging flocks), Blue Tit (<3), Blackbird (<2), Redwing (<1 passed over site at 12.45hrs), Song Thrush (<1), Pied Wagtail (<1), Starling (<15 passing through site only), Hooded Crow (<2), Rook (<5 passing over site only). Feral Pigeon (<8) noted on-site. No other target species noted on-site.

December 10th, 2022

Sunrise- 08.28hrs/Sunset 16.06hrs. Weather – Wind F2 West, Cloud 8/8, Dry, 2c, Good visibility. On-site 08.45hrs – 14.30hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Goldcrest, Chaffinch, Linnet, Goldfinch, Blue Tit, Long-tailed Tit, Great Tit, Blackbird, Song Thrush, Redwing, Starling, Grey Wagtail, Pied Wagtail, Hooded Crow, Magpie, Jackdaw, Rook, Raven, Feral Pigeon.

08.45hrs-12.00hrs – Observing from VP from 08.45-12.00hrs, and site traversed twice. Herring Gull (<24) and Black-headed Gull (<4) noted passing mainly over the north end of the site, none observed to land on-site. Grey Wagtail (<2 foraging around building), Dunnock (<3), Robin (<2), Chaffinch (<6), Linnet (<10 passing over site only at 10.15hrs), Goldcrest (<3 foraging at east side), Great Tit (<1 at east side), Blue Tit (<3), Long-tailed Tit (<14), Jackdaw (<10 mainly as usual roosting on building), Rook (<8 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-16.00hrs – Monitoring from VP from 12.00-14.30hrs, site traversed also twice, Herring Gull (8) and also Black-headed Gull (<5) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<10), Chaffinch (<5), Goldcrest (<2 at east side), Dunnock (<3), Wren (<2), Robin (<3), Long-tailed Tit (<10) Blue Tit (<4), Blackbird (<1), Redwing (<22 passed over south side of site at 13.40hrs), Song Thrush (<2), Pied Wagtail (<1), Starling (<35 passing through site only in several flocks), Hooded Crow (<2), Rook (<15 passing over site only), Raven (<2 passed east over the middle of site at 13.50hrs), Feral Pigeon (<8) noted on-site. No other target species noted on-site.

December 19th, 2022

Sunrise- 08.36hrs/Sunset 16.07hrs. Weather – Wind F3 Southeast, Cloud 3/8, Dry, 9c, Good visibility. On-site 09.45hrs – 16.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Goldcrest, Chaffinch, Bullfinch, Redpoll, Goldfinch, Blue Tit, Long-tailed Tit, Blackbird, Song Thrush, Starling, Grey Wagtail, Pied Wagtail, Sparrowhawk, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

09.45hrs-12.00hrs – Observing from VP from 08.45-12.00hrs, and site traversed twice. Herring Gull (<32) and Black-headed Gull (<5) noted passing mainly over the north end of the site, none observed to land on-site. Grey Wagtail (<1 foraging around building), Dunnock (<4), Robin (<3), Chaffinch (<8), Bullfinch (<2 foraging at south end of site), Goldcrest (<4 foraging at east side), Blue Tit (<5), Long-tailed Tit (<10), Jackdaw (<8 mainly as usual roosting on building), Rook (<10 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-16.00hrs – Monitoring from VP from 12.00-14.30hrs, site traversed also twice, Herring Gull (20) and also Black-headed Gull (<7) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<12), Chaffinch (<3), Redpoll (<2 foraging at east side of site at 15.00hrs), Goldcrest (<2 at east side), Dunnock (<2), Wren (<3), Robin (<1), Long-tailed Tit (<12), Blue Tit (<2), Blackbird (<4), Song Thrush (<1), Pied Wagtail (<1 around main building), Woodpigeon (<6), Starling (<25 passing through site only in several flocks), Sparrowhawk (<1 male observed hunting at east side of site at 13.40hrs), Hooded Crow (<3), Rook (<4 passing over site only), Feral Pigeon (<8) noted on-site. No other target species noted on-site.

