ALTEMAR
Marine & Environmental Consultancy

Ecological Impact Assessment (EcIA) for a proposed development of a No. 274 residential unit at Mill Road, Saggart, Co. Dublin.

13th December 2021

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Tetrach Residential Ltd.

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Document Control Sheet			
Client	Tetrach Residential Ltd.		
Project	Ecological Impact Assessment (EcIA) for the proposed development of a No. 274 residential unit development at Mill Road, Saggart, Co. Dublin		
Report	Ecological Impact Assessment		
Date	13th December 2021		
Project No:		Document Reference:	
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Jack Doyle	13th December 2021

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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).

An EIA is not required for this project and the following EcIA has been prepared by Altemar Ltd. at the request of Tetrach Residential Ltd., for the proposed development of a No. 274 residential unit development at Mill Road, Saggart, Co. Dublin.

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);
- Draft Guidelines on the information to be contained in EIARs (2018);
- 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).

The data gathered as part of the EcIA forms the basis for the species and habitats assessment seen in the accompanying AA Screening and NIS. A separate AA screening has been produced by Altemar Ltd. to identify potential impacts of the development on Natura 2000 sites, Annex species and Annex habitats.

Altemar Ltd.

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

Project Description

Tetrach Residential Ltd. is proposing to build a housing development just off Mill Road, Saggart, Co. Dublin, beside the N7. The proposed development site is seen in Figures 1-3. The proposed development site is seen in Figures 1-3. The development will consist of: 274 no. units on a 4.62 ha (net) site (density c.59 units per hectare). It will comprise of 51 no. houses, 38 no. duplex units and 185 no. apartments. The height of the proposed scheme will range from two storey houses and three storey duplexes to 5 storey and part 8 storey apartment blocks.

The proposed residential mix will comprise of:

- 17 no. 2-bed houses, 27 no. 3-bed houses and 7 no. 4-bed houses,
- 2 no. 1-bed duplex, 17 no. 2-bed duplex and 19 no. 3-bed duplex units,
- 62 no. 1-bed apartments, 119 no. 2-bed apartments and 4 no. 3-bed apartments.

A 4-classroom crèche of c. 276 sq.m and 2 no. substations are also included in the proposed development. 276 no. car parking spaces and 670 no. bicycle spaces are provided.

A planted woodland berm will be developed along the northern boundary with the N7 to provide a sound barrier and amenity open space. There are a number of green spaces located in the centre of the site and on the south east and west of the site with natural play and SUDS elements as well as a large open communal space for the two apartment blocks to the south.

Vehicle, pedestrian and cycle access to the site will be from the Mill Road. A new road will be constructed running east west at the southern boundary of the site. The residential element of the site will have two access points off the proposed new road. This new route will extend eastwards to provide cycling and pedestrian connections through neighbouring Citywest lands and to the Saggart LUAS light rail terminus.

Primary access is proposed at the north west of the site from an existing access road connecting to Mill Road. This access is designed as services and emergency only and will be controlled by collapsible bollards. The masterplan seen in Figure 5 also includes permitted residential developments and an outline of a future masterplan roads network on the lands to the east to illustrate how the proposed development will form an integral part of a larger urban place. An AA Screening also accompanies this EcIA and concludes that "*No Natura 2000 sites are within the zone of influence of this development. Having taken into consideration the effluent discharge from the proposed development works, the distance between the proposed development site to designated conservation sites, lack of direct hydrological pathway or biodiversity corridor link to conservation sites and the dilution effect with other effluent and surface runoff, it is concluded that this development would not give rise to any significant effects to designated sites. The construction and operation of the proposed development will not impact on the conservation objectives of features of interest of Natura 2000 sites*." The proposed site outline, location, layout plan, and elevations are demonstrated in Figures 1-6.

The Zone of Influence (ZoI) of the proposed project would be seen to be restricted to the site outline with potential for minor localised noise, dust and light impacts during construction. Drainage from site, both foul and surface water, would be seen as the outputs from the site during construction and operation that could potentially extend the potential ZoI. As a result, further information is provided in relation to the proposed drainage strategy.

Landscape

The proposed landscape for the development is shown in Figure 5. The Landscape Design report states that: *'The landscape design aims to create a connection with nature and the natural world, as well as spaces for the residents to enjoy and use for recreation, contemplation, exercise and play. The streetscapes that weave through the development are planted with street trees and punctuated with open spaces. Existing trees and hedges are also retained wherever feasible, and the trees integrated into open space proposals. Ecological enhancement measures are also incorporated.*

There are six areas of public open space, distributed throughout the scheme, creating a public amenity close to all residents. Each has a unique layout and orientation, creating character and amenity within the development. Due to the proximity of the site to the N7, a 30m setback along the northern boundary is provided as an additional amenity space and incorporates noise reduction measures.'

Drainage

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by Tetrarch Residential Ltd to prepare an Engineering Services Report to accompany a planning application for a residential development at Mill Road, Saggart, County Dublin. The proposed drainage strategy for the subject site is demonstrated in Figure 13.

Foul Drainage

In terms of the construction of foul drainage networks, the Engineers Planning Stage Report outlines the following:

'Further to a review of the Irish Water drainage records for the area, an existing 450mm diameter foul sewer traversing the N7 carriageway flowing south to north (towards Dublin city centre). An additional 375mm foul sewer is shown on Mill Road, however due to its proximity of the Camac River a connection to this sewer is unattainable. See ***Appendix A*** *for Irish Water drainage records. The proposed development shall be serviced by a new drainage system with separate sewers and manholes for both foul and storm water within the sites boundary. The proposed foul network has been designed in accordance with the Building Regulations & the Regional Code of Practice for Drainage Works, Version 6.'*

The report also states that:

'*All foul effluent generated from the proposed development shall be collected in 150mm and 225mm diameter pipes and flow under gravity, to the existing 450mm diameter foul sewer running adjacent to the N7 carriageway via a new connection. It is proposed to make the connection to the existing 450mm foul sewer by thrust boring a piper under the carriageway as to avoid affecting traffic movements to existing road network.'*

It is also noted that:

'The drainage network for the development shall be in accordance with Part H of the Building Regulations and to the requirements and specifications of Irish Water. A Pre-Connection Enquiry for 310 No. units was submitted to Irish Water and we received a favourable response confirming a connection was feasible without any infrastructure upgrades.'

As discussed with CS consulting the foul water ultimately discharges to the Ringsend WwTP.

Stormwater Drainage

Regarding the existing stormwater drainage, the report states that:

'Following receipt of drainage records (see Appendix A) there is an existing 225mm stormwater line running along the northern boundary of the development site, just off the N7 carriageway.'

In relation to the proposed stormwater drainage, the report states that:

'In accordance with the requirements of SDCC Drainage Division all new developments are to incorporate the principles of Sustainable Urban Drainage Systems, (SuDS) The SuDS principles require a two-fold approach to address storm water management on new developments. The first aspect is to reduce any post development run-off to pre-development discharge rates. The development is to retain storm water volumes predicted to be experience during extreme rainfall events. This is defined as the volume of storm water generated during a 1 in 100-year storm event increased for predicted climate change factors. To ensure an accurate calculation of the required attenuation for the site Met Eireann was contacted to provide:

a) The SAAR (Standard Annual Average Rainfall) for the area; 850mm/ year
b) The sliding duration table for the site indicating the 1:100-year rainwater intensities to be used

Based on the above criteria, the development shall require 2084ms of storage, see Appendix C for the attenuation calculations. The development site shall limit its discharge to 10.61/s, in line with the QBAR flow of 2.29 l/s/ha. Due to the size and layout of the development it is proposed to provide this volume of attenuation 2 number attenuation tanks. The first tank is located in the centre of the development site and shall limit its discharge flow

to 5.01 I/s and provide 1082ms of storage, the second tank is adjacent to the outfall at the northern boundary of the development and provide 1043ms, with the discharge flow limited to 10.6I/s at this location.'

The report also states that:

'The restricted flow from the development site shall then discharge to the existing 225mm stormwater network along the northern boundary. The last public manhole and network to the existing sewer is to be constructed in accordance with Local Authority's requirements.'

In relation to Sustainable Urban Drainage Systems (SuDs) the report states that:

'It is proposed to use a range of SuDs devises for the scheme they are listed below:

- *Infiltration trenches to rear gardens that shall cater for runoff generate from adjacent roofs.*
- *Tree Pit Drainage Systems*
- *Permeable Paving to all new parking spaces*
- *Waterbutts for local irrigation and washing down*
- *Attenutaion tank with flow control device, sized to contain a 1-in-100-year storm even and increased by 20% predicted climate change to limit the surface water discharge from the site during extreme rainfall events.'*

As discussed with CS consulting the surface water ultimately discharges to the Camac River via the public infrastructure network.

Outline Construction Management Plan

An Outline Construction Management Plan has been prepared by CS Consulting Group to accompany this planning application. In relation to environmental considerations for the proposed development, this report outlines the following:

'***5.0 ENVIRONMENTAL MANAGEMENT***

5.1 Materials and Decontamination

Excavation works shall each address the requirements of this investigation report and verify the treatment and removal of all materials and contamination encountered during the works.

5.2 Noise

The Contractor shall implement measures to eliminate and reduce noise levels where possible.

All construction activities shall be carried out in compliance with the recommendations of BS 5228, Noise Control on Construction and open sites part 1 and comply with BS 6187 Code of Practice for Demolition.

The following is an outline of the possible noise mitigation measure which the Contractor may consider implementing on site to address potential noise levels;

General Considerations:

1. All site staff shall be briefed on noise mitigation measure and of best practicable means to be employed to control noise.

2. Site hoarding should be erected to maximise the reduction in noise levels.

3. The Contractor should but in place a liaison officer to engage with neighbours on a weekly basis and keep them a braised of the pending works on site and address any concerns raised.

4. Internal haul routes shall be maintained, and steep gradients shall be avoided where possible.

5. Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours for traffic management (i.e. road closure) or health and safety reasons has been granted (application must be made to the Council a minimum of 4 days prior to proposed works).

6. Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements.

Plant

1. Contractor should ensure that each item of plant and equipment complies with the noise limits quoted in the relevant EC Directive 2000/14/EC.

2. Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer.

3. Use all plant and equipment only for the tasks for which it has been designed.

4. Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum.

5. Power plant by mains electricity where possible rather than generators.

6. Employ partial or full enclosures for fixed plant where possible.

7. Locate movable plant away from noise sensitive receptors where possible.

8. All plant operators to be qualified in their specific piece of plant.

9. Compressors and generators shall be sited in areas least likely to give rise to nuisance where practicable.

Vehicle activity:

1. Ensure all vehicle movement on site occur within permitted working hours unless permission to the contrary has been granted.

2. Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public road, if unavoidable engines should be turned off.

3. Contractor should plan the site layout to ensure that reversing is kept to a minimum.

4. Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular road sweeping of adjoining roads should take place as necessary.

5.3 Air Quality & Dust Monitoring

Dust prevention measures shall be included for control of any site airborne particulate pollution. The Contractor shall monitor dust levels in the vicinity of the site in accordance with planning conditions. Records shall be kept of such monitoring for review by the Planning Authority. The minimum criteria to be maintained shall be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m2/day.

The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project.

5.4 Migrating Dust & Dirt Pollution

A regime of "wet" road sweeping can be set up to ensure the roads around the immediate site are as clean and free from dirt/dust arising from the site, as is reasonably practicable.

Footpaths immediately around the site can be cleaned by hand regularly, with damping as necessary.

Scaffolding to be cleaned regularly. Netting can be provided to enclose scaffolding at sensitive areas of the site.

Vehicle waiting areas or hard standings can be regularly inspected and kept clean.

Vehicle and wheel washing facilities can be provided at the site exit where practicable. If necessary, vehicles can be washed down before exiting the site.

Internal combustion plant should not be left running unnecessarily.

Where possible fixed plant such as generators should be located away from residential areas.

The number of handling operations for material should be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.

The transport of dusty materials and aggregates should be carried out using covered/sheeted lorries.

Vehicles loading should be dampened down and drop heights for material to be kept to a minimum.

Dust dispersal over the site boundary should be minimised using static sprinklers or other watering methods necessary.

Stockpiles of material should be kept to a minimum and may be sheeted or watered down. These should be located away from sensitive boundaries.

Equipment and techniques for cutting/grinding/sawing/sanding etc., which minimise dust emissions and which have the best available dust suppression measures, should be employed.

Where possible pre-mixed plasters and masonry compounds should be used to minimise dust arising from on-site mixing.

Prior to commencement, the main contractor should identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions. Furthermore, the main contractor should prepare environmental risk assessments for all dust generating processes, which are envisaged.

The main contractor should allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.

5.5 Harmful Materials

Harmful material shall be stored on site for use in connection with the construction works only. These materials shall be stored in a controlled manner. Where on-site facilities are used there shall be a bunded filling area using double bunded steel tank at a minimum.

5.6 Vibration

The Contractor shall be required to carry out the works such that the effect of vibration on the adjoining buildings and surroundings is minimised and does not cause any damage.

5.7 Sediment and Water Pollution Control Plan

All works carried out as part of these infrastructure works shall comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor shall co-operate in full of the Environmental Section of South Dublin County Council. As part of the overall construction methodology, the following issues shall be addressed and have been identified as being of particular risk and/or concern to pollution.

Contamination of Watercourse / Groundwater – There is a risk that ground water could become contaminated with lime from cement which subsequently finds its way into the local adjacent watercourses. The measures proposed to be put in place to mitigate any potential damage from the effluent of contaminated ground water would be to create an exclusion zone, as far as reasonably practicable, by the erection of a visible 1.0m high barrier along watercourses. This shall be formed by means of steel road pins, which shall be used to support a PVC 'orange' barrier with warning signs appropriately fixed at regular intervals.

Sediment & 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 the site shall 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 positive drainage system shall be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction. A series of geotextile lined cascading, high level outfall, settling basins shall be installed upstream of the agreed discharge point. This temporary surface water management facility shall throttle runoff and allow suspended solids to be settled out and removed before being

discharged in a control manner to the agreed outfall. All inlets to the cascading settling basins shall be riprapped to prevent scour and erosion in the vicinity of the inlet. o Minimisation site disturbance

o Implement sediment control (as outlined above)

o Minimise the potential for erosion

o Prevent sediment-contaminated water leaving the site

River Camac

• Discharge Licences – It shall not be permitted to discharge into any newly constructed storm water systems or watercourse without adhering to the conditions of the discharge licence and agreeing the same with the Design Team, Site Manager and Local Authority Area Engineer.

• Over Ground Oil / Diesel Storage – Only approved storage system for oil / diesel within the site shall be permitted, (i.e. all oil / diesel storage to be located within a designated area placed furthest away from adjacent watercourses and contained within constructed bunded areas e.g. placed on 150mm concrete slab with the perimeter constructed with 225mm solid blockwork rendered internally). The bunded area shall accommodate the relevant oil / diesel storage capacity in case of accidental spillage. Any accidental spillages shall be dealt with immediately on site however minor by containment/removal form site. Any accidental spillages shall be dealt with immediately on site however minor by containment /removal form site.

• Re-fuelling shall be contained within a designated area adjacent to the storage area.

• Concrete Washout – The washing out of concrete trucks on site shall not be permitted as they are a potential source of high alkalinity in watercourses. Consequently, it is a requirement that all concrete truck washout takes place back in the ready-mix depot.

• Disposal of Wastewater off Site – The Site Management Team shall maintain a record of all receipts for the removal of toilet or interceptor waste off site to insure its disposal in a traceable manner. These shall be available for inspection by the Environment Section of South Dublin County Council at all times.

• Road Sweepers / Cleaning – The cleaning of public roads in and around the subject site shall be undertaken to reduce environmental impacts and care shall be taken to prevent any pollution of watercourses from this activity.

• Maintenance of existing gullies on existing roads used for site access.'

