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Marine & Environmental Consultancy

Ecological Impact Assessment (EcIA) for a Proposed Large-Scale Residential Development on Lands at Confey, Leixlip, Co. Kildare.

30th July 2026

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Leixlip and Newbridge SPV Limited.

Harbour, Triton House, 2 Trafalgar Rd, Rathdown Lower, Greystones, Co. Wicklow, A63 PP71.
Tel: 01-2533016 info@altemar.ie
Directors: Bryan Deegan and Sara Corcoran
Company No.427560 VAT No. 9649832U
www.altemar.ie

Document Control Sheet			
Project	Ecological Impact Assessment (EcIA) for a Large-Scale Residential Development on Lands at Confey, Leixlip, Co. Kildare.		
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Introduction

Background

Ecological Impact Assessment (EcIA) has been defined as '*the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components*' (Treweek, 1999). "*The purpose of EcIA is to provide decision-makers with clear and concise information about the likely ecological effects associated with a project and their significance both directly and in a wider context. Protecting and enhancing biodiversity and landscapes and maintaining natural processes depends upon input from ecologists and other specialists at all stages in the decision-making and planning process; from the early design of a project through implementation to its decommissioning*" (IEEM, 2010).

The following EcIA has been prepared by Altemar Ltd. at the request of Leixlip and Newbridge SPV Limited. for a Proposed Large-Scale Residential Development on Lands at Confey, Leixlip, Co. Kildare.

Study Objectives

The objectives of this EcIA are to:

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

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

- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2002);
- Guidelines on the information to be contained in EIARs (2022);
- Guidelines for Ecological Impact Assessment (EcIA) (IEEM, 2019);
- Advice Notes on current practice in the preparation of EIS's (EPA, 2003);
- Institute of Ecology and Environmental Management Guidelines for EIA (IEEM, 2005).

Altemar Ltd.

Since its inception in 2001, Altemar has been delivering ecological and environmental services to a broad range of clients. Operational areas include: residential; infrastructural; renewable; oil & gas; private industry; Local Authorities; EC projects; and, State/semi-State Departments. Bryan Deegan, the managing director of Altemar, is an Environmental Scientist and Marine Biologist with 31 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).

Description of the Proposed Project

The development will comprise a Large-Scale Residential Development (LRD) on a site at Confey, Leixlip, Co. Kildare.

The proposed development provides a total of 125 residential units, comprising 81 no. houses, 22 no. duplex units and 22 no. apartments. The housing element consists of a mix of semi-detached and terraced dwellings, including 56 no. 3-bedroom houses and 25 no. 4-bedroom houses, ranging in height from 2 to 3 storeys. The development includes 22 no. duplex units within 11 duplex blocks, comprising 11 no. 2-bedroom and 11 no. 3-bedroom duplex homes, arranged over 3 storeys. The apartment element comprises 22 no. units within a single apartment block of up to 5 storeys in height, consisting of 5 no. 1-bedroom apartments and 17 no. 2-bedroom apartments.

Provision of car, cycle and motorbike parking will be provided throughout the development.

Vehicular, pedestrian, and cyclist access points will be provided from the north of the site via R149, with additional pedestrian and cyclist access provided from the south via the Royal Canal Greenway. The development will also provide landscaping, public and communal open spaces and all associated site development works to facilitate the project. These include boundary treatments, plant and waste management areas, and other service provisions.

The site outline, site location and architectural plans are shown in Figures 1-4.

Landscape

The landscape strategy for the proposed development has been prepared by Murphy and Sheanon Horticulture and Landscape Architects. The proposed landscape plan is shown in Figure 5.

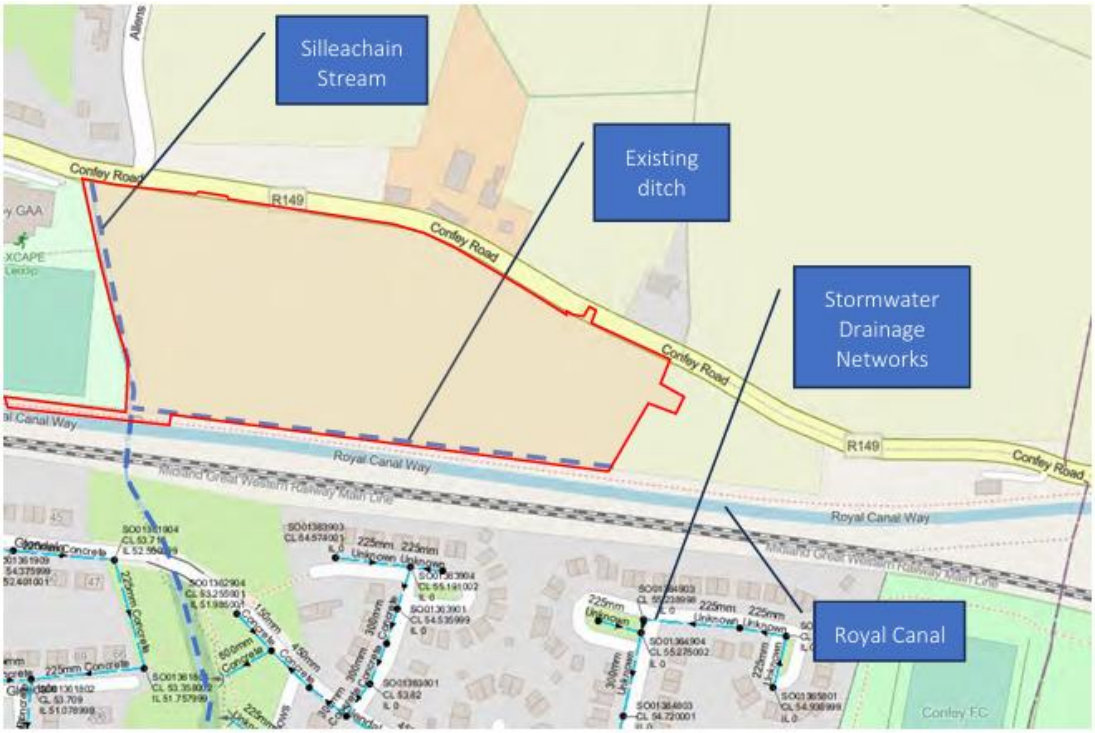
Drainage

An Infrastructure Design Report has been prepared by Corrigan Hodnett Consulting Civil and Structural Engineers for the proposed development. It outlines the following drainage strategy:

Existing Surface Water

'There is an existing watercourse (the Silleachain Stream) within the site running along the western boundary which runs beneath the Royal Canal and rail line and joins the River Liffey to the south in Leixlip. On the southern boundary a ditch runs parallel to the Royal Canal to the south and converges with the Silleachain Stream in the southwest corner of the site. The Silleachain Stream runs in a north to south general direction and outfalls to the River Liffey to the south. There are no identified surface water networks in the vicinity of the site.

The existing site is a greenfield site and does not have any positive drainage network. It is currently farmed as arable farmland with rainfall infiltrating to ground. The soil is predominantly a boulder clay till with minimal infiltration characteristics as was demonstrated by the BRE Digest 365 soakaway testing carried out to inform the surface water drainage design for the scheme. The infiltration testing carried out indicates that, while infiltration characteristics are poor and would not be considered adequate for concentrated SuDS devices such as soakaways or similar, the infiltration rate is adequate to drain rainwater through the soil in its greenfield state – there is no evidence of wet areas or ponding on a walkover of the site with the lands remaining in good condition despite being worked by heavy farm machinery.'



(Source: Infrastructure Design Report, Corrigan Hodnett Consulting Civil and Structural Engineers)

Proposed Surface Water Drainage Outfall

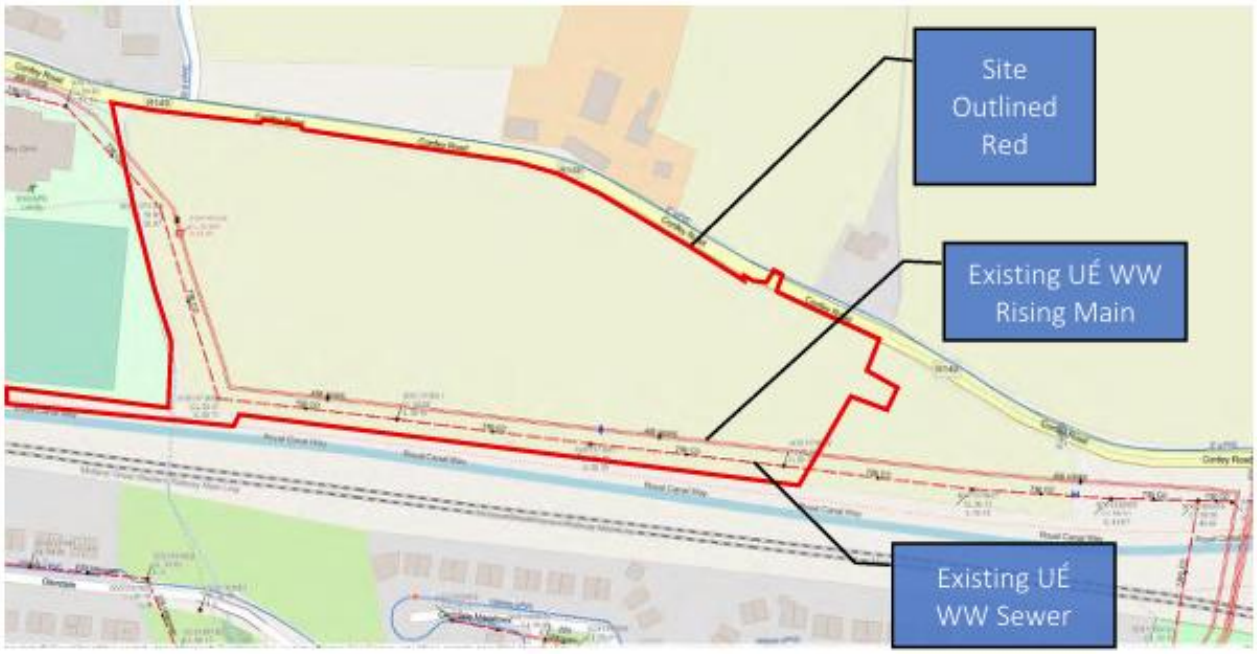
'The Masterplan details that the surface water outfall from the site is at a single point to the Silleachain Stream at the northwest corner of the site. However, on detailed analysis of the site particularly with regard to the fact that the site is relatively flat it is apparent that an single outfall at this location to serve the entire site is not possible. As part of the design process it has been determined that it is necessary to separate the site into five separate surface water drainage catchments and outfall each catchment individually to the watercourse to the south.'

(Source: Infrastructure Design Report, Corrigan Hodnett Consulting Civil and Structural Engineers)

Existing Wastewater Drainage

'There are two Uisce Éireann wastewater assets currently traversing the site as follows;

- *There is a 450mm diameter wastewater rising main to the south and west of the site running parallel to the site boundaries within the area zoned 'Open Space and Amenity'.*
- *There is a 750mm diameter wastewater sewer running parallel and to the south/west of the rising main.'*



(Source: Infrastructure Design Report, Corrigan Hodnett Consulting Civil and Structural Engineers)

Proposed Wastewater Drainage

It is proposed that 'the development will discharge the generated wastewater effluent into the existing 750mm diameter wastewater sewer to the south of the site at manhole ref. SO01374002, subject to confirmation by UÉ.'

Flood Risk Assessment

A Flood Risk Assessment has been prepared by Corrigan Hodnett Consulting Civil and Structural Engineers to accompany this planning application. The report concludes the following:

'The OPW Eastern CFRAM Study fluvial flood extent mapping confirms that none of the proposed buildings are within the identified fluvial extents flooding for the low probability 0.1% AEP Fluvial event (1in1000year fluvial event) and in the limited area of Flood Zone B there are no changes proposed to the ground levels in this area.

The Eastern CFRAMS mapping does not extend to the site for Coastal Flooding. The fact that the distance of the site from the Irish Sea is in excess of 19km and the fact that the levels within the site are in excess of 50metres above Ordnance Datum confirms that the site is not subject to Coastal Flooding.

The Confey Masterplan flood extents mapping confirms that all of the buildings within the site fall within Flood Zone C for fluvial and pluvial flooding.

The internal drainage for the scheme has been designed such that there is no risk of internal flooding to the properties in the event of a system failure. In the event of a total system failure within the development, surface water from the development will primarily flow towards the west and northwest of the site towards the Silleachain Stream mirroring the existing overland flow routes.

On review of the OPW www.floodmaps.ie website there are no recorded flood events within the site. The closest recorded event is on the opposite side of the R149 Confey Road to the north of the site.

Inspection of the topographic survey commissioned for the site confirms that the site is not at risk of flooding from overland pluvial flows. The proposed scheme includes extensive SuDS measures which will reduce surface water discharge and overland flow routes created within the development will ensure there is only limited risk of flooding as a result of a surface water network failure.

The GSI mapping confirms that there are no visible alluvial deposits within the site which is indicative of the fact that all historical flows would have been within a confined channel width with little or no out of channel flooding for the extents of the watercourse within the site.

Inspection of historical 6inch and 25inch mapping did not return any indications of areas 'liable to flooding' or marsh symbols in the vicinity of the site.

The walkover survey of the site confirms that there are no further sources of flooding which need to be considered and verifies that the overland flow routes of the site and wider area do not pose a concern.

… The Stage 1 – Flood Risk Identification element of the flood risk assessment has been carried out sequentially in accordance with 'The Planning System and Flood Risk Management Guidelines for Planning Authorities', Nov 2009 and the Dún Laoghaire-Rathdown County Development Plan 2022-2028.

Based on the fact that the development proposals are located within Flood Zone C for all types of flooding and there have been no sources of flooding to impact the development, there is no requirements to progress to a Stage 2 Initial Flood Risk Assessment.

The proposed development is classified as 'Highly Vulnerable' and is located within Flood Zone C. Based on the Guidelines, the proposed development is deemed 'Appropriate' and no justification test is required.'