January 9th, 2022

Sunrise- 08.37hrs/Sunset 16.27hrs. Weather – Wind F3 Southwest, Cloud 2/8, Dry, 4c, Excellent visibility. On-site 10.30hrs – 16.30hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Goldcrest, Chaffinch, Bullfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Blackbird, Mistle Thrush, Song Thrush, Redwing, Starling, Grey Wagtail, Pied Wagtail, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

09.45hrs-12.00hrs – Observing from VP from 08.45-12.00hrs, and site traversed twice. Herring Gull (<40) and Black-headed Gull (<6) noted occasionally passing mainly over the north end of the site, none observed to land on-site. Grey Wagtail (<2 foraging around building), Dunnock (<2), Robin (<1), Chaffinch (<4), Bullfinch (<3 foraging at east end of site), Goldcrest (<3 foraging at east side), Blue Tit (<4), Long-tailed Tit (<6), Coal tit (<3), Blackbird (<2), Mistle Thrush (<2 passing over south end at 11.20hrs), Jackdaw (<7 mainly as usual roosting on building), Rook (<15 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-16.00hrs – Monitoring from VP from 12.00-14.30hrs, site traversed also twice, Herring Gull (25) and also Black-headed Gull (<8) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<8), Chaffinch (<6), Goldcrest (<3 at east side), Dunnock (<3), Wren (<2), Robin (<2), Blue Tit (<3), Blackbird (<5), Song Thrush (<2), Redwing (<14 in trees at south end at 14.15hrs), Pied Wagtail (<2 around main building), Starling (<12 passing through site only), Hooded Crow (<2), Rook (<9 passing over site only), Feral Pigeon (<12) noted on-site. No other target species noted on-site.

January 21st, 2022

Sunrise- 08.26hrs/Sunset 16.46hrs. Weather – Wind F2 Southeast, Cloud 5/8, Dry, 7c, Excellent visibility. On-site 08.15hrs – 14.15hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Common Gull, Goldcrest, Chaffinch, Bullfinch, Goldfinch, Redpoll, Blue Tit, Long-tailed Tit, Coal Tit, Song Thrush, Starling, Pied Wagtail, Buzzard, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

08.15hrs-12.00hrs – Observing from VP from 08.15-12.00hrs, and site traversed twice. Herring Gull (<30), Black-headed Gull (<8) and Common Gull (<2) noted occasionally passing mainly over the north end of the site, none observed to land on-site. Pied Wagtail (<2 foraging around building), Dunnock (<3), Robin (<1), Redpoll (<3), Chaffinch (<2), Goldfinch (<5), Bullfinch (<2 foraging at south end of site), Goldcrest (<5 foraging at east side), Blue Tit (<2), Long-tailed Tit (<15), Coal tit (<5), Blackbird (<2), Jackdaw (<14 mainly as usual roosting on building), Rook (<12 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-14.15hrs – Monitoring from VP from 12.00-14.15hrs, site traversed once, Herring Gull (35) and also Black-headed Gull (<5) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<8), Chaffinch (<4), Goldcrest (<2 at east side), Dunnock (<1), Wren (<2), Robin (<3), Blue Tit (<6), Blackbird (<4), Song Thrush (<1), Woodpigeon (<10), Pied Wagtail (<2 around main building), Starling (<20 passing through site only), Buzzard (<1 soaring over east end of site at 13.10hrs), Hooded Crow (<2), Rook (<4 passing over site only), Feral Pigeon (<12) noted on-site. No other target species noted on-site.