Figure 1. *Proposed site outline and location*

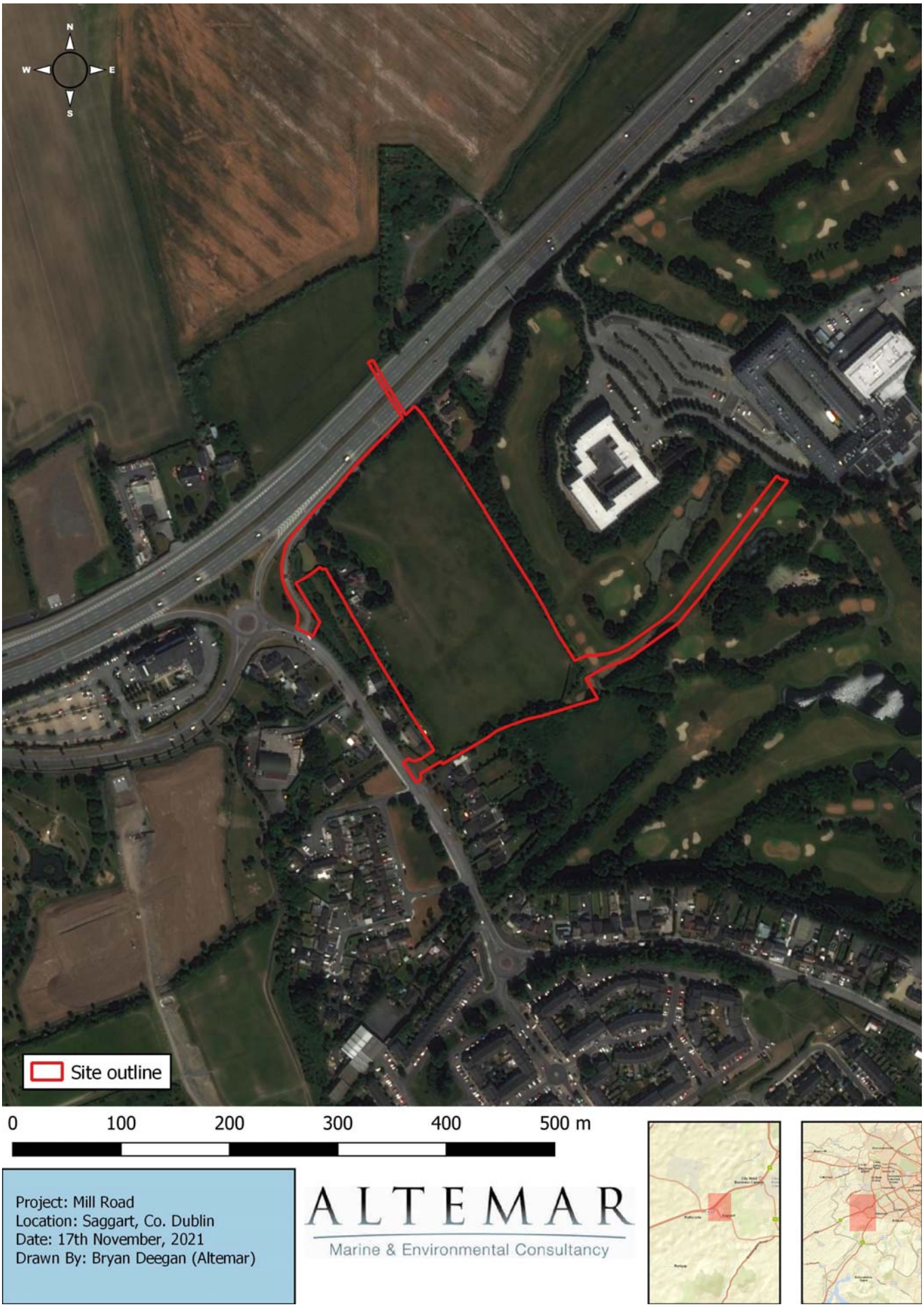

Figure 2. *Proposed site outline*

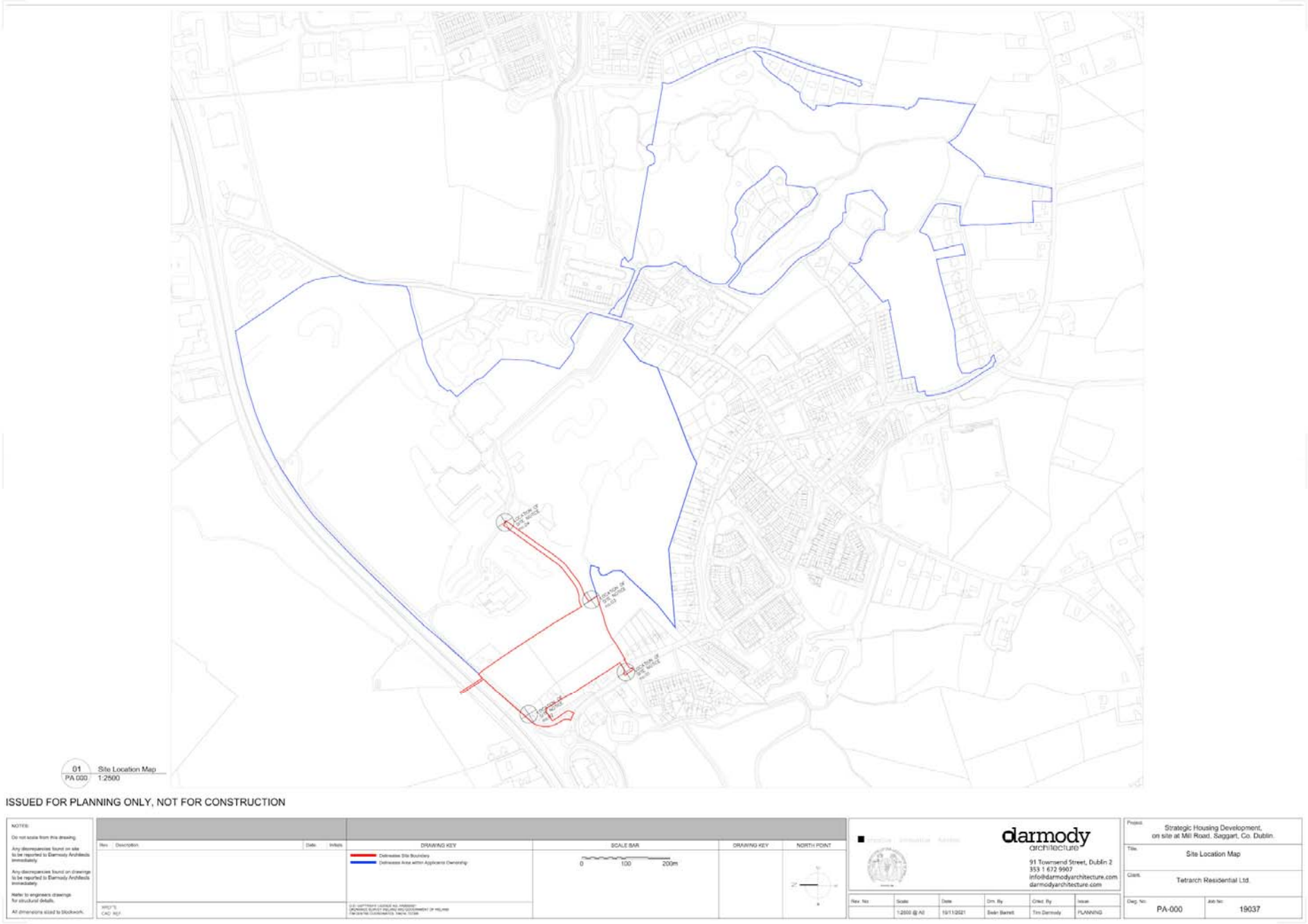

Figure 3. *Site location plan*

Figure 4. *Proposed site plan*

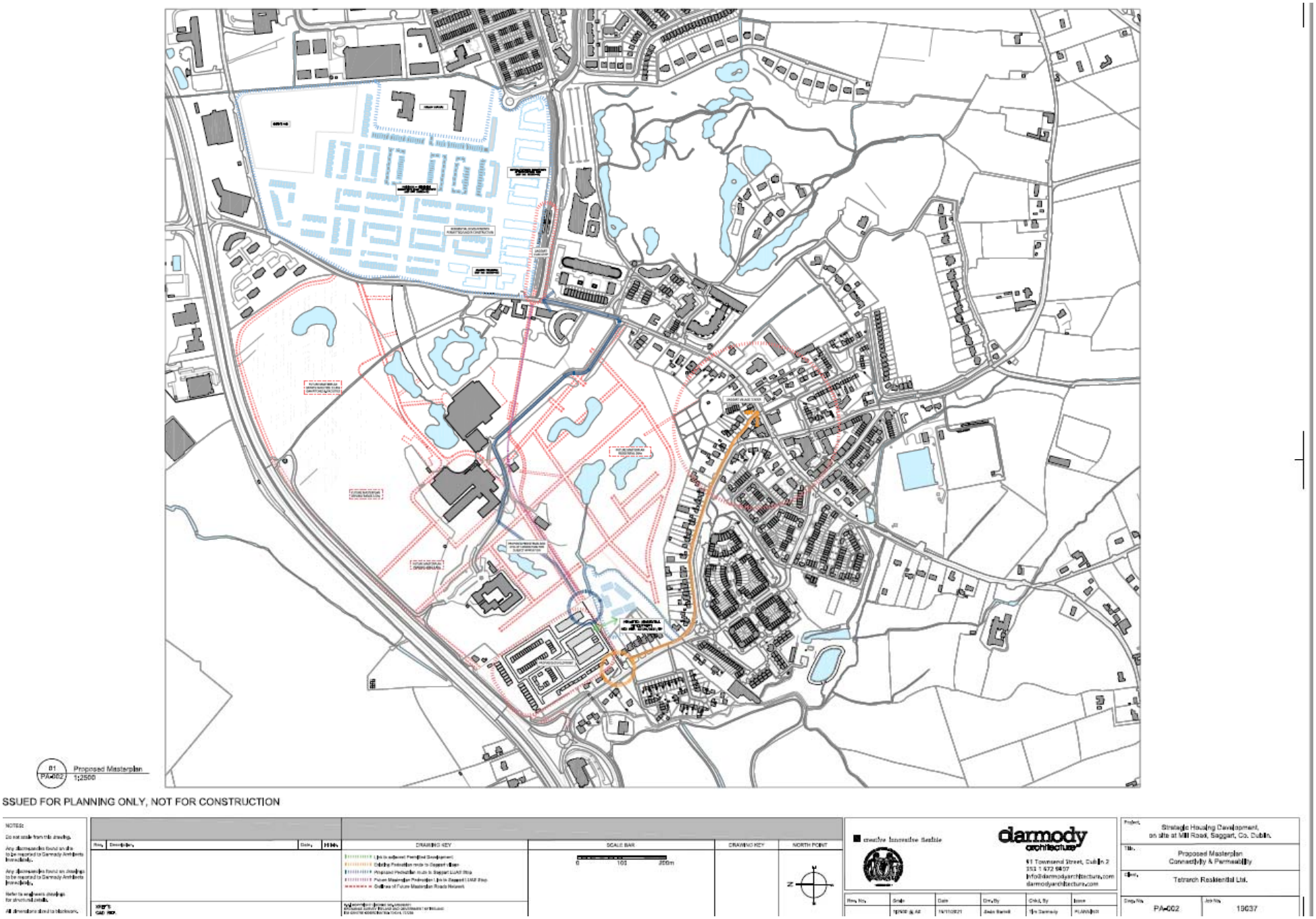

Figure 5. *Proposed site masterplan*

Figure 6. *Proposed landscape masterplan*

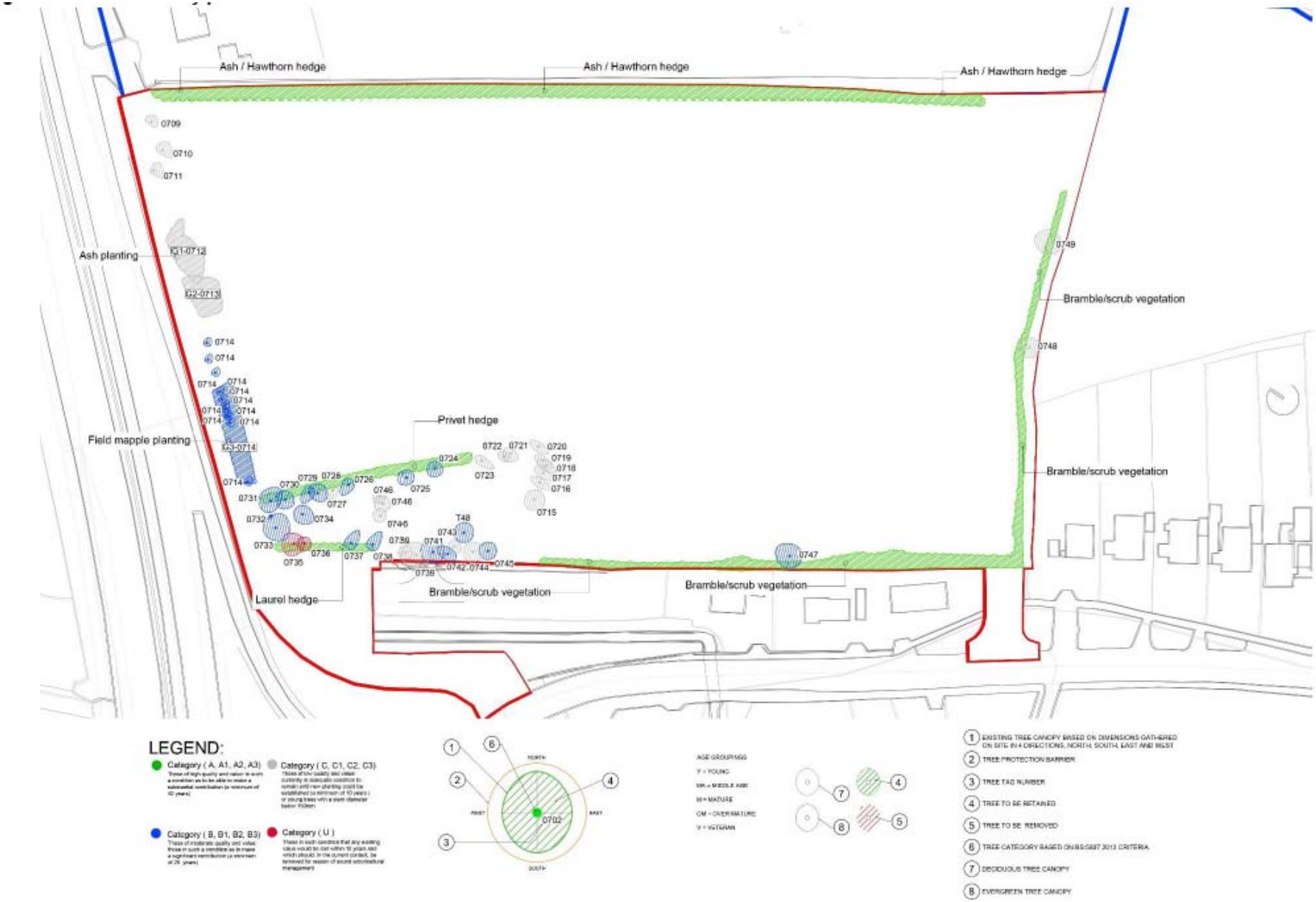

Figure 7. *Tree inventory plan*

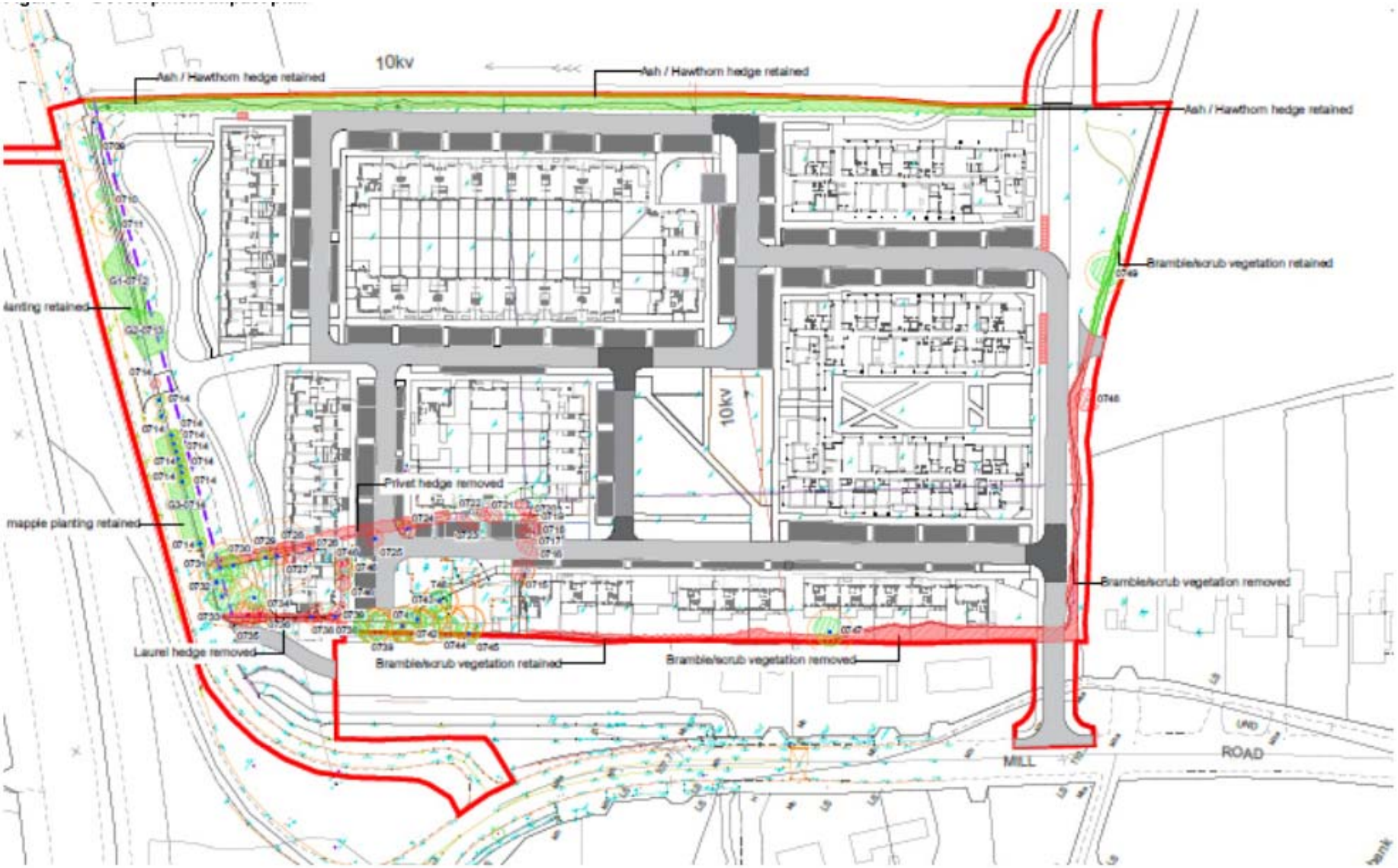

Figure 8. *Development impact plan for trees on site*

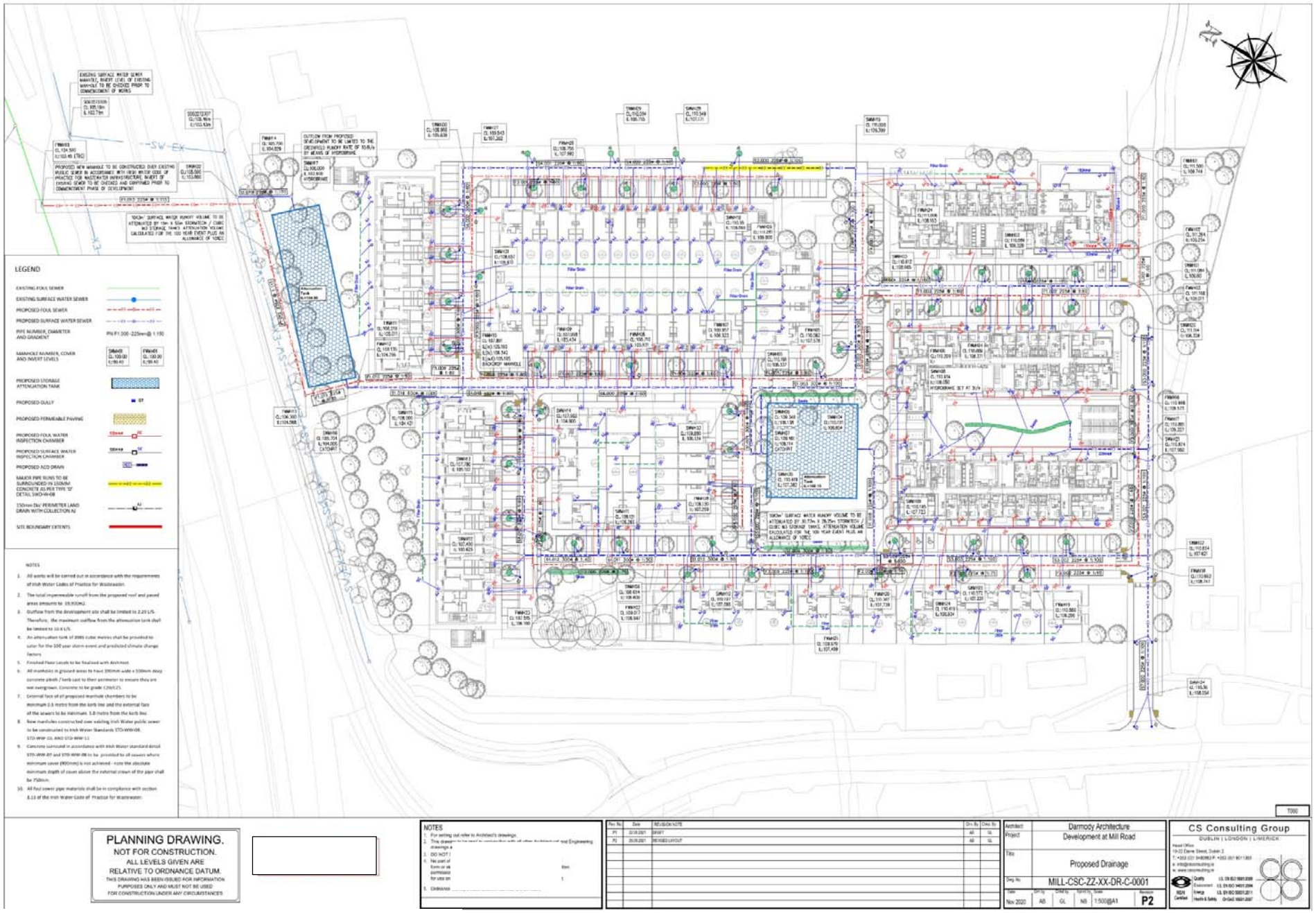

Figure 9. *Proposed drainage layout*

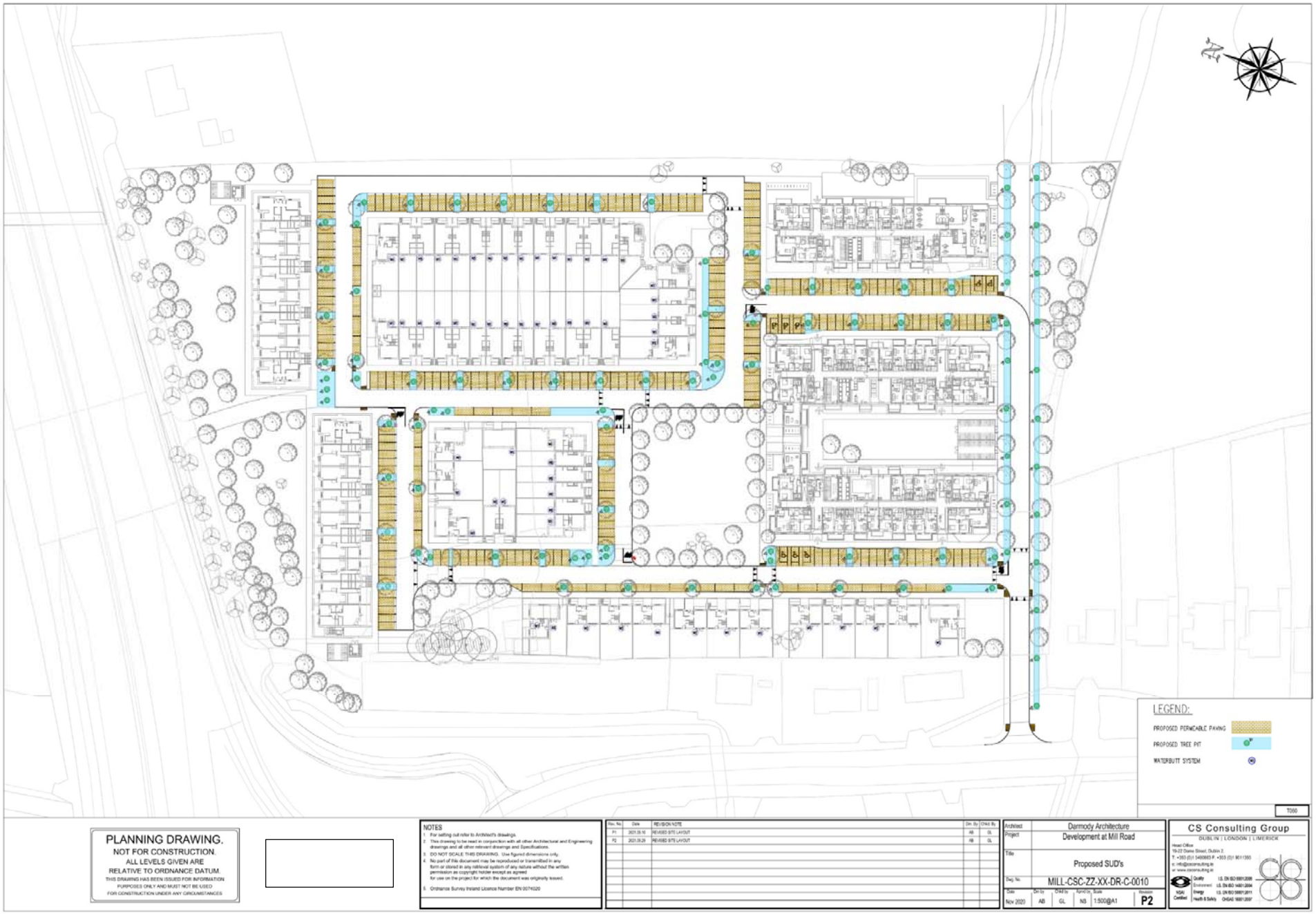

Figure 10. *Proposed sustainable drainage layout plan*

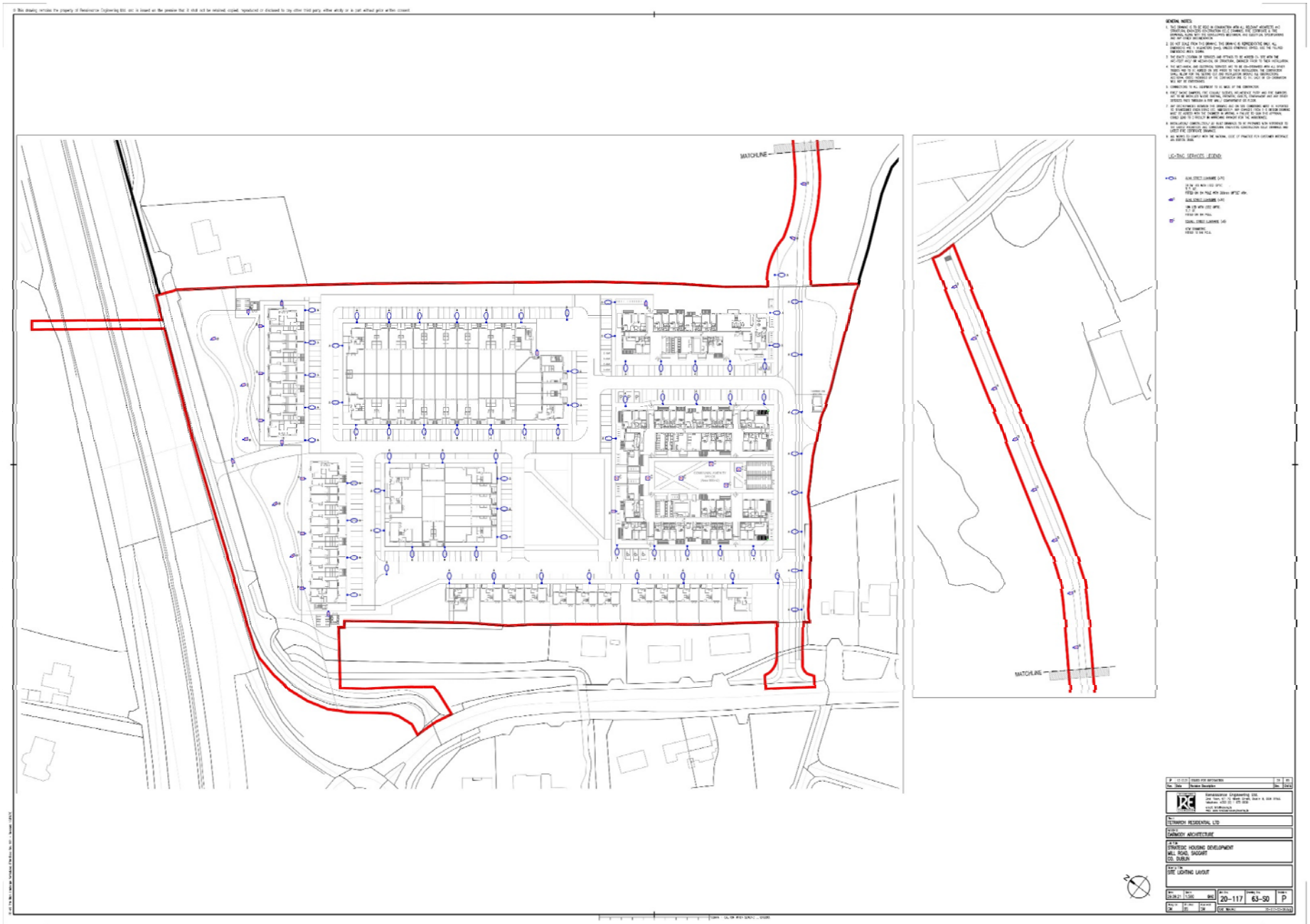

Figure 11. *Overall site lighting layout*

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 Maps (ArcGIS)

A provisional desk based assessment of the potential species and habitats of conservation importance was carried out in June 2020 and then updated in November 2021.

Field Survey

A field survey was carried out by Altemar Ltd. on the 29th June, 7th & 12th of July 2015, 17th of November 2016, 28th September 2020 and 13th August 2021, following completion of the desk based assessment. Additional site visits included a terrestrial mammal survey by Ecology Solutions (Dr. Chris Smal) on the 12th of July 2015 (Appendix I) and bat fauna survey by Aardwolf Surveys (Conor Kelleher) on the 29th June 2015 (Appendix II) and Altemar on 28th September 2020 and 13th August 2021. All surveys were carried out in mild/overcast conditions and covered the lands within the site outline and the land immediately outside the site. The bat surveys (2015 & 2020) also included inside the house and outbuildings of the dwelling including stables. The purpose of the field survey on the 13th August 2021 was to identify habitat types according to the Fossitt (2000) habitat classification and map their extent. In addition, a bat emergent and detector survey was carried out. In addition, more detailed information on the species composition and structure of habitats, conservation value and other data were gathered.

Survey Limitations

All surveys were carried out within the appropriate survey period.

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. A derogation licence (Appendix III) was acquired from NPWS in 2016 in relation to bats located within the dwelling on site. 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 impact and typical descriptions

Magnitude of impact (change)		Typical description
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.

Magnitude of impact (change)		Typical description
Low	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring
Negligible	Adverse	Very minor loss or alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.