Figure 1. *Site outline*

Figure 2. *Site outline and location context.*

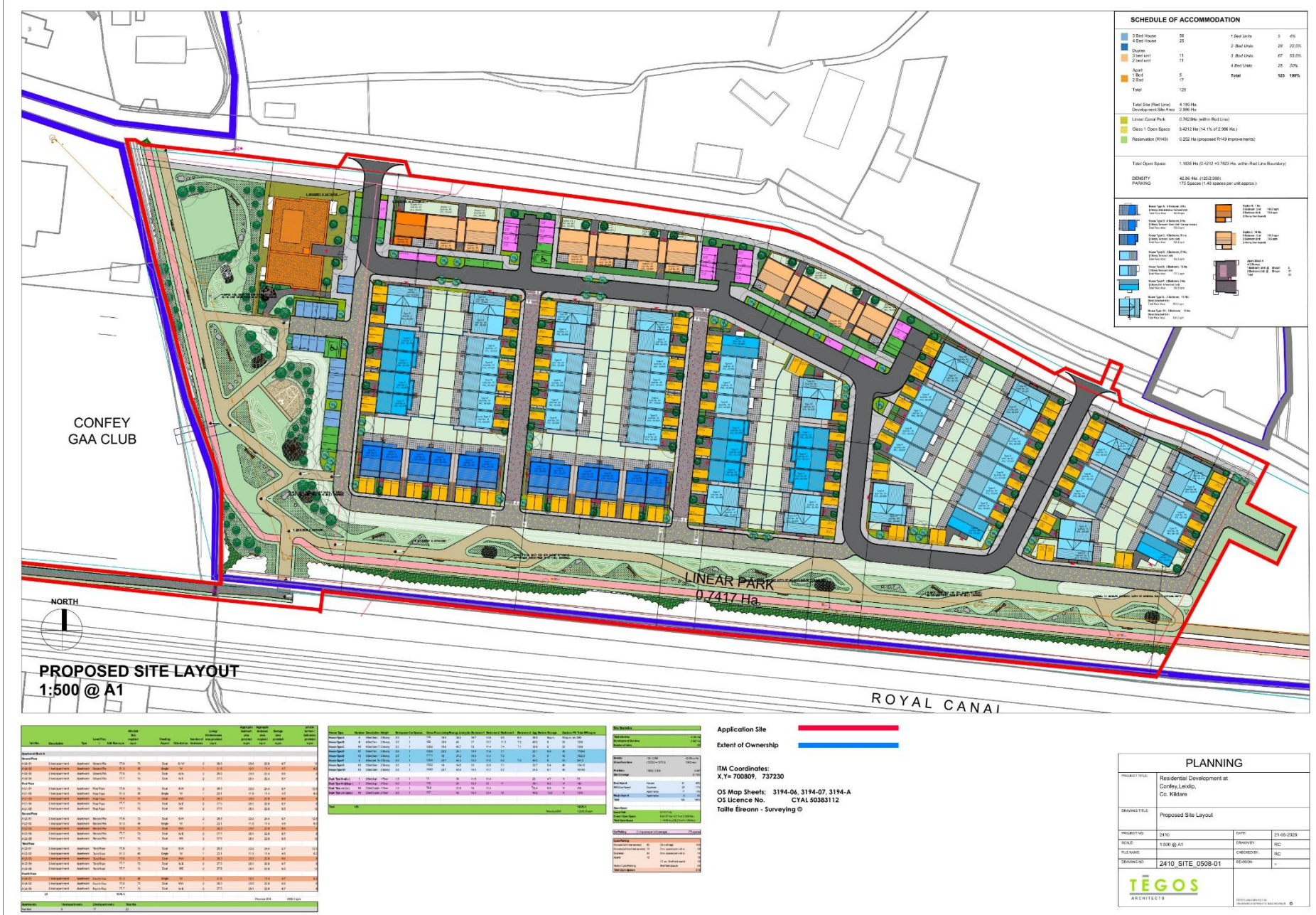


Figure 3. *Site layout plan*

Figure 4. *Block A Planning GA sections and elevations*

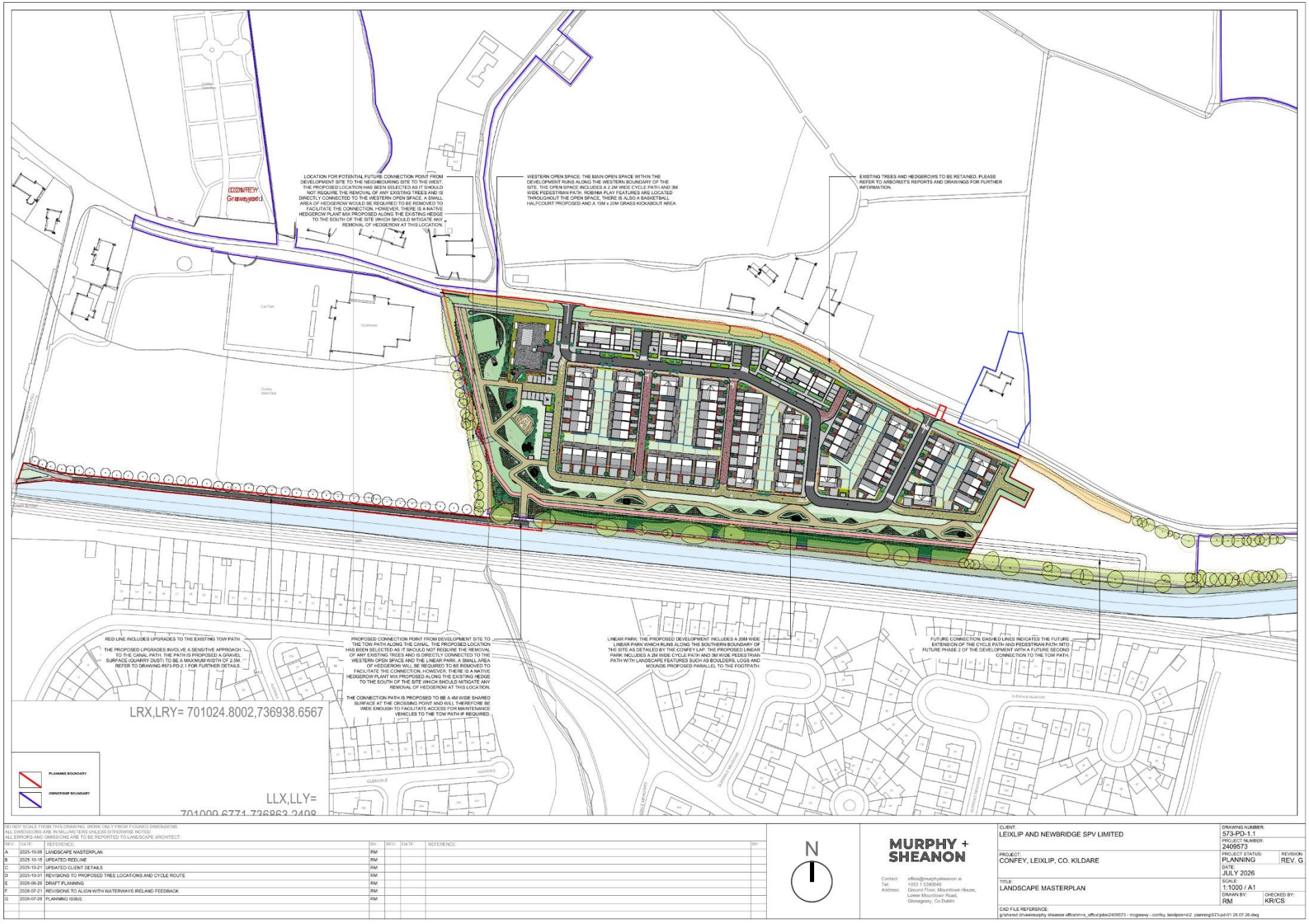


Figure 5. *Landscape plan*

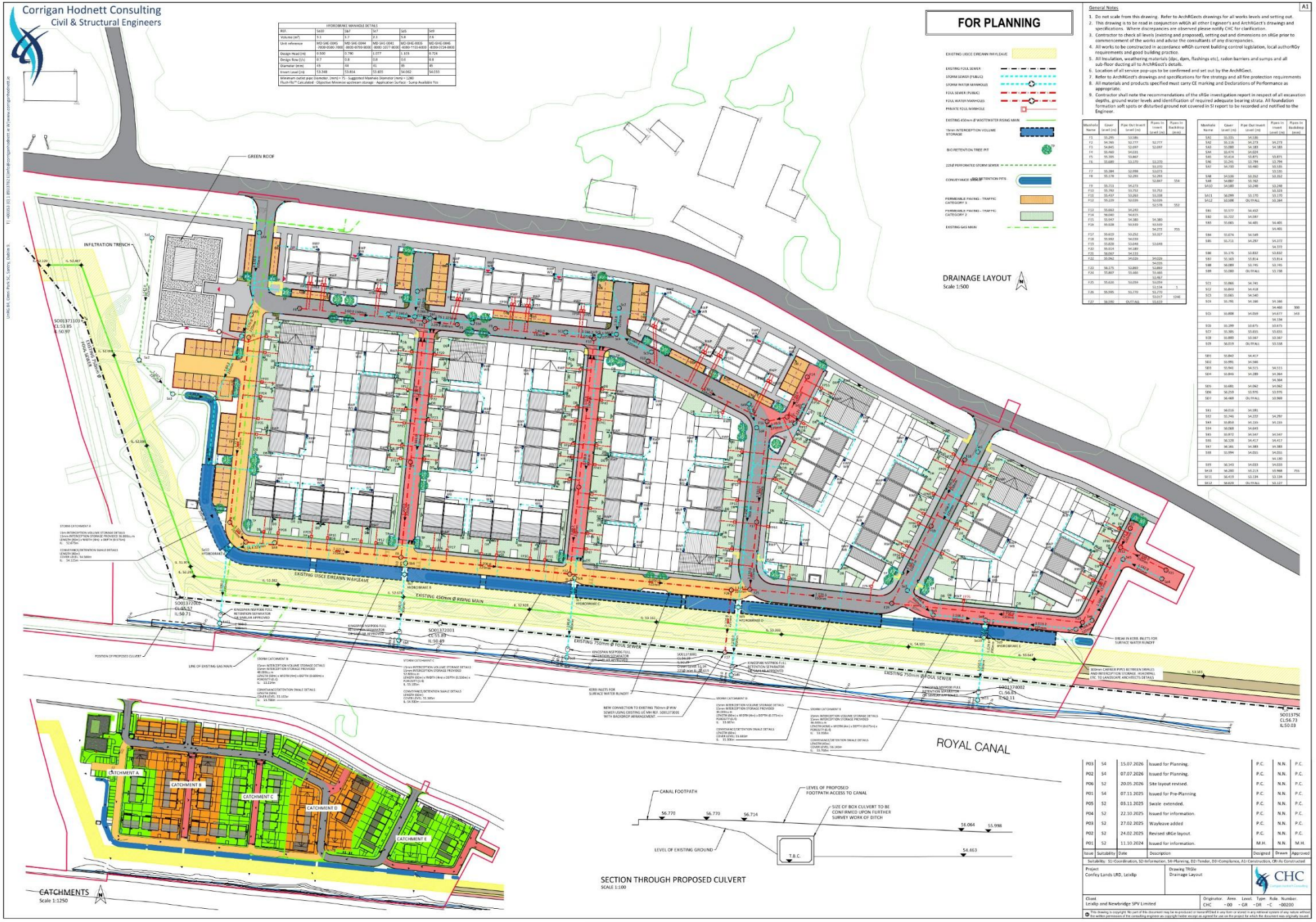


Figure 6. *Proposed drainage layout*

Arborist

An Arboricultural Impact Assessment has been prepared by Charles McCorkell Arboricultural Consultancy to accompany this planning application. The report summarizes the following in relation to trees on site:

'Arboricultural Impacts

Loss of trees – To facilitate two new vehicular entrance points to the site, the partial removal of two sections of the low quality (C Category) northern tree and hedge groups G647 and G650 is required.

Along the southern boundary, small sections of the moderate quality (B Category) hedgerow H681 and a poor quality (U Category) ash tree T630, are required to be removed to connect surface water runs to the existing ditch and to facilitate a pedestrian access link to the Royal Canal towpath. The majority of trees along this boundary are located on the southern side of the ditch, so the extent of removal is unlikely to be significant.

The loss of trees and hedgerows required to facilitate the development have been kept to a minimum and will have an insignificant impact on the character and visual appearance of the site within the local surrounding area. The design is to retain the main boundary tree and hedge lines, which will ensure that the local landscape character is maintained, whilst adding an element of maturity to the landscape of the new development.'

The tree survey plan, removal plan and protection plan are demonstrated in figures 7- 9.

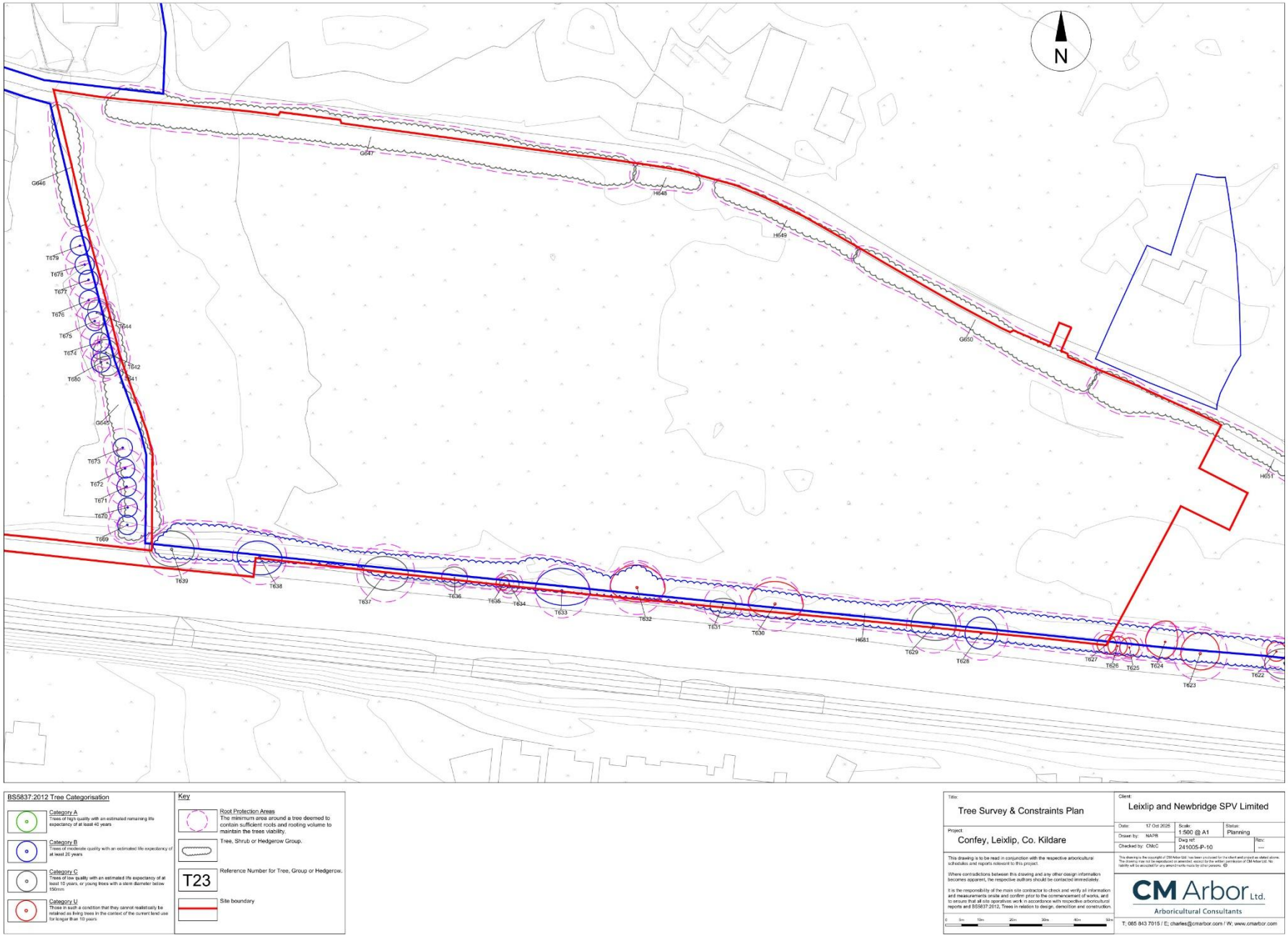


Figure 7. *Tree survey plan*

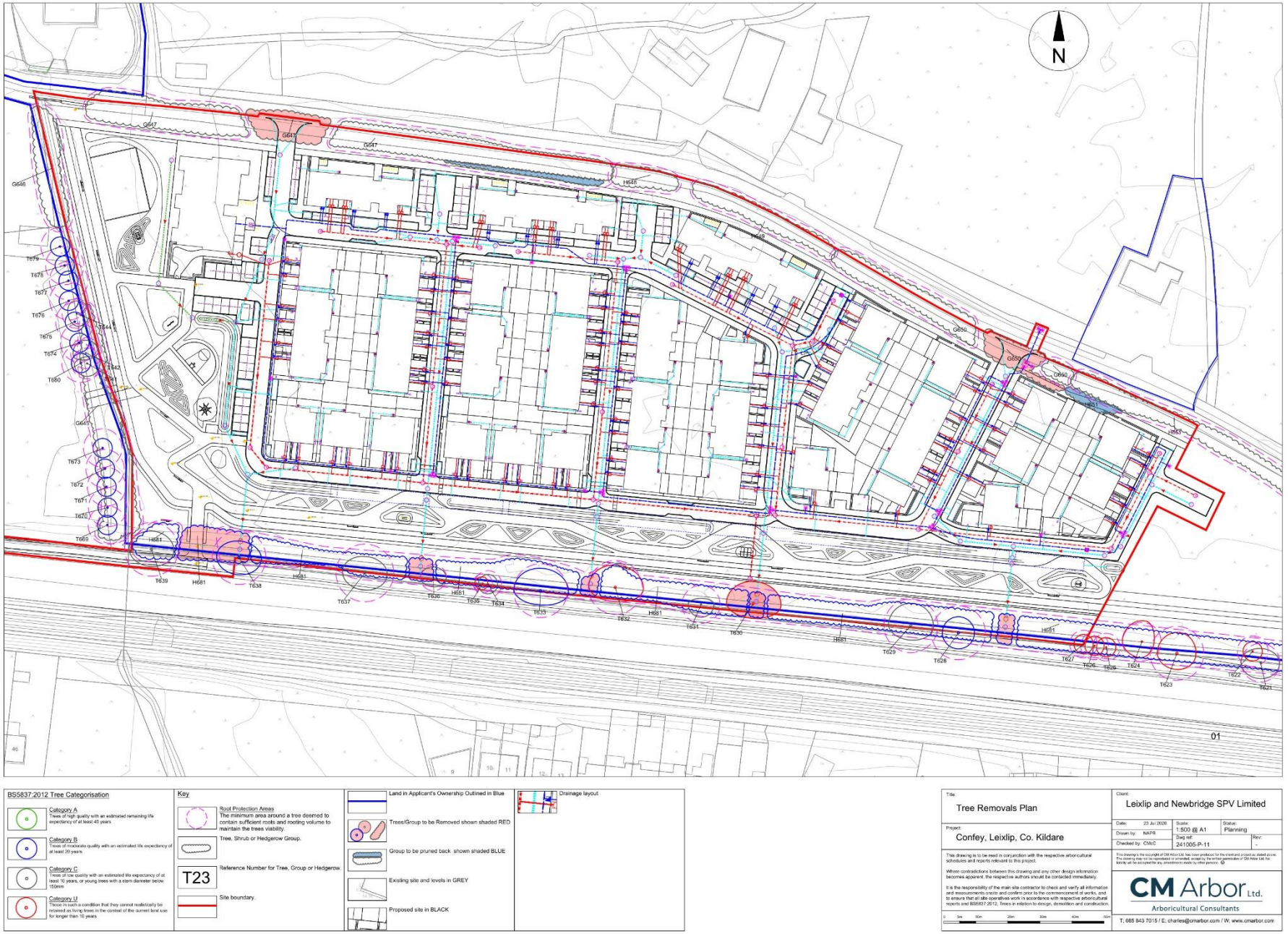


Figure 8. *Tree removals plan*

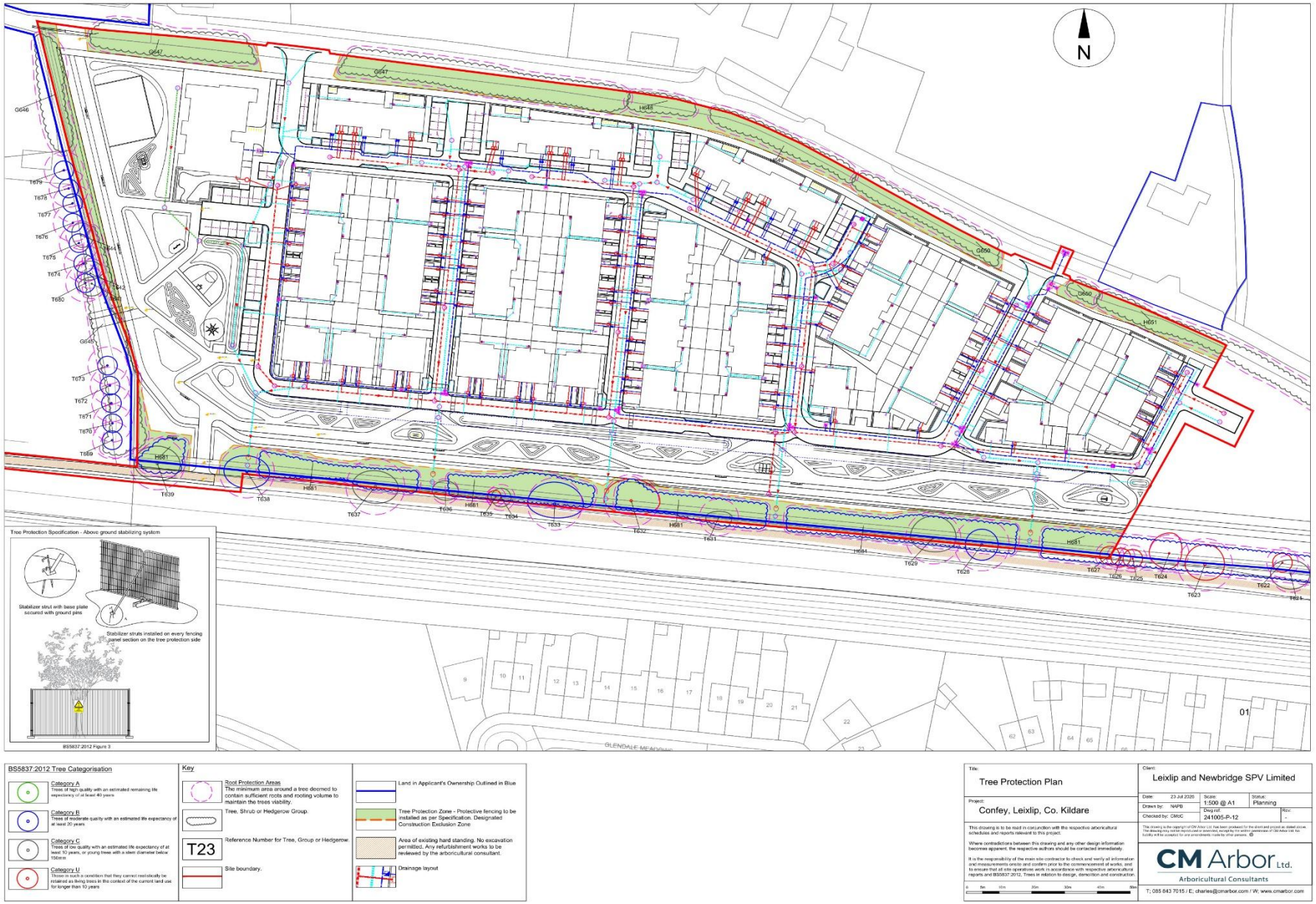


Figure 9. *Tree protection plan*

Lighting

An external lighting report has been prepared by Sabre Electrical Services Ltd. It outlines the following details in relation to proposed outdoor lighting on site:

Luminaires

Luminaire A Data

Supplier	C U Phosco
Type	E950-28-F2A-727-C600-15W
Lamp(s)	727N
Lamp Flux (klm)	2.23
File Name	E950-28-F2A-727-C0600-15W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	8

Luminaire B Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C600-15W
Lamp(s)	727N
Lamp Flux (klm)	2.19
File Name	E950-28-P4A-727-C0600-15W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	11

Luminaire C Data

Supplier	C U Phosco
Type	E950-28-R3A-727-C400-10W
Lamp(s)	727N
Lamp Flux (klm)	1.55
File Name	E950-28-R3A-727-C0400-10W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	18

Luminaire D Data

Supplier	C U Phosco
Type	E950-28-R3A-727-B2-C0250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.84
File Name	E950-28-R3A-727-B2-C0250-7W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	748.7, 23.8, 0.3
No. in Project	19

Luminaire E Data

Supplier	C U Phosco
Type	E950-28-F2A-727-B2-C0250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.80
File Name	E950-28-F2A-727-B2-C0250-7W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	708.0, 79.8, 0.4
No. in Project	1

Luminaire F Data

Supplier	C U Phosco
Type	E950-28-P4A-727-B2-C0250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.83
File Name	E950-28-P4A-727-B2-C0250-7W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	709.7, 142.6, 0.4
No. in Project	2

The proposed lighting strategy has been discussed and modified to reduce the potential impact of the development on bats. This has keeping riparian corridors dark and warm white LED lighting (2700K) with full cut-off optics is proposed to minimise impacts on bat foraging and reduce light spill towards treelines and hedgerow boundaries, in addition to the Royal Canal. The public lighting layout is demonstrated in figure 10.

Figure 10. *Proposed public lighting layout*

Ecological Assessment Methodology

Desk Study

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

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

A provisional desk-based assessment of the potential species and habitats of conservation importance was carried out in July 2026. Altemar assessed the project, the proposed construction methodology and the operation of the proposed development.

Spatial Scope and Zone of Influence

As outlined in CIEEM (2018) '*The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries.*' In line with best practice guidance an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995).

The proposed development site is a greenfield site located to the immediate north of the Royal Canal, and to the immediate east of Confey GAA grounds. After consultation with Corrigan Hodnett Consulting Civil and Structural Engineers, surface water drainage from the site will discharge to the Silleachain Stream located northwest corner of the site. This drainage network flows a short distance south where it outfalls to the River Liffey. The River Liffey in turn discharges to Dublin Bay over 20km downstream from the proposed development site. Given the excavation, the scale of the development there is the potential for dust and contaminated surface water to enter the watercourse and impact on downstream conservation sites and aquatic biodiversity. In this case, the potential ZOI extends beyond the site, with the potential for impacts to extend beyond the proposed development area via the proposed construction works and the surface water network.

Field Survey

Field surveys of the proposed development site were carried out by Altemar Ltd. The purpose of the field surveys was to identify habitat types according to the Fossitt (2000) habitat classification and map their extent. In addition, more detailed information on the species composition and structure of habitats, conservation value and other data were gathered. The bat survey is seen in Appendix I.

Table 1. Survey dates.

Survey	Surveyor	Dates
Flora and Habitat	Kalvin Townsend Smyth Jeff Boyle	11th September 2025 7th July 2026
Bat	Kalvin Townsend Smyth Jeff Boyle Luke Dodebier	11th September 2025 7th July 2026 20th July 2026
Mammal	Kalvin Townsend Smyth Jeff Boyle Luke Dodebier	11th September 2025 7th July 2026 20th July 2026
Wintering Birds 2024/2025 & 2025/2026	Jeff Boyle Gayle O'Farrell	5th December 2024, 20th January 2025, 4th, 13th and 25th of March 2025 13th November 2025, 12th December 2025, 6th January 2026, 12th January 2026 and 18th February 2026

Survey Limitations

The habitat, flora, bat and bird assessments were all carried out within the optimal survey season. No limitations are foreseen in relation to the surveys.

Consultation

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

Impact Assessment Significance Criteria

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

Magnitude of effect and typical descriptions

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

Criteria for Establishing Receptor Sensitivity/Importance

Importance	Ecological Valuation
International	Sites, habitats or species protected under international legislation e.g. Habitats and Species Directive. These include, amongst others: SACs, SPAs, Ramsar sites, Biosphere Reserves, including sites proposed for designation, plus undesignated sites that support populations of internationally important species.
National	Sites, habitats or species protected under national legislation e.g. Wildlife Act 1976 and amendments. Sites include designated and proposed NHAs, Statutory Nature Reserves, National Parks, plus areas supporting resident or regularly occurring populations of species of national importance (e.g. 1% national population) protected under the Wildlife Acts, and rare (Red Data List) species.
Regional	Sites, habitats or species which may have regional importance, but which are not protected under legislation (although Local Plans may specifically identify them) e.g. viable areas or populations of Regional Biodiversity Action Plan habitats or species.
Local/County	Areas supporting resident or regularly occurring populations of protected and red data listed-species of county importance (e.g. 1% of county population), Areas containing Annex I habitats not of international/national importance, County important populations of species or habitats identified in county plans, Areas of special amenity or subject to tree protection constraints.
Local	Areas supporting resident or regularly occurring populations of protected and red data listed-species of local importance (e.g. 1% of local population), Undesignated sites or

Importance	Ecological Valuation
	features which enhance or enrich the local area, sites containing viable area or populations of local Biodiversity Plan habitats or species, local Red Data List species etc.
Site	Very low importance and rarity. Ecological feature of no significant value beyond the site boundary

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

Significance of Effects

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

Duration and Frequency of Effect	Description
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting less than a year
Short-term	Effects lasting one to seven years.
Medium-term	Effects lasting seven to fifteen years.
Long-term	Effects lasting fifteen to sixty years.
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration

Describing the Probability of Effects	Description
Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

Results

Proximity to Designated Conservation Sites

The nearest European site to the subject site is 0.6 km away (Rye Water Valley/Carton SAC) (Figure 11). The nearest official EPA Waterframework Directive watercourses to the subject site is the Royal Canal (4m) and Oranstown/Silleachain Stream along the western boundary. There are no NHAs within 15 km of the proposed development and no potential hydrological pathways from the proposed development site to any NHAs located further than 15 km (Figure 13). Watercourses surrounding the site and potential pathways to proximate designated conservation sites are seen in Figures 15-17.

The nearest European site to the proposed development is the Rye Water Valley/Carton Valley SAC, located approximately 674 m to the southwest of the development boundary (Figure 11). The Oranstown Stream (Silleachain Stream), which runs along the western site boundary, will receive surface water from the proposed development site. This stream flows southwards before discharging into the River Liffey approximately 400m downstream of the Rye Water Valley/Carton SAC. Given the topographical flow direction, there is no direct or indirect hydrological pathway from the proposed development to the Rye Water Valley/Carton SAC.

The River Liffey in turn discharges to Dublin Bay over 20km downstream from the proposed development site and by extension, out of an abundance of caution, European sites at Dublin Bay including South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and North-west Irish Sea SPA were also assessed. It is therefore considered that there is an indirect hydrological pathway between the proposed development site and European sites at Dublin Bay via the extended surface water drainage network. European sites within 15 km and the distance from the proposed development to these sites are displayed in Table 2. Proposed Natural Heritage Areas within 15 km and the distances from the proposed development site are seen in table 3.

Table 2. European sites within 15km of the proposed site

Site Code	NATURA 2000 Site	Distance
Special Areas of Conservation		
IE001398	Rye Water Valley/Carton SAC	0.6 km
IE001209	Glenasmole Valley SAC	15 km
Special Protection Areas		
None within 15km of the proposed development		

Table 3. (proposed) NHAs and Ramsar sites within 15km of the proposed development site

Status	Site Name	Distance
pNHA	Liffey Valley pNHA	1.2 km
pNHA	Royal Canal pNHA	4m
pNHA	Rye Water Valley/Carton pNHA	0.6 km
pNHA	Grand Canal pNHA	4.9 km
pNHA	Lugmore Glen pNHA	12.2 km
pNHA	Slade Of Saggart and Crooksling Glen pNHA	12.2 km
pNHA	Dodder Valley pNHA	13.2 km
pNHA	Santry Demesne	15 km