February 7th, 2022

Sunrise- 07.59hrs/Sunset 17.19hrs. Weather – Wind F1 Southwest, Cloud 6/8, Dry, 7c, Excellent visibility. On-site 11.00hrs – 17.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Goldcrest, Chaffinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Song Thrush, Mistle Thrush, Starling, Grey Wagtail, Pied Wagtail, Sparrowhawk, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

11.00hrs-12.00hrs – Observing from VP from 11.00-12.00hrs. Herring Gull (<32) and Black-headed Gull (<8) noted occasionally passing mainly over the north and west end of the site, none observed to land on-site. Pied Wagtail (<1 foraging around building), Grey Wagtail (<1), Dunnock (<2), Robin (<2), Chaffinch (<8), Goldfinch (<14), Goldcrest (<2 foraging at east side), Blue Tit (<3), Long-tailed Tit (<9), Coal tit (<2), Great Tit (<1), Blackbird (<3), Sparrowhawk (<1 female passed west over south side of site at 14.30hrs), Jackdaw (<6 mainly as usual roosting on building), Rook (<6 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-17.00hrs – Monitoring from VP from 12.00-17.00hrs, site traversed three times, Herring Gull (18) and Black-headed Gull (<12) again mainly at the north end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<5), Chaffinch (<7), Goldcrest (<3 at east side), Dunnock (<1), Wren (<3), Robin (<3), Blue Tit (<4), Blackbird (<3), Song Thrush (<2), Woodpigeon (<15), Pied Wagtail (<1 around main building), Starling (<15 passing through site only), Hooded Crow (<2), Feral Pigeon (<12) noted on-site. No other target species noted on-site.

February 22nd, 2022

Sunrise- 07.29hrs/Sunset 17.48hrs. Weather – Wind F3 West, Cloud 3/8, Dry, 4c, Excellent visibility. On-site 08.00hrs – 14.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Black-headed Gull, Goldcrest, Chaffinch, Goldfinch, Redpoll, Blue Tit, Long-tailed Tit, Coal Tit, Song Thrush, Redwing, Fieldfare, Mistle Thrush, Starling, Grey Wagtail, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

08.00hrs-12.00hrs – Observing from VP from 08.00-12.00hrs and site traversed three times. Herring Gull (<20) and Black-headed Gull (<10) noted occasionally passing mainly over the north and west end of the site, none observed to land on-site. Grey Wagtail (<1), Dunnock (<4), Robin (<2), Chaffinch (<3), Goldfinch (<8), Goldcrest (<1 foraging at east side), Blue Tit (<5), Long-tailed Tit (<14), Coal tit (<4), Blackbird (<3), Song Thrush (<3),

Redwing (<5 at east side of site), Fieldfare (<2 south over site at 13.40hrs), Jackdaw (<10 mainly as usual roosting on building), Rook (<20 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-14.00hrs – Monitoring from VP from 12.00-14.00hrs, site traversed once, Herring Gull (15) and Black-headed Gull (<12) again mainly at the north and west end of site passing over the boundary of site occasionally, none observed foraging on-site. Goldfinch (<10), Chaffinch (<4), Redpoll (<3 at south side of site at 13.00hrs), Goldcrest (<3 at east side), Dunnock (<2), Wren (<3), Robin (<2), Blue Tit (<6), Blackbird (<2), Redwing (<10 at east side of site), Woodpigeon (<10), Starling (<40 passing through site only), Hooded Crow (<1), Feral Pigeon (<10) noted on-site. No other target species noted on-site.

March 8th, 2022

Sunrise- 06.57hrs/Sunset 18.15hrs. Weather – Wind F2 East, Cloud 4/8, Dry, 3c, Excellent visibility. On-site 12.00hrs – 18.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Lesser black-backed Gull, Black-headed Gull, Common Gull, Goldcrest, Chaffinch, Goldfinch, Siskin, Bullfinch, Blue Tit, Long-tailed Tit, Coal Tit, Song Thrush, Redwing, Mistle Thrush, Starling, Grey Wagtail, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