Criteria for Establishing Receptor Sensitivity/Importance

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

Quality of Potential Impacts on Biodiversity

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

Significance of Impacts

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

Duration of Impact

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

Proximity to Designated Conservation Sites

It should be noted that the proposed development site is not within a designated conservation area. The closest conservation site is Slade of Saggart and Crooksling Glen (pNHA) 2.2km from the proposed development (Figure 14). Internationally designated Natura 2000 sites (SAC and SPA) are located at minimum, 6.6km from the site (Figures 12-13). The nearest NHA (Hodgestown Bog) is 22km from the site. The closest RAMSAR Site is Sandymount Strand/Tolka Estuary, 22km from the site. Details of international conservation sites within 15km and pNHA within 10km of the proposed site are seen in Table 5.

Table 4. Distances to Natura 2000 sites within 15km of the subject site

NATURA 2000 Site	Code	Distance	Direct Hydrological / Biodiversity Connection
Special Areas of Conservation			
Glenasmole Valley SAC	IE0001209	6.6 km	No
Wicklow Mountains SAC	IE0002122	8.8 km	No
Rye Water Valley/Carton SAC	IE0001398	9.2 km	No
Red Bog, Kildare SAC	IE0000397	10.9 km	No
Special Protection Areas			
Wicklow Mountains SPA	IE0004040	10.5 km	No
Poulaphouca Reservoir SPA	IE0004063	11.5 km	No

Table 1. Distances to National conservation sites within 10km of the subject site

Conservation Site Name	Conservation Type	Distance
Slade of Saggart and Crooksling Glen	pNHA	2.2 km
Lugmore Glen	pNHA	3.3 km
Grand Canal	pNHA	5.1 km
Dodder Valley	pNHA	6.4 km
Kilkeel Wood	pNHA	7.3 km
Liffey Valley	pNHA	7.9 km

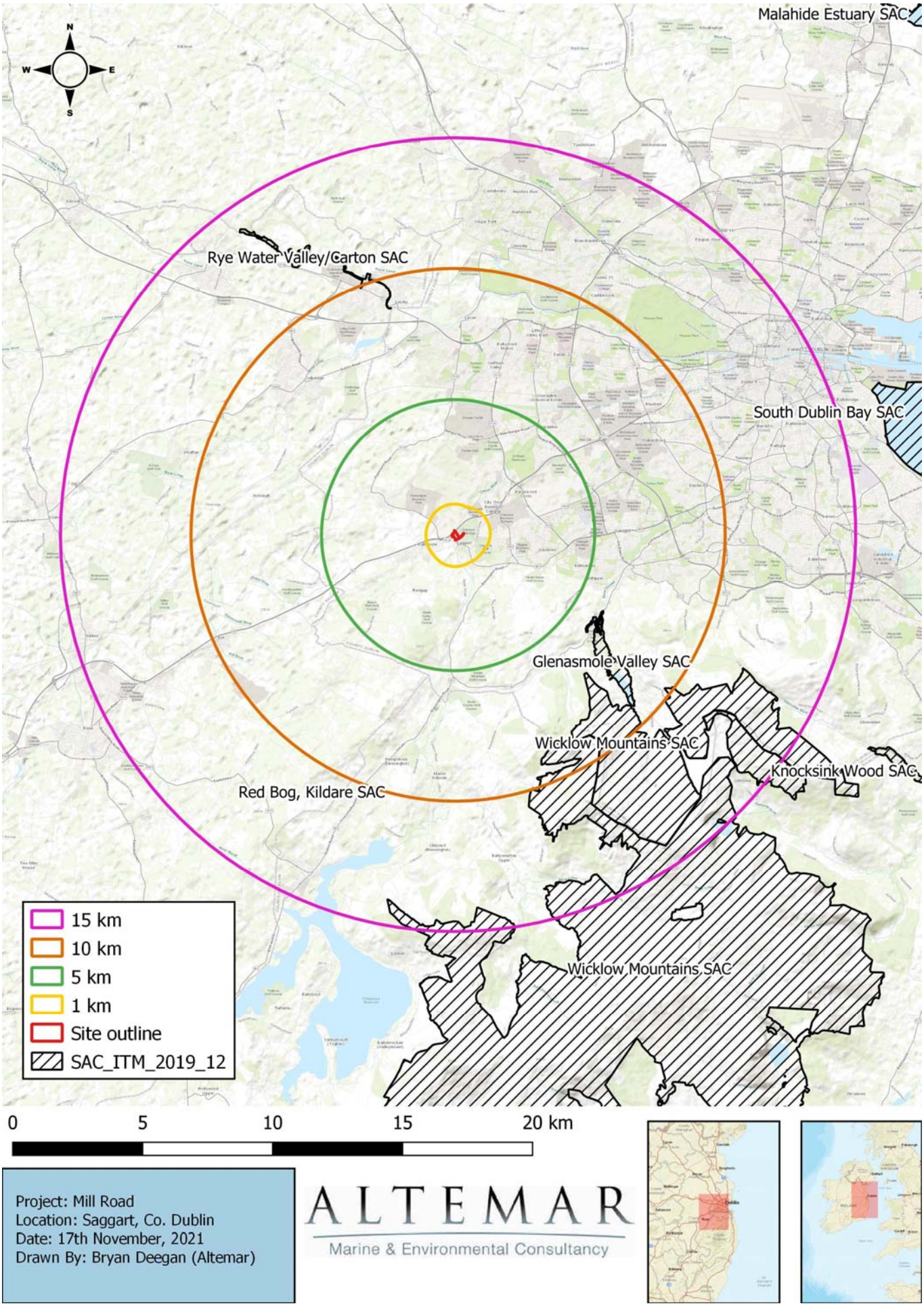

Figure 12. *Special Conservation Areas (SAC) within 15 km of the proposed development*

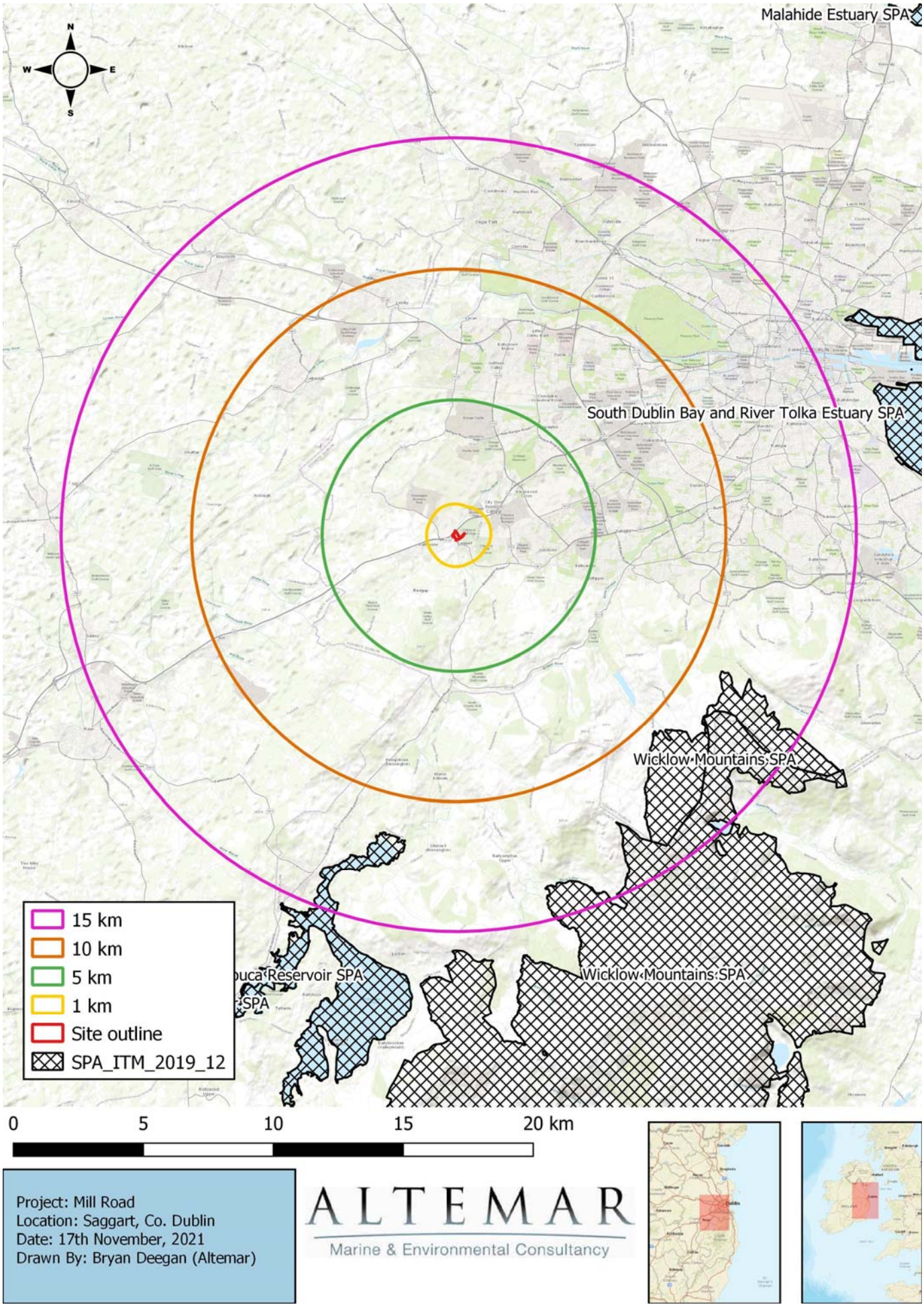

Figure 13. *Special Protection Areas (SPA) within 15 km of the proposed development*