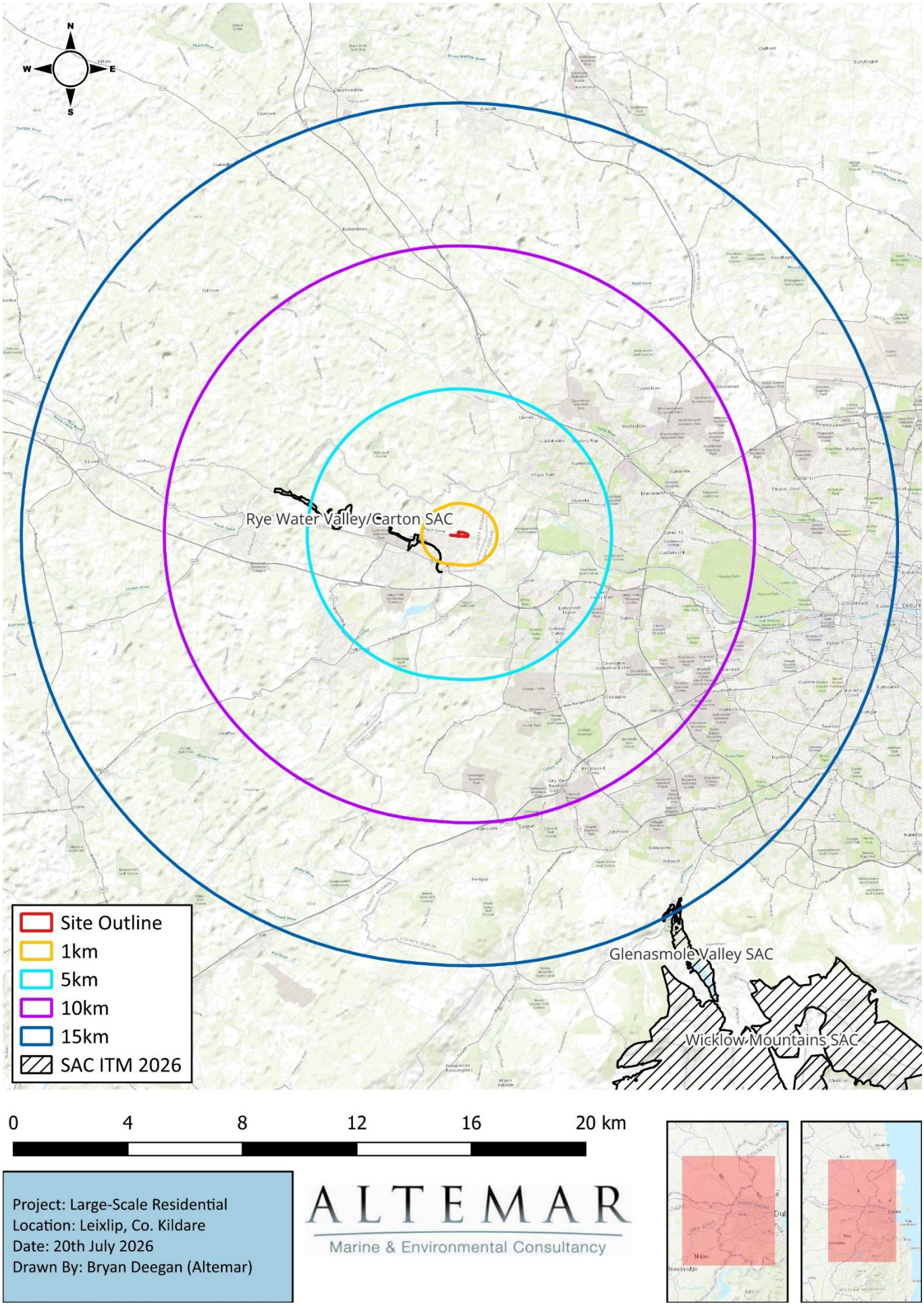


Figure 11. *SACs located within 15km of the proposed development*

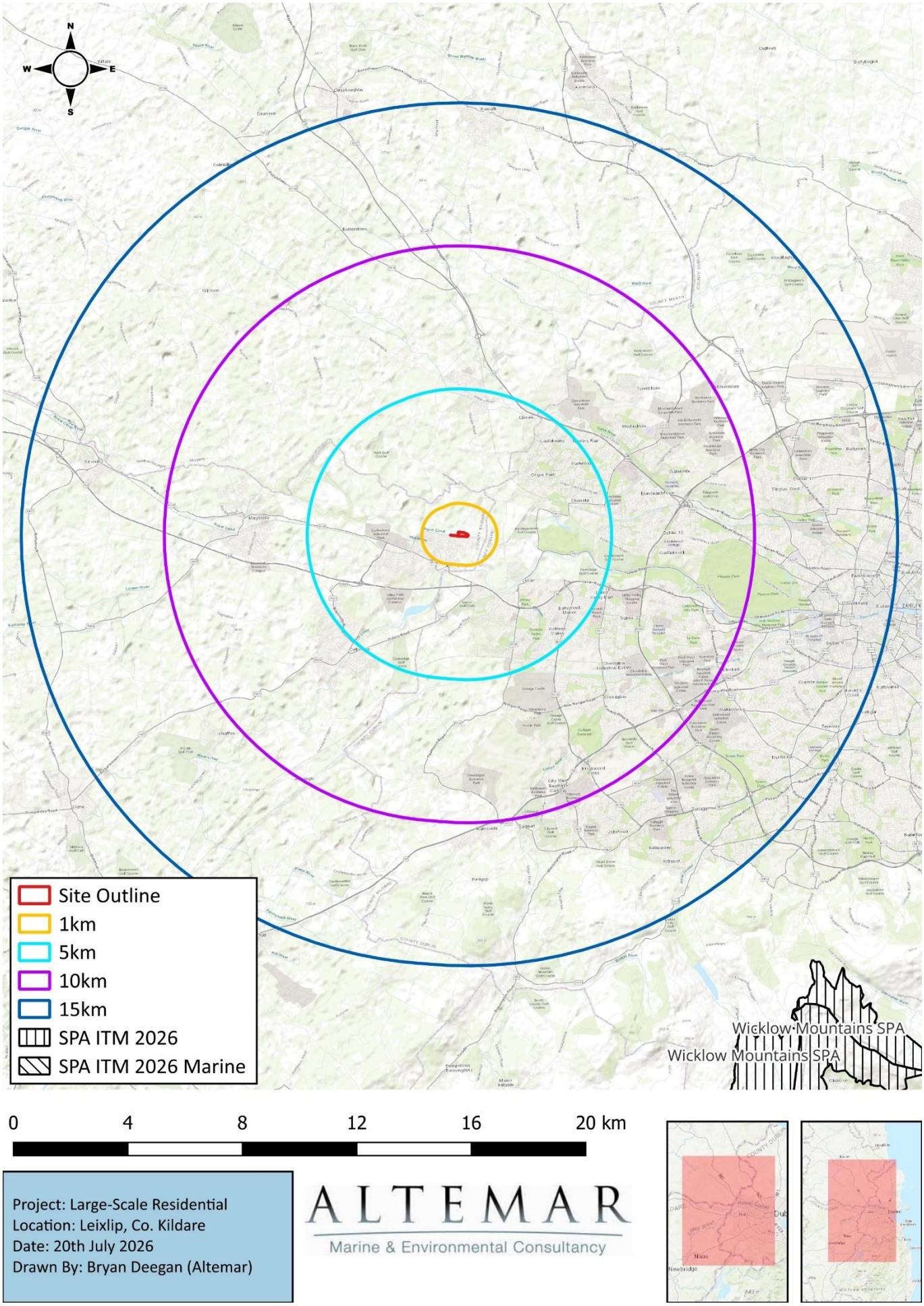


Figure 12. *SPAs located within 15km of the proposed development*

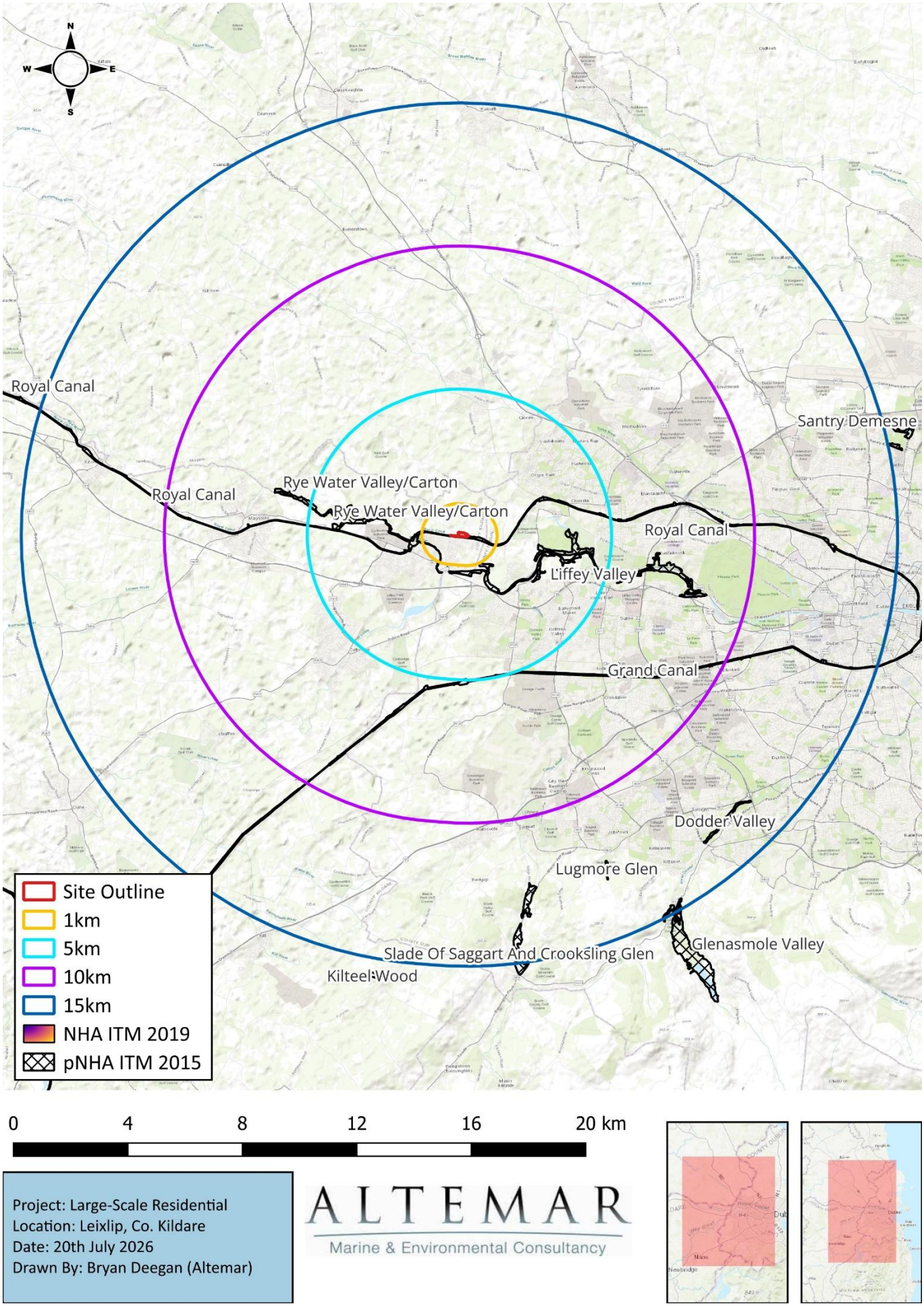


Figure 13. *pNHAs located within 15km of the proposed development*

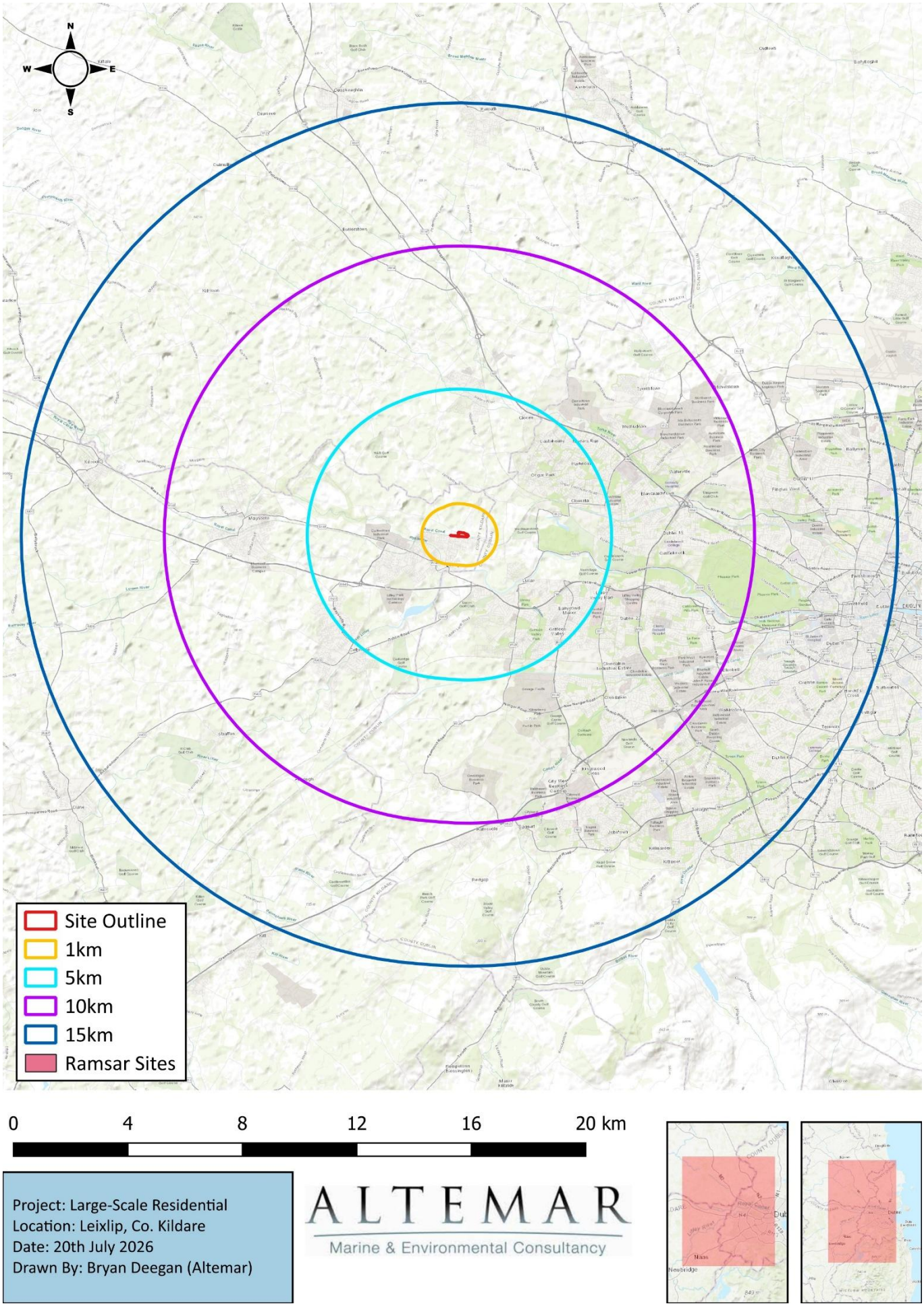


Figure 14. *Ramsar sites located within 15km of the proposed development (none)*

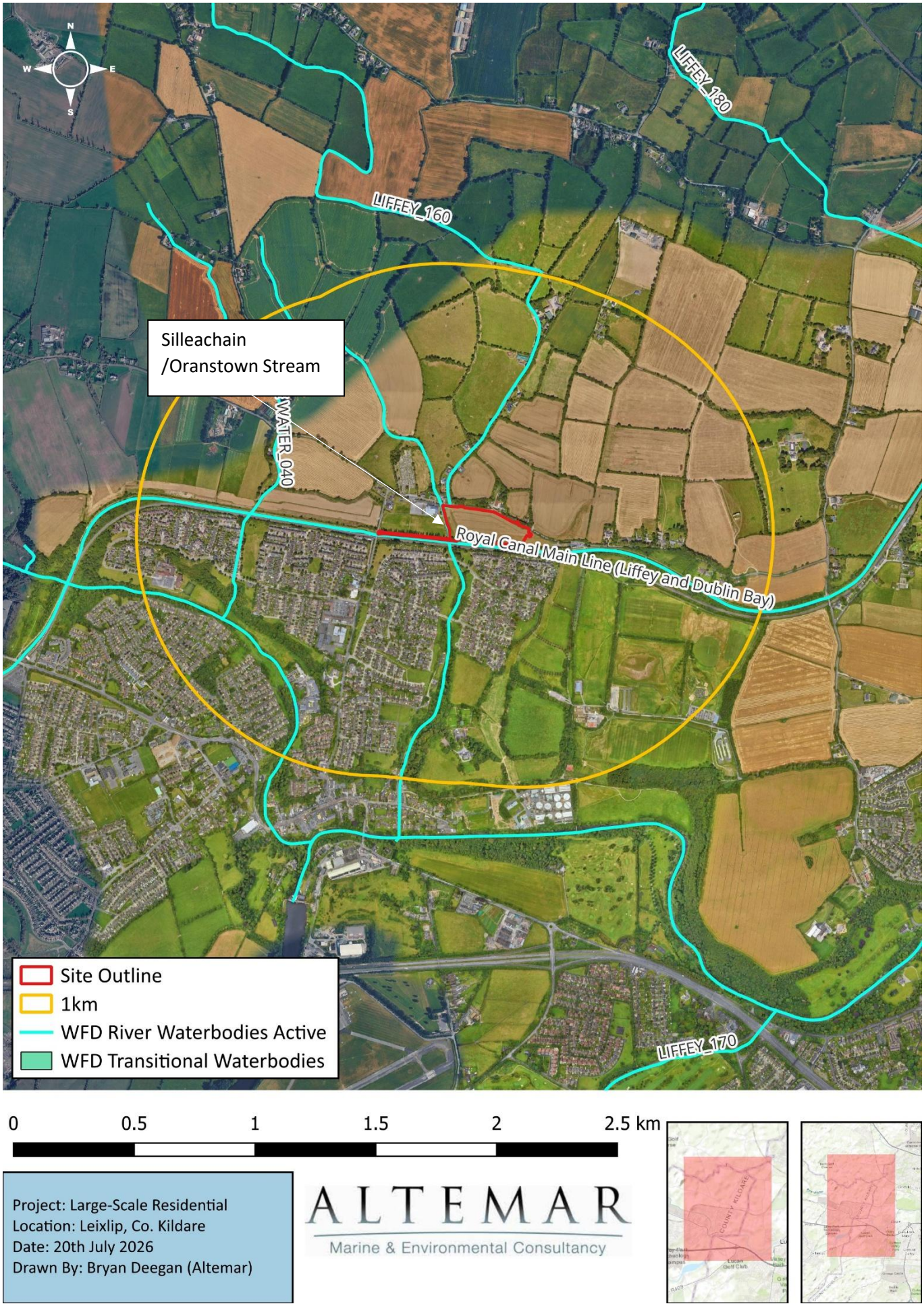


Figure 15. *Watercourses proximate to proposed development*

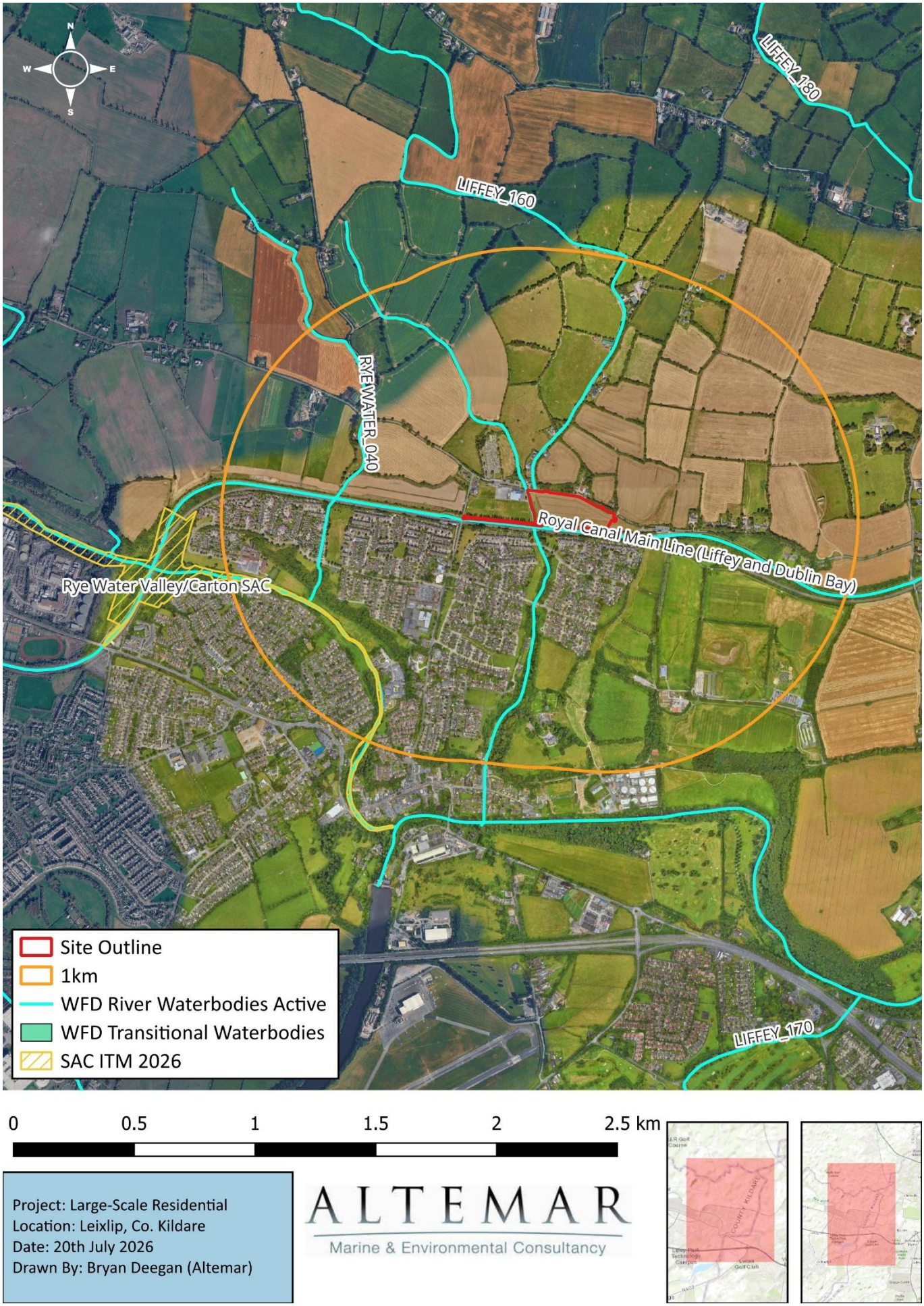


Figure 16. *Watercourses and SACs near the subject site*

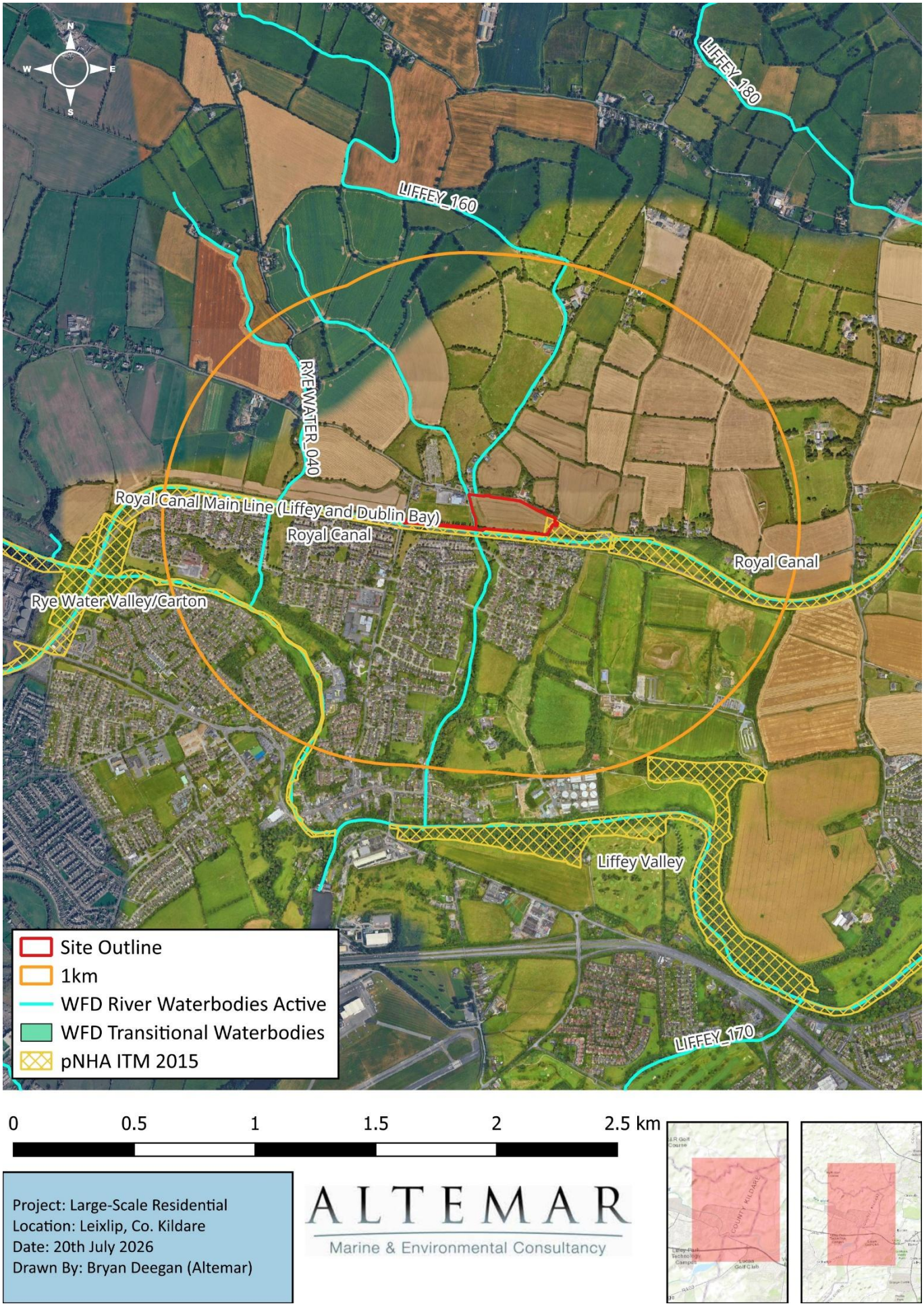


Figure 17. *Watercourses and pNHAs near the subject site*

Habitats and Species

A site assessment was carried out on the 11th of September 2025 and updated on the 7th of July 2026. Habitats within the proposed development site were classified according to Fossitt (2000) (Figure 18).