12.00hrs-18.00hrs – Observing from VP from 12.00-18.00hrs and site traversed four times. Herring Gull (<40), Lesser black-backed Gull (<2), Black-headed Gull (<15) and Common Gull (<3) noted occasionally passing mainly over the north and west end of the site, none observed to land on-site. Grey Wagtail (<2), Dunnock (<3), Robin (<4), Wren (<2), Chaffinch (<5), Siskin (<6 foraging at south side of site), Goldfinch (<12), Bullfinch (<2), Goldcrest (<3 foraging at east side), Blue Tit (<6), Long-tailed Tit (<10), Coal tit (<3), Blackbird (<5), Song Thrush (<1), Mistle Thrush (<2 at east side of site), Redwing (<8 at east side of site), Starling (<20 passing over site in small numbers), Woodpigeon (<14 mainly at east and south side of site), Jackdaw (<10 mainly as usual roosting on building), Rook (<12 passing over site only), noted foraging on-site. No other target species recorded.

March 20th, 2022

Sunrise- 06.28hrs/Sunset 18.37hrs. Weather – Wind F2 South, Cloud 5/8, Dry, 9c, Excellent visibility. On-site 07.30hrs – 14.00hrs.

Species recorded – Robin, Dunnock, Wren, Woodpigeon, Herring Gull, Lesser black-backed Gull, Black-headed Gull, Goldcrest, Chaffinch, Goldfinch, Siskin, Blue Tit, Great Tit, Long-tailed Tit, Coal Tit, Great Tit, Song Thrush, Redwing, Starling, Pied Wagtail, Grey Wagtail, Meadow Pipit, Sparrowhawk, Hooded Crow, Magpie, Jackdaw, Rook, Feral Pigeon.

07.30hrs-12.00hrs – Observing from VP from 07.30-12.00hrs and site traversed three times. Herring Gull (<30), Lesser black-backed Gull (<5) and Black-headed Gull (<4) noted occasionally passing mainly over the north and west end of the site, none observed to land on-site, birds observed often landing on residential houses north of the site. Grey Wagtail (<1), Meadow Pipit (<8 passing over site only), Pied Wagtail (<2), Dunnock (<5), Robin (<3), Wren (<3), Chaffinch (<2), Siskin (<20 passing over site only), Goldfinch (<10), Goldcrest (<5 foraging at east side), Blue Tit (<8), Long-tailed Tit (<15), Coal tit (<2), Great Tit (<2), Blackbird (<4), Song Thrush (<1), Redwing (<3 at south side of site), Starling (<30 passing over site in small numbers), Woodpigeon (<8 mainly at east and side of site), Jackdaw (<6 mainly as usual roosting on building), Rook (<20 passing over site only), noted foraging on-site. No other target species recorded.

12.00hrs-14.00hrs – Observing from VP from 12.00-14.00hrs and site traversed once. Herring Gull (<30) and Lesser black-backed Gull (<3) noted occasionally passing mainly over the north and west end of the site, none observed to land on-site. Dunnock (<5), Robin (<2), Wren (<3), Chaffinch (<5), Goldfinch (7), Goldcrest (<5 foraging at east and south side), Blue Tit (<4), Long-tailed Tit (<8), Coal tit (<3), Blackbird (<4 including one observed nest building), Song Thrush (<1), Starling (<25 passing over site in small numbers), Woodpigeon (<12 mainly at east of site), Sparrowhawk (<1 soaring over northeast corner of site at 13.45hrs), Jackdaw (<5 mainly as usual roosting on building), Rook (<8 passing over site only), noted foraging on-site. No other target species recorded.

Comments and observations on survey results

In total 37 Bird species were recorded overall at the Taylor's Lane site in Ballyboden during 10 surveys over the course of the winter bird survey period 2022-2023. Species recorded that are red listed as a wintering species of conservation concern (Birdwatch Ireland's birds of conservation concern in Ireland 2020-2026) that were recorded on-site were Redwing, recorded in small numbers (less on 20 foraging on-site on all visits).