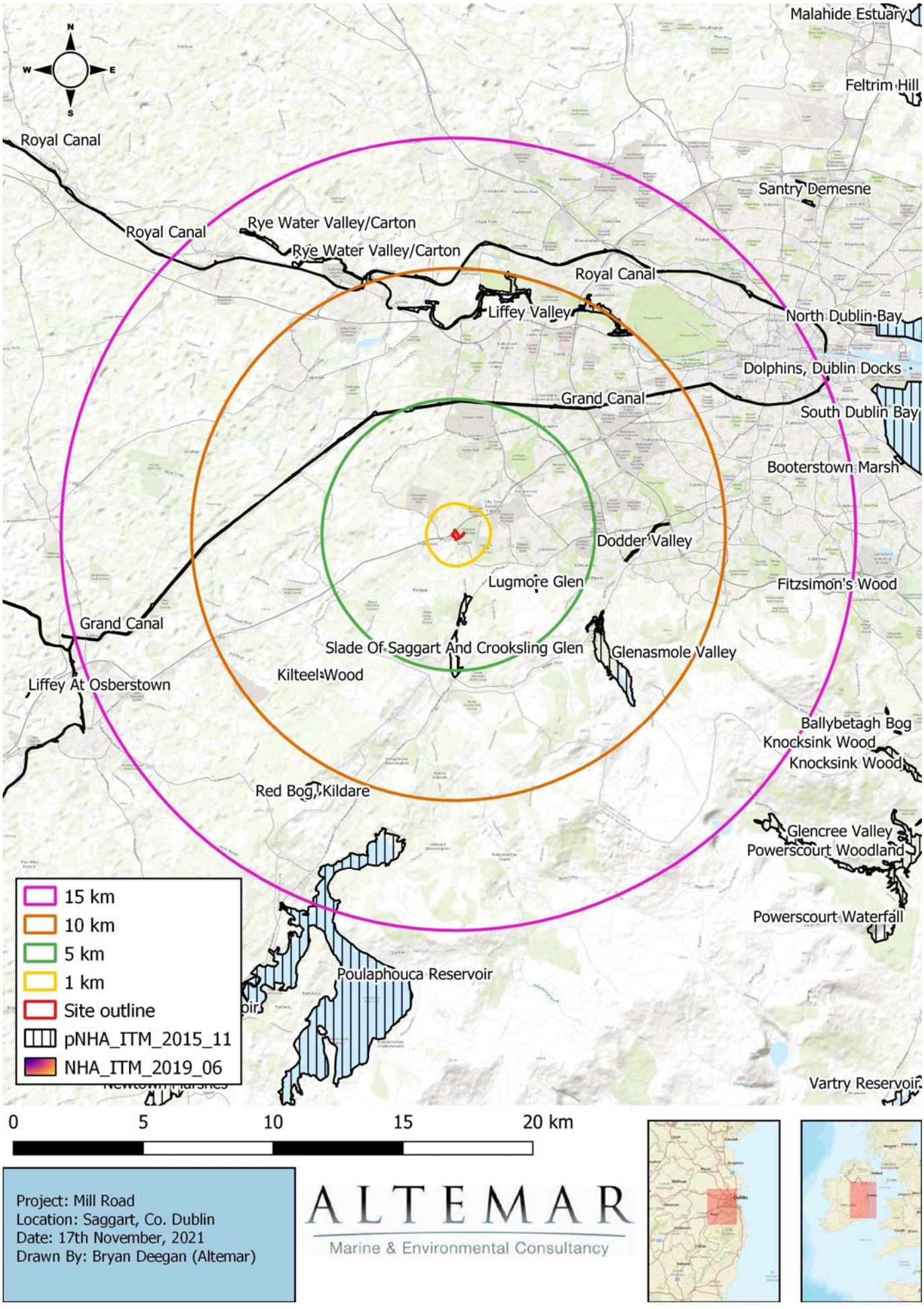

***Figure 14**. pNHAs and NHAs within 15 km of the proposed development*

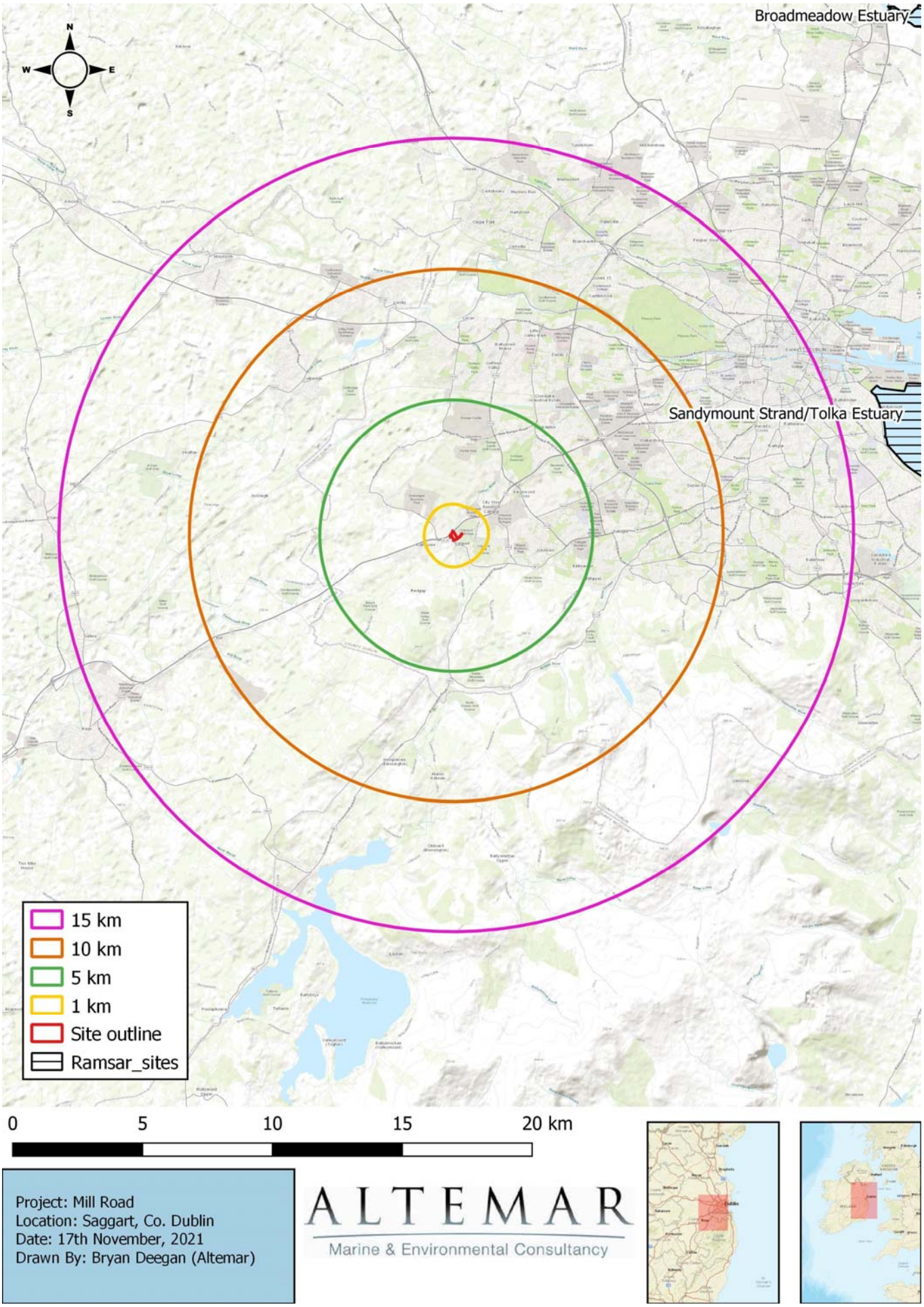

***Figure 15**. Ramsar sites within 15 km of the proposed development*

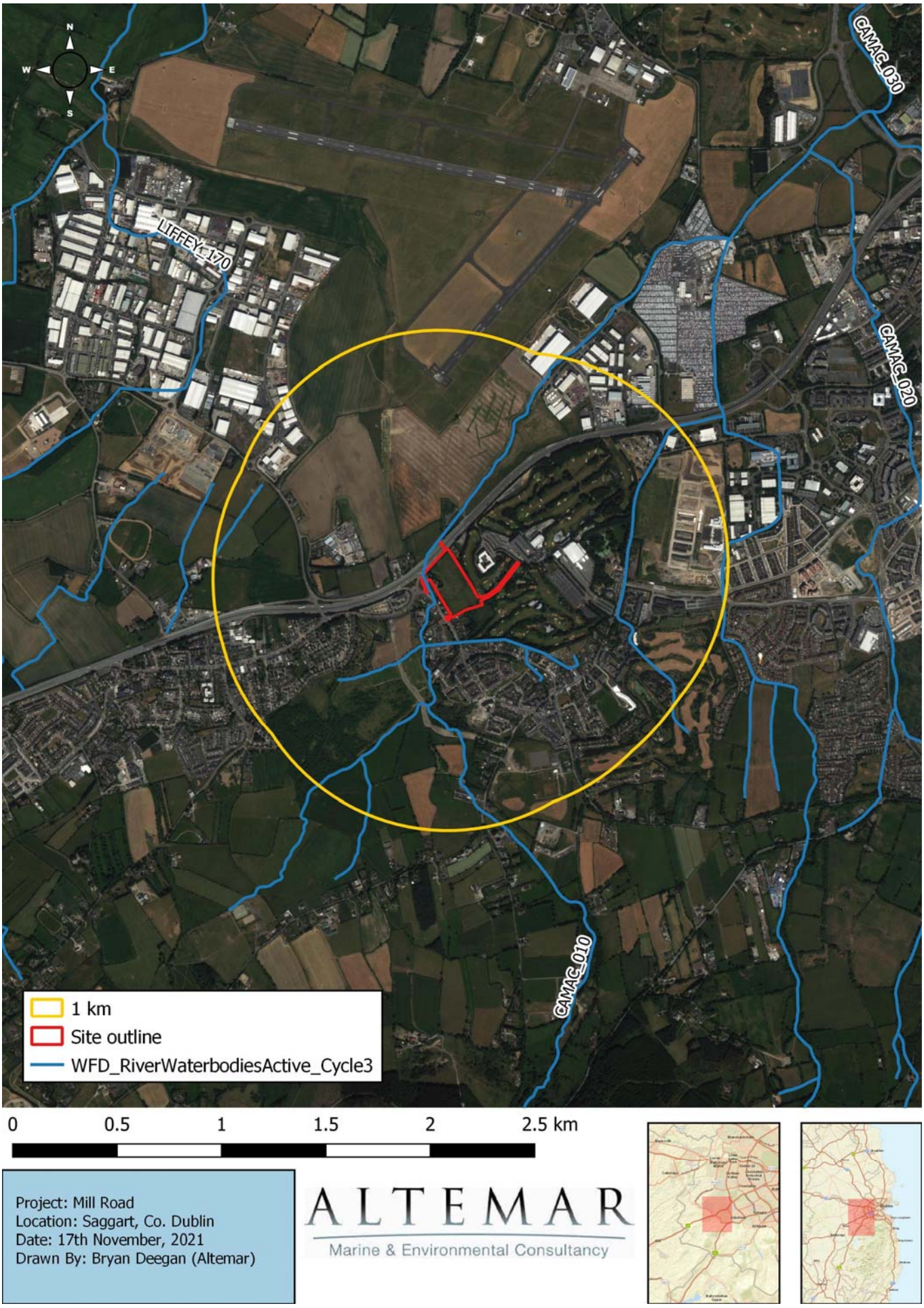

Figure 16. *Watercourses within 1km of the proposed development site*

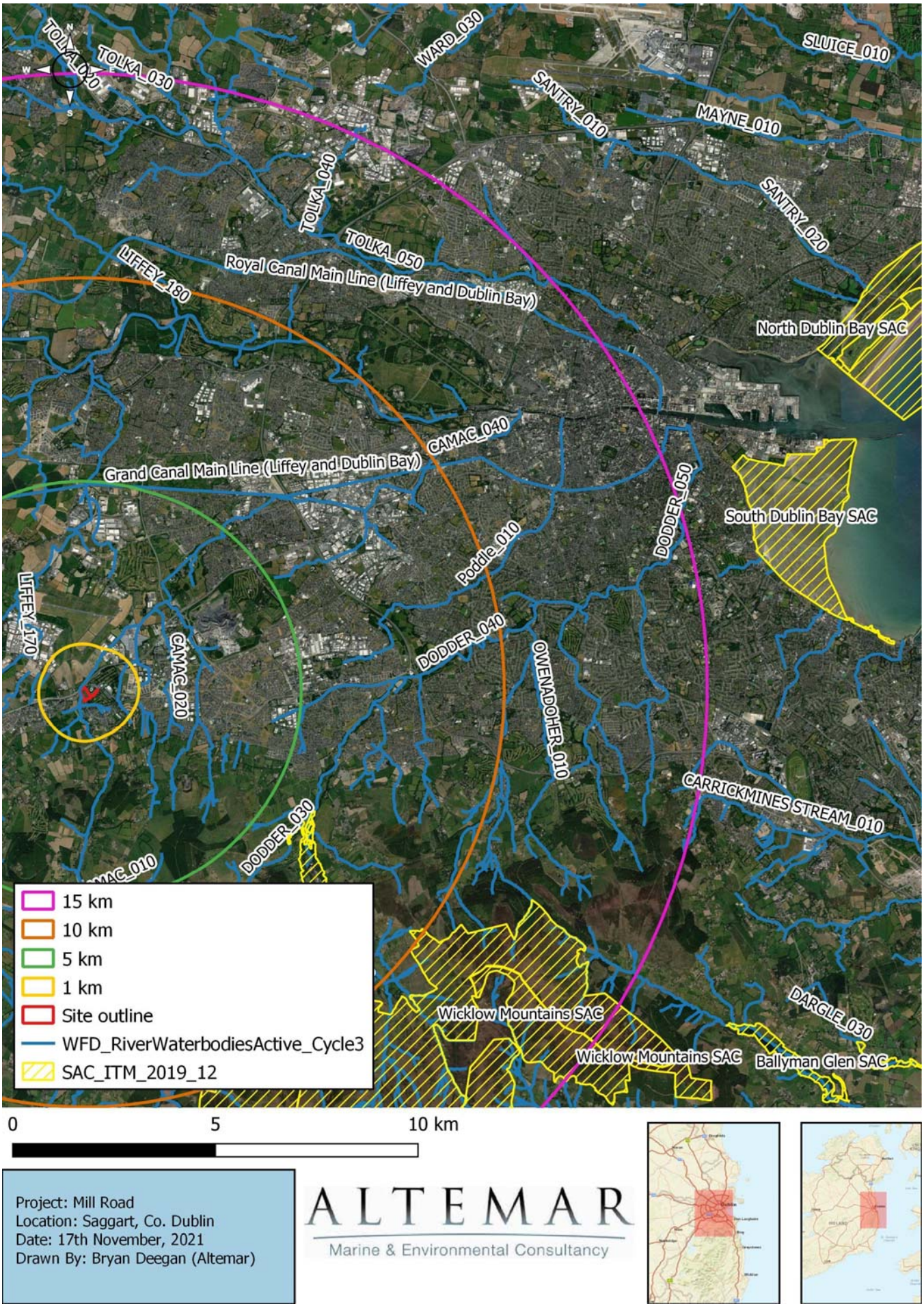

Figure 17. *Watercourses and SACs proximate to the proposed development site*

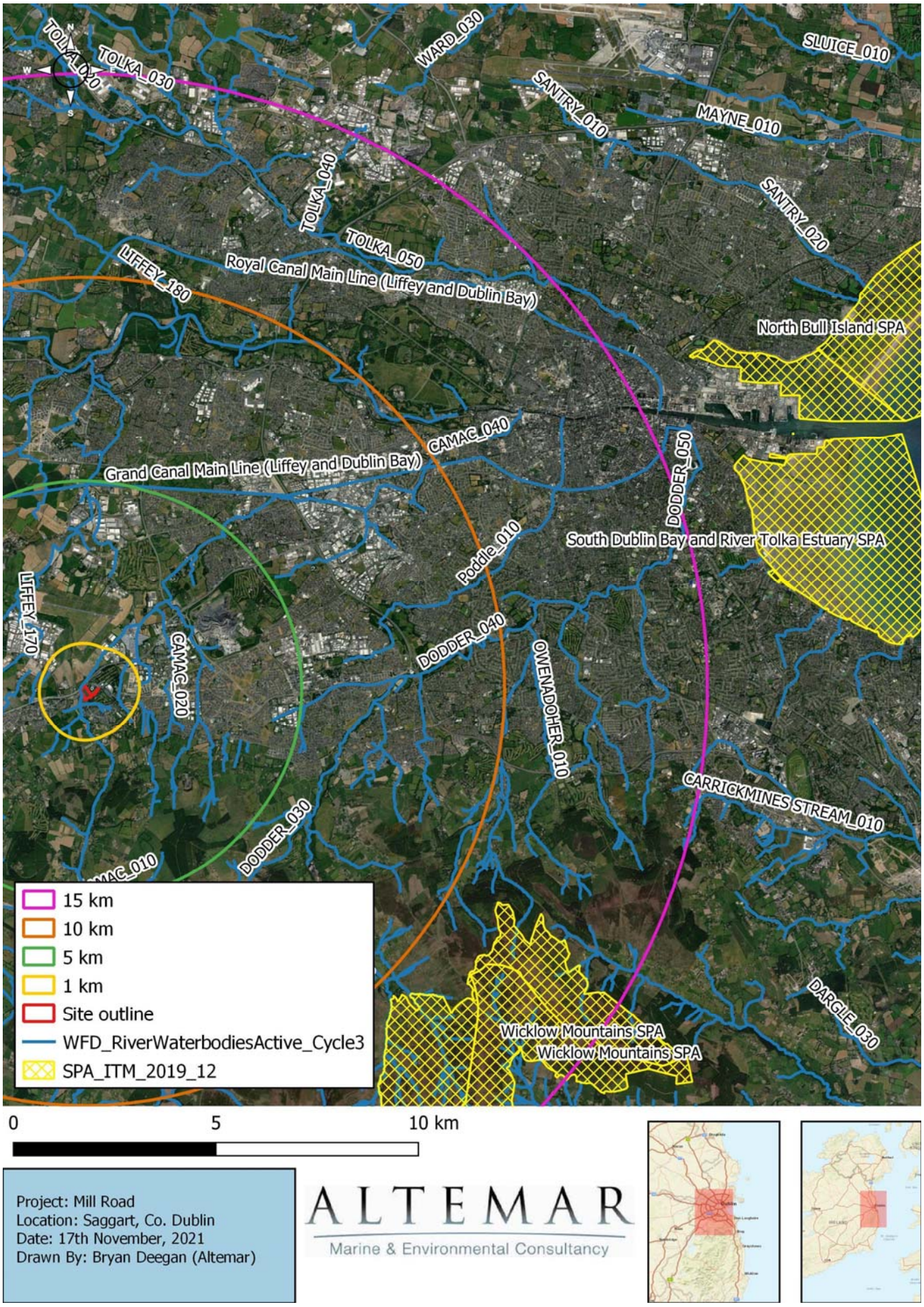

Figure 18. *Watercourses and SPAs proximate to the proposed development site*

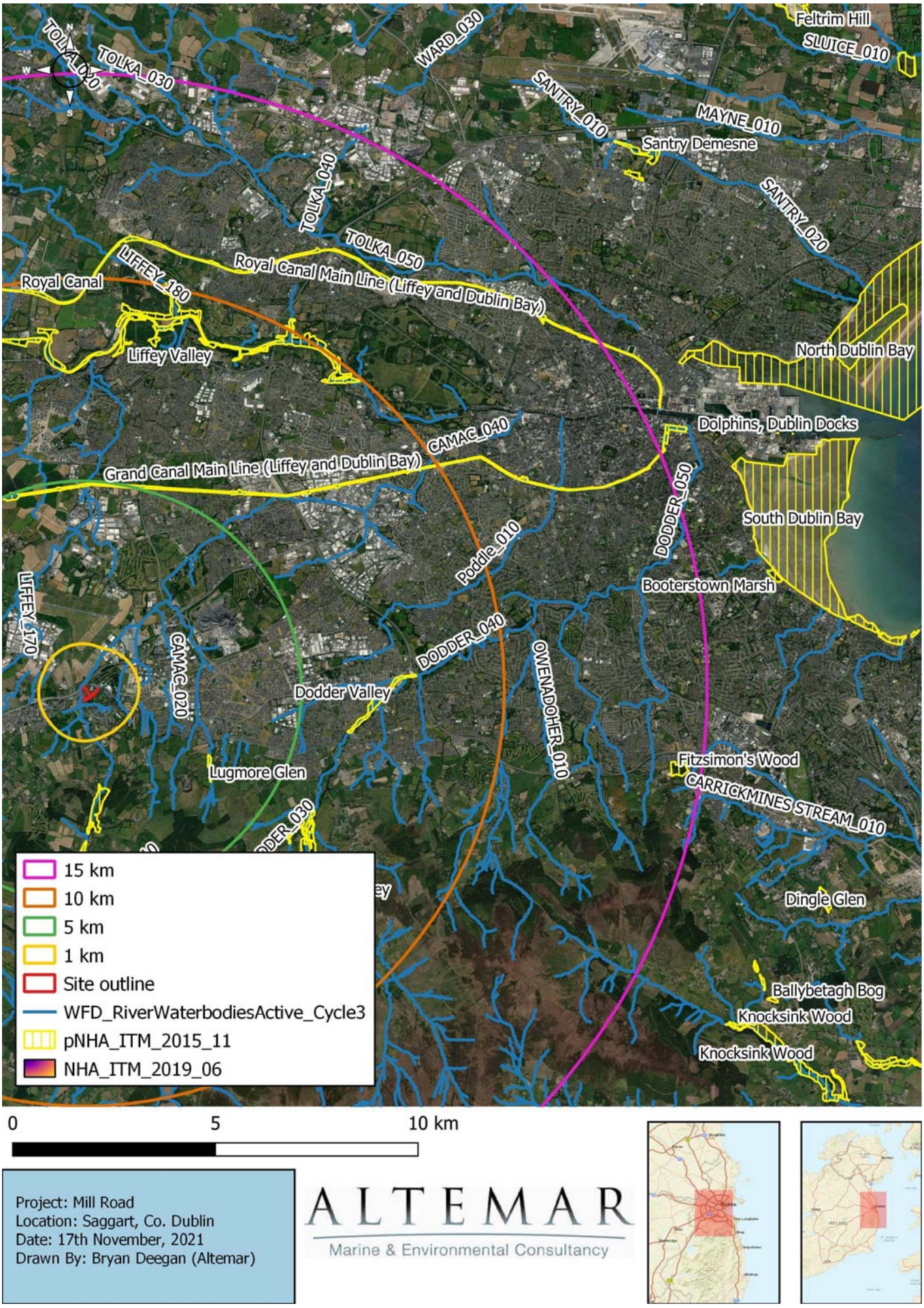

Figure 19. *Watercourses and pNHAs proximate to the proposed development site*

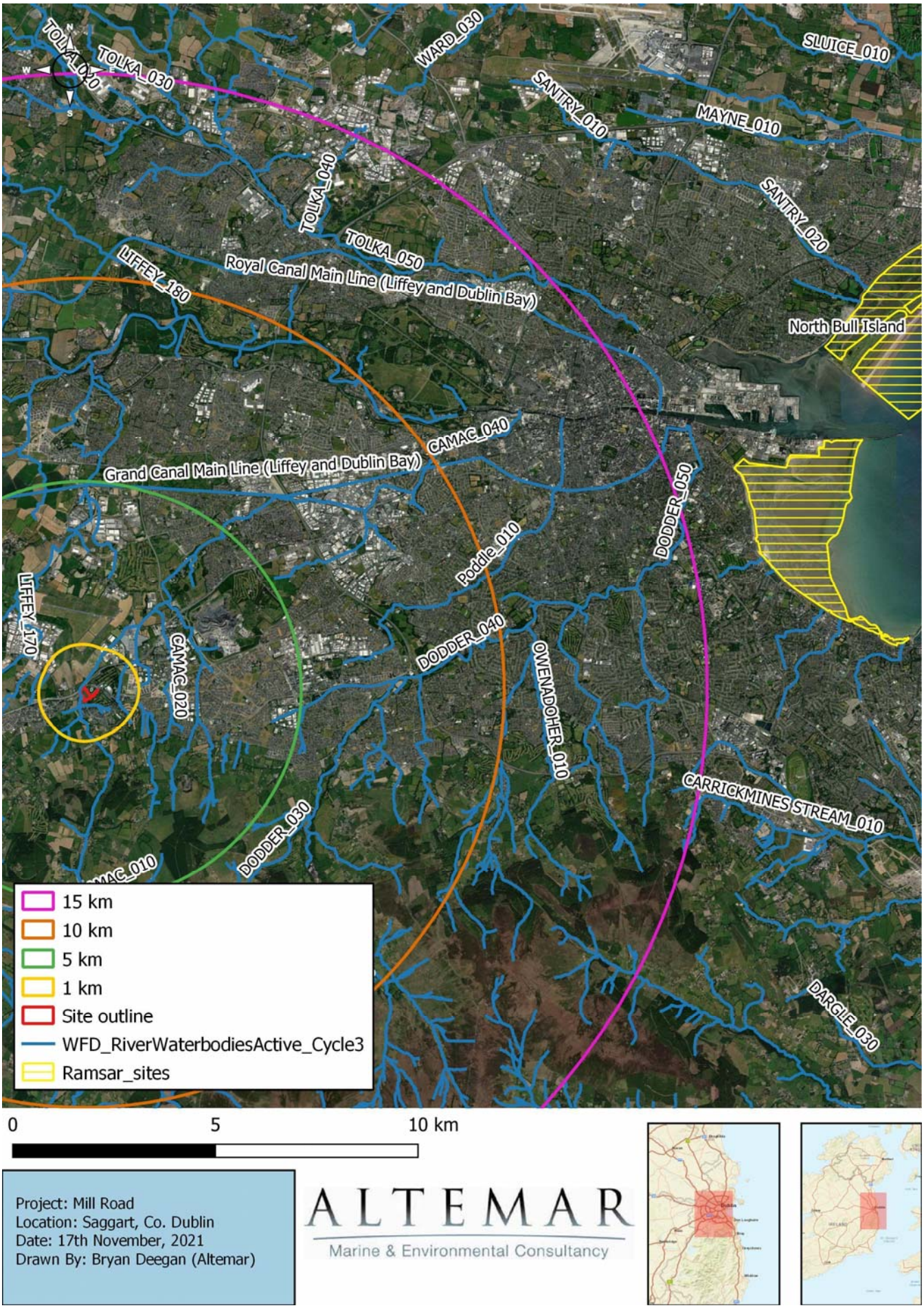

Figure 20. *Watercourses and Ramsar sites proximate to the proposed development site*

Habitats and Species

A site assessment was carried out on the 29th June, 7th & 12th of July 2015, 17th November 2016, 28th September 2020 and 13th August 2021. Habitats within the proposed site were classified according to Fossitt (2000) (Figure 21) based on the 13th August 2021 site visit.

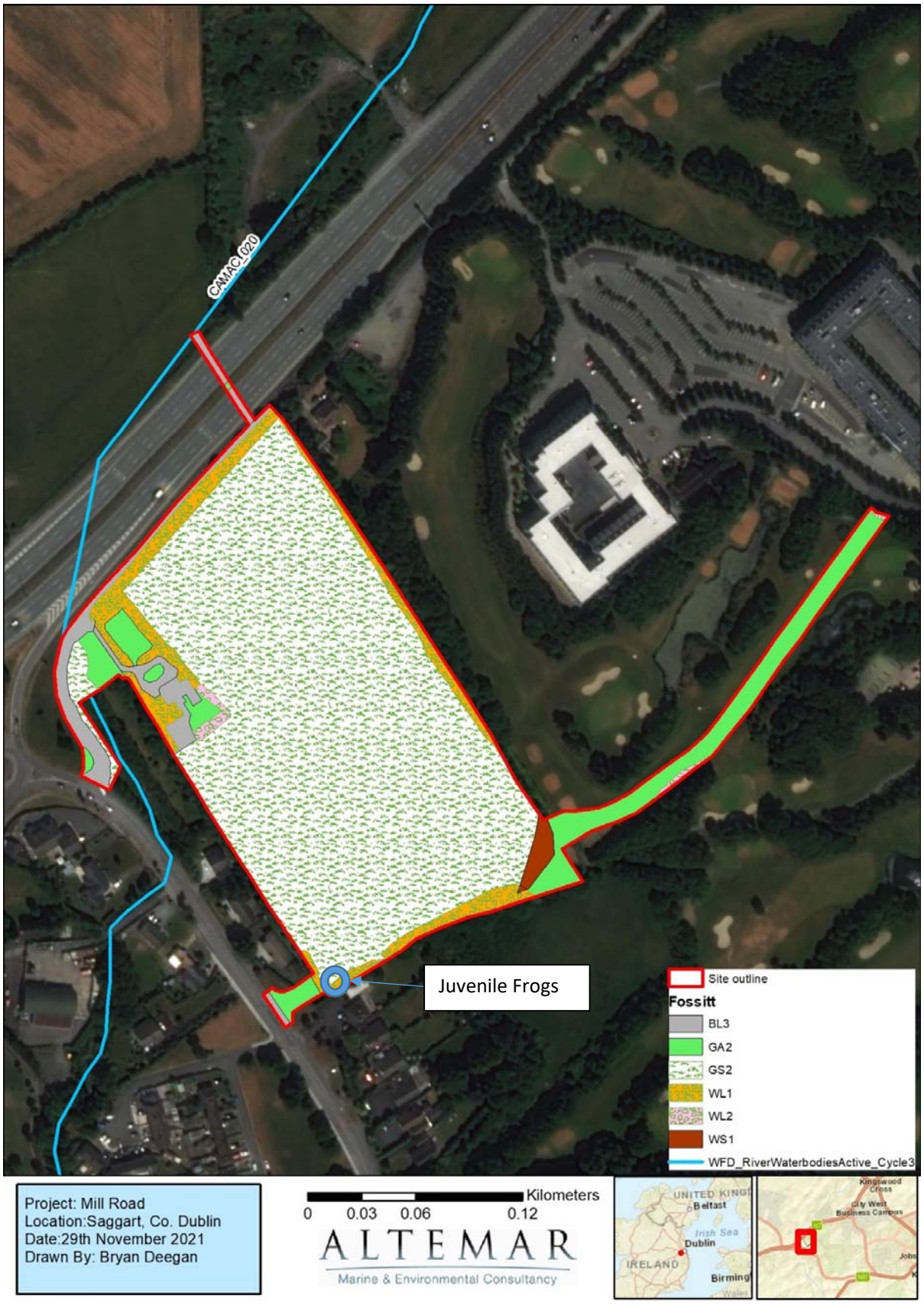

Figure 21. *Fossitt (2000) habitat map of the proposed development site*

A) GA1- Improved agricultural grassland

Plate 1: Northwest corner of field (Facing SE).

Plate 2: South west corner of field (Facing NE).

The vast majority of the site is taken up by a uniform field grazed by ~10 horses. The flora was dominated by meadow buttercup (*Ranunculus acris*), dandelion (*Taraxacum spp*.), Creeping Buttercup (*Ranunculus repens*), plantains (*Plantago spp*.), Nettle (*Urtica dioica*), thistles (*Cirsium arvense, C. vulgare*) and docks (*Rumex spp.*) ragwort (*Senecio jacobaea*), yellow rattle (*Rhinanthus minor*), Common Field-speedwell (*Veronica persica*), Oxeye Daisy (*Leucanthemum vulgare*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*) and sticky mouse-ear (*Cerastium glomeratum*). Beside the hedgerow, in the south eastern corner of the site possibly outside the area of ploughing, 8 pyramidal orchids (*Anacamptis pyramidalis*) were noted. This species is not protected but is of noteworthy importance and should remain a viable interest on site due to the locating of the perimeter fence on the inside of the hedgerow. Horses were still present in November 2016.

B) WL1 Hedgerows

Plate 4: Hedgerow on the southern boundary.

Plate 5: Western boundary

The field is surrounded by hedgerows on all sides. The eastern hedgerow, lies in front of a wide drainage ditch 1.5m deep and 2m wide that runs the length of the field. Hedgerow species in this area were dominated by hawthorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), elder (*Sambucus nigra*), Holly (*Ilex aquifolium*) and blackthorn (*Prunus spinosa*) in addition to bramble (*Rubus fruticosus*) and ivy (*Hedera helix*). Other species included cow parsley (*Anthriscus sylvestris*), dog-rose (*Rosa canina*), yarrow (*Achillea millefolium*), lady's bedstraw (*Galium verum*), self-heal (*Prunella vulgaris*) and cat's-ear (*Hypochaeris radicata*). Three disused badger setts were noted in this area and an additional survey specifically for badgers was carried out by Dr. Chris Smal (terrestrial mammal ecologist) as seen in Appendix I.

The hedgerow on the southern boundary has similar tree species but, had a less diverse understory. This appears to be the area where the horses frequent and the ground is trampled. A drainage ditch is also located in this area of the site. The hedgerow on the western side borders the back gardens of houses and is thinner and less structured. It is dominated by elder (*Sambucus nigra),* nettle (*Urtica dioica*) and sycamore (*Acer pseudoplatanus). An additional disused badger sett was noted in this hedgerow along with juvenile frogs (Rana temporaria).*

C) GA2- Amenity Grassland (Improved)

Two small areas of amenity grassland were present at the back and front of the house. These were poorly maintained and grass was approx. 80cm high in each location. Species included dandelion (*Taraxacum* spp.), daisy (*Bellis perennis*), plantains (*Plantago* spp.), creeping buttercup (*Ranunculus repens*), thistles (*Cirsium arvense, C. vulgare*), docks (Rumex spp.) white clover (*Trifolium repens*), red clover (*Trifolium pratense*) and cow parsley (*Anthriscus sylvestris*).

Plate 6: Amenity grassland in front garden of the house.

Plate 7: Amenity grassland in golf course.

D) BL3-Buildings and Artificial Surfaces

A bat survey was carried out within the building by Conor Kelleher (Appendix I). Pipistrelle bats were found roosting in the house and details of the roost are seen below. Two subsequent surveys in 2020 (internal and external examination of house and emergent survey) and 2021 (emergent survey) did note a bat roost on site. However, it should be noted that upgrading of the attic insulation was noted in the 2020 when compared to the site visit in 2015. As a precaution, given the history of bat roost on site for the purpose of impact assessment it is assumed that a bat roost is present on site.

E) WL2- Treelines

A small treeline is located on the boundary fence surrounding the house. This treeline consists of sycamore (*Acer pseudoplatanus)* approximately 7m high. Treelines are also located within the golf club.

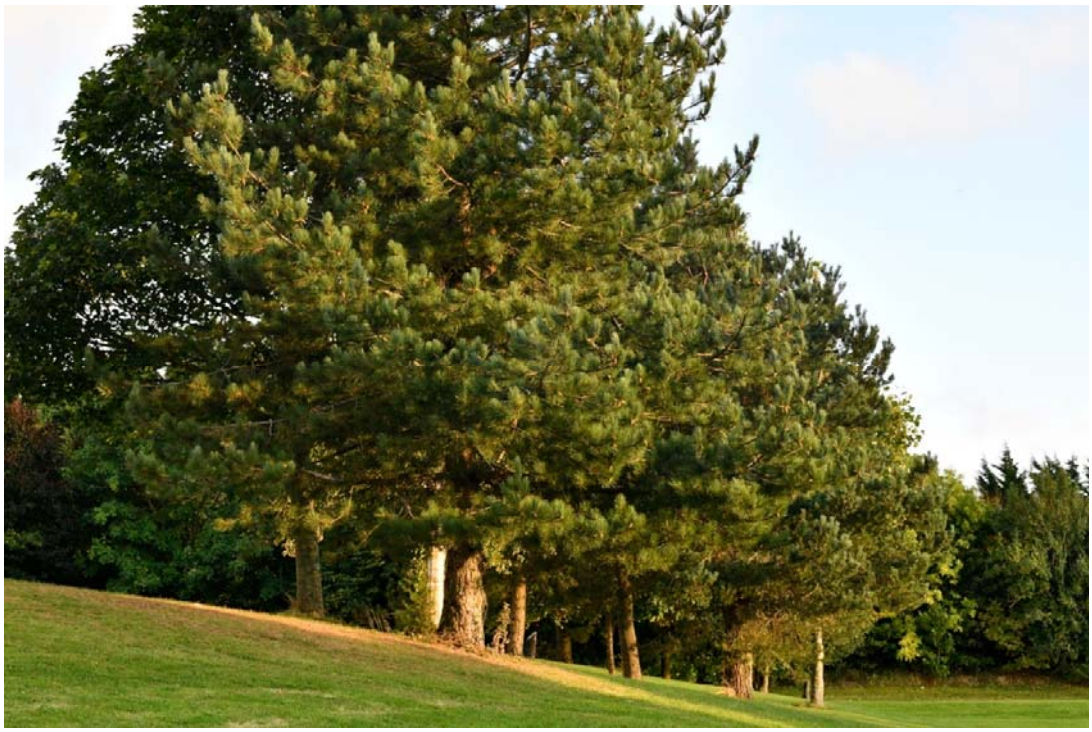

Plate 8: Treelines in golf course

F) WS1-Scrub

A small area of scrub was located in the south east corner of the site. This was dominated by Leland cypress (x Cupressocyparis leylandii) and Bramble (*Rubus fruticosus agg*.).

Plate 9: Scrub

Evaluation of Habitats

The proposed development site is mainly made up of a large field of improved agricultural grassland of low biodiversity and conservation significance. A house with overgrown amenity grassland is located in the north west corner of the site with hedgerows and a treeline surrounding the plot. The hedgerow on the eastern perimeter of the site will be retained. Behind the hedgerow on the eastern boundary is a drainage ditch. This area is has a poorly developed understory due to the thick canopy above it.

Species

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. However, the pyramidal orchids found in the eastern hedgerow are of noteworthy importance. Records of rare and threatened species from NPWS were examined. No rare or threatened plant species were recorded in the immediate vicinity of the proposed site at a fine resolution. However, within the 10km grid red hemp-nettle (*Galeopsis angustifolia*), hairy violet (*Viola hirta*), narrow-leaved helleborine (*Cephalanthera longifolia*), small-white orchid (*Pseudorchis albida*), heath cudweed (*Gnaphalium sylvaticum*), green-winged orchid (*Orchis morio*), blue fleabane (*Erigeron acer*), henbane (*Hyoscyamus niger*), yellow archangel (*Lamiastrum galeobdolon subsp. montanum*) and Corncockle (*Agrostemma githago*) were recorded by NPWS. None of these species were recorded on site. It should be noted that no invasive plant species, that could hinder removal of soil from the site during groundworks, such as Japanese knotweed (*Fallopia japonica*), giant rhubarb (*Gunnera tinctoria*), Himalayan balsam (*Impatiens glandulifera*) or giant hogweed (*Heracleum mantegazzianum*) were noted on site.