Figure 18. *Fossitt (2000) Habitat map of proposed development site.*

Ecological Assessment Methodology

Field Surveys

A field survey was carried out by Kalvin Townsend-Smyth of Altemar Ltd. on the 11th September 2025 in relation to flora and fauna. A follow up survey was carried out on the 7th of July by Jeff Boyle of Altemar Ltd. The survey was carried out in warm and dry conditions and covered all land within the site outline and the land immediately outside the site. The purpose of the field survey was to identify habitat types according to the Fossitt (2000) habitat classification and map their extent. Additionally, more detailed information on the species composition and structure of habitats, conservation value and other data were gathered. Notes were also taken on any incidental sightings of fauna or signs of fauna that were made during this field survey. In addition to this, three bat surveys, including inspections of trees on site for Potential Roosting Features (PRFs) for bats, were undertaken on the 11th September 2025, the 7th of July 2026 and the 20th of July 2026. Further details and the results of these surveys can be found in the bat assessment report in Appendix I. Wintering bird surveys were undertaken during the 2024/2025 (5th December 2024, 20th January 2025, 4th, 13th and 25th of March 2025) and 2025/2026 seasons (13th November 2025, 12th December 2025, 6th January 2026, 12th January 2026 and 18th February 2026) Mammal surveys including badger and otter were undertaken on the 11th September 2025, 7th July 2026 and 20th July 2026 . The results below are indicative of the updated 2026 surveys.

Survey Limitations

The flora surveys were carried out in September 2025 & July 2026. This is within the optimum survey period (April to October) for full species assessments of floral cover. It should be noted that good coverage of the site was possible and there was full and clear access to all areas. Bat surveys were carried out in September 2025 and July 2026, within the optimal season (May-September). There is no limitation in relation to these survey timings. 2026 mammal surveys (undertaken in July 2026) were conducted outside of the optimal season (September-May). Mammals are still present and active within this season, but vegetative growth is considerably greater which can cover up signs of mammals.

BC1- Arable crops

This habitat type was recorded in the northern field of the site, which was under active cultivation with common oat (*Avena sativa*) crops at the time of the survey.

Plate 1. Oat crop field

FW4- Drainage ditches

A vegetated drainage ditch traverses the western and southern boundaries of the site, known as the Silleachain Stream. This ditch was dry given that the survey was undertaken during a dry spell in July 2026. This linear aquatic habitat supports a range of wetland and riparian plant species, including duckweed *(Lemna minor),* horsetail *(Equisetum arvense),* marsh valerian *(Valeriana dioica)*, water mint *(Mentha aquatica),* reed canary grass *(Phalaris arundinacea),* rose bay willowherb *(Chamerion angustifolium),* water cress *(Chamerion angustifolium),* willow *(Salix sp.),* bindweed *(Calystegia sylvatica),* and bramble (*Rubus fruticosus*).

Plate 2. Vegetated drainage ditch

BL3 - Buildings and artificial surfaces

There are no buildings within the site. Artificial surfaces within the site boundary consisted of the road to the north of the site and the pathway along the Royal Canal. No flora species of conservation concern were recorded in this habitat.

WL1 – Hedgerows & WL2 Treelines

There are treelines and hedgerows surrounding the site on the southern, eastern and northern perimeters. The species identified within these habitat types include ash *(Fraxinus excelsior),* ivy (*Hedera helix*), brambles (*Rubus fruticosus*), sycamore (*Acer pseudoplatanus*), creeping thistle *(Cirsium arvense),* dock *(Rumex obtusifolius),* elder *(Sambucus nigra),* hawthorn *(Crataegus monogyna),* hazel *(Corylus avellana),* hogweed *(Heracleum sphondylium),* dandelion (*Taraxacum officinale*), horsetail *(Equisetum arvense)*, Wych Elm *(Ulmus glabra) and* Dogrose *(Rosa canina).*

Plate 3. Treeline along northern site boundary

Plate 4. Treeline and hedgerow habitat

WS1 – Scrub

The boundaries between the treeline/hedgerow habitat and the arable crops habitat consisted of scrubby areas with opportunistic species including black mustard (*Brassica nigra)*, creeping thistle (*Cirsium arvense),* broadleaved dock (*Rumex obtusifolius)*, meadowsweet (*Filipendula ulmaria)*, purple loostrife (*Lythrum salicaria*), field sowthistle (*Sonchus arvensis*), marsh sowthistle (*Sonchus palustris*), marsh woundworth (*Stachys palustris),* hemp agrimony (*Eupatorium cannabinum)*, common fleabane (*Pulicaria dysenterica*), sycamore maple (*Acer pseudoplatanus*), hogweed (*Heracleum sphondylium*), tufted vetch (*Vicia cracca)*, poppy (*Papaver rhoeas),*charlock (*Sinapis arvensis)*, rosebay willowherb (*Chamaenerion angustifolium)*, elderberry (*Sambucus),* eared willow (Salix aurita), common teasal (*Dipsacus fullonum)* and buddelija (*Buddleja davidii)*. This habitat is also present along the Royal Canal pathway.

Plate 5. Scrub habitat

ED2 – Spoil and bare ground

This habitat exists on the pathway along the Royal Canal to the south of the site, and in a small section to the north which is used as an entrance to the site. Along the canal walkway, there are patches of grasses within the centre and each side of the path. Species here include meadowsweet (*Filipendula ulmaria)* & Butterbur (*Petasites hybridus).*

Plate 6. Canal walkway

Evaluation of Habitats

Most habitats on site are of relatively low ecological value, reflecting intensive agricultural use. The arable (BC1)) areas are species-poor and offer limited wildlife value. In contrast, the drainage ditch (FW4), hedgerows (WL1), and treeline (WL2) support greater biodiversity and provide important habitat connectivity. These linear features contribute to the site's overall ecological function and should be retained and protected where possible.

Plant Species

The plant species encountered within the various habitats on site are detailed above. No plant species protected or restricted under Irish or international legislation were noted on site. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened plant species were recorded within the proposed development site.

Terrestrial Mammals

All areas of the site were accessible. Although the surveys were not undertaken during the optimal survey season for mammals, no evidence of mammals of conservation importance was noted on site. No signs of badger (*meles meles*) were noted during the mammal survey. However, signs of otter (*Lutra lutra*) were observed along the Royal Canal. A small piece of otter (*lutra lutra*) scat was found under Cope bridge to the western extent of the site. No holts were recorded in this area or within 150m of the proposed development site. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened faunal species were recorded within the proposed development site.

Emergent / Detector Surveys & Potential Roosting Features

All trees onsite were examined for features of bat roosting potential, including loose/lifting bark, deep trunk cracks and splits, knotholes, and dense ivy.A dusk bat detector survey was carried out on the 11th September 2025, 7th July 2026 and 20th July 2026 on the proposed development site using a Echo Meter Touch 2 Pro detector to determine bat activity. During all surveys, the weather was dry, with little to no wind, and warm temperatures (>13 °C). Bats were identified by their ultrasonic calls, coupled with behavioral and flight observations.

A total of three bat species were recorded using the site: Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), and soprano pipistrelle (*Pipistrellus pygmaeus*). Further details on bat activity on site is outlined in Appendix I: Bat Fauna Impact Assessment.

Amphibians / Reptiles

The vegetated drainage ditch provides potentially suitable habitat for common Irish amphibians, including common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*). However, no evidence of these species was recorded. This suggests that amphibian populations are likely absent or present at very low levels on site, potentially due to habitat limitations or connectivity constraints. The ditches were dry due to the dry spell and the season that surveys took place which likely also contributed to these findings.

Wintering Birds

Ten wintering bird surveys were carried out by Altemar during the 2024/2025 & 2025/2026 wintering bird survey season on the 5th December 2024, 20th January 2025, 4th, 13th and 25th of March 2025 & 13th November 2025, 12th December 2025, 6th January 2026, 12th January 2026 and 18th February 2026.

Survey methodology

Wintering bird surveys were carried out during the 2024/2025 & 2025/2026 wintering bird season at Confey, Leixlip, Co. Kildare in order to gather baseline data to assist in assessing the potential impacts on wintering birds from the proposed development on the site, in particular those listed as Qualifying Interests of SPAs within 15 km and other amber/red-listed birds of conservation concern in Ireland (BoCCI). Potential impacts on wintering bird species include disturbance, destruction of foraging areas, destruction of roosting areas and collision risk during construction and operation (cranes, buildings etc.). These wintering bird surveys were carried out based on the BTO Common Bird Census (Bibby *et al.*, 2000 and Gilbert *et al.*, 1998) and I-WeBS Counter Manual: Guidelines for Irish Wetland Bird Survey counters (BWI & NPWS), following CIEEM guidelines.

A 15-minute settlement period was given following arrival to allow resumption of bird activity after any possible disturbance caused by arrival to the site. Various features such as grassland, scrub, waterlogged areas, recolonising bare ground, bare ground, and treeline were present within the survey area. A roving transect survey around the perimeter was carried out on each occasion, providing clear views of all areas within and over that survey area. A vantage point in the north and southeast of the site provided unobstructed views across the survey area (Figure 16). Flight lines, large flights, foraging, perching, bathing and any other observed behaviour by wintering bird species and other species observed within, over and immediately adjacent to the survey area were recorded. Each survey was carried out by a single surveyor. A pair of binoculars were used by the surveyor to identify and count birds at distance.

Care was taken not to double count any observations. Surveys were initiated at varying times (morning/midday/afternoon) to account for fluxes in bird activity and birds transiting to/from foraging and roosting areas. Local temperatures varied from 5 – 12°C. Winds varied from 1 – 3 on the Beaufort scale. Weather conditions were favourable on all occasions.

Peak counts for the survey area were compared to 1% national and international population sizes of relevant species for which data was available. Foraging areas, flight paths, large flights and other observations were mapped according to field sheet records.

Survey results/discussion

Habitats of wintering bird potential

A desk and ground level wintering bird habitat assessment were carried and used to examine the structures, features and vegetation on site that could provide wintering bird habitat. Potential features associated with foraging/roosting include agricultural fields, scrub, and drainage ditches. All open areas, vegetated areas, and water-holding features within and immediately adjacent to the site were assessed for wintering bird potential.

Habitat of foraging value for wintering birds was limited throughout the site. The site has poor suitability to support wintering or migrating bird populations. The site is also a significant distance from the nearest SPA (South Dublin Bay and River Tolka Estuary SPA, C. 16.4km). These constraints are reflected in the results of the wintering bird surveys. The site is not considered to be of significance to wintering birds.

Figure 19. Survey area and vantage point

Wintering bird activity survey

A total of 28 species were recorded within, above and immediately adjacent to the survey area across 10 surveys over the 2024/2025 & and 2025/2026 seasons. 18 green, 9 amber and 1 red bird species of conservation concern in Ireland (BoCCI) were recorded either within, over and immediately adjacent to the survey area (Table 4.) Details regarding the status, behaviour and abundances of species recorded on/over/adjacent to the site relevant to the conservation interests of Special Protected Areas (SPAs) and red listed BoCCI are discussed below. Total species counts and observations from both wintering bird seasons are discussed below and mapped in Figures 20-24.

Herring gull (amber BoCCI) was observed in flight occasionally. A total of 7 observations of herring gull were made of a total of 7 individuals. This species was recorded flying mostly in a north-south direction. This species was observed foraging outside of the survey area on the football fields within Confey GAA Club on two occasions in flocks of 5 & 7. The species was likely flying to coastal sites as it was heading east over the subject site in search of more abundant foraging habitat of better suitability within the urban and suburban environments closer to the coast. Peak counts are displayed in Table 5. This species is not a Qualifying interest for any proximate SPA.

Black headed gull (amber BoCCI) was observed in flight 9 times over the subject site. A total of 9 observations were made of 7 individuals. This species was also observed on one occasion in a large flock of 32 individuals foraging on the football fields within Confey GAA Club, and on another occasion in a flock of 11. Peak counts are displayed in Table 5. This species is not a Qualifying interest of any proximate SPA.

Meadow pipit (red BoCCI) was observed in low numbers foraging throughout the centre of the site on two occasions. (Figure 21). Peak counts are displayed in Table 5. This species is not listed as a Qualifying Interest of any SPAs within 15 km of the subject site.

Mute Swan (Amber BoCCI) was observed in low numbers flying east over the canal in parallel with the subject site. Individual observations were also made of this species on the canal to the south of the site. This species is not listed as a Qualifying Interest of any SPAs within 15 km of the subject site. Peak counts are displayed in Table 5.

Mallard (Amber BoCCI) were observed in low numbers along the canal to the south of the subject site. This species is not listed as a Qualifying Interest of any SPAs within 15 km of the subject site. Peak counts are displayed in Table 5.

Table 4. Species recorded within, above and/or immediately adjacent to the survey area 2024/2025 & and 2025/2026 seasons

Common Name	BTO	Scientific name	Conservation status
Blackbird	B.	*Turdus merula*	**Green**
Rook	RO	*Corvus frugilegus*	**Green**
Wren	WR	*Troglodytes troglodytes*	**Green**
Jackdaw	JD	*Corvus monedula*	**Green**
Robin	R.	*Erithacus rubecula*	**Green**
Dunnock	D.	*Prunella modularis*	**Green**
Woodpigeon	WP	*Columbidae*	**Green**
Buzzard	BZ	*Buteo buteo*	**Green**
Goldfinch	GO	*Spinus tristis*	**Green**
Blue Tit	BT	*Cyanistes caeruleus*	**Green**
Goldcrest	GC	*Regulus regulus*	**Amber**
Starling	SG	*Sturnidae*	**Amber**
Magpie	MG	*Pica pica*	**Green**
House Sparrow	HS	*Passer domesticus*	**Amber**
Long-tailed Tit	LT	*Aegithalos caudatus*	**Green**
Pied Wagtail	PW	*Motacilla alba*	**Green**

Greenfinch	GR	*Chloris*	**Amber**
Chaffinch	CH	*Fringilla coelebs*	**Green**
Herring Gull	HG	*Larus argentatus*	**Amber**
Black-headed Gull	BH	*Larus ridibundus*	**Amber**
Great Tit	GT	*Parus major*	**Green**
Song Thrush	ST	*Turdus philomelos*	**Green**
Linnet	LI	*Carduelis cannabina*	**Amber**
Mute Swan	MS	*Cygnus olor*	**Amber**
Hooded Crow	HC	*Corvus cornix*	**Green**
Mallard	MA	*Anas platyrhynchos*	**Amber**
Meadow Pipit	MP	*Anthus pratensis*	**Red**
Moorhen	MH	*Gallinula chloropus*	**Green**

Table 5. Peak counts of species during surveys 2024/2025 & and 2025/2026 seasons

Species	Peak count (2024/25)	Peak count (2025/2026)	1% international
Blackbird	4	3	
Rook	3	5	
Wren	4	2	
Jackdaw	5	7	
Robin	2	3	
Dunnock	4	2	
Woodpigeon	5	5	
Buzzard	1	1	
Goldfinch	7	2	
Bluetit	1	4	
Goldcrest	3	2	
Starling	6	10	
Magpie	1	6	
House sparrow	8	5	
Long-tailed tit	2	3	
Pied wagtail	6	5	
Greenfinch	2	5	
Chaffinch	3	5	
Herring gull	2	10	>1000
Black headed gull	2	32	>10,000
Great Tit	3	5	
Song Thrush	4	4	
Linnet	6	7	
Mute Swan	4	4	
Hooded Crow	8	3	
Mallard	3	4	
Meadow pipit	7	3	
Moorhen	3	2	