Results suggest that the site is not significant ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). Species of more significant interest in the context of the site's location such as Brent Geese, Curlew, Oystercatcher etc. were not recorded passing over the site. Herring Gull were noted to regularly pass over especially the north side of the site, none were noted foraging on-site with the few small open areas on-site noted as sub-optimal for foraging (long rough grass type). A selection of passerines typical of parkland in suburban Dublin were recorded, and remained consistent throughout the surveys.

Habitats Directive Assessment

Screening of proposed development of lands for residential development at Taylor's Lane, Ballyboden For Appropriate Assessment in accordance with the requirements of Article 6(3) of the EU Habitats Directive

18th May 2020

Final Report

Report prepared by

Faith Wilson BSc CEnv MCIEEM

Faith Wilson
ECOLOGICAL CONSULTANT

Faith Wilson Ecological Consultant BSc CEnv MCIEEM
Kestrel Ridge, Tigroney West, Avoca, Co. Wicklow

Invasive species present in the site were also identified and mapped if present. A particular focus of the surveys was for those invasive species listed in the Birds and Habitats Regulations 2011.

2.1.3 Description of the receiving environment at Taylor's Lane.

The survey site is approximately 3.8ha in size (3.5ha net) and is located on the site of the former Good Counsel premises (Order of St Augustine) as shown on **Figure 2** below. The former Pitch & Putt course to the east of the Good Counsel premises is also included within the site boundary. Taylors Lane forms the western boundary with Ballyboden Road to the north. Further undeveloped lands which were also part of the former Pitch & Putt course are found to the south.

The former Pitch & Putt course lands (to the south of the present site boundary and the grounds of the former Good Counsel premises) at Taylor's Lane were first visited by this author on the 11th September 2013. These lands were managed at that time and the grassland habitats were closely mown and were classified as amenity grassland (GA2).

The main areas of interest to biodiversity in these areas were identified at the time as the boundary treelines and shrubs whilst areas of mown grassland on the pitch and putt course also provided foraging for a variety of bird species.

Since then intensive management has ceased which has allowed a greater diversity of flora to develop and the grassland is topped on occasion. The grassland habitat is now more akin to that of dry grassy verges (GS2) and supports a greater diversity of invertebrates as a result.

Figure 2. Lands at Taylor's Lane (Google maps imagery).

The grassland is dominated by Yorkshire fog (*Holcus lanatus*), Cock's-foot grass (*Dactylis glomerata*), Creeping buttercup (*Ranunculus repens*), Ribwort plantain (*Plantago lanceolata*), Yarrow (*Achillea millefolium*), Dandelion (*Taraxacum* agg.), Daisy (*Bellis perennis*), Meadow buttercup (*Ranunculus acris*), Hogweed (*Heracleum sphondylium*), White clover (*Trifolium repens*), Common vetch (*Vicia sativa*), Yellow clover (*Trifolium dubium*) and patches dominated by Rosebay willowherb (*Epilobium angustifolium*), Creeping thistle (*Cirsium repens*), Docks (*Rumex* sp.) and Nettle (*Urtica dioica*).

The site is bounded along the western boundary by a treeline (WL2) of mature Sycamore (*Acer pseudoplatanus*), Horse chestnut (*Aesculus hippocastanum*), Lawson Cypress (*Chamaecyparis lawsoniana*), London plane (Platanus X hispanica), and Lombardy poplar (*Populus nigra* 'Italica'). Below this is a poor understorey of Wych elm (*Ulmus glabra*), Elder (*Sambucus nigra*), Dog rose (*Rosa canina*), Bramble (*Rubus fructicosus* agg.) and Mountain ash (*Sorbus aucuparia*). A large volume of shredded and chipped material has been spread at the base of the trees here.

The ground flora here is generally sparse – species recorded include dense Ivy (*Hedera helix*), Cleavers (*Galium aparine*), ash seedlings, dandelion, St. John's wort (*Hypericum androsaemum*), Cow parsley (*Anthriscus sylvestris*), Wood avens (*Geum urbanum*) and Alexanders (*Smyrnium olusatrum*).