Amphibians

The common frog (*Rana temporaria*) was observed in the south west corner of the site in 2015. Juvenile frogs (~20) were observed on the grassland area immediately beside the hedgerow (WL1) area outlined in

Figure 21. A damp depression in this shallow ditch, possibly caused by poaching horses, is likely to form a pond during winter/spring. At time of the most recent 2021 survey this area was damp but, had no surface water. The presence of numerous froglets in 2015 and also some sub-adult frogs in the immediate vicinity is suggestive of the ditch (where it is open and not shaded by scrub) being a frog spawning site. In November 2016 water was present in the depression but no frogs or froglets were visible. A single frog was seen in 2021. NPWS have records for the common frog and smooth newt (*Lissotriton vulgaris*) from 1972, 75m to the west of the north western boundary outside the site, at the present site of the slip road off the N7. No smooth newts were observed on site. Due to the presence of one of the main access points of the site proximate to this area it is proposed to develop a compensatory frog wetland habitat on the eastern section of the site as seen in the landscape masterplan (Figure 6).

Bats

As outlined in Appendix II (2015 Bat Fauna Study) a "review of existing bat records within a 10km radius of the study site (sourced from BCIreland's National Bat Records Database) reveals that eight of the ten known Irish species have been observed locally. These include common (*Pipistrellus pipistrellus)*, soprano (Pipistrellus *pygmaeus)* and Nathusius' (Pipistrellus *nathusii) pipistrelle*, Leisler's (*Nyctalus leisleri)*, brown long-eared (*Plecotus auritus)*, Daubenton's (*Myotis daubentonii)*, Natterer's *(Myotis nattereri*) and whiskered (*Myotis mystacinus)* bats.

A bat fauna study was carried out on the 12th July 2015 by Conor Kelleher and Bryan Deegan, both in the field area and within the existing house on site. As outlined in the report "*Within the roof space, droppings of a pipistrelle species were noted at the southern gable (Plate 4) and droppings were also scattered on the attic insulation. Two corpses of drowned bats were also observed within the water tank in the roof space. The evidence showed that a small roost of pipistrelle bats is present within the roof space of the dwelling. An emergence survey of the dwelling was undertaken at dusk with the aid of a bat detector but no bats were recorded leaving or entering the building."* In addition "*due to the high boundary treelines and hedgerows surrounding the site and the onsite dwelling, the grounds are well vegetated and very sheltered and so are favourable for swarming insects which then attract bats and three species were observed foraging onsite. The onsite dwelling is also used as a roosting site by a colony pipistrelles and these bats may breed in the building. As a bat roost is present and a number of bats forage onsite, mitigation measures to safeguard these animals are needed during building and tree removal and vegetation clearance*." As all bat species are protected under existing legislation and a bat roosting site or resting place is protected whether bats are present or not. A derogation licence (Appendix III), was provided by the Licensing Department of the National Parks and Wildlife Service to allow the legal exclusion of the bats in the onsite building. Subsequent surveys in 2020 and 2021 did not reveal a bat roost on site. As previously outlined, upgrading of attic insulation had taken place between 2015 and 2020. As a precaution, it is recommended that as a condition of planning that, prior to the commencement of any demolition/clearance on site being carried out, an up to date and valid Derogation Licence is sought and is necessary for the removal of the bat roost onsite. Mitigation measures are proposed and it will be necessary to follow the outlined mitigation in the bat fauna report and in the valid derogation licence.

Terrestrial Mammals

A faunal survey was carried out by Dr Chris Smal of Ecological Solutions on the 12th July 2015 and this survey can be seen in Appendix I. In summary, a number of larger mammal burrows were found on site, some of these were of the size and shape of badger setts. "*None of the setts were found to be currently active and may be considered as outlier setts, i.e. setts typically found on the periphery of a badger group territory or at some distance from the main (breeding) sett. The sett tunnel systems associated with these setts will be very short (less than 3m). No signs of badger activity were confirmed on site – such as bedding, footprints, rooting/feeding signs or badger latrines. There was no indication of badger digging or foraging activity within the proposed site." "The apparent absence of badgers on site may have resulted from mortalities with traffic on the adjacent N7 highway in the past. There is no badger-proof fencing along the N7 at this section, and undoubtedly, this would have led to road traffic incidents with badgers in the past*."

It should be noted that the entrances to all badger setts are within the hedgerows, outside the areas of construction. However, the tunnels of three of the setts on the north eastern boundary face the drainage ditch and could extend into the field. It is proposed to retail all setts and access to all setts. Mitigation measures are proposed. All burrows were revisited in 2020 and in 2021. No signs of recent activity were noted. All burrows contained leaf litter and cobwebs indicating that they are not currently being used by mammals. A pre-construction mammal assessment should be carried out on site.

Foxes were seen during the site visit. Records from the NBDC indicate a fox siting from 2012 in the vicinity of the proposed site/ or the golf club to the east. Hedgehogs have been recorded by NBDC within the 10km square but, not within 1km at a finer resolution. No hedgehogs were seen during the site visits.

Records from NPWS rare and threatened species database indicate that mammals were not found in the immediate vicinity of the site at a fine resolution. However, the following mammal species have been found in the 10km square; Irish Stoat (*Mustela erminea subsp. hibernica*) (Saggart Forest and Tallaght), Badger (Tallaght), Eurasian Red Squirrel (*Sciurus vulgaris*) (Tallaght), West European hedgehog (*Erinaceus europaeus*), Irish Hare (*Lepus timidus subsp. hibernicus*), pine marten (*Martes martes*), European otter (*Lutra lutra*) (Tallaght and a stream near Kingswood), Eurasian red squirrel (*Sciurus vulgaris*) (Tallaght) and the Eurasian Pygmy Shrew (*Sorex minutus*) (Tallaght).

Birds

During the site visits records were kept of the bird species observed on site. The most common bird species observed were wood pigeon feeding in the large open field. A pair of barn swallows was seen nesting in the outbuildings to the rear of the house on site.

Table 2. Birds and species noted in the vicinity of the development

Common Name	***Scientific Name***
Woodpigeon	*Columba palumbus*
Wren	*Troglodytes troglodytes*
Blackbird	*Turdus merula*
Robin	*Erithacus rubecula*
Bullfinch	*Pyrrhula pyrrhula*
Chaffinch	*Fringilla coelebs*
Blackbird	*Turdus merula*
Blue tit	*Parus caeruleus*
Great tit	*Parus major*
Starling	*Sturnus vulgaris*
Magpie	*Pica pica*
Jackdaw	*Corvus frugilegus*
Rook	*Corvus frugilegus*
House sparrow	*Passer domesticus*
Goldfinch	*Carduelis carduelis*
Chaffinch	*Fringilla coelebs*
Barn Swallow	*Hirundo rustica*

Assessment of Biodiversity Records

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 by generating a report based on the site outline, the species recorded are shown below in Table 7.

Following this a 2 km^2 grid, reference number O021, based on the Ordnance Survey Ireland (OSI) Irish Grid classification system was assessed. Table 8 provides a list of all species recorded in the species reports

generated for this grid that possess a specific designation, such as Invasive Species or Protected Species. These include marine and coastal species.

Table 7. Table of species, NBDC

Date of Record	Species Name	Designation
31/12/1979	Common Frog (*Rana temporaria*)	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex V || Protected Species: Wildlife Acts
30/06/1972	Smooth Newt *(Lissotriton vulgaris*)	Protected Species: Wildlife Acts
31/07/1991	Barn Owl (*Tyto alba*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/12/2011	Barn Swallow (*Hirundo rustica*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Black-headed Gull (*Larus ridibundus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/12/2011	Common Coot (*Fulica atra*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Goldeneye (*Bucephala clangula*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Kestrel (*Falco tinnunculus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Kingfisher (*Alcedo atthis*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Linnet (*Carduelis cannabina*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Pheasant (*Phasianus colchicus*)	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
29/02/1984	Common Pochard *(Aythya ferina*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
29/02/1984	Common Redshank (*Tringa totanus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/12/2011	Common Sandpiper (*Actitis hypoleucos*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

31/12/2011	Common Snipe (*Gallinago gallinago*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	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
31/12/2011	Common Swift (*Apus apus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	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
31/07/1972	Corn Crake (*Crex crex*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/07/1972	Eurasian Curlew (*Numenius arquata*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/12/2011	Eurasian Teal (*Anas crecca*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Eurasian Tree Sparrow (*Passer montanus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
29/02/1984	Eurasian Wigeon (*Anas penelope*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Eurasian Woodcock (*Scolopax rusticola*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
29/02/1984	European Golden Plover (*Pluvialis apricaria*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Protected Species: EU Birds Directive >> Annex III, Section III Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
29/02/1984	Great Black-backed Gull (*Larus marinus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Great Cormorant (*Phalacrocorax carbo*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

31/12/2011	Great Crested Grebe (*Podiceps cristatus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Greylag Goose (*Anser anser*)	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/07/1972	Hen Harrier (*Circus cyaneus*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Herring Gull (*Larus argentatus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/12/2011	House Martin (*Delichon urbicum*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	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
31/12/2011	Lesser Black-backed Gull (*Larus fuscus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Little Egret (*Egretta garzetta*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species
31/12/2011	Little Grebe (*Tachybaptus ruficollis*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Mallard (*Anas platyrhynchos*)	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
31/12/2011	Merlin (*Falco columbarius*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Mew Gull (*Larus canus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Mute Swan (*Cygnus olor*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Northern Lapwing (*Vanellus vanellus*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
29/02/1984	Northern Pintail (*Anas acuta*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List

31/12/2011	Northern Wheatear (*Oenanthe oenanthe*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Peregrine Falcon (*Falco peregrinus*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species
31/12/2011	Red Grouse (*Lagopus lagopus*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/07/1991	Ringed Plover (*Charadrius hiaticula*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Rock Pigeon (*Columba livia*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
31/12/2011	Sand Martin (*Riparia riparia*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Sky Lark (*Alauda arvensis*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Spotted Flycatcher (Muscicapa striata)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/07/1972	Stock Pigeon (*Columba oenas*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Tufted Duck (*Aythya fuligula*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section II Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/07/1972	Water Rail (*Rallus aquaticus*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/07/1972	Whinchat (*Saxicola rubetra*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Whooper Swan (*Cygnus cygnus*)	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex I Bird Species || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Yellowhammer (*Emberiza citrinella*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
30/09/1930	Smooth Hornwort (*Phaeoceros laevis*)	Threatened Species: Least concern
31/12/1972	Wall (*Lasiommata megera*)	Threatened Species: Endangered
07/07/1923	Andrena (Andrena) fucata	Threatened Species: Near threatened
01/04/1923	Andrena (*Melandrena*) nigroaenea	Threatened Species: Vulnerable
21/01/1969	Brown Rat (*Rattus norvegicus*)	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
14/01/1992	Eurasian Badger (*Meles meles*)	Protected Species: Wildlife Acts
21/01/1969	Eurasian Pygmy Shrew (*Sorex minutus*)	Protected Species: Wildlife Acts

21/01/1969	Eurasian Red Squirrel (*Sciurus vulgaris*)	Protected Species: Wildlife Acts
21/01/1969	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
28/02/2006	Pine Marten (*Martes martes*)	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex V || Protected Species: Wildlife Acts
31/12/2008	Sika Deer (*Cervus nippon*)	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts
21/01/1969	West European Hedgehog (*Erinaceus europaeus*)	Protected Species: Wildlife Acts

An assessment of files received from the NPWS (Code No. 2020_185) which contain records of rare and protected species and grid references for sightings of these species was carried out as part of this EcIA for the proposed development. There are no recorded species sightings within the site itself, however the following table (Table 8) provides a summary of the species identified, the year of identification/sample, survey name and data ID of sightings locations in the areas surrounding the proposed development.

Table 8. Species survey, NPWS

Data ID.	Species	Survey Name	Sample Year
25124	Smooth Newt (*Lissotriton vulgaris*)	AFF Mammals, Reptiles & Amphibians Distribution Atlas 1978	1972
8955	Common Frog (*Rana temporaria*)	Frog - National Frog Survey 2011 additional records	2011
25321	Hairy Violet (*Viola hirta*)	NPWS Rare/Threatened Plants Database	1900
30635	European Otter (*Lutra lutra*)	Animal Survey IBRC - Location Species Lists	1960
4290	Freshwater Crayfish (*Austropotamobius pallipes*)	Camac / d/s Clondalkin br	1984
5206	Sika Deer (*Cervus nippon*)	Deer data Coillte	2004
29390	Opposite-leaved Pondweed (*Groenlandia densa*)	Rare Vascular Plants: Additional Records on Survey Cards 2011	1992
1491	Brown Long-eared Bat (*Plecotus auratus*)	Animal Survey IBRC - Location Species Lists	1960
15894	Irish Hare (*Lepus timidus subsp. Hibernicus*)	Hare Survey of Ireland 2006/2007	2006
14445	Badger (*Meles meles*)	Badger and Habitat Survey of Ireland	1992
21771	Hairy St John's-wort (*Hypericum hirsutum)*	Miscellaneous Vascular Plant Records 2014b	2005

4 Analysis of the Potential Impacts

Introduction

The proposed development will involve the removal of the majority of existing habitats on site including the house (former bat roost) and internal hedgerows and treelines. Perimeter hedgerows on the eastern boundary will be maintained.

Direct Impacts

The overall development of the site is likely to have direct negative impacts upon the existing internal habitats, fauna and flora. Direct negative effects will be manifested in terms of the removal of the improved agricultural grassland, existing house, amenity grassland, scrub and hedgerows and in addition to the treeline to the south east of the house. It will also reduce the foraging area for mammal species including bats, fox and badger (if present).

The hedgerow on the eastern perimeter of the site is seen as the most important ecological area of the site. This area, in addition to the drainage ditch and golf club woodland, form a biodiversity corridor and area for biodiversity along the north eastern boundary of the site. The hedgerow will be maintained. The badger setts are located at the top of the drainage ditch, within tree roots and a protection zone will be provided for all machinery. All setts, although unused, will have unhindered access to the areas outside the development including the golf course/woodland on the eastern boundary and golf course/gardens on the southern boundary.

Once developed, the site would be seen as a stable ecological environment. It would be expected that there will be no significant ecological impact arising from the day to day operation of the proposed residential development. The incorporation of native species planting and areas specifically for native biodiversity within the landscaping proposals would be of benefit to the long term ecology and residents of the site. Positive impacts would be achieved by landscaping including planting a range of flora in open spaces the overall abundance and diversity of vegetation on the site.

Indirect Impacts

Any soil imported/removed from the site during ground works would also have to comply with planning requirements and policies, and would need to be disposed of/acquired in an appropriate manner. No invasive species were observed on site that could impact on soil removal from the site.

The construction of new drainage networks will have to comply with SUDS, engineering and planning requirements and as a result would have negligible impact on habitats and species surrounding proposed development site.

Designated Conservation sites within 15km

There is no direct biodiversity corridor of pathway to designated sites. Mitigation measures are not necessary to protect designated sites.

Impacts: Negligible / International/ Not significant / short term.

Biodiversity

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

Terrestrial mammalian species

No protected terrestrial mammals were noted on site. Disused badger setts will not be impacted. Loss of habitat and habitat fragmentation may affect some common mammalian species.

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

Flora

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

Impacts: Low adverse / site / Negative Impact / Not Significant / Short term

Bat Fauna

The house is a former bat roost. Three bat species were noted foraging on site. Lighting during construction and operation could impact on foraging activity.

Impacts: Low adverse /Local / Negative Impact / Not significant / short term. Mitigation is needed in the form of a pre-construction survey, application for an updated Derogation Licence and control of light spill during construction/operation.

Aquatic Biodiversity

There is a watercourse and drainage ditch in the hedgerow proximate to the proposed development site. There is the potential for downstream impacts on biodiversity from silt or petrochemicals. Frogs were observed on site.

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

Bird Fauna

No bird fauna of conservation importance were noted on site.

Impacts: Low adverse / site/ Negative Impact / Not significant / long term. Mitigation is needed in the form of the protection of nesting birds.

Operational Phase

Following construction all surface water runoff will comply with SUDS. The biodiversity value of the site would be expected to improve as the landscaping matures. Surface water discharge from site will be developed in accordance with the requirements of the Water Pollution Acts.

Designated Conservation sites within 15km

The drainage on site will be carried out to modern SuDS and water pollution prevention standards. No significant adverse impacts on designated conservation sites are likely.

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

Biodiversity

Biodiversity value of the site will improve as landscaping matures.

Terrestrial mammalian species

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

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

Flora

No protected flora were noted on site.

Impacts: Low Adverse/ site / Negative Impact / 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.

Impacts: Low adverse / International /Negative Impact / Not significant / long term. Mitigation measures are recommended due to the loss of potential roosting areas.

Aquatic Biodiversity

Given that there is a watercourse passing through the proposed development site, there is the potential for downstream impacts on biodiversity from silt or petrochemicals. Frogs were observed on site. Standard controls and compensatory frog habitat will be in place.

Impacts: Low adverse / local / Neutral Impact / Not significant / long term

Bird Fauna

The proposed development will change the local environment as new structures are to be erected. The buildings are comprised of solid materials consisting of a solid material on the exterior which includes sections of concrete and glass. These buildings would be clearly visible to bird species and would not pose a significant collision risk. Nesting resource will be lost and will be mitigated.

Impacts: Low adverse / site / Negative Impact / Not significant / long term. Mitigation is required.

Avoidance and Remedial Measures

Mitigation by Avoidance

Direct negative impacts upon the existing vegetation are not regarded as being significant due to the absence of species of conservation importance and as a result do not require mitigation. A project ecologist will be appointed prior to any works taking place on site. Several protected faunal species are present on site and these require mitigation measures to be carried out:

Mitigation for badgers

Despite no signs of badgers being actively present on site, there are however three setts on the eastern boundary of the site, situated at the top of a drainage ditch along the hedgerow. An area adjacent to these burrows is proposed as green amenity space and the hedgerow and ditch will be left in place. Therefore, there should be no direct impacts on these burrows. The sett at the south-west corner has been interfered by earlier dumping of materials. Again, retention of the hedgerow is proposed there and a narrow green amenity space is to be provided there also. Mitigation in relation to badgers will include:

1. The proposal does not require removal of these inactive setts and they may be left in place. However, a pre construction survey will be carried out.
2. The use of heavy machinery during landscaping, construction of attenuation areas, new paths or roadways, fencing, and removal of scrub along the hedgerow should be restricted in the vicinity of the 3 setts at the east: A protective zone of 5m should be established to the north and south of the three disused setts and 5m from the ditch on the western side of the hedgerow.
3. The sett at the south-west has a tunnel system that extends off site and not into the development site. The sett should be retained in place. Provision of the amenity area will not interfere with this sett.
4. Fencing works, if required, should avoid erection of fence posts directly into the setts and care taken to place posts well away from sett entrances within the exclusion zone recommended above.
5. Additional planting will occur in the hedgerow to improve its appearance and density.
6. A badger proof fence should be placed in the SW corner of the site to prevent any badger movement on to the main access road.

Mitigation for frogs

A damp section of a shallow ditch at the south-west area of the site is likely to be a frog-breeding site in spring. At time of survey, this was merely damp and retained almost no water. Water was present in the depression in November 2016. The presence of numerous froglets and also some sub-adult frogs in the immediate vicinity from the 2015 survey is suggestive of the ditch (where it is open and not shaded by scrub) being a frog spawning site. A frog was also observed in 2020. Common frogs are a protected species under the Irish Wildlife Acts.

Recommendations:

1. Due to the proximity of the frog breeding site to the main development entrance it is proposed to develop a compensatory wetland habitat to the east of the site.
2. Works will not interfere with the frog breeding area during the breeding season which is from the beginning of February through to the end of July in most years (weather dependent). It is recommended that the site be checked by a suitably qualified ecologist prior to works commencing.
3. Should works need to be conducted at this breeding site or its immediate vicinity during the breeding season, then the frogs, spawn, tadpoles, can be translocated to another suitable site in the vicinity (off-site). Such translocations need to be conducted under Derogation licence provided by the National Parks and Wildlife Service.
4. A log of the captures and translocations should be kept, to comply with the usual terms of the wildlife licence to translocate frogs issued by the NPWS.

Mitigation for Birds

Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds needs to be followed e.g. do not remove trees or shrubs during the nesting season (1st March to 31st August).

Mitigation for bats

As bats were present in the onsite dwelling, mitigation measures are required to ensure their safe exclusion from the building prior to its removal and a derogation licence is required for the demolition – Bat Mitigation Guidelines for Ireland (Legislation and Licensing) (Kelleher & Marnell, 2007) and NPWS Circular Letter 2/07 as reproduced in the Appendices.

Recommendations:

1. Protection of bats. As a bat roost was present and a number of bats forage onsite, mitigation measures to safeguard these animals are needed during building and tree removal and vegetation clearance. As all bat species are protected under existing legislation and a bat roosting site or resting place is protected whether bats are present or not, a derogation licence is necessary for the removal of this species (Appendix III). An updated derogation licence must be sought from NPWS prior to the demolition of the house.
2. Timing of building removal - Any works within the roof area of the onsite dwelling and the removal of the building should preferably be undertaken within the period from August to the end of February when all bats, including the young, are able to fly and fewer animals are expected to be in the building.
3. Roof removal - The removal of the roof of the dwelling should be undertaken manually and carefully in the knowledge that a few bats may be found beneath. If discovered, the animals should be retained in a secure box until dusk and then released onsite.

4. Retention of mature trees - It is recommended that mature trees be retained where possible. Surgery instead of complete removal is suggested for Health & Safety precautions as a means of stabilising any tree that may be considered dangerous.
5. Protection of retained trees - Where possible, all retained trees should be fenced a minimum of 7m from the trunk or a distance equivalent to canopy height to ensure that their root structure and branches are not damaged by plant machinery.
6. Tree felling - Trees that are to be removed should preferably be felled during the months of September to November inclusive. Felling during the autumn months avoids the periods when bats are most active or in hibernation and also avoids the peak bird nesting season. Trees may be felled outside of this period but there is a greater chance of encountering bats. Any ivy-covered trees which require felling should be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape overnight.
7. Retention of other vegetation and additional planting - Existing hedgerows and treelines at the site's boundaries should be retained where possible to continue to afford commuting routes and foraging areas for bats and other wildlife but also to screen the development. Where suitable, areas should be replanted with native tree and shrub species. Native species support a significantly greater diversity of insects than non-native species and are therefore better for wildlife in general and bats in particular. Where these linear features are retained or planted, they should link up with existing hedgerows both on and off-site to ensure connectivity of corridors for bat and other wildlife movement. Further planting of native tree species that already occur onsite is recommended. These should be sourced locally. Night-scented plants could also be planted as part of landscaping of the proposed development to encourage night-flying insects onto the site to act as prey items for bats. These can be chosen according to local soil conditions.
8. Lighting- In general, artificial light creates a barrier to commuting bats so lighting should be minimised along the site boundaries as it deters some bat species. Where lighting is required, directional lighting (i.e. lighting which only shines on access roads and built areas and not nearby countryside) should be used to prevent overspill. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Cowls will be placed on lighting facing the eastern hedgerow.
9. 5 bat boxes should be places on site to offset the loss of potential/former roosting sites.

Mitigation for downstream impacts

1. Appropriate monitoring of groundwater levels during site works should be undertaken. In order to prevent "downstream impacts" appropriate mitigation measures should be developed including filtering of excess water for suspended solids prior to discharge, if required. It would be particularly important to note that the stream 20m to the west of the north western site boundary and the drainage ditch to the north east of the site should not be impacted during construction and used as discharge points for unfiltered runoff. The main entrance to the proposed site is 70m to the south east of this stream and there is a 20m buffer between this stream and the western site boundary and these impacts would not be foreseen. However, if significant quantities of soil are to be removed from site, runoff with suspended material may enter this stream from the surrounding roads. In addition if there is movement of soil within the site runoff should be monitored and mitigated to ensure suspended solids/pollutants do not enter watercourses. Sufficient onsite cleaning of vehicles prior to leaving the site should be carried out, particularly during groundworks. Appropriate consultations should take place prior to site clearance if any impact is foreseen in this area.
2. Waterflows may increase within the drainage ditch as a result of the discharges from the attenuation. Prior to the attenuation coming on line the existing debris and rubbish should be removed from the drainage ditch.