Figure 20. *Black-headed gull flightlines and observations*

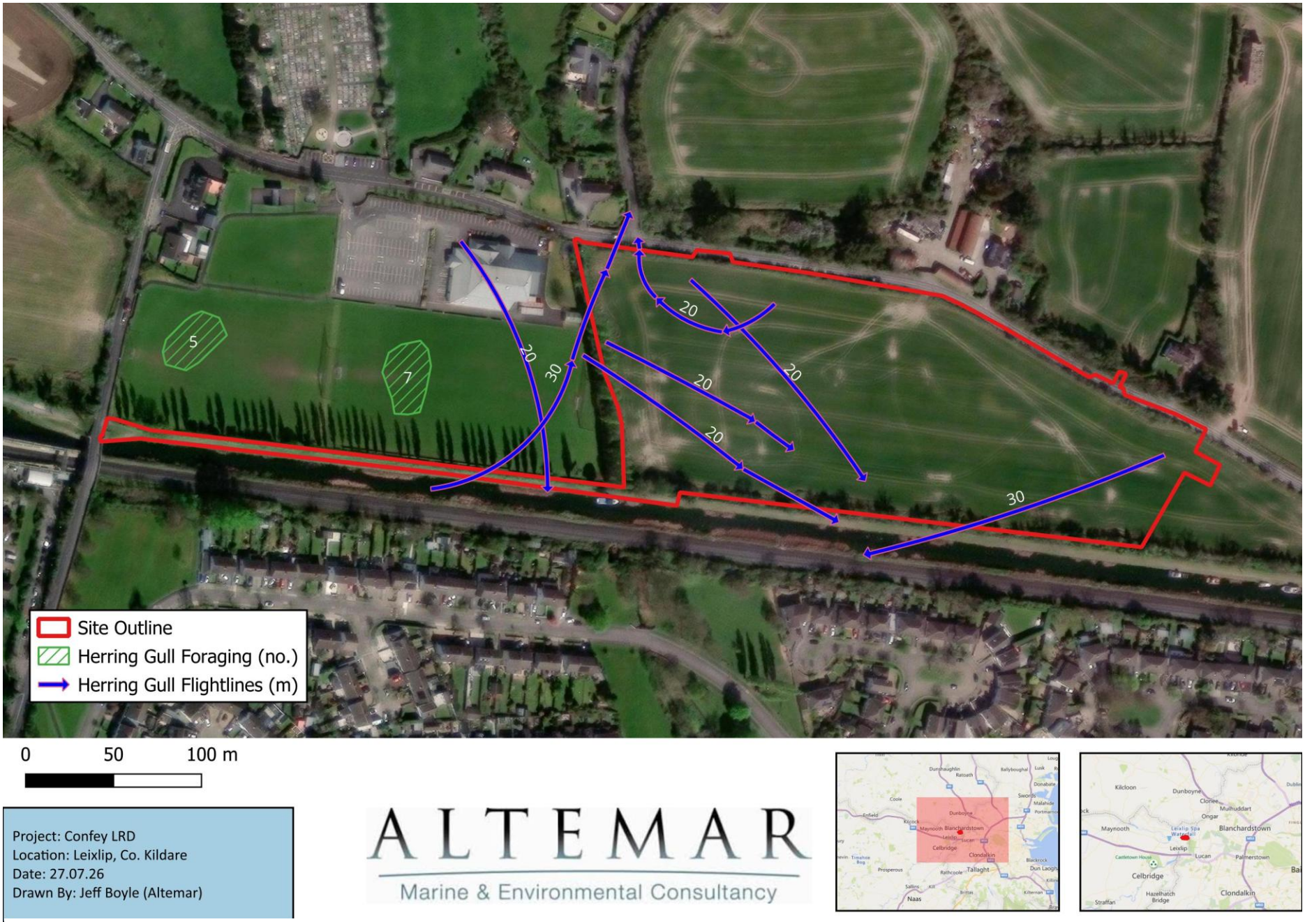


Figure 20. *Herring gull flightlines and observations*

Figure 21. *Meadow pipit foraging*

Figure 22. *Mute swan flightlines and observations*

Figure 23. *Moorhen observations*

Figure 24. *Mallard observations*

Summary

A total of 28 species were recorded within, above and immediately adjacent to the survey area across 10 surveys over the 2024/2025 & and 2025/2026 seasons. 18 green, 9 amber and 1 red bird species of conservation concern in Ireland (BoCCI) were recorded either within, over and immediately adjacent to the survey area (Table 4). It is important to note that no significant numbers of QI of any SPA were noted during the surveys. However, one red and several amber listed species were noted on site.

The proposed development on the subject lands will reduce available foraging areas for wintering birds, in particular for meadow pipits, herring gulls and black-headed gulls. However, gull species were not using the site and were only observed in flight. Impacts on wintering bird species moving between foraging and roosting sites are not likely in the absence of mitigation measures. The proposed development is likely to reduce total foraging area within the survey area for red and amber listed species recorded during surveys. However, the reduction of foraging area for these species is not considered significant due to the scale of the development in the context of the surrounding areas and habitats available, and as the proposed site layout and landscape plan will continue to facilitate foraging by these species within the site.

Out of an abundance of caution, mitigation measures are recommended which are outlined in Table 7 of this EcIA. Following the full implementation of mitigation measures, no significant impacts on wintering bird species, particularly Qualifying Interests of nearby SPAs, are predicted. It would be expected that impacts on Red and amber listed species would be on the site only with a potential reduction in foraging on site. It should be noted that this site is within a rural landscape where numerous similar habitats are present in neighbouring fields and the displacement would be on a site level rather than a local level.

Historic Records of Biodiversity

The National Biodiversity Data Centre's online viewer was consulted in order to determine the extent of biodiversity and/or species of interest in the area. First, an assessment of the site specific area was carried out and it recorded no species of interest in the site area. Following this 1km^2 grid (O0037) was assessed. Tables 6 provides a list of all species recorded in both grid areas that possess a specific designation, such as Invasive Species or Protected Species.

Table 6. Recorded species and associated designations (Grid ref. O0037)

Species name	Date of last record	Title of dataset	Designation
Cormorant *(Phalacrocorax carbo)*	21/08/2025	Birds of Ireland	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
House Martin *(Delichon urbicum)*	21/08/2025	Birds of Ireland	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Mute Swan *(Cygnus olor)*	27/03/2021	Birds of Ireland	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Grey Squirrel *(Sciurus carolinensis)*	07/10/2015		Invasive Species: EU Invasive Alien Species Regulation No. 1143/2014 || Invasive Species: Regulation S.I. 477/2011 (Ireland) || Invasive Species: High Risk Invasive Species (2013 Report) || Invasive Species: Regulation S.I. 374/2024 (Ireland)

Potential Impacts

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

Potential Construction Impacts

The overall development of the site is likely to have direct negative impacts upon the existing habitats, fauna and flora. Direct negative effects will be manifested in terms of the removal of the site's internal habitats. The removal of these habitats will result in a loss of species of low biodiversity importance.

Designated Conservation sites within 15km

The proposed development is not within a designated conservation site. The nearest designated conservation site is the Royal Canal pNHA, located along the southern site boundary. The nearest Natura 2000 sites is Rye Water Valley/Carton SAC (c. 600m) southwest of proposed development site.

The Oranstown Stream (Silleachain Stream), which runs along the western site boundary, will receive surface water from the proposed development site. This stream flows southwards before discharging into the River Liffey approximately 400m downstream of the Rye Water Valley/Carton SAC. Given the topographical flow direction, there is no direct or indirect hydrological pathway from the proposed development to the Rye Water Valley/Carton SAC. In relation to hydrogeological pathways, as outlined in the Hydrological & Hydrogeological Risk Assessment prepared by AWN '*A hydrogeological connection may exist to The Rye Water Valley / Carton SAC through the underlying "Locally Important Aquifer" (LI), due to the flow path distances (1km) typical within the Dublin GWB exceeding the distance of separation (c.880m) from the proposed development site, albeit via a moderate pathway distance and an underground flow path involving a significant dilution factor (and mixing) within the aquifer / groundwater body (Dublin GWB). The vertical migration to the underlying bedrock is minimised due to the low*

permeability nature of the overburden, which is characteristic of cohesive glacial clays, thereby further negating the potential for a hydrogeological linkage pathway to the sensitive receptors.'

There is a remote indirect hydrological pathway to European sites located within Dublin Bay (namely, South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay & River Tolka Estaury SPA and North Bull Island SPA) via surface water drainage to the River Liffey via the Oranstown/Silleachain Stream during construction and operation. However, given the significant minimum distance from the proposed development site to any European site located within Dublin Bay (18 km, however it is noted that the distance the River Liffey actually flows from the proposed development site to bay, in kilometres, is significantly longer), settlement and mixing within the surface water network, dilution and mixing effects within the River Liffey, flocculation within the estuarine environment of the River Liffey and marine environment, and it is considered that no significant effects are foreseen.

Foul water from the site will discharge to the existing foul sewer network located to the south of the subject site. Wastewater will ultimately be treated along this public network and will not significantly impact on any European Site.

Lighting and increased human presence during construction has the potential to impact on the Royal Canal pNHA in the absence of mitigation.

Biodiversity

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

Terrestrial mammalian species

No signs of badgers (*Meles meles)* or otter *(Lutra lutra)* were noted onsite. Foxes (*Vulpes vulpes*) have been seen onsite as well as various rodent species. Otter *(Lutra lutra)* was noted swimming along the Royal Canal (approximately 800m west of the site boundary). No otter holts were noted within 150m radius of the proposed development.

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

Flora

No plant species protected or restricted under Irish or international legislation were noted on site. The majority of trees and hedgerows on site are to be retained. Tree protection measures will need to be in place.

Potential Impacts in the absence of mitigation: Low adverse / site / Negative Impact / Not Significant / Short term.

Bat Fauna

A total of three bat species were recorded using the site and the adjacent Royal Canal: Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), and soprano pipistrelle (*Pipistrellus pygmaeus*). As outlined in the Bat Fauna Impact Assessment (Appendix I), '*Given the limited extent of habitat removal and the retention of the majority of existing linear features across the site, any displacement of bats utilising the site is expected to be minimal. The site is currently characterised by low illumination, with minimal light spill from surrounding areas. Lighting during construction has the potential to impact on foraging of bats on site and the adjacent Royal Canal in the absence of mitigation. Mitigation measures are required to minimize light spill and protect retained bat foraging areas, particularly along the southern site boundary adjacent to the Royal Canal. There is the potential for habitat loss, habitat fragmentation, and disturbance impacts (human activity, lighting, & noise pollution) on the bat species recorded during the construction phase of development.*'

Potential impacts in the absence of mitigation*: negative, low adverse, short term, not significant, local and likely effect on bat fauna during construction.* Mitigation is required.

Aquatic Biodiversity

The Oranstown Stream (Silleachain Stream), is located along the western boundary and is connected by the drainage ditch along the southern site boundary. Standard mitigation measures will be implemented to ensure runoff during site clearance, re-profiling, the construction and operation of project elements could impact on the Oranstown Stream and surface water network, with water quality within these watercourses with potential

downstream impacts aquatic ecology within this watercourse network and the downstream watercourse (River Liffey). Measures relating to dust control will be implemented to protect the adjacent Royal Canal.

The contamination of watercourses and surfaces water networks could potentially impact negatively on the biodiversity within the watercourses and the downstream marine environment.
Potential impacts in the absence of mitigation*:* negative; moderate adverse, short term, not significant. Mitigation is required.

Bird Fauna

Localised disturbance due to noise on site is foreseen. Site clearance will result in a reduction in the vegetation cover including scrub, small areas of hedgerows, and removal of the internal habitats will reduce nesting habitat for ground nesting birds. Clearance works on site during bird nesting season could impact on bird population within the proposed development site. Dust from reprofiling works could potentially impact on vegetation and nesting birds on site within the remaining hedgerows and treelines.

Potential Operational Impacts

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

Appropriate measures will be taken to prevent light spill, contaminated surface water run-off and dust entering into adjacent habitats including the Oranstown Stream and Royal Canal. The new drainage networks will have to comply with SUDS and County Council requirements and, as a result, would have negligible impact on habitats and species surrounding proposed development site.

Designated Conservation sites within 15km

It is proposed to discharge surface water from the site to the Oranstown/Silleachain Stream located along the western boundary. This stream flows a short distance south where it outfalls to the River Liffey. Drainage ditches on site discharge to the Oranstown/Silleachain Stream . There is no direct or indirect hydrological pathway to the nearby Rye Water Carton/Valley SAC. There is a weak indirect hydrological pathway to European Sites located in Dublin Bay. However, given the significant minimum distance from the proposed development site to any European site located within Dublin Bay (18 km, however it is noted that the distance the River Liffey actually flows from the proposed development site to bay, in kilometres, is significantly longer), settlement and mixing within the surface water network, dilution and mixing effects within the River Liffey, flocculation within the estuarine environment of the River Liffey and marine environment, and it is considered that no significant effects are foreseen.

Foul water from the site will discharge to the existing foul sewer network located to the south of the subject site. Wastewater will ultimately be treated along this public network and will not significantly impact on any European Site. The new drainage networks will have to comply with SUDS and County Council requirements.

During operation, artificial lighting has the potential to affect biodiversity within and adjacent to the Royal Canal pNHA. However, the proposed lighting design incorporates mitigation measures to avoid these effects. Light spill will be restricted to the main development area, while lighting adjacent to the Royal Canal pNHA has been designed to prevent illumination of the pNHA. In addition, luminaires with a maximum correlated colour temperature of 2700K will be used to minimise potential disturbance to light-sensitive species.

Potential Impacts in the absence of mitigation: Minor Adverse / Local / Negative Impact / Not significant / Long-term. In the absence of mitigation, no significant impacts are likely. Mitigation is required in relation light spill into the Royal Canal pNHA.

Biodiversity

Biodiversity value of the site will improve as landscaping matures.

Terrestrial mammalian species

No badger setts or otter holts were noted on or proximate to the site. Lighting from the development could potentially impact on mammals that utilise the Royal Canal

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

Flora

No protected or invasive flora species were noted on site.

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

Bat Fauna

A total of three bat species were recorded using the site: Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), and soprano pipistrelle (*Pipistrellus pygmaeus*). As outlined in the Bat Fauna Impact Assessment (Appendix I) in relation to potential impacts during the operational phase of the development, '*Given the limited extent of habitat removal and the retention of the majority of existing linear features across the site, any displacement of bats utilising the site is expected to be minimal. There is potential for bat foraging to be impacted by the artificial lighting on site. The proposed lighting strategy has been discussed and modified to reduce the potential impact of the development on bats. This has included only lighting areas where required and not lighting public open spaces unless necessary. Warm white LED lighting (2700K) with full cut-off optics is proposed to minimise impacts on bat foraging and reduce light spill towards treelines and hedgerow boundaries. The lighting strategy has been designed to maintain dark riparian corridors across the site. Compensatory planting has been incorporated into the landscape strategy.*'

Impacts in the absence of mitigation: negative, low adverse, local, permanent, not significant. Mitigation is required including consultation with the project ecologist in relation to lighting and a post lighting inspection by the ecologist.

Aquatic Biodiversity

Petrochemical runoff from the site could potentially negatively directly or indirectly impact the aquatic ecology. Runoff from the development and roads will have to comply with County Council drainage requirements and will require petrochemical interception and which will be attenuated and discharged at greenfield rates to the surface water network. The drainage connections and the installations in relation to petrochemical interception should be inspected by the project ecologist.

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

Bird Fauna

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

Potential Impacts in the absence of mitigation: Minor adverse / site / Negative Impact / Not significant / short term

Mitigation Measures & Monitoring

Standard construction and operational controls will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the Zone of Influence (ZoI) including the downstream biodiversity, and local biodiversity within / proximate to the subject site are outlined in Table 7.

Table 7. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation Measures to Prevent Impacts on sensitive receptors
Local Biodiversity Surface water drainage network Oranstown/Silleachain Stream River Liffey Royal Canal pNHA	• Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream impacts Negative impacts on the aquatic environment, aquatic species	An Outline Construction Management Plan has been prepared by Wave Dynamics and outlines the following measures that will be implemented during construction phase: ***'20m Exclusion Zone*** *Pre-construction site clearance and construction works have the potential to indirectly impact on Silleachain Stream and existing drainage ditches, causing deterioration of water quality flowing into the designated sites located downstream of the proposed project.* *A 20 m buffer will be maintained between all construction works and existing waterbodies in order to avoid and / or minimise adverse effects from pollution and runoff and to ensure the project will not have adverse effects on the integrity of any designated sites located downstream of the proposed project.* *The 20m distance exclusion zone or buffer from the watercourse must be maintained for the duration of all construction works.* *• NO material shall be stored in the exclusion zone.* *• There shall be no cement, concrete, grout, fuels/ oil/ hydrocarbons stored in the exclusion zone.* *Pollution prevention measures detailed below will be incorporated during the construction phase to prevent any possibility of sediments and other pollutants entering any nearby watercourses or surface drainage systems. The following measures must be implemented;* *Dedicate specific areas for oil storage and refuelling, separated a minimum of 20m from any adjacent waterbodies and comply with legislation, including providing bunds sized to contain 110% of fuel storage capacity.* *✓The contractor will use fill point drip trays, bunded pallets and secondary containment units.* *✓The site will be enclosed and secured and fuel storage areas will be secondarily secured.* *✓All fuel, oil and chemical deliveries will be supervised by a responsible person who will be trained to deal with any spillage to prevent a pollution problem occurring.* *✓Storage of COSHH items is not permitted and only brought to site as required, fuel is provided by client from an existing bunded static supply, where small portable machines are to be fuelled up a drip tray is used.* *Protection of the Water Environment* *Oil Storage and Refuelling* *The following pollution prevention measures will be incorporated during the construction phase to ensure sediments and other pollutants do not enter watercourses or surface water drains. The implementation of these water pollution mitigation measures is designed to prevent any adverse effects on watercourses or downstream designated sites. The following measures are mandatory:* *✓Designated Areas: Specific areas for oil storage and refuelling must be established.* *✓Containment: Bunds must be sized to contain 110% of the fuel storage capacity. The contractor will utilise fill-point drip trays, bunded pallets, and secondary containment units.* *✓Security: The site will be secured, and fuel storage areas will have secondary security measures.*