The eastern boundary of the site is dominated by a treeline of dense Cypress. The locations of these trees are presented on the tree survey drawing

(19026_TPP) as shown below on **Figure 3**. As indicated by the red circles many of these trees will be lost as a result of the proposed development.

Figure 3. Tree survey drawing - 19026_TPP.

The main tree and shrub species present elsewhere in internal treelines and group plantings within the former pitch and putt course and around the buildings include Sycamore (*Acer pseudoplatanus*), Lombardy poplar (*Populus* sp.), Wild cherry (*Prunus avium*), Hazel (*Corylus avellana*), Birch (*Betula pubescens*), Silver birch (*Betula pendula*), Crab apple (*Malus sylvestris*), Wych elm (*Ulmus glabra*), Elder (*Sambucus nigra*), Sessile oak (*Quercus petraea*), Common oak (*Quercus robur*), Beech (*Fagus sylvatica*), Lawson Cypress (*Chamaecyparis lawsoniana*), Lime (*Tilia* spp.), Weymouth pine (*Pinus strobus*), Copper beech (*Fagus sylvatica* 'Purpurea'), Norway Spruce (*Picea abies*), Large-leaved lime (*Tilia platyphyllos*), Blue atlas cedar (*Cedrus libani atlantica* 'Glauca'), Monterey pine (*Pinus radiata*), Cider gum (*Eucalyptus gunnii*), Swedish whitebeam (*Sorbus intermedia*), Monterey cypress (*Cupressus macrocarpa*), Western red cedar (*Thuja plicata*), Holm oak (*Quercus ilex*), Hybrid black poplar (*Populus x canadensis*), Goat willow (*Salix caprea*), Crack willow (*Salix fragilis*) and a variety of other non-native and ornamental species.

The small watercourse which traverses the lands along the southern boundary of the present site was also examined. Contrary to what one would expect, given the location of the Owendoher River to the west, this water feature flows west to east. On reviewing the six-inch maps for the area this appears to have been a man made diversion from the Owendoher River to the west of the site to serve a number of large houses in the area. The six inch

maps indicate that this stream rejoins the eastern tributary of the Owendoher River but it would appear that for much of its route it has been culverted in modern times. This watercourse is heavily shaded by a treeline of Cypress. It was vegetated with brooklime (*Veronica beccabunga*) and fool's watercress (*Apium nodiflorum*).

Opportunistic species which have colonised gravelled and tarmacadamed areas include; Canadian fleabane (*Conyza canadensis*), Creeping thistle (*Cirsium repens*), Broad leaved plantain (*Plantago major*), Prickly sow thistle (*Sonchus asper*), Ragwort (*Senecio jacobaea*), Creeping buttercup, Dandelion, Cleavers, Common fumitory (*Fumaria officinalis*), Broad-leaved willowherb (*Epilobium montanum*), Rosebay willowherb and moss.

Rare, Threatened and Protected Flora
A review of the National Parks and Wildlife Service online database has no records of rare, threatened and protected flora from the Taylor's Lane site.

Records from the 10km square in which the Taylor's Lane lands are located (O12) are as follows:

There are historic records of Red Hemp-Nettle (*Galeopsis angustifolia*) from between Two-rock and Three-rock Mountain. Small Cudweed (*Filago minima*) was historically recorded from the base of Three-rock Mountain and in quarry rubbish at 1050 feet and was seen more recently in 1993 on the north side of Three Rock Mountain above Barnacullia. The legally protected orchid species Small-white Orchid (*Pseudorchis albida*) was historically recorded from near Three Rock Mountain. There is no suitable habitat for any of these species within the site.

Invasive Species
During the 2014 survey of the lands one invasive species as listed under section 49 of the Birds and Habitats Regulations (2011) was recorded – this was a few standing dead stems of Giant Hogweed (*Heracleum mantegazzianum*) and their indicative locations in 2014 are indicated below on **Figure 4**. There was no evidence of this species during the present survey – only the native hogweed (*Heracleum sphondylium*) was recorded in 2019.