3. The drainage ditch on the eastern boundary flows into the Camac River, which is a tributary of the River Liffey which supports both salmon and trout populations in this area. Discharge levels from the onsite attenuation are small and are deemed not to have a significant impact on the river. However, only as a precaution Inland Fisheries Ireland should be consulted in relation to the project.

Mitigation by Remedy

Replanting of the perimeter treelines should be carried out with native trees, that would afford the appropriate feeding and potential roosting sites for bat species. It would also assist in reinstating, if not improving, the natural wildlife corridor. These trees should be allowed to grow to their maximum size to provide suitable roosting and foraging conditions for birds and bat species. Lighting of treelines should be carried out sympathetically with due consideration for bat species. Native Hedgerow planting should be included in planting schemes within the site, to reinstate nesting resource lost during site clearance. Native biodiversity areas could be developed to form part of the replanting scheme. Grassland areas would form a buffer for biodiversity between the perimeter treelines and the proposed development.

Cumulative Impacts

There are several developments that received planning permission located in the area immediately surrounding the subject site. The following is a list of planning applications as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Map' portal:

Planning Ref.	Address	Proposal
SD13A/0221/EP	Mill Road, Saggart, Co. Dublin	Demolition of 'Somerton' (a habitable dwelling) and the construction of 22 three-bedroom duplex units and 22 two-bedroom apartment units in 5 three storey blocks with balconies at 3rd floor level in all blocks; vehicular access to the development will be via a new entrance/exit roadway onto Mill Road and 66 car parking spaces are provided at surface level within the development; a new pedestrian route into the scheme is proposed adjacent to No. 5 Mill Road. Permission is also sought for all associated site development, landscaping and boundary treatment works and the provision of 4 bin stores (c.48sq.m) at 'Somerton' and No's 3, 4 and 5 Mill Road and a site of c.1.68ha located to the rear of No's 1 - 5 Mill Road.
SD20A/0319	Moneenalion Commons Upper, Brownsbarn and Collegeland, Baldonnell Business Park, Dublin 22	Amend permitted logistics/warehouse units C and D and incorporate other amendments, providing for a resultant; Unit C, 7,937sq.m including 757sq.m ancillary office space (permitted 11,492sq.m total); Unit D, 12,050sq.m including 911sq.m ancillary office space (permitted 7, 856sqm total); Overall increase of 639sq.m for Units C and D; provision of maintenance ramp to swale; resultant amendments to site layout, minor revisions to flood mitigation strategy, yards, elevations, signage, internal road layout, landscaping, ground works, drainage, gates, fencing, services and utilities and all associated and ancillary site development works at a site at the townlands of Moneenalion Commons Upper, Brownsbarn and Collegeland, Baldonnell Business Park and is located between the Casement Aerodrome and the N7 national route and comprising of amendments to the second phase of development permitted under Ref. SD19A/0370 & SD20A/0215.
SD19A/0250	Dawson Park, College Lands, Rathcoole, Co. Dublin	Flood lighting including lighting columns and all associated site works to training pitch at clubhouse on club grounds.

Planning Ref.	Address	Proposal
SD15A/0381	Citywest Hotel and Conference Centre, Saggart, Dublin	Permission is sought for the increase in capacity of the conference centre to allow for up to 6,000 patrons (the conference centre is currently limited to 4,161 patrons under Reg. Ref. SD07A/0294, An Bord Pleanala reference PL06S.227236) and for the provision of public concerts; modifications to the permitted layout of the overflow car park (Reg. Ref. SD10A/0150, An Bord Pleanala reference PL06S.238971) to accommodate an additional 171 car parking spaces and taxi set-down area; improvement works to the junction at Garters Lane and Fortunestown Lane; all associated site development, landscaping and boundary treatment works above and below ground.
SHD3ABP-300555-18	Site bounded by Fortunestown Lane, Garters Lane and Bianconi Avenue, Saggart, Co. Dublin	A residential development comprising: 526 residential units and all associated site and development works as follows: - 274 3-bed 2 storey terraced units, 185 4-bed 2 and 3 storey terraced and end of terrace units, 67 2-bed apartment/duplex units (37 2-storey, 2 bed terraced duplexes, 18 1-storey 2 bed terraced apartments and 12 1 storey 2 bed end of terrace apartments). The development also provides for a district park (4.58 ha) and a neighbourhood park (0.71 ha) in accordance with the Fortunestown Local Area Plan 2012. Permission is also sought for 789 car parking spaces, bin storage areas, ESB substations and all associated site development and infrastructural works. Vehicular access to serve the proposed development will be provided via two new access points off Garter Lane and via a new signalised junction at the southeastern corner of the site to replace the existing roundabout off Fortunestown Lane. Provision is made for a future access to Bianconi Avenue. In addition, an interim local square is proposed within the subject site providing a direct pedestrian link from the proposed development to the Saggart Luas stop. Two direct pedestrian links are proposed between the subject site and the adjoining school sites permitted under Reg Ref No SD16A/0255 providing a direct link between the school and the proposed district park and a direct link from the west of the school site to the proposed residential development. Lands identified for future development are located along the southern boundary of the current application site adjacent to Fortunestown Lane/Saggart Luas Stop. These areas will be subject of a future planning application (Phase 2) and will include the final design and layout of the local square.
SD18A/0093	Block A, Citywest Educate Together National School, Former Golf Heritage Buildings, Fortunestown Lane, Saggart, Co. Dublin	Conversion of part of the ground floor of Block A into 8 classrooms with en-suite toilets, administration, secretary & principals offices, entrance foyer, 1 S.E.T. room, new boiler & electrical room, new emergency escape corridor with associated alterations on the west facing elevation of Block A and all associated works.
SHD3ABP-300555-18	Site bounded by Fortunestown Lane, Garters Lane and Bianconi Avenue, Saggart, Co. Dublin	A residential development comprising: 526 residential units and all associated site and development works as follows: - 274 3-bed 2 storey terraced units, 185 4-bed 2 and 3 storey terraced and end of terrace units, 67 2-bed apartment/duplex units (37 2-storey, 2 bed terraced duplexes, 18 1-storey 2 bed terraced apartments and 12 1 storey 2 bed end of terrace apartments). The development also provides for a district park (4.58 ha) and a neighbourhood park (0.71 ha) in accordance with the

Planning Ref.	Address	Proposal
		Fortunestown Local Area Plan 2012. Permission is also sought for 789 car parking spaces, bin storage areas, ESB substations and all associated site development and infrastructural works. Vehicular access to serve the proposed development will be provided via two new access points off Garter Lane and via a new signalised junction at the southeastern corner of the site to replace the existing roundabout off Fortunestown Lane. Provision is made for a future access to Bianconi Avenue. In addition, an interim local square is proposed within the subject site providing a direct pedestrian link from the proposed development to the Saggart Luas stop. Two direct pedestrian links are proposed between the subject site and the adjoining school sites permitted under Reg Ref No SD16A/0255 providing a direct link between the school and the proposed district park and a direct link from the west of the school site to the proposed residential development. Lands identified for future development are located along the southern boundary of the current application site adjacent to Fortunestown Lane/Saggart Luas Stop. These areas will be subject of a future planning application (Phase 2) and will include the final design and layout of the local square.
SD20A/0258	College Lane, Greenogue, Rathcoole, Co. Dublin	Demolition of the existing dwelling (252sq.m) and associated domestic garage (49sq.m) and shed (12sq.m) located towards the north-west of the site and the construction of 3 warehouses with ancillary office and staff facilities and associated development as follows: Unit 1 will have a maximum height of 15.75 metres with a gross floor area of 5,619sq.m including a warehouse area (5,041sq.m), ancillary office areas (182sq.m) and staff facilities (396sq.m); Unit 2 will have a maximum height of 16.35 metres with a gross floor area of 6,724sq.m including a warehouse area (6,135sq.m), ancillary office areas (275sq.m) and staff facilities (314sq.m); and Unit 3 will have a maximum height of 18.9 metres with a gross floor area of 10,095sq.m including a warehouse area (9,335sq.m), ancillary office areas (399sq.m) and staff facilities (361sq.m); the development will also include the provision of a new vehicular access to the site from the Aerodrome Roundabout in lieu of the extinguishment of existing multiple access points from the R120 Newcastle to Rathcoole Road; internal roundabout; pedestrian access; 187 ancillary car parking spaces; bicycle parking; HGV yards; level access goods doors; dock levellers; access gates; signage; hard and soft landscaping; lighting; boundary treatments; ESB substations; sprinkler tanks; pump houses and all associated site development works above and below ground.

In relation to Planning Ref. **SD20A/0319** an Appropriate Assessment carried out by OPENFIELD Ecological Services stated that:

'On the basis of the screening exercise carried out above, it can be concluded that the possibility of any significant impacts on any European Sites, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.'

In relation to Planning Ref. **SD19A/0250** in the Irish Water Submission to Planning Authority report it is stated that:

'*The distance between foundations of proposed development and 5" watermain west of site shall comply with Irish Water Standards'*

This reiterates that the proposed development in combination with Planning ref: **SD19A/0250** will have no in combination effects on Natura 2000 sites.

In relation to Planning Ref. **SD15A/0381** an Appropriate Assessment was carried out by Ecology Ireland, the report states that:

'No impacts on Poulaphouca Reservoir SPA are expected as a result of the proposed development.'

As Poulaphouca Reservoir is the furthest Natura 2000 site from the proposed development at Mill Road (11.5 Km), the in-combination effects with this development will have no impact on the Natura 2000 sites within 15 Km.

In relation to Planning Ref. **SHD3ABP-300555-18** an Appropriate Assessment Screening was carried out by OPENFIELD Ecological Services. The report states that:

'Given the negative effects are not considered likely to arise, there are no projects, which acting in combination with the current proposal, can result in significant effects to Natura 2000 areas.'

In relation to Planning ref. an Appropriate Assessment Screening was carried out by OPENFIELD Ecological Services. The report states that:

'*This project has been screened for AA under the appropriate methodology. It has found that significant effects are not likely to arise, either alone or in combination with other plans or projects to any SAC or SPA.'*

In relation to Planning Ref. **SD20A/0258** and Appropriate Assessment Screening was carried out by JBA Consulting. This report states that:

'Following this initial screening of the proposed development at College Lane, Greenogue, Rathcoole, Co. Dublin, it can be concluded that significant impacts are not anticipated via surface water, groundwater, or land/air pathways on the following Natura 2000 sites:

- *Rye Water Valley/ Caron SAC (001398)*
- *North Dublin Bay SAC (000206)*
- *South Dublin Bay SAC (000210)*
- *North Bull Island SPA (004006)*
- *South Dublin Bay and River Tolka Estuary SPA (004024)'*

No significant projects are proposed or currently under construction that could potentially cause in cumulative effects.

Residual Impacts and Conclusions

The existing site consists of a large field with a house and garden beside the N7 at Saggart, Co. Dublin. The grassland areas were of poor ecological significance, but the eastern perimeter of the site comprised of a poorly managed native hedgerow. This contained disused/outlier badger setts and an area poached by horses that had supported a breeding population of frogs. Pyrmidal Orchids were also noted in one area of the hedgerow. The house on the plot previously contained contains a pipistrelle bat roost (2015). However, for the purposes of this impact assessment and mitigation it is assumed that this bat roost is still present.

A range of mitigation measures are proposed to reduce the impact of the proposed development on the fauna of conservation significance that may be present on site. In relation to the disused badger setts, no signs of badger activity were noted within the proposed development or surrounding areas including the golf course. Burrow entrances are outside the development area and were indicative of outlier setts, but three of the tunnels extended into the main field of the development. A 5m exclusion zone is recommended by the mammal ecologist. Full access to these burrows from the drainage ditch, the surrounding woodland and golf course will still be possible post construction should the burrows be used in the future.

The current frog breeding area is located beside one of the main access areas. As a result a compensatory wetland habitat will be prepared on site away from vehicular areas. If deemed necessary by the ecologist any frogs will be removed off site under licence to the new habitat prior to works in the area.

A roost of pipistrelle bats was present in the house on site. A derogation licence has been granted by NPWS to remove this colony. However, this licence is out of date. An updated derogation licence from NPWS will be necessary. The proposed development will change the local environment as new structures are to be erected in place of the existing building, new roads and parking areas constructed and some of the existing vegetation will be removed. The removal of the onsite dwelling will potentially negatively impact bats as a potential/former roost will be lost. The provision of multiple new buildings onsite may offer bats alternative roosting opportunities.

The hedgerows currently form the main habitat of conservation importance, not by the presence of protected species, or individual trees of particular ecological importance, but by the provision of a wildlife corridor, around the site and the presence of a drainage ditches. This corridor forms a foraging area for bats and nesting areas for bird species. As outlined in Appendix II “The planned works may result in the loss of bat roosting opportunities within some trees but any potential impact of same is considered to be negligible. The retaining of existing hedgerows on-site in addition to the planting, or replacement perimeter trees and hedgerows, will assist in mitigation impacts on biodiversity, particularly if native trees are selected and allowed to grow to their full potential. Should additional biodiversity areas be developed particularly in the vicinity of the perimeter tree lines, it would also assist in mitigating impacts. Care should be taken to minimise suspended solids/pollutants entering the stream to the west and the drainage ditch to the north east of the site.

Impacts within the site would be considerable due to the removal of the majority existing habitats. No significant ecological impacts would be foreseen outside the immediate vicinity of the proposed development. However, since the majority of the site is poor in species diversity and no flora of conservation importance were found these impacts would be limited, localised and reversible depending on the planting regime. Mitigation measures for fauna of conservation importance on site are proposed and it is felt that with the implementation of these mitigation measures the impacts will be greatly reduced. The planting regime following construction would be important to mitigate the impacts, if not improve on the biodiversity importance of the site, particularly in relation to hedgerows and treelines to reinstate foraging routes for bat species that currently use the site. In addition, the provision of buffers of tall grassland near the perimeter and wildflower meadows would also benefit the biodiversity of the site.

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Appendix I: Terrestrial Mammal survey

FAUNAL INSPECTION: PROPOSED HOUSING DEVELOPMENT AT SAGGART, CO DUBLIN

DR. CHRIS SMAL, ECOLOGICAL SOLUTIONS

16th July 2015

Site description

The site is located at Saggart, west Co. Dublin; it is comprised of one large field and includes an adjoining dwelling house and its lands. Access is from a single lane road adjacent to the N7.

The field is currently grazed by horses. It is bounded on all sides by hedgerow. At the south-west, rear garden properties adjoin the site. There is a deep ditch along most of the length of the site boundary on the eastern side- with the hedgerow boundary on the inward side, and plantation and golf course areas to the east.

Survey

Dr. Chris Smal of Ecological Solutions was requested to inspect a number of mammal burrows on site. A survey of the site was undertaken on 12th July 2015, accompanied by Dr. Brian Deegan of Altemar. The survey was conducted in good weather conditions (overcast, dry). Mammal surveys are best conducted from December to April when vegetational cover is low; dense scrub along some portions of the hedgerows did pose some difficulties during time of survey in July.

Survey results

Few signs of mammals were found on site. Fox signs were found at two locations (scent and also footprints) at east and south boundaries; signs of brown rats were very frequent along the ditch at the east. There were no signs of frequently encountered species such as rabbit or Irish hare.

A number of larger mammal burrows were found on site; some of these were of the size and shape of badger setts. These have been mapped approximately on Figure 1. However, none of the setts was found to be currently active; no signs of badger activity were confirmed on site – such as bedding, footprints, rooting/feeding signs or badger latrines. A portion of the golf course adjacent was surveyed also and there were no badger feeding signs on the greens or fairways.

There were a number of other, smaller, burrows along the ditch at the east also; these were too small for badgers and may be disused rabbit burrows or partially collapsed old badger setts. The badger setts would be visited by foxes on occasion also.

Evaluation

The badger setts found on site were not in use by badgers at time of survey. All were small single entrance setts, bar the two-entrance sett at the south-west. A survey of a larger area around the site might reveal badger presence in the area; the setts observed on site may be considered as outlier setts, i.e. setts typically found on the periphery of a badger group territory or at some distance from the main (breeding) sett. The sett tunnel systems associated with these setts will be very short (less than 3m).

The apparent absence of badgers on site may have resulted from mortalities with traffic on the adjacent N7 highway in the past. There is no badger-proof fencing along the N7 at this section, and undoubtedly, this

would have led to road traffic incidents with badgers in the past. Figure 1.

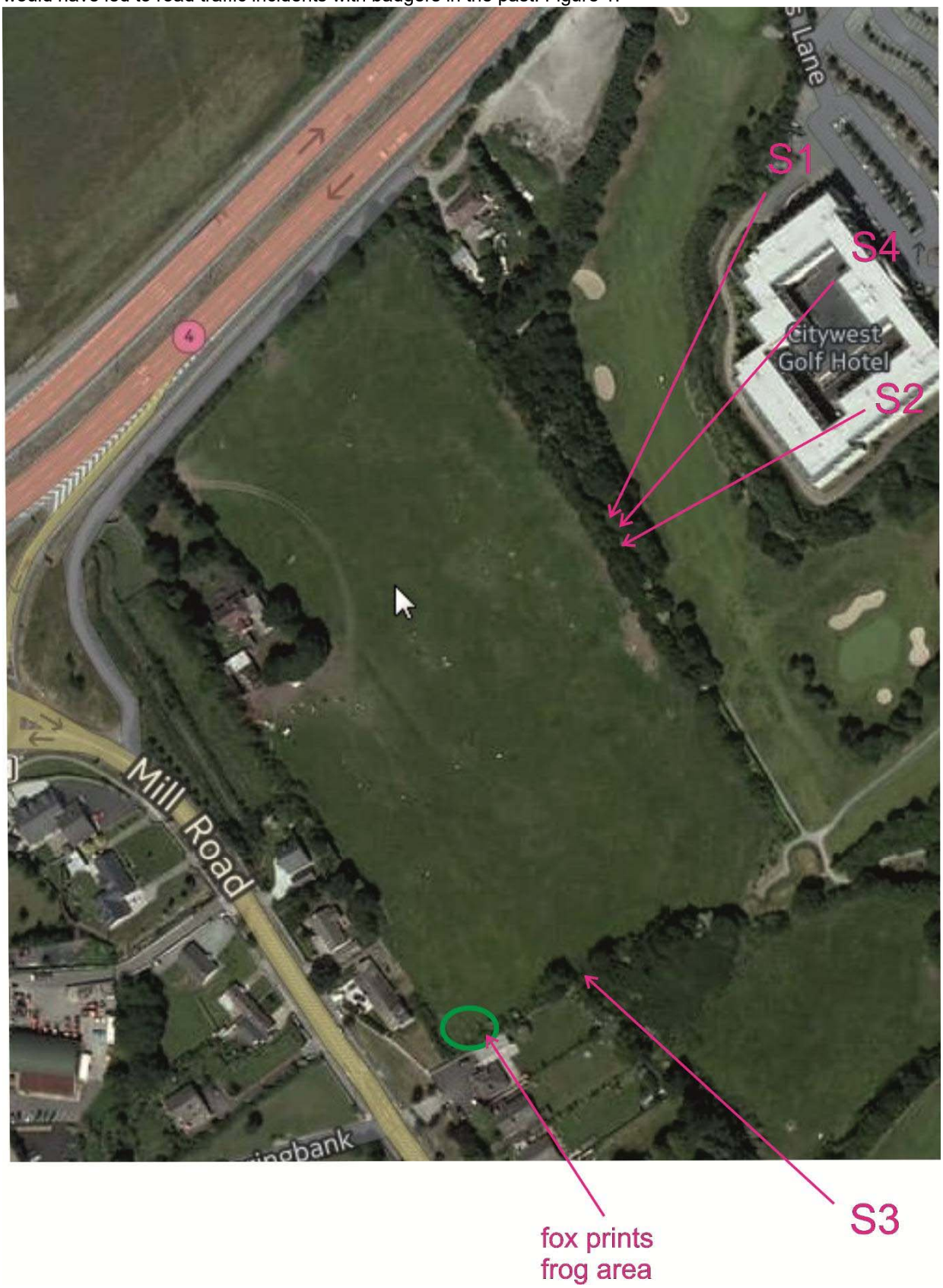

Table of setts

Sett reference as shown in Figure 1	Location and habitat	Type of sett	Status and description
S1	Ditch and hedgerow GPS O 03313 27191	Outlier	single entrance sett in hedgerow, path across ditch. Small old spoil heap. Open, no cobwebs, no fresh spoil or bedding. No signs. Inactive.
S2	Ditch and hedgerow GPS O 03320 27178	Outlier	single entrance sett in hedgerow, overgrown with ivy. Small old spoil. No bedding. No signs. Inactive.
S3	Shallow ditch and hedgerow GPS O 03308 27014	Outlier	two entrance sett in hedgerow,one entrance partially blocked by building materials from adjacent garden. Medium sized spoil heaps, old. Open, no cobwebs, no fresh spoil or bedding. No signs. Inactive.
S4	Ditch and hedgerow GPS O 03315 27284	Outlier	single entrance sett on ditch side of hedgerow, path across ditch. Cobwebs, leaves. No fresh spoil or bedding. No signs.

Mitigation

The three setts at the east are situated in ditch and hedgerow on the eastern boundary. An area adjacent to these burrows is proposed as green amenity space and it is understood that the hedgerow and ditch will be left in place. Therefore, there should be no direct impacts on these burrows.

The sett at the south-west has been interfered by earlier dumping of materials. Again, retention of the hedgerow and some larger trees is proposed there and a narrow green amenity space is to be provided there also.

Recommendations:

1 The proposal does not require removal of these inactive setts and they may be left in place.

2 Use of heavy machinery during landscaping, construction of new paths or roadways, fencing, and removal of scrub along the hedgerow should be restricted in the vicinity of the 3 setts at the east: A protective zone of 5m should be established to the north and south of the three setts and 5m from the ditch on the western side of the hedgerow.

3 The sett at the south-west has a tunnel system that extends off site and not into the site. The sett should be retained in place. Provision of the amenity area will not interfere with this sett.

4 Fencing works, if required, should avoid erection of fence posts directly into the setts and care taken to place posts well away from sett entrances within the exclusion zone recommended above.

PROPOSED RESIDENTIAL DEVELOPMENT, MILL ROAD, SAGGART, DUBLIN

BAT FAUNA STUDY

Prepared for

Altemar Marine and Environmental Consultants

By

Conor Kelleher ACIEEM, PCQI

22 July 2015

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1. RECEIVING ENVIRONMENT

1.1 Introduction

1.1.1 Background

A residential development is proposed within an open-field site on Mill Road, Saggart, Dublin. As part of the development proposals, the existing onsite building and several trees are to be removed. As both the structures and trees show potential to harbour bats which are protected animals, *Aardwolf Wildlife Surveys* was requested to undertake a specific bat assessment of the site by *Altemar Marine and Environmental Consultants*, to ensure that any onsite bat populations were safeguarded prior to and during the proposed works.

Development or removal of old buildings and existing vegetation may adversely affect bats through roost loss or injury or loss of traditional commuting features and it is essential therefore that a study of bat activity be undertaken to identify any conflict zones and hence to avoid or reduce impacts through mitigation to these protected animals.

This report details the results of an onsite bat survey and assessment undertaken within the active season in June 2015.

1.1.2 Site location and description

The proposed development area is situated on Mill Road, Saggart, adjacent to the N7 road route, to the west of Dublin city at National Grid Reference: O033 273 (Ordnance Survey Discovery Series Sheet Number 50) and consists mainly of an open field of unimproved grassland (Plate 1) with surrounding hedgerows (Plate 2) and treelines of hawthorn *Crataegus monogyna* and ash *Fraxinus excelsior* and a small private property with a single-storey occupied dwelling (Plate 3), adjacent outbuildings and a private garden sheltered by sycamore *Acer pseudoplatanus* trees with heavy ivy *Hedera helix* cover.