Table 7. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation Measures to Prevent Impacts on sensitive receptors
		✓Supervision: A trained, responsible person must supervise all fuel, oil, and chemical deliveries and be prepared to manage any spillage. *COSHH Items: Storage of Control of Substances Hazardous to Health (COSHH) items on-site is not permitted; items should only be brought to the site as required. For small, portable machines fuelled from the client's existing static supply, a drip tray must be used.* ***Suspended Sediment / Sedimentation*** *Preventing run-off is the most effective method for controlling sediment pollution in the water environment. The adoption of appropriate sediment controls during construction is essential for regulatory compliance and environmental protection. The Contractor is responsible for implementing and adhering to mitigation measures outlined in this CEMP. Sediment control measures will be consistent with the following guidance documents:* *• GPP 1: Understanding your environmental responsibilities - good environmental practices (October 2020);* *• GPP 2: Above ground oil storage tanks;* *• GPP 5: Works or maintenance in or near water (February 2018); and,* *• GPP 6: Working at construction & demolition sites (Environment Agency, 2012).* *Additional Measures to Limit Water Quality Issues:* *• Stockpile Management: The location of stockpile storage areas will be carefully planned, clearly identified, and selected to minimise material movements, erosion potential, and cross-contamination risk.* *• Exclusion Zones: 20m exclusion zones will be clearly marked using tape and cones to provide a visual reminder to all site personnel of restricted areas.* ***Concrete and Cement Pollution*** *The primary impacts regarding cement and concrete for the Proposed Development are related to the installation of concrete flooring and general building construction works. Mitigation measures to prevent cement contamination of water bodies will be implemented strictly according to the recommendations within this OCEMP. The following actions are mandatory to mitigate potential water quality issues:* *• Washout Facilities: A risk assessment will be performed to determine the optimal, contained location for concrete washout facilities required for plant on site.* *• Mixing Areas: If required, all washout from mixing operations will be undertaken within a contained, impermeable area.* *• Stockpile Location: Stockpile storage areas must not be located within the designated environmental exclusion zone.* *• Exclusion Zone Marking: The 20m exclusion zone shall be clearly marked with tape and cones to provide a visual reminder of restricted areas.* *The implementation of these mitigation measures during construction operations will reduce the potential impact to the receiving water environment to a negligible magnitude, resulting in a minor, temporary environmental effect.* ***Flooding*** *The site is not at risk of flooding from overland pluvial or fluvial flows. The proposed scheme includes extensive*

Table 7. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation Measures to Prevent Impacts on sensitive receptors
		SuDS measures which will reduce surface water discharge and overland flow routes created within the development will ensure there is only limited risk of flooding as a result of a surface water network failure. Surface water from the development will be collected in green roofs areas, permeable paving surfaced areas, infiltration trenches, tree pits, and swales throughout the site. The development design mirrors the existing scenario regarding surface levels and existing overland flow routes will remain generally unchanged. *Sustainable Drainage Systems (SUDs)* *The proposed development includes a number of SuDS measures which are designed to minimise flood risk to the subject site and upstream and downstream properties in accordance with the GDSDS. The surface water discharge for the development is limited to the calculated greenfield runoff rate (QBARRURAL) and the necessary attenuation storage is designed allowing for a 30% climate change factor and a 10% Urban Creep factor. The addition of a green roof to the apartment building, infiltration trenches, tree pits, a conveyance and retention swale and extensive areas of permeable paving areas, water butts, etc. further increases storage throughout the site and also increases the time of entry for discharge into the swale area, thereby further flattening the peak flow curves. Figure 9 illustrates the locations of the infiltration blanket and swale.* ***Ecological Clerk of Works (ECoW)*** *An Ecological Clerk of Works will oversee implementation of the ecological measures during vegetation clearance, excavation and other works with the potential to affect bats, breeding birds or non-volant terrestrial mammals.* *Ecological monitoring will be undertaken at the frequency required by the works programme and the level of ecological risk. Sensitive works will be attended directly where necessary, while routine inspections will be undertaken periodically throughout the Construction Phase. Where monitoring identifies a failure to implement an ecological measure, the affected works will stop where required and corrective action will be completed before works recommence.* *The Ecological Clerk of Works will:* *• review the final construction programme, temporary lighting design and relevant method statements;* *• inspect areas of vegetation, debris and stored materials before mammal-sensitive clearance;* *• inspect open excavations, trenches and pipework where mammals could become trapped;* *• verify that ecological exclusion zones and stop-work procedures are observed;* *• monitor temporary construction lighting where it could affect bat-roost features or retained habitat;* *• record ecological incidents, non-compliance and corrective actions; and* *• confirm that any previously unidentified protected species or active nests are appropriately managed.* ***Construction Noise General Mitigation*** *British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites outlines a range of measures that can be used to reduce the impact of construction phase noise. These measures will be applied by the contractor where appropriate during the construction phase of the Proposed Development. Examples of some of the best practice measures included in BS5228 are listed below:* *✓ensuring that mechanical plant and equipment used for the purpose of the works are fitted with effective exhaust silencers and are maintained in good working order;* *✓careful selection of quiet plant and machinery to undertake the required work where available;* *✓all major compressors will be 'sound reduced' models fitted with properly lined and sealed acoustic*

Table 7. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation Measures to Prevent Impacts on sensitive receptors
		covers which will be kept closed whenever the machines are in use; *✓any ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers;* *✓machines in intermittent use will be shut down in the intervening periods between work;* *✓ancillary plant such as generators, compressors and pumps will be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines will be placed away from sensitive locations, in order to cause minimum noise disturbance. Where possible, in potentially sensitive areas, acoustic barriers of enclosures will be utilised around noisy plant and equipment.* *✓Handling of all materials will take place in a manner which minimises noise emissions;* *✓Audible warning systems will be switched to the minimum setting required by the Health & Safety Executive;* *In order to minimise the likelihood of complaints, Kildare County Council and affected residents must be kept informed of the works to be carried out and of any proposals for work outside normal hours.* ***Air Quality Management*** *Construction activities associated with the Proposed Development may generate dust and exhaust emissions. The following mitigation measures are mandatory during the construction phase to control fugitive dust and emissions to the atmosphere.* *Communications and Awareness* *The following communication protocols will be implemented before works commence on site:* *✓Accountability: Display the name and contact details of the person(s) accountable for environmental issues (e.g., Project Manager or Site Manager) on the site boundary.* *✓Training: Provide appropriate training to all staff to ensure awareness and understanding of dust and environmental control measures.* *✓Head Office Contact: Display head or regional office contact information on site signage.* ***Site Management*** *The Principal Contractor must implement the following site management measures as required throughout the works:* *✓Complaints Handling: Record all dust and air quality complaints, identify the cause(s), take timely measures to reduce emissions, and document all actions taken.* *✓Reporting: Make the complaints record available to relevant regulatory authorities upon request* *✓General Controls:* *o Avoid site runoff of water or mud.* *o Use covered skips for waste materials.* *o Prohibition: No bonfires or burning of waste materials on site is permitted* ***Earthworks and Excavation*** *Earthworks, including foundations, trenching, and stockpiling, are planned as part of the scheme. The following*

Table 7. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation Measures to Prevent Impacts on sensitive receptors
		measures will be implemented: *✓Material Handling: Minimise drop heights when loading or handling equipment/materials. Use fine water sprays on handling equipment where appropriate.* *✓Dampening: Utilise dampening methods (e.g., water suppression) where necessary to control dust generation.* *Construction Activities* *The appointed contractor must implement the following measures during the construction period:* *✓Bulk Materials: Ensure bulk cement and other fine powder materials are delivered in enclosed containers.* *✓Smaller Supplies: For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust release.* *✓Cutting/Grinding: Only use cutting, grinding, or sawing equipment that is fitted with, or used in conjunction with, suitable dust suppression techniques (e.g., water sprays or local exhaust ventilation systems).* *✓Cleaning: Hardstand areas must be cleaned regularly using personnel or mechanical road sweepers fitted with water suppression systems.* ***Vehicle Movement and Emissions*** *Vehicle movement, plant use, and emissions will be managed throughout the project:* ***Dust Monitoring*** *✓Transportation: Transport aggregates and fine materials in enclosed or sheeted vehicles.* *✓Speed Limit: The main contractor will implement and enforce an appropriate onsite speed limit (e.g., 15 km/h).* *✓Engine Idling: Ensure all vehicles switch off engines when stationary and not in immediate use—no idling vehicles.* *✓Plant Maintenance: All plant utilised must be regularly inspected and maintained to comply with manufacturer limits.* *✓Visual Monitoring: Conduct visual monitoring of plant to ensure no black smoke is emitted other than during ignition.* *✓Exhaust Direction: Vehicle exhausts must be directed away from the ground and surfaces (preferably upwards) to avoid re-suspension of road dust.* **Operational Phase Mitigation** A project ecologist will be appointed to oversee completion of all landscape and drainage works.
Birds (National Protection)	• Removal nesting habitat.	• "Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent.

Table 7. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation Measures to Prevent Impacts on sensitive receptors
	• Removal foraging habitat. • Destruction and/or disturbance to nests (injury/death).	• Additional 10 no. Nest boxes placed on site to compensate for resource loss in consultation with project ecologist. • Planting will provide suitable cover for nesting birds and encourage insect diversity that would sustain birds. • During construction light falling upon any areas of benefit to birds such will not exceed 3 lux to ensure that resting and nesting species are not unnecessarily disrupted. All lighting during construction phase will be to the satisfaction of the project ecologist, will be point inwards to the site and will be downward facing so as not to Retained trees will be protected throughout the works. • During construction phase, due to the sites proximity to the Royal Canal, procedures should be taken to ensure minimal disturbance on bird species using the canal and its banks.
Bats (International Protection)	• Removal roosting/foraging habitat. • Lighting Impacts	• Lighting at all stages should be done sensitively on site with no direct lighting of treelines or hedgerows or the Royal Canal. • Post Construction assessment/compliance with proposed lighting strategy. • Lighting will comply with Bat lighting Guidance and to the satisfaction of the project ecologist. • A post construction lighting assessment will be carried out and inspected by the project ecologist. • Lighting design will be approved by the project ecologist prior to commencement. • 5 bat boxes will be placed on site in consultation with the project ecologist.
Mammals	• Death/injury • Destruction of resting/breeding places	• A pre-construction inspection will be conducted to ensure that there are no badger setts or otter holts on or proximate to the proposed development site. • Lighting at all stages should be done sensitively on site with no direct lighting of treelines, riparian corridor and Royal Canal.

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

Standard construction and operational mitigation measures are proposed. These would ensure that water entering the surface water drainage network and drainage ditches is clean and uncontaminated. However, early implementation of ecological supervision, prior initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff, dust mitigation, bat, amphibian, mammal and avian mitigation.

With the successful implementation of standard mitigation measures to limit surface water impacts on the watercourses, biodiversity mitigation/supervision, no significant impacts are foreseen from the construction or operation of the proposed project on terrestrial or aquatic ecology. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed development.

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on terrestrial biodiversity, aquatic biodiversity and bats through the application of the standard construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts and prevent silt and pollution entering the pond/watercourse satisfactorily address the potential impacts on downstream biodiversity. An increase in disturbance would be seen on site and mitigation measures will be carried out to ensure that bats continue to forage and breeding birds are maintained on site. No significant adverse impacts on the conservation objectives of European sites are likely in the absence of mitigation measures outlined above.

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

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

Cumulative Impacts

The following is a list of planning application(s) as identified on the Department of Housing, Local Government and Heritage’s ‘National Planning Application Database’ portal (Table 8)[1]:

Table 8. Planning applications proximate to the subject site

Planning Reference	Address	Proposal
315725	Mariavilla, Carton Demesne, Oldcarton, Catherinestown , Kellystown, Ravensdale, Sion and Confey, Co. Kildare.	Upgrades to existing network and provision of new pipeline. A Natura Impact Statement (NIS) was submitted with this application.
211191	Creighton Park , Leixlip , Co. Kildare.	the construction of a 9.5 metre x 10.21 metre by 5 metre high concrete hurling skills wall in a "H" configuration and centred on a 29.9 metre x 10.55 play area. Lighting to be provided by 4 No. spotlights (2 No. directed to each side of centre wall) and mounted on a metal frame affixed to the centre wall at a height of 6.645m above ground level. The application also covers retention permission for removal of a disused modular waste water treatment system and distribution box
2149	367 River Forest , Leixlip , Co.	construction of a two storey kitchen, living room and bedroom extension to rear of house together with a single storey porch and lounge extension

[1] https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de

	Kildare W23 X9X2.	to front as well as attic conversion to storeroom with raised gable wall to facilitate access to same with all ancillary site and drainage works
23184	319 River Forest , Leixlip , Co. Kildare	a new two-bedroom, two storey, semi-detached dwelling in the existing side garden area to include for off street parking for both the existing and proposed dwellings, connections to all services and all associated site development works. Revised by Significant Further Information the changes to the design include a reconfiguration of the rear boundary and increase in ground floor area.
23855	235 River Forest Estate , Leixlip , Co. Kildare	A single storey structure at rear of house site relating to Planning Permission Register Number 23/123, for uses incidental to enjoyment of the dwelling including home office, home art studio, storeroom.
22784	Mariavilla Carton Demesne , Oldcarton Catherinestown Kellystown Ravensdale , Sion and Confey	development at this site in the townlands of Mariavilla, Carton Demesne, Oldcarton, Catherinestown, Kellystown, Ravensdale, Sion and Confey. The development will traverse the administrative areas of both Kildare County Council and Meath County Council. The development within the Kildare County Council administrative area will consist of: (a) Permanent Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) upgrade works, upgrade of the existing chemical dosing system and ancillary works at the Maynooth Wastewater Pumping Station (WWPS) site in the townland of Mariavilla; and, (b) Provision of approximately 7.9km new pipeline (approximately 9.8km total development length within Kildare and Meath) and associated infrastructure (air valves, scour valves, flow meter, ventilation columns etc.) between the Maynooth WWPS and existing Irish Water infrastructure along the R149 in the townland of Confey.
2560058	Confey GAA Club Creighton Park, Leixlip, Co. Kildare	for the construction of a 1913 Sqm enclosed astro turf playing pitch. Lighting to be provided by 4 No 15m high spotlights poles with up to 7 clustered light fittings on each (1 No pole located at each corner of the playing pitch) Along with 2 No ball stop nets erected on each end of the pitch. Pitch to be enclosed with a 3m high mesh fence with ball stop netting over to 6m high. Revised by Significant Further Information which consists of: Willing to erect the lights on columns that are up to 18m high.
FW26A/0017E (FI Requested)	Locations across Fingal in an east to west direction crossing the townlands of Ashtown, Castleknock, Blanchardstown , Carpenterstown , Sheepmoor, Diswellstown, Porterstown, Annfield, Kellystown, Woodlands, Clonsilla, Barberstown, Barnhill and, Passifyoucan	The Electricity Supply Board (ESB) intends to apply for permission for a 10-year approval for development at this site consisting of up to approximately 25.74 kilometres (km) of 38 kilovolts (kV) underground cable at various locations in County Fingal with a total site area of c. 28.78ha. The proposed Coolmine 38 kV Cable Route section runs across the County in an east to west direction from the County boundary within Dublin City Council in the east to the County boundary with Kildare County Council in the west and crosses the townlands of Ashtown, Castleknock, Blanchardstown, Carpenterstown, Sheepmoor, Diswellstown, Porterstown, Annfield, Kellystown, Woodlands, Clonsilla, Barberstown, Barnhill and Passifyoucan. The proposed development consists of the installation of a 25.74 km section of the proposed Coolmine 38 kV Cable Route and all associated site and development works within the administrative area of Fingal County Council (FCC). The proposed Coolmine 38 kV Cable Route section in FCC connects to the approved Granard 38 kV substation (ACP Ref. 314232), existing Coolmine 38 kV substation, approved Carpenterstown 38 kV substation (ACP Ref. 314232) and the approved Hansfield 38 kV substation (ACP Ref. 314232) from east to west. The primary purpose of the proposed underground cables is to provide electrical power to the Dart+ West Railway project as granted under the DART+ West Railway Order (ACP Ref. 314232).

2660044	The site consistig of up to approximately 15.05 kilometres (km) of 38 kilovolts (kV) underground cable (UGC) and all associated site and development works at various locations in County Kildare with a total site area of c. 16.13ha.	a 10-year approval for development at this site consisting of up to approximately 15.05 kilometres (km) of 38 kilovolts (kV) underground cable (UGC) and all associated site and development works at various locations in County Kildare with a total site area of c. 16.13ha .
2660746	Lands within the townlands of Newtown and Confey, Leixlip, Co. Kildare , greenfield lands to the west, the Royal Canal, railway line and Leixlip Confey Train Station to the south, and Cope Bridge to the south-east	for (A) the construction of 272 no. residential units comprising: 101 no. terraced houses (54 no. 3-bed 2 no. storey houses, 28 no. 4-bed 2 storey houses and 19 no. 4-bed 3 no. storey houses); 12 no. own door 1-bed apartment units in an end of terrace (3 storey) arrangement in 4 no. locations throughout the site; 78 no. duplex apartment units (33 no. 2-bed and 45 no. 3-bed units) provided in terraced and end of terrace (3 storey) arrangements in 13 no. locations throughout the site; and provision of a mixed use area comprising 81 no. apartments / duplex apartments units (29 no. 1-bed, 36 no. 2-bed, and 16 no. 3-bed units) in 4 no. blocks (Blocks A1 to A4) ranging from part 3 no. storeys up to part 6 no. storeys in total, including a podium / ground floor level; (B) The provision at ground floor of Blocks A1 to A4 of a childcare facility (c. 500 sq.m GFA) and associated play area, 3 no. commercial units with a total GFA of c. 615 sq.m (for Class 1- Shop, or Class 2- Office / Professional Services, or Class 11- Gym, or Restaurant / Café use, including ancillary takeaway use, or Class 8- Health Centre / Civic, or Cultural Use); a Restaurant / Café unit (c. 358 sq.m GFA), bike stores, bin stores, plant areas, 1 no. ESB substation and associated switch rooms, and car parking; (C) Block A1 (3 no. storeys and part 4 no. storeys over podium / ground floor level) includes 33 no. apartments (10 no. 1-bed 19 no. 2-bed, and 4 no. 3-bed units [including apartments over 2 levels]) from first floor to fourth floor level; (D) Block A2 (2 no. storeys over podium / ground floor level) includes 4 no. 3-bed duplex apartment units from first floor to second floor level; (E) Block A3 (4 no. storeys and part 5 no. storeys over podium / ground floor level) includes 36 no. apartments (15 no. 1-bed, 17 no. 2-bed units and 4 no. 3-bed units [including apartments over 2 levels]) from first floor to fifth floor level; (F) Block A4 (3 no. storeys over podium / ground floor level) includes 8 no. duplex apartment units (4 no. 1-bed and 4 no. 3 bed units) from first floor to third floor level; (G) All apartments / duplex apartment units and houses are provided with private amenity space in the form of gardens, balconies, or terraces; (H) The development provides public open space and communal open space to serve the residential units, and c. 1 ha of a linear park to the north of the Royal Canal; (I) Provision of 2 no. vehicular and pedestrian / cyclist accesses from the R149 to the east and the L1015 to the north; and proposed upgrades (horizontal widening and minor vertical road

		alignment) to the R149 to the east and to the L1015 along the northern boundary of the site; (J) The development will provide for a total of 370 no. car parking spaces; a total of 412 no. bicycle parking spaces; internal roads, pedestrian and cycle paths; and the provision of the proposed infrastructure up to the application site boundary to facilitate future connections to adjoining lands; (K) Provision of foul, watermain and surface water drainage, including attenuation system and upgrade works to the existing watermain along the R149; 3 no. ESB substations in total; public lighting; landscaping and boundary treatment works; PV panels; services; bin and bicycle stores throughout the site; and all associated infrastructure and site works to facilitate the development.