Figure 4. The location of stands of Giant Hogweed noted on the property in 2014.

Otter

A survey for signs of otters along the stream within the site was conducted during the site visit in 2013. No signs of otter such as spraints, tracks, slides, etc. were observed and no otter holt was present at that time.

The 2019 survey did not record any signs of otter such as spraints, tracks, slides, etc. and no otter holt is present along this watercourse.

It is possible that otters may on occasion use the site as they are known from the Owendoher River.

Bats

The Bat Conservation Ireland Database of bat records was searched for records of bats from the area. The database contains records of roosts, ad hoc observations and the results of surveys such as the BATLAS 2010 project and the All Ireland Daubenton's Monitoring Project.

The Bat Conservation Ireland database has identified that several species of bats have been recorded within the 10km square in which the proposed development is located. These include Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), Natterer's bat (*Myotis nattereri*), Daubenton's bat (*Myotis daubentonii*) and Brandt's/whiskered bat (*Myotis*

mystacinus/brandtii). There are also records of an unidentified Myotis species (*Myotis* sp. and probably one of the above three) and an unidentified pipistrelle species (*Pipistrellus* sp. and probably one of the above two). These records include both detector records and records of known roosts.

Nearby Surveys

A detector survey was conducted in 2015 of lands proposed for housing development by South Dublin County Council off Ballyboden Road confirmed the presence of three species of bats foraging over those lands (Wilson, 2015). These were the Leisler's bat which was detected on two occasions flying across the site, while the boundary treelines and shrubs provided rich foraging for several common pipistrelle and soprano pipistrelle bats. No roosts were confirmed on site.

2013 Bat Survey Results

A previous bat activity survey of the lands to the north of the Good Counsel buildings (the pitch and putt course and clubhouse) was conducted on 11th September 2013 (Wilson, 2013)). That detector survey confirmed the presence of two species of bats foraging over the site – these were the Leisler's bat (*Nyctalus leisleri*), which was detected on two occasions flying across the site, while the boundary treelines and shrubs provided rich foraging for several common pipistrelle (*Pipistrellus pipistrellus*) bats. Social calls of pipistrelles were also recorded near the tree identified in the tree survey drawing as T6121.

2016 Bat Survey Results

A bat survey of the building on site was previously conducted by Faith Wilson on 27th July and 10th August 2016 during which the buildings were internally and externally inspected and a bat detector survey of the buildings and site was conducted.

The buildings proposed for demolition in 2016 were the former Augustinian Seminary and chapel and associated outbuildings as illustrated on **Figure 2** above. The property consists of a three storey building and adjoining chapel with associated outbuildings including a boiler house, a workshop and various sheds.

The building was in excellent condition and was only recently vacated when first surveyed in 2016. The attics within the property are large and access at full height throughout most of the attic was possible. The southern end of the main building (approximately 1/8 of that attic) had no access and could not be internally inspected. The attic is insulated and the roof is composed of slate with sarking boards beneath which are visible from within the attic. The roof of the chapel and spire is composed of copper.

The main roosting potential for bats within this structure is in the attic spaces which would be especially favourable to brown long-eared bats and in areas such as behind the fascia, soffit and window frames of the property which are likely to be used by pipistrelles.

Three species of bats were recorded using the lands surrounding the Good Counsel buildings during the previous survey in 2016. These were common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and Leisler's bat (*Nyctalus leisleri*). Only small numbers of bats were recorded as shown on **Figure 5** below. Bat activity was mostly focused on the southern and south eastern side of the building which was in darkness with the exception of a security light over the door. No bats were recorded either entering or exiting the building and it would not appear to have been used by bats for roosting purposes at this time.

Figure 5. Bat activity recorded on site in 2016. Common pipistrelle (red), Soprano pipistrelle (blue), Leisler's bat (yellow).