1.2 Bat survey

This report presents the results of a bat survey undertaken within the proposed development area on 29 June 2015 by Conor Kelleher. The bat fauna occurring onsite is described and the likely impacts of the planned works on bat species discussed with recommendations for mitigation and enhancement measures to safeguard the animals currently roosting in the onsite dwelling.

1.2.1 Survey methodology

All internal and external areas of the onsite structures, including each of the roof spaces within the main building, were inspected for bats and/or their signs using a powerful torch (141 Lumens) – Petzl MYO RXP. The presence of bats is often shown by grease staining, droppings, corpses, feeding signs such as invertebrate prey remains and/or the presence of bat fly *Nycteribiidae* pupae, although direct observations are also occasionally made. At dusk, a detector survey using a heterodyne bat detector – *Batbox Duet* – was also undertaken to determine bat activity within the site. The site survey was supplemented by a review of *Bat Conservation Ireland's* (BCIreland) National Bat Records Database.

1.2.2 Survey constraints

There were no seasonal or climatic constraints as survey was undertaken within the active bat season in good weather conditions with daytime temperatures of 14°C to 17°C and 12°C after dark. Winds were light and there was no rainfall.

2. BAT FAUNA – SURVEY RESULTS

2.1 Review of local bat records

The review of existing bat records within a 10km radius of the study site (sourced from BCIreland's National Bat Records Database) reveals that eight of the ten known Irish species have been observed locally. These include common *Pipistrellus pipistrellus,* soprano *P. pygmaeus* and Nathusius' *P. nathusii* pipistrelle, Leisler's *Nyctalus leisleri*, brown long-eared *Plecotus auritus*, Daubenton's *Myotis daubentonii,* Natterer's *M. nattereri* and whiskered *M. mystacinus* bats as shown in Table 1 below.

Table 1: Adjudged status of Irish bat species in the local area

Common name	Scientific name	Presence	Source
Common pipistrelle	*Pipistrellus pipistrellus*	Present	BCIreland
Soprano pipistrelle	*Pipistrellus pygmaeus*	Present	BCIreland
Nathusius' pipistrelle	*Pipistrellus nathusii*	Present	BCIreland
Leisler's bat	*Nyctalus leisleri*	Present	BCIreland
Brown long-eared bat	*Plecotus auritus*	Present	BCIreland
Lesser horseshoe bat	*Rhinolophus hipposideros*	Absent	BCIreland
Daubenton's bat	*Myotis daubentonii*	Present	BCIreland
Natterer's bat	*Myotis nattereri*	Present	BCIreland
Whiskered bat	*Myotis mystacinus*	Present	BCIreland
Brandt's bat	*Myotis brandtii*	Potential	BCIreland

The remaining two Irish species; lesser horseshoe *Rhinolophus hipposideros* and Brandt's *M. brandtii* bat have not been recorded in County Dublin. The lesser horseshoe bat is confined to the west of Ireland and the latter species is extremely rare. Further information on the Irish bat species is given in Appendix 1 and 2.

2.2 Structure survey

The onsite dwelling offers suitable access for bats beneath slates and lead flashing and provides insulated, darkened roof voids that are very favourable to these animals. Within the roof space, droppings of a pipistrelle species were noted at the southern gable (Plate 4) and droppings were also scattered on the attic insulation (Plate 5). Two corpses of drowned bats were also observed within the water tank in the roof space (Plate 6). The evidence showed that a small roost of pipistrelle bats is present within the roof space of the dwelling. An emergence survey of the dwelling was undertaken at dusk with the aid of a bat detector but no bats were recorded leaving or entering the building.

No evidence of bats was observed in the outbuildings at the rear of the dwelling.

2.3 Tree survey

The onsite trees were inspected for their potential to harbour bats and any evidence of the presence of a roost. The ivy-covered trees within the site and along the site boundaries have limited potential for roosting bats as they are mostly tall, thin specimens and, in some cases, multi-stemmed and have no features such as hollows or crevices that might be used by bats. Individual bats may occasionally rest behind ivy-cover but, in the absence of hollows within the tree beneath, large roosts would not be present.

2.4 Detector survey

At dusk, a detector survey of bat activity was undertaken onsite and three bat species were observed: common and soprano pipistrelle and Leisler's bat. The pipistrelles foraged along the onsite hedgerows while Leisler's bat foraged high over the open field.

3. LEGAL STATUS – BATS

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory

Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

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

NB: Destruction, alteration or evacuation of a known bat roost is a notifiable action under current legislation and a derogation licence **has** *to be obtained from the* National Parks and Wildlife Service (NPWS) **before** *works can commence.*

Also, it should be noted that any works interfering with bats and especially their roosts, including for instance, the installation of lighting in the vicinity of the latter, may only be carried out under a licence to derogate from Regulation 23 of the Habitats Regulations 1997, (which transposed the EU Habitats Directive into Irish law) issued by NPWS. The details with regards to appropriate assessments, the strict parameters within which derogation licences may be issued and the procedures by which and the order in relation to the planning and development regulations such licences should be obtained, are set out in Circular Letter NPWS 2/07 "*Guidance on Compliance with Regulation 23 of the Habitats Regulations 1997 - strict protection of certain species/applications for derogation licences*" issued on behalf of the Minister of the Environment, Heritage and Local Government on the 16th of May 2007- reproduced in Appendix 3.

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

The current status and legal protection of the known bat species occurring in Ireland is given in Table 2 below.

Table 2: Legal status and protection of the Irish bat fauna

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

4. ASSESSMENT OF SCIENTIFIC INTEREST OF THE PROPERTY

Due to the high boundary treelines and hedgerows surrounding the site and the onsite dwelling, the grounds are well vegetated and very sheltered and so are favourable for swarming insects which then attract bats and three species were observed foraging onsite. The onsite dwelling is also used as a roosting site by a colony pipistrelles and these bats may breed in the building.

5. POTENTIAL IMPACT OF PROPOSED DEVELOPMENT ON BATS

The removal of the existing buildings will result in the loss of a bat roost and the clearance of site vegetation may result in some loss of foraging areas.

6. MITIGATION MEASURES

As bats are present in the onsite dwelling, mitigation measures are required to ensure their safe exclusion from the building prior to its removal and a derogation licence is required for the demolition – *Bat Mitigation Guidelines for Ireland* (Legislation and Licensing) (Kelleher & Marnell, 2007) and NPWS Circular Letter 2/07 as reproduced in the Appendices.

6.1 Protection of bats

As a bat roost is present and a number of bats forage onsite, mitigation measures to safeguard these animals are needed during building and tree removal and vegetation clearance. As all bat species are protected under existing legislation and a bat roosting site or resting place is protected whether bats are present or not, an application for a derogation licence, accompanied by a copy of this report, should be made to the Licensing Department of the *National Parks and Wildlife Service* to allow the legal exclusion of the bats in the onsite building. The roost should be excluded outside of the bats' breeding period between May and mid-July.

6.1.1 Timing of building removal

Any works within the roof area of the onsite dwelling and the removal of the building should preferably be undertaken within the period from August to the end of February when all bats, including the young, are able to fly and fewer animals are expected to be in the building.

6.1.2 Roof removal

The removal of the roof of the dwelling should be undertaken manually and carefully in the knowledge that a few bats may be found beneath. If discovered, the animals should be retained in a secure box until dusk and then released onsite.

6.1.3 Retention of mature trees

It is recommended that mature trees be retained where possible. Surgery instead of complete removal is suggested for Health & Safety precautions as a means of stabilising any tree that may be considered dangerous.

6.1.4 Protection of retained trees

Where possible, all retained trees should be fenced a minimum of 7m from the trunk or a distance equivalent to canopy height to ensure that their root structure and branches are not damaged by plant machinery.

6.1.5 Tree felling

Trees that are to be removed should preferably be felled during the months of September to November inclusive. Felling during the autumn months avoids the periods when bats are most active or in hibernation and also avoids the peak bird nesting season. Trees may be felled outside of this period but there is a greater chance of encountering bats. Any ivy-covered trees which require felling should be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape overnight.

6.1.6 Retention of other vegetation and additional planting

Existing hedgerows and treelines at the site's boundaries should be retained where possible to continue to afford commuting routes and foraging areas for bats and other wildlife but also to screen the development. Where suitable, areas should be replanted with native tree and shrub species. Native species support a significantly greater diversity of insects than non-native species and are therefore better for wildlife in general and bats in particular. Where these linear features are retained or planted, they should link up with existing hedgerows both on and off-site to ensure connectivity of corridors for bat and other wildlife movement.

Further planting of native tree species that already occur onsite is recommended. These should be sourced locally.

Night-scented plants could also be planted as part of landscaping of the proposed development to encourage night-flying insects onto the site to act as prey items for bats. A list of suggested plant species is given in Appendix 4. These can be chosen according to local soil conditions.

6.1.7 Lighting

In general, artificial light creates a barrier to commuting bats so lighting should be minimised along the site boundaries as it deters some bat species. Where lighting is required, directional lighting (i.e. lighting which only shines on access roads and built areas and not nearby countryside) should be used to prevent overspill. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

7. PREDICTED IMPACT OF PLANNED DEVELOPMENT ON BATS

The proposed development will change the local environment as new structures are to be erected in place of the existing building, new roads and parking areas constructed and some of the existing vegetation will be removed. The removal of the onsite dwelling will negatively impact bats as a roost will be lost but the provision of multiple new buildings onsite may offer these same bats alternative roosting opportunities.

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An Roinn Ealaíon, Oidhreachta,
Gnóthaí Réigiúnacha, Tuaithe agus Gaeltachta

Department of Arts, Heritage,
Regional, Rural and Gaeltacht Affairs

Licence No.: DER/BAT 2016-90

EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS 2011 (S.I. No 477 of 2011)

DEROGATION LICENCE

Granted under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, hereinafter referred to as "the Habitats Regulations".

Introduction

The Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs, (hereinafter referred to as "the Minister"), after obtaining professional advice, is satisfied that: -

(A) this licence should be granted for the purpose of protecting wild fauna and conserving natural habitats and in the interests of public health and public safety, and

(B) there is no satisfactory alternative, and the action authorised by this licence will not be detrimental to the maintenance of the population of **BATS** referred to below at a favourable conservation status in their natural range.

Licence

The Minister, in exercise of the powers conferred on her by Regulation 54 of the Habitats Regulations hereby grants to **Crekav Trading GP Ltd, 4 Inver Mews, Old Chapel Ground, Arklow, Co. Wicklow** ("the licensee") a licence in respect of **Bat Species**. This licence authorises the following:

(a) disturbance;
(b) damage or destruction of breeding sites or resting places;
("the authorised actions").

This licence is subject to the terms and conditions set out overleaf.

National Parks & Wildlife Service
LICENCE

Terms and Conditions

1. This licence is granted solely in respect of the activities specified in connection with the proposed residential development at **Mill Road, Saggart, Co. Dublin.**

2. The authorised actions shall be carried out on the licensee's behalf by, or under the authorisation of **Conor Kelleher, Aardwolf Wildlife Surveys, Spring Lane, Carrigagulla, Ballinagree, Macroom, Co. Cork** ("the scientific agent").

3. All activities authorised by this licence, and all equipment used in connection herewith, shall be carried out, constructed and maintained (as the case may be) so as to avoid unnecessary injury or distress to any species of **BAT**.

4. This licence may be modified or revoked, for stated reasons, at any time.

5. The actions to which this licence authorises shall be completed between the **1st December 2016** and the **31st March 2017, subject to the details in mitigation measures** referred to in the accompanying survey report carried out by the scientific agent.

6. No agent or servant of the licensee, nor any other person, shall carry out any of the activities to which this licence applies unless authorised in writing by the scientific agent. Any such agent, servant or other person shall make a copy of the written authorisation available for and shall produce it on demand to any member of An Garda Síochána or an authorised officer.

7. This licence is granted subject to the licensee, including his or her servants and the scientific agent, adhering in full to the mitigation measures as set out in the accompanying survey report carried out by the scientific agent and any additional mitigation measures requested by the National Parks and Wildlife Service.

8. The local NPWS official, shall be contacted prior to the commencement of work under the terms of this licence. The local NPWS Conservation Ranger is Terry Doherty and he can be contacted at (01) 668 7051 or (087) 679 5862.

9. Within 5 working days of being requested to do so by an authorised officer, the licensee shall provide a report on the progress of the work covered by this licence and of the mitigation measures implemented.

10. The licensee shall, within 14 days of completion of the actions which this licence authorises, submit a written report to the address below, describing the activities carried out and the mitigation measures implemented in pursuance of this licence.

11. The licensee shall provide for and implement a scientific programme (hereinafter referred to as "the scientific programme") of monitoring of any translocated populations and of the operation of the mitigation measures, to investigate and provide data on the effectiveness of the mitigation measures. The scientific programme will provide for supplementary mitigation measures informed by data obtained from this monitoring programme.

12. The licensee shall, within **3 calendar months** of the submission of the report under 10 above, submit to the signatory at the address below an interim report on the continued monitoring under the scientific programme. The licensee shall submit a further report by the **13th (final report)** calendar month after the submission of the report under 10 above, setting out the results of the monitoring carried out over these periods and particulars of any supplementary mitigation measures taken.

13. The reporting requirements under this licence will continue in force after the completion of the actions which it authorises, until their completion and the licensee shall be responsible for ensuring that these requirements are met in full.

Gerry Leckey
(a person authorised by the Minister to sign on her behalf)

18th November 2016

Wildlife Licensing Unit,
National Parks and Wildlife Service,
Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs,
7 Ely Place,
Dublin 2, D02 TW98.

wildlifelicence@ahg.gov.ie

NOTES (1 to 2).

1. This licence is granted for the period specified and subject to compliance with the conditions specified. Anything done other than in accordance with the terms of this licence may constitute an offence.

2. This licence applies to **bats** and to no other species.

ALTEMAR
Marine & Environmental Consultancy

Appendix IV. Bat fauna impact assessment for a proposed development of a No. 274 residential unit at Mill Road, Saggart, Co. Dublin.

29th November 2021

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Tetrach Residential Ltd.

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie
Directors: Bryan Deegan and Sara Corcoran
Company No.427560 VAT No. 9649832U
www.altemar.ie

Document Control Sheet			
Client	Tetrach Residential Ltd.		
Project	Bat fauna impact assessment for a proposed development of at Mill Road, Saggart, Co. Dublin.		
Report	Bat Fauna Assessment		
Date	29th November 2021		
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Jack Doyle	29th November 2021

SUMMARY

Structure:	The existing site comprises of an undeveloped greenfield site with a farmhouse and ancillary buildings to be demolished and a site area of 4.94 ha.
Location:	Mill Road, Saggart, Co. Dublin.
Bat species present:	A 2015 survey revealed that "*Within the roof space, droppings of a pipistrelle species were noted at the southern gable and droppings were also scattered on the attic insulation. Two corpses of drowned bats were also observed within the water tank in the roof space. The evidence showed that a small roost of pipistrelle bats is present within the roof space of the dwelling. An emergence survey of the dwelling was undertaken at dusk with the aid of a bat detector but no bats were recorded leaving or entering the building*." Subsequent surveys (2020 & 2021) did not observe evidence of bats within the or emerging from the building**.**
Proposed work:	Proposed residential development.
Impact on bats:	A potential former/ or small bat roost will be lost. No significant impacts are foreseen based on the successful implementation of mitigation.
Survey by:	Bryan Deegan MCIEEM
Survey date:	28th September 2020 and 13th August 2021.

Introduction

Development Description

Tetrach Residential Ltd. is proposing to build a housing development just off Mill Road, Saggart, Co. Dublin, beside the N7. The proposed development site is seen in Figures 1-3. The proposed development site is seen in Figures 1-3. The development will consist of: 274 no. units on a 4.62 ha (net) site (density c.59 units per hectare). It will comprise of 51 no. houses, 38 no. duplex units and 185 no. apartments. The height of the proposed scheme will range from two storey houses and three storey duplexes to 5 storey and part 8 storey apartment blocks.

The proposed residential mix will comprise of:

- 17 no. 2-bed houses, 27 no. 3-bed houses and 7 no. 4-bed houses,
- 2 no. 1-bed duplex, 17 no. 2-bed duplex and 19 no. 3-bed duplex units,
- 62 no. 1-bed apartments, 119 no. 2-bed apartments and 4 no. 3-bed apartments.

A 4-classroom crèche of c. 276 sq.m and 2 no. substations are also included in the proposed development. 276 no. car parking spaces and 670 no. bicycle spaces are provided.

A planted woodland berm will be developed along the northern boundary with the N7 to provide a sound barrier and amenity open space. There are a number of green spaces located in the centre of the site and on the south east and west of the site with natural play and SUDS elements as well as a large open communal space for the two apartment blocks to the south.

Vehicle, pedestrian and cycle access to the site will be from the Mill Road. A new road will be constructed running east west at the southern boundary of the site. The residential element of the site will have two access points off the proposed new road. This new route will extend eastwards to provide cycling and pedestrian connections through neighbouring Citywest lands and to the Saggart LUAS light rail terminus.

Primary access is proposed at the north west of the site from an existing access road connecting to Mill Road. This access is designed as services and emergency only and will be controlled by collapsible bollards. The masterplan seen in Figure 5 also includes permitted residential developments and an outline of a future masterplan roads network on the lands to the east to illustrate how the proposed development will form an integral part of a larger urban place.

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

Landscape

The proposed landscape masterplan is demonstrated in Figure 3.

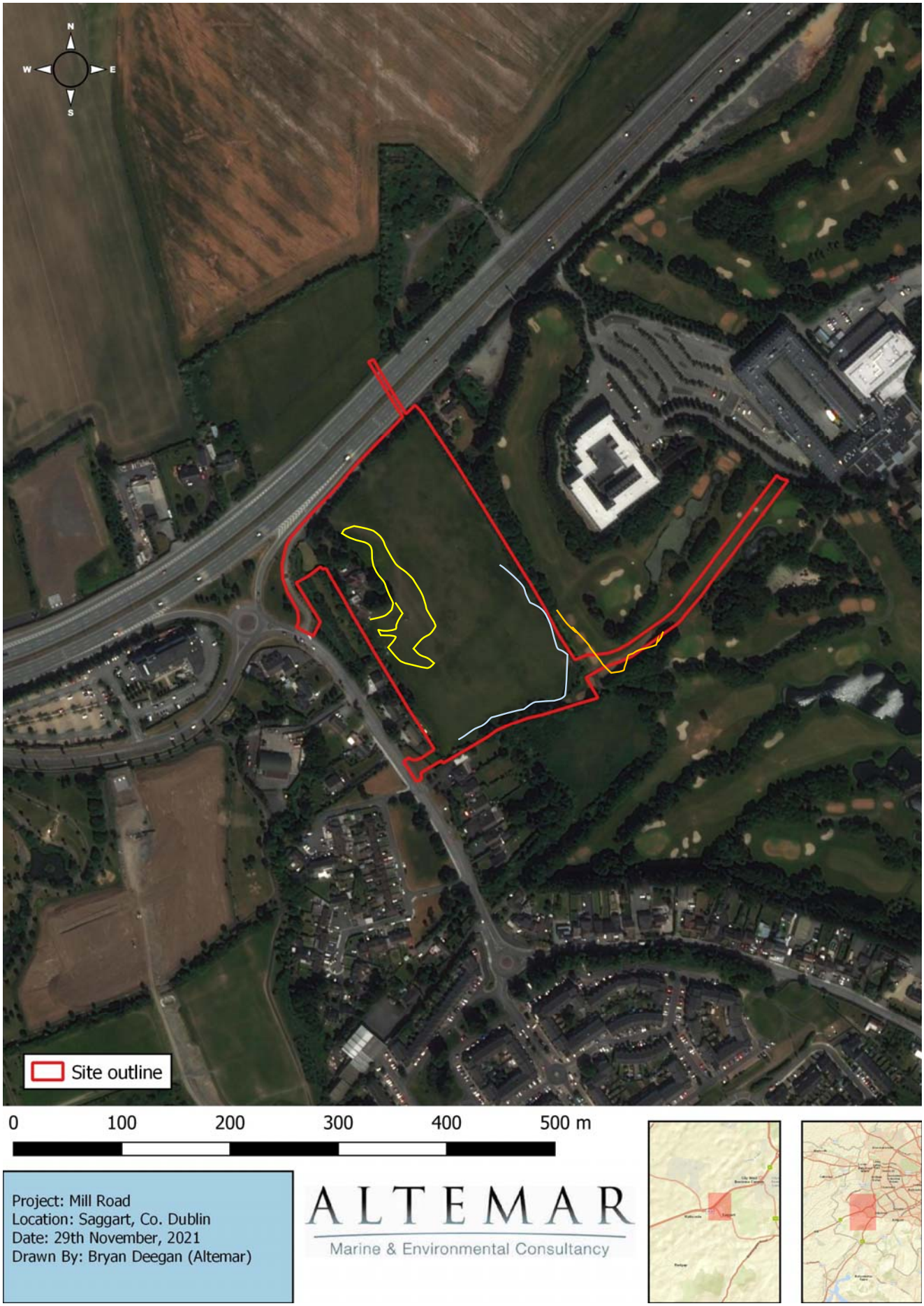


Figure 1. Proposed site outline. Foraging activity of Leisler (Yellow), Soprano pipistrelle (blue) and common pipistrelle (orange)

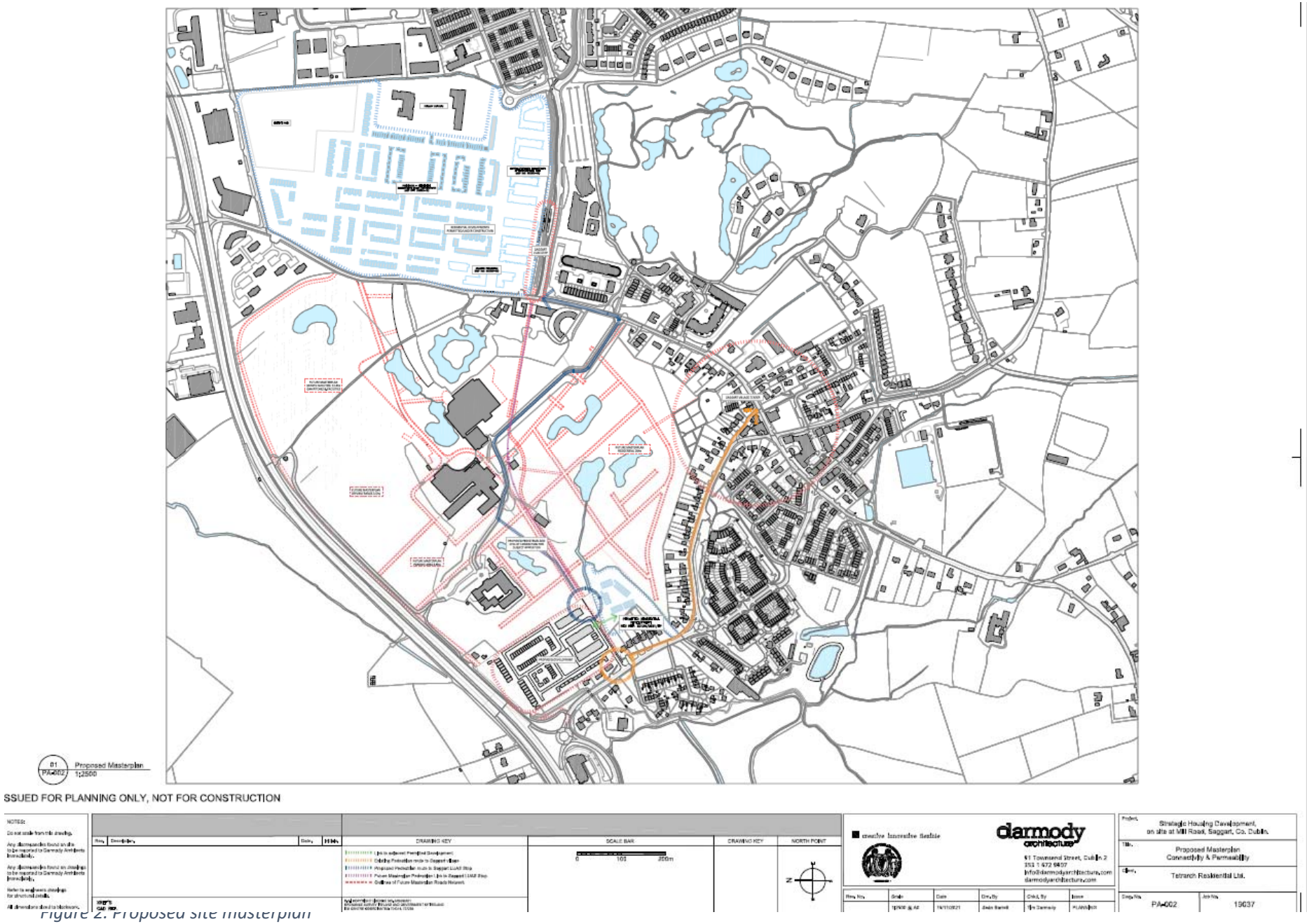


Figure 2: Proposed site masterplan

Figure 3. Proposed landscape masterplan

Lighting

A Site Lighting Layout has been prepared by Renaissance Engineering Ltd. This is demonstrated in Figure 4.