In 2016 the buildings proposed for demolition at the Good Counsel were assessed as not currently supporting roosting bats, however it was acknowledged that there was potential for bats to roost behind the slates (between the slates and the sarking boards on the attic roof), behind fascia boards and around window frames etc. as well as within the attics. A number of mature trees within the boundaries of the site were also identified as having potential to support roosting bats.

2019 Bat Survey Results

The bat survey conducted in 2019 had similar results to those found in 2016, with the addition of brown long-eared bat as shown on **Figure 6** below. The survey was conducted on the 27th September 2019 which is towards the end of the bat survey season.

Figure 6. Bat activity recorded on site in 2019. Common pipistrelle (red), Soprano pipistrelle (blue), Leisler's bat (yellow), Brown long eared bat (black).

The attics in the building were again fully inspected for the presence of or signs of roosting bats. All wardrobes, storage areas, etc. in former bedrooms and window shutters in the old part of the house were examined and checked for signs of roosting bats.

There was no evidence of bats roosting in the buildings on site but as noted above there is potential for bats to roost in a number of locations within the buildings.

The detector survey recorded four species of bats foraging in the grounds of the property. These were Leisler's bat, which was first recorded flying south to north over Taylor's Lane and the Owendoher River corridor. This bat is unlikely to have been roosting in the property but would be availing of foraging habitat in the grounds. Common and soprano pipistrelles were

recorded foraging over much of the grounds as previously recorded. A single pass of a brown long-eared bat was recorded at the corner of the chapel. This species is very hard to detect on a bat detector as it makes quite quiet calls. The design and structure of the attic of the building would be very favourable to brown long eared bats.

Badger

A survey for signs of badgers within the site was conducted during the site visit in 2013. No signs of badger such as tracks, latrines, snuffle holes or setts were observed at that time. The 2019 survey did not find any signs of badger within the site boundary.

Birds

Species typical of semi-urban habitats were recorded during the site visits – these ere blackbird, song thrush, robin, chaffinch, wren, wood pigeon, blue tit, pied wagtail, feral pigeon, coal tit, and goldcrest. There was no evidence of use by kingfisher of the small watercourse along the southern boundary of the site – it is very tunnelled and dark and is unlikely to provide suitable habitat for hunting kingfisher. There is no breeding potential along this watercourse.

Fisheries

The lands at Taylor's Lane are located within the Eastern River Basin District within the Liffey and Dublin Bay catchment (09) and the Dodder Sub-catchment (SC010). According to the EPA Envision Map Viewer the Owendoher River (IE_EA_09O011700), which is located to the west of the site is a river at risk of not achieving 'Good' water status under the Water Framework Directive as shown on **Figure 7** below.

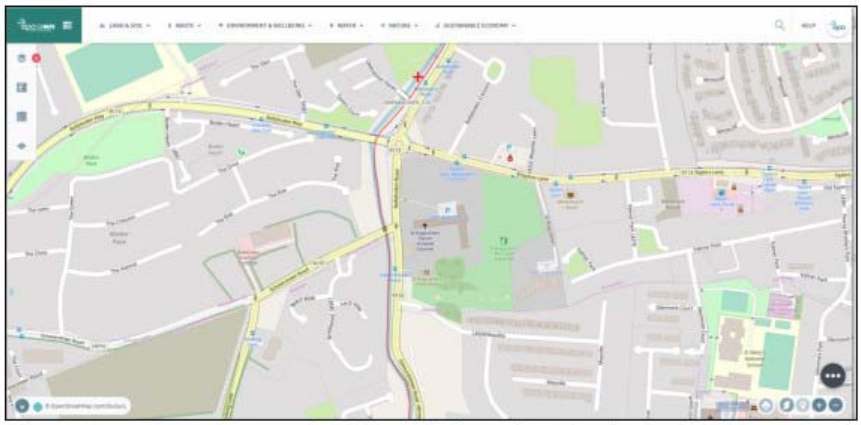

Figure 7. Watercourses in the vicinity of Taylor's Lane (Source: EPA Envision Map Viewer).