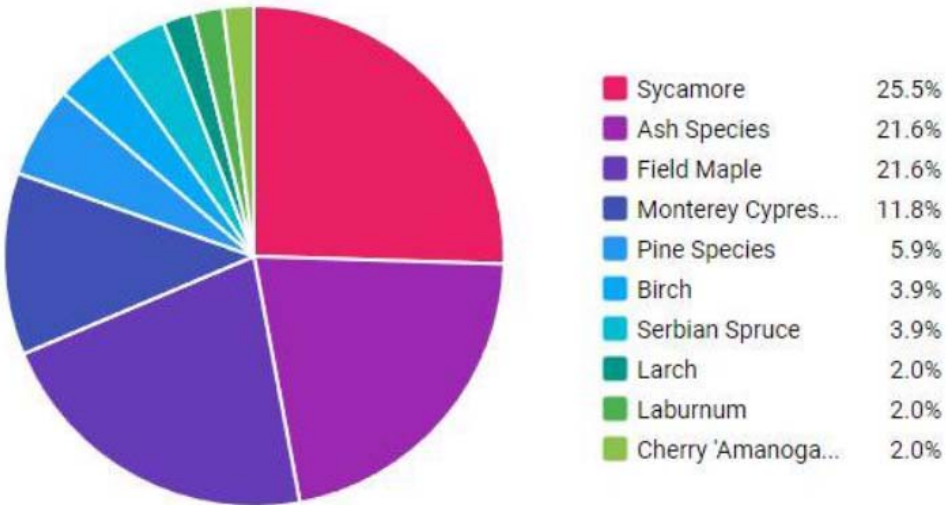
Arborist

An Arboricultural Inventory and Impact Assessment (incorporating a Tree Protection Strategy) has been prepared by Murray & Associates Landscape Architects to accompany this planning application. This report outlines the following tree survey results and conclusions:

Category	Number of trees	Trees to be removed
A	0	0
B	28	6
C	22	16
U	6	6

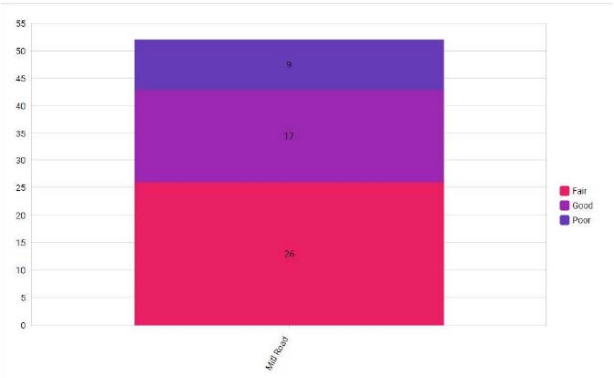
Table 1. Category of the Trees surveyed (BS 5837:2012, Item 4.5 Tree categorisation method)

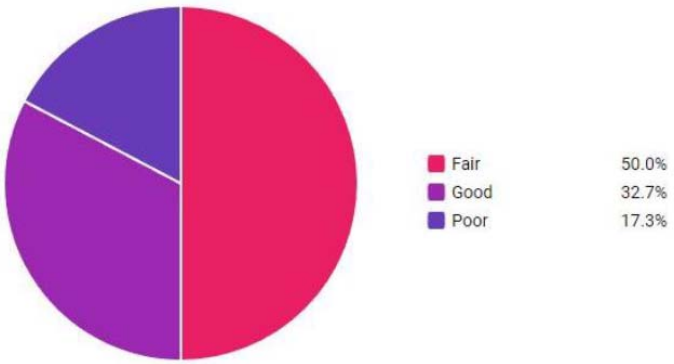
'The species composition of the site is shown on the chart below:



There are two main areas of tree cover on the site. The first is along the boundaries and these are composed of Field Maple, Sycamore, Ash and Hawthorn. These plantings will all be retained. The second area is around the existing dwelling on the south western boundary. This are contains a number of good specimens of Pine, Birch, Sycamore and Spruce. Of particular note are the two existing Pines 0741 and 0742 (category B1) which are situated along the old Mill Channel, and these will be retained as part of the development. These are in good condition and are very good specimens.

In terms of quality the division of tree condition and quality is as shown on the charts below:





50% of trees are in fair condition, and 1/3 of the trees are in good condition. The site layout has attempted to retain as many of the trees that are in good condition as possible.'

'Conclusions

The proposed development will have a moderate impact on the existing tree cover on the site. Additional replanting will works will mitigate any loss of trees as a result of the proposed development. The proposed landscape plan details the planting of a significant number of new native broadleaf trees. While the short term impact of the development will be high, in the longer term the new planting will replace the existing tree cover.'

The tree inventory plan and development impact plan are demonstrated in Figures 5 & 6.

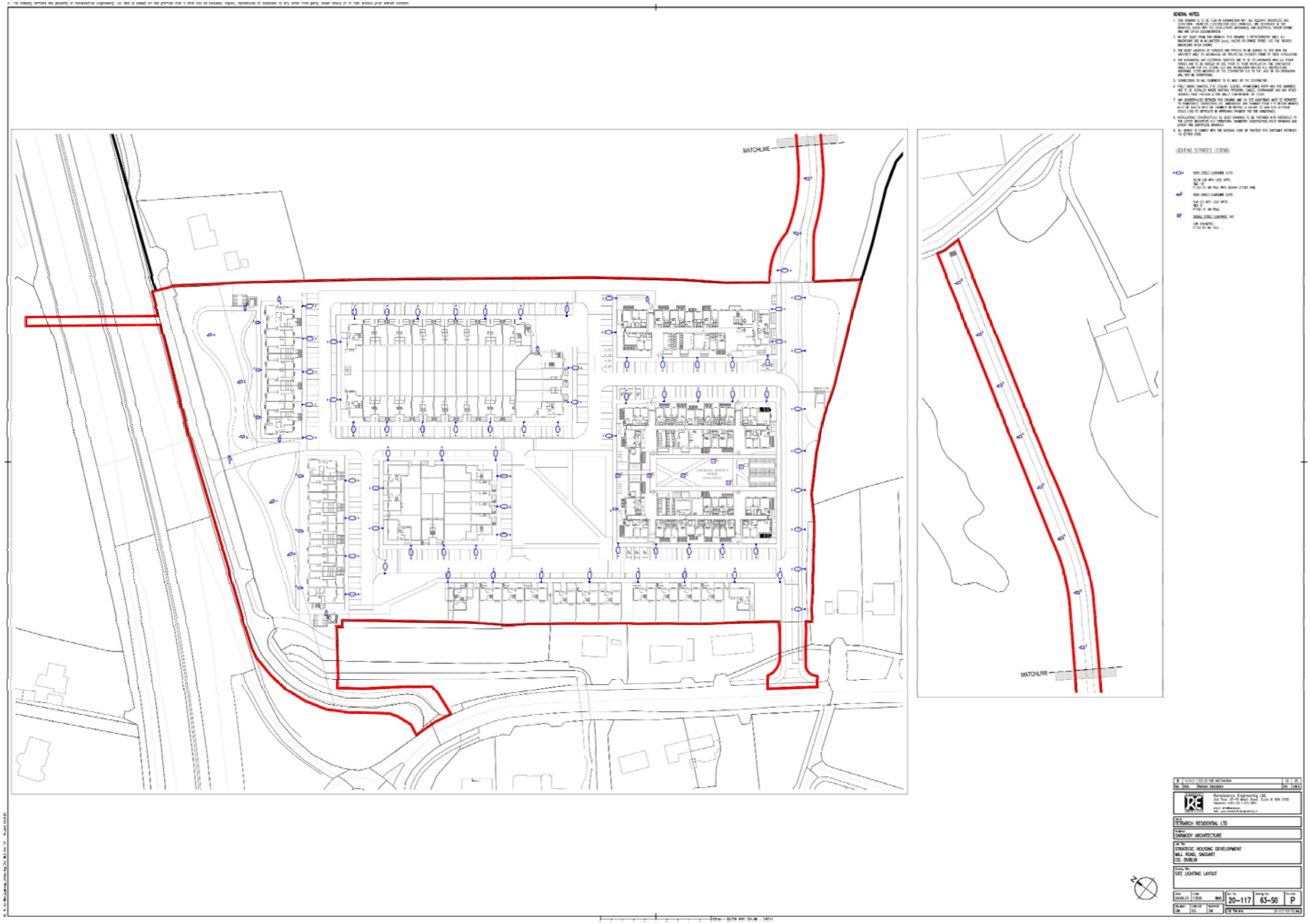


Figure 4. Proposed site lighting layout

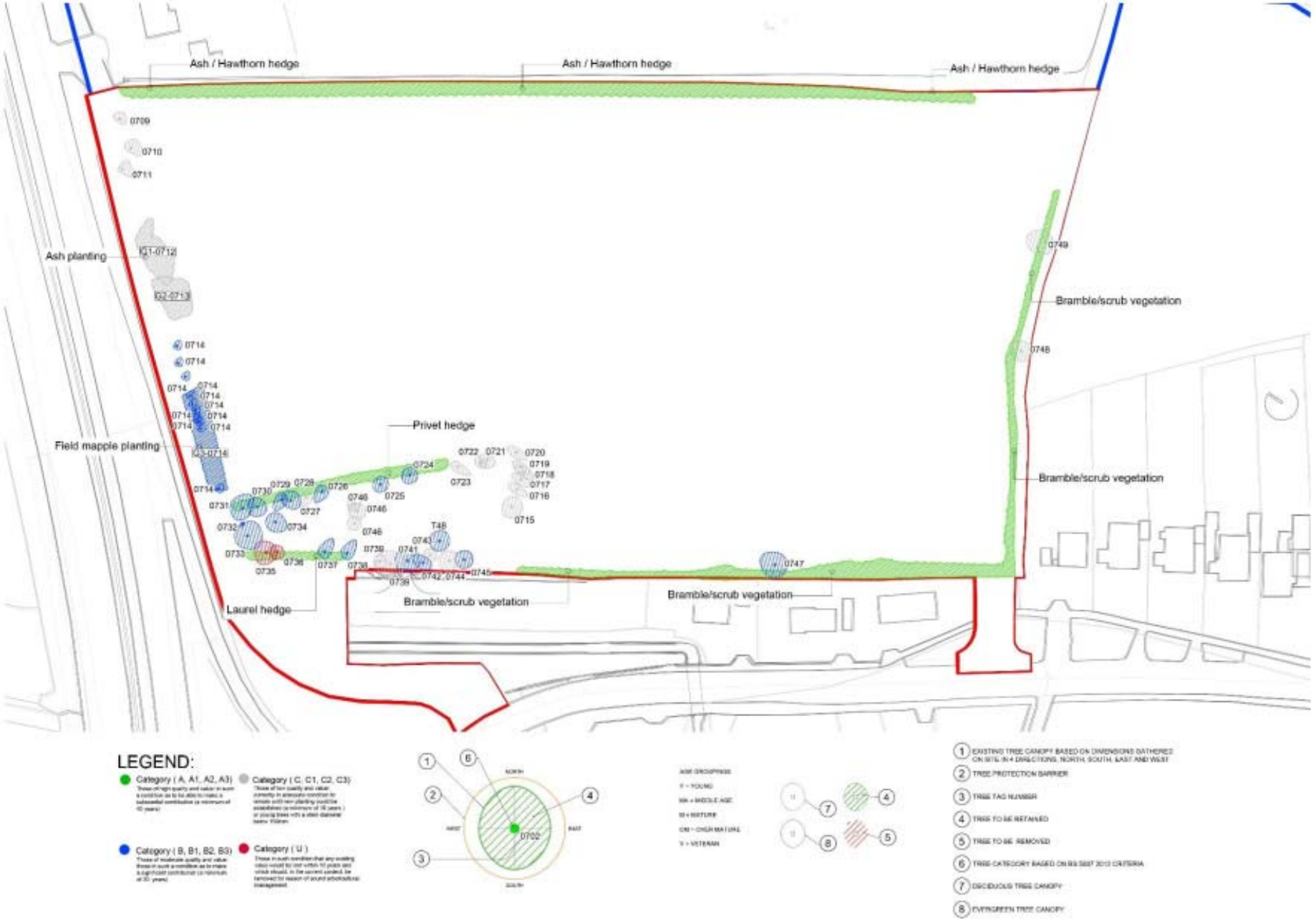


Figure 5. Tree inventory plan

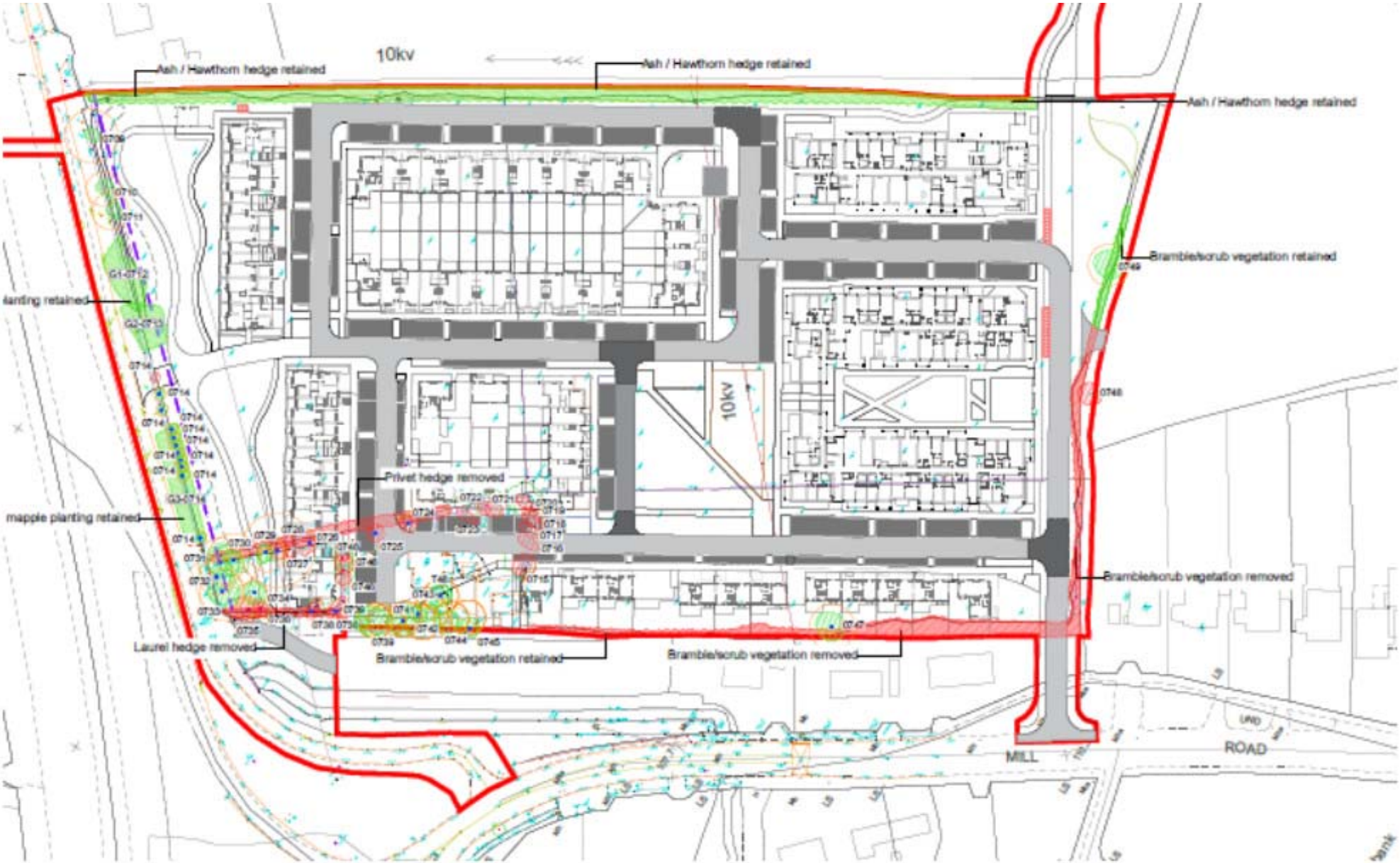


Figure 6. Development impact plan

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 (2007)) 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 Kelleher and Marnell (2007), Bat Mitigation Guidelines for Ireland.

Legislative Context

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 transposed into Irish Law i.e. European Communities (Natural Habitats) Regulations, 1997 (SI No. 64/1997).

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 section 23 of SI No. 64/1997 all bats are listed under the first schedule of Section 23 which makes it an offence to:

- deliberately capture a bat
- deliberately disturb a bat,
- damage or destroy a breeding site or resting place of a bat.

Bat survey

This report presents the results of site visits by Bryan Deegan (MCIEEM) on the 28th September 2020 and 13th August 2021 during which the proposed development site was searched for bat use or presence. The house on site was inspected internally on the 28th September 2020. Bat emergent/detector surveys were also carried out on both evenings.

Survey methodology

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

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

Survey constraints

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

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 O02I) encompassing the study area reveals that three of the nine known Irish species have been observed locally (Table 1). 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 7 & 8. The following species were noted in the wider area: Brown Long-eared Bat (*Plecotus auritus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*, and Pipistrelle (*Pipistrellus pipstrellus sensu* lato) (Figures 7 & 8).

Table 1: Status of bat species within a 2km^2 grid encompassing the subject site (Reference No. O02I)

Species name	**Record count**	**Date of last record**	**Note**
Brown Long-eared Bat (*Plecotus auritus*)	1	20/09/2005	National Bat Database of Ireland
Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	2	15/08/2011	National Bat Database of Ireland
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	1	11/10/2020	National Bat Database of Ireland

Figure 7. Brown Long-eared Bat (*Plecotus auritus*) (yellow) (Source NBDC) (Site – red circle)

Figure 8. Pipistrelle (*Pipistrellus pipistrellus sensu lato*) (purple) (Species aggregate), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (yellow), and both Pipistrelle and Soprano Pipistrelle (orange) (Source NBDC) (Site – red circle)

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

1. Pipistrelle (*Pipistrellus pipistrellus sensu lato*) in grid reference O034266. Recorded on 15/08/2011 and approximately 300m South of the subject site.
2. Soprano Pipistrelle (*Pipistrellus pygmaeus*) in grid reference O034266. Recorded on 15/08/2011 and approximately 300m South of the subject site.
3. Pipistrelle (*Pipistrellus pipistrellus sensu lato*) in grid reference O039267. Recorded on 20/09/2005 and approximately 530m South-East of the subject site.
4. Brown Long-eared Bat (*Plecotus auritus*) in grid reference O039267. Recorded on 20/09/2005 and approximately 530m South-East of the subject site.

Detector survey

Foraging activity of Common pipistrelle (*Pipistrellus pipis*trellus), Soprano pipistrelle (*P. pygmaeus*) and Leisler's bat (*Nyctalus leisleri*) was observed on site as seen in Figure 1.

Potential impacts of proposed redevelopment on bats

No bats emerging from the onsite buildings or trees were observed. The trees on and adjacent to the site have no features that would act as potential roosting areas. The light spill during construction could have the potential to reduce foraging activity for bats. A potential/former bat roost will be demolished (under Derogation Licence) as part of the development.

As the eastern hedgerow will be partially bordered (~33%) by an access road light spill will extend towards the hedgerow. However, it would be expected that due to the distance from the lights to the hedgerow and the height at which bats were foraging (2-3m) in this area and that a portion of this hedgerow will be unlit, that foraging would continue along this hedgerow. Foraging activity would also persist within the golfclub area, although it may be reduced in the vicinity of the road, due to street lighting. Foraging activity within the majority of main field would be lost due to lighting impacts and due to the proximity of the greenspace in the northern area of the field to light and noise of the N7. Foraging activity would be expected in the vicinity of the compensatory habitat for frogs due to the additional tree cover and insects expected in this area.

Mitigation measures

1. As evidence of a former bat roost was noted onsite, mitigation measures in regard to these animals are needed during the proposed works. There is a requirement for a *National Parks and Wildlife Service* derogation licence application to allow the planned works.
2. Timing of building removal - Any works within the roof area of the onsite dwelling and the removal of the building should preferably be undertaken within the period from August to the end of February when all bats, including the young, are able to fly and fewer animals are expected to be in the building.

3. Roof removal - The removal of the roof of the dwelling should be undertaken manually and carefully in the knowledge that a few bats may be found beneath. If discovered, the animals should be retained in a secure box until dusk and then released onsite.

4. Retention of mature trees - It is recommended that mature trees be retained where possible. Surgery instead of complete removal is suggested for Health & Safety precautions as a means of stabilising any tree that may be considered dangerous.

5. Protection of retained trees - Where possible, all retained trees should be fenced a minimum of 7m from the trunk or a distance equivalent to canopy height to ensure that their root structure and branches are not damaged by plant machinery.

6. Tree felling - Trees that are to be removed should preferably be felled during the months of September to November inclusive. Felling during the autumn months avoids the periods when bats are most active or in hibernation and also avoids the peak bird nesting season. Trees may be felled outside of this period but there is a greater chance of encountering bats. Any ivy-covered trees which require felling should be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape overnight.

7. Retention of other vegetation and additional planting - Existing hedgerows and treelines at the site's boundaries should be retained where possible to continue to afford commuting routes and

foraging areas for bats and other wildlife but also to screen the development. Where suitable, areas should be replanted with native tree and shrub species. Native species support a significantly greater diversity of insects than non-native species and are therefore better for wildlife in general and bats in particular. Where these linear features are retained or planted, they should link up with existing hedgerows both on and off-site to ensure connectivity of corridors for bat and other wildlife movement. Further planting of native tree species that already occur onsite is recommended. These should be sourced locally. Night-scented plants could also be planted as part of landscaping of the proposed development to encourage night-flying insects onto the site to act as prey items for bats. These can be chosen according to local soil conditions.

8. Lighting- In general, artificial light creates a barrier to commuting bats so lighting should be minimised along the site boundaries as it deters some bat species. Where lighting is required, directional lighting (i.e. lighting which only shines on access roads and built areas and not nearby countryside) should be used to prevent overspill. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Cowls will be placed on lighting facing the eastern hedgerow.

9. 5 bat boxes should be places on site to offset the loss of potential/former roosting sites.

Predicted and residual impact of the proposal

There was previous evidence of a bat roost on site, therefore there is potential for negative impacts on roosts these animals are expected to result from the proposed development and a Derogation Licence is required. Foraging activity would be expected to continue on site following the implementation of mitigation, albeit at a slightly reduced level over the main field area. It is deemed that the proposed development will have a Low adverse / International /Negative Impact / Not significant / long term on bats.

The likelihood bat collision is not significant as the materials proposed for the apartment blocks are generally solid and would have good acoustic properties to reflect echolocation signals. As a result the buildings would be clearly visible to bat species. The impact of the proposed development on bats will be low adverse not significant in the long term based on the successful implementation mitigation.

Legal status and conservation issues – bats

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

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

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

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

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

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

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

References

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