The proposed development has been considered in combination with other existing, permitted and proposed developments within the Leixlip Wastewater Treatment Plant (WWTP) catchment. Uisce Éireann's April 2026 Wastewater Treatment Capacity Register identifies the Leixlip WWTP as having 'Green' (available) treatment capacity[2], indicating that sufficient treatment capacity is currently available to accommodate additional development within the catchment. Furthermore, Uisce Éireann is progressing the Growth and Development Programme – Maynooth Transfer Pipeline Project, with completion anticipated in 2027, to increase wastewater network capacity and facilitate planned residential and commercial growth across the wider Leixlip, Maynooth and Celbridge catchment. These strategic infrastructure upgrades have been designed to support forecast development within the service area and reduce the potential for cumulative pressures on the wastewater network. Accordingly, subject to a connection agreement from Uisce Éireann and the availability of capacity within the local sewer network, the proposed development will not result in significant cumulative effects on any European site arising from wastewater collection, treatment or discharge.

In relation to **Planning Reference 2660074[3],** a Natura Impact Statement was prepared by AECOM and concluded the following: ''*Noise and visual disturbance to SCI light-bellied brent goose of the South Dublin & River Tolka Estuary SPA and North Bull Island SPA, and water quality/hydrology impacts to QI habitats and species of Rye Water Valley/Carton SAC were the impact pathways screened in for the NIS stage of AA. This NIS showed that in the absence of mitigation, adverse effects on the integrity of these European sites cannot be excluded. Various mitigation measures are considered necessary to protect the integrity of these European sites.*

These measures include scheduling construction works within the 300 m of visual and noise disturbance zone surrounding functionally-linked feeding areas of light-bellied brent geese to be undertaken outside of the winter months (October to April). Furthermore, several industry-standard and project-specific measures to protect local watercourses and downstream habitats from sedimentation and water pollution are identified in the accompanying CEMP. Importantly, this includes various measures specifically addressing HDD within the Rye Water Valley/Carton SAC. These comprise the preparation of a Hydraulic Fracture Risk Assessment, continuous monitoring of flows within the borehole and a Frac-Out Contingency Plan.

Provided the above listed mitigation measures are implemented, it is considered that the Proposed Works will not result in adverse effects on the integrity of any European site, either alone or incombination with other plans or projects.''

The proposed project is within a greenfield site, zoned in the Kildare County Development Plan 2023-2029 and the Leixlip Local Area Plan 2020-2023 (As extended and as amended) for new residential and mixed-use development, bordered largely by agricultural lands with sporadic developments in the area. Most of the applications outlined above relate to small scale projects with temporary/short term construction phases, and

[2] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/kildare

[3] https://www.eplanning.ie/KildareCC/AppFileRefDetails/2660074/0

relating to the alterations of existing structures, or minor public infrastructural improvements. Any larger-scale developments in the wider area are subject to separate planning processes and are not foreseen to have significant in-combination effects with the proposed project, as the projects will be designed to ensure, and will not be consented unless, there are no likely significant effects on any European sites.

It is considered that cumulative impacts with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on Natura 2000 sites will be seen as a result of the proposed development alone or combination with other projects. **No projects in the vicinity of the proposed development would be seen to have a likely significant cumulative impact on Natura 2000 sites.**

Residual Impacts and Conclusion

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

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Appendix I. Bat Fauna Impact Assessment for a Proposed Residential Development on Lands at Confey, Leixlip, Co. Kildare.

27th July 2026

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Leixlip and Newbridge SPV Limited.

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	Leixlip and Newbridge SPV Limited.		
Project	Bat fauna impact assessment for a Proposed Residential Development on Lands at Confey, Leixlip, Co. Kildare.		
Report	Bat Fauna Impact Assessment		
Date	27th July 2026		
Version	Author	Reviewed	Date
Planning	Bryan Deegan	Gayle O'Farrell	27th July 2026

SUMMARY

Structure:	The proposed development area consists mainly of arable grassland, with patches of scrub, treelines and hedgerows. The Royal Canal is immediately to the south of the site and consists of disturbed ground.
Location:	Confey, Leixlip, Co. Kildare.
Bat species present:	Soprano Pipistrelle (*Pipistrellus pygmaeus*), Common Pipistrelle *(Pipistrellus pipistrellus sensu lato),* and Lesser Noctule *(Nyctalus leisleri)* bat activity was recorded onsite during detector surveys by visual observation and using an *Echo meter touch 2 Pro* handheld detector.
Proposed work:	Proposed Residential Development at Confey, Co. Kildare.
Impact on bats:	The proposed development has the potential to impact bats through minor habitat loss, disturbance and lighting effects. The proposed development will result in limited vegetation removal, with the majority of existing linear features retained to continue to provide suitable bat foraging and commuting habitat. Construction activities, including temporary lighting, noise and human disturbance, have the potential to affect bat foraging activity, particularly adjacent to the Royal Canal, and mitigation measures will be implemented to minimise these effects. During operation, the lighting strategy has been designed to minimise impacts on bats through the use of warm white LED lighting (2700K) with full cut-off optics, restricting illumination to required areas, reducing light spill onto retained habitats and maintaining dark riparian corridors. Compensatory planting proposed within the landscape strategy will further enhance habitat connectivity for bats.
Survey by:	Kalvin Townsend-Smyth, Jeff Boyle, Luke Dodieber
Survey dates:	11th September 2025, 7th July 2026 & 20th July 2026

Competency of Assessor

Bryan Deegan MSc, BSc (MCIEEM)

This report has been prepared by Bryan Deegan MSc, BSc (MCIEEM). Bryan has over 31 years of experience providing ecological consultancy services in Ireland. He has extensive experience in carrying out a wide range of bat surveys including dusk emergence, dawn re-entry and static detector surveys. He also has extensive experience reducing the potential impact of projects that involve external lighting on Bats. Bryan trained with Conor Kelleher author of the Bat Mitigation Guidelines for Ireland (Kelleher and Marnell (2022)) and Bryan is currently providing bat ecology (impact assessment and enhancement) services to Dun Laoghaire Rathdown County Council primarily on the Shanganagh Park Masterplan. The desk and field surveys were carried out having regard to the guidance: Bat Surveys for Professional Ecologists – Good Practice Guidelines 3rd Edition (Collins, J. (Ed.) 2016) and Marnell, Kelleher and Mullen (2022), Bat Mitigation Guidelines for Ireland V2 (which update and replace the Bat Mitigation Guidelines for Ireland published in 2006).

Jeff Boyle (BSc Environmental Management)

Jeff Boyle (BSc (Hons.) Environmental Management) is skilled in bat detection through static detector surveys, dusk emergence, and down re-entry surveys. He is also skilled in habitat assessment and has undertaken flora/invasive species surveys and breeding/wintering bird surveys to produce numerous ecological assessments on a range of residential, industrial and commercial projects.

Kalvin Townsend-Smyth (BSc (Hons.) Wildlife Biology, MSc Biodiversity and Conservation)
Kalvin is an experienced ecologist with over six years' in ecological consultancy, during which he has gained extensive and varied field experience. He has undertaken dedicated species and habitat surveys for a range of developments across the country, including breeding and wintering birds, terrestrial mammals, flora and invasive species, bat roost suitability inspections, and bat detector surveys (activity, emergence and re-entry) to inform ecological assessments.

Luke Dodebier (BSc (Hons.) Wildlife Biology
Luke is a skilled and practical ecologist with experience in habitat restoration and invasive species monitoring and removal. He has expertise in terrestrial ecology, data analysis and environmental monitoring and is adept at delivering high quality data, managing complex projects, and fostering strong client relations
He has worked in New Zealand and Canada and has co-led a specialist bat ecology team and designed large-scale acoustic surveys for wind farm projects. He has also led terrestrial and freshwater habitat surveys, including invasive species management and plant ID and is skilled in GIS mapping and data analysis. He holds Bachelor of Wildlife Biology Degree and is skilled in farm and herd management.

Legislative Context

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

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

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

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

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

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

Description of Proposed Project

The proposed development provides a total of 125 residential units, comprising 81 no. houses, 22 no. duplex units and 22 no. apartments. The housing element consists of a mix of semi-detached and terraced dwellings, including 56 no. 3-bedroom houses and 25 no. 4-bedroom houses, ranging in height from 2 to 3 storeys. The development includes 22 no. duplex units within 11 duplex blocks, comprising 11 no. 2-bedroom and 11 no. 3-bedroom duplex homes, arranged over 3 storeys. The apartment element comprises 22 no. units within a single apartment block of up to 5 storeys in height, consisting of 5 no. 1-bedroom apartments and 17 no. 2-bedroom apartments.

Provision of car, cycle and motorbike parking will be provided throughout the development.

Vehicular, pedestrian, and cyclist access points will be provided from the north of the site via R149, with additional pedestrian and cyclist access provided from the south via the Royal Canal Greenway. The development will also provide landscaping, public and communal open spaces and all associated site development works to facilitate the project. These include boundary treatments, plant and waste management areas, and other service provisions.

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

Landscape

The landscape strategy for the proposed development has been prepared by Murphy and Sheanon Horticulture and Landscape Architects As detailed in the accompanying Landscape Approach:

'ECOLOGICAL STRATEGY

Biodiversity: A desire for greater species diversity has been expressed by Kildare County Council. We have developed a planting schedule that takes cognisance of this. We have also made reference to the All-Ireland Pollinator Plan 2021-2025 and the most up-to-date RHS Plants for Pollinators guidance. We have put forward planting schemes with a range of species and plant types to encourage a diversity of habitats that support a wide range of wildlife. Planting proposals have also been strategically located to provide screening and to create buffer zones where required.

Green Infrastructure: Green Infrastructure refers to an interconnected network of natural and semi-natural elements such as, parks, greenways, wetlands, street trees, bioretention areas, and hedgerows. It enhances biodiversity, mitigates flooding, manages stormwater, improves air quality, and supports climate resilience while also contributing to recreation, well-being, and place-making. The existing site is well connected to local green infrastructure network by way of boundary hedgerows and tree planting. Where possible, these hedgerows and trees will be retained. Where it is not possible to retained these trees and hedgerows, new trees and hedges are proposed. Additionally, the green infrastructure within the site will be enhanced through the proposed street trees planted along roads in bioretention tree pits and additional tree and shrub planting throughout the site.

Sustainable Urban Drainage Systems (SuDS): SuDS are drainage solutions designed to manage stormwater locally by mimicking natural drainage principles and reducing the strain on conventional urban drainage systems. The benefits of including SuDS solutions in new developments include;

- *Managing runoff volumes and flow rates from hard surfaces, reducing the impact of urbanisation on flooding*
- *Protecting and enhance water quality by reducing pollution from runoff*
- *Providing an attractive habitat for wildlife in urban watercourses*

- *Creating more interesting landscapes for play and recreation*
- *Improving air quality*
- *Aiding with carbon reduction and sequestration*

A comprehensive SuDS layout has been developed by Corrigan Hodnett Consulting Engineers. A key feature of the proposed SuDS layout is the inclusion of bioretention tree pits across the site. Tree pits are engineered to treat runoff through filtration and vegetation uptake, enhancing both sustainability and visual quality. These elements not only manage stormwater effectively but also enhance the visual and ecological value of the landscape. Bioretention areas use natural vegetation and engineered soil to filter and treat runoff, reducing pollution and flood risk while contributing to biodiversity and ecological resilience.'

The proposed landscape masterplan is demonstrated in Figure 3.

Figure 1: *Site outline.*

Figure 2: *Site layout plan*

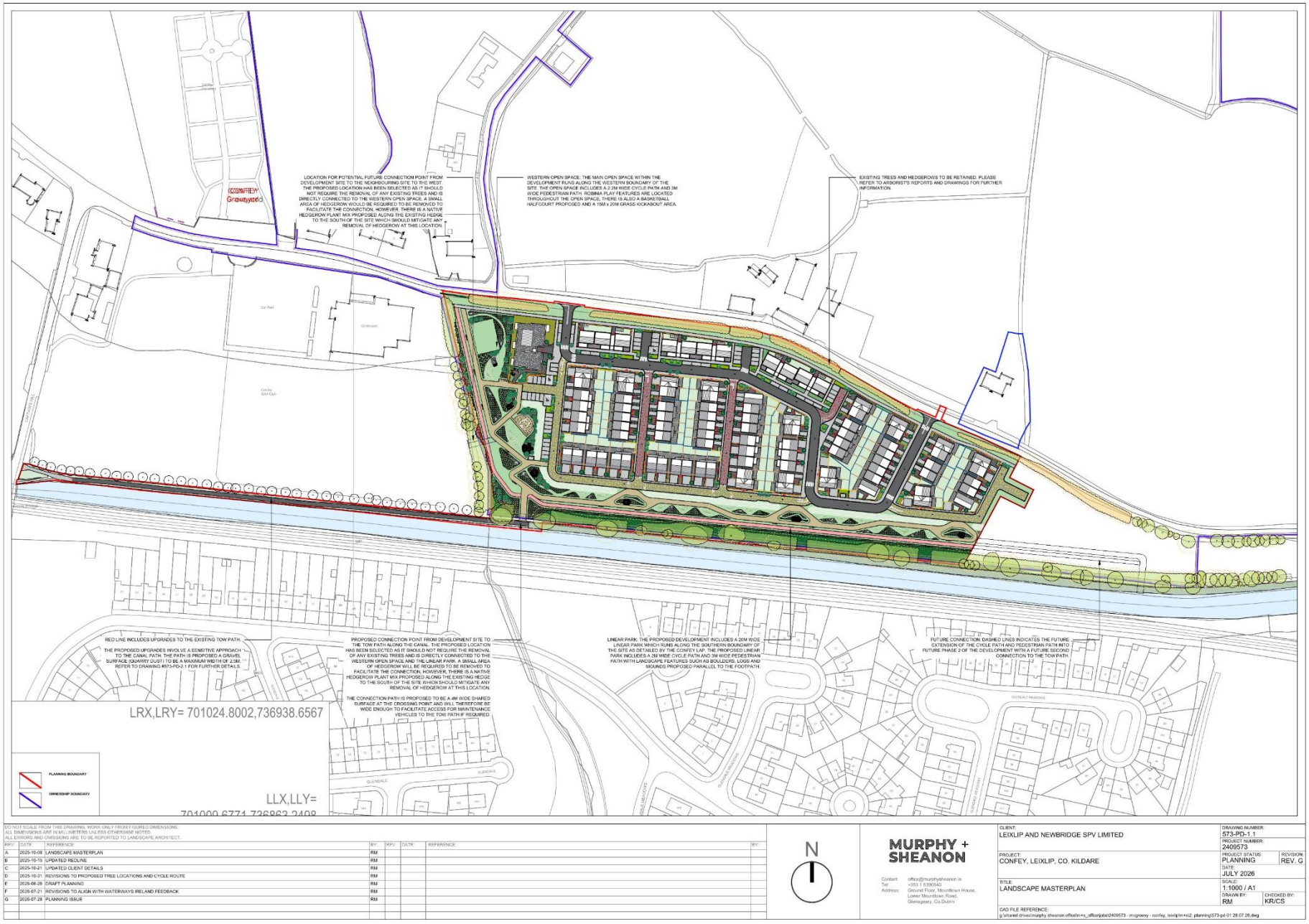

Figure 3. *Landscape Plan*

Arboricultural Assessment

An Arboricultural Impact Assessment has been prepared by Charles McCorkell Arboricultural Consultancy to accompany this planning application. The report summarizes the following in relation to trees on site:

Arboricultural Impacts

Loss of trees – To facilitate two new vehicular entrance points to the site, the partial removal of two sections of the low quality (C Category) northern tree and hedge groups G647 and G650 is required.

6.2 Along the southern boundary, small sections of the moderate quality (B Category) hedgerow H681 and a poor quality (U Category) ash tree T630, are required to be removed to connect surface water runs to the existing ditch and to facilitate a pedestrian access link to the Royal Canal towpath. The majority of trees along this boundary are located on the southern side of the ditch, so the extent of removal is unlikely to be significant.

6.3 The loss of trees and hedgerows required to facilitate the development have been kept to a minimum and will have an insignificant impact on the character and visual appearance of the site within the local surrounding area. The design is to retain the main boundary tree and hedge lines, which will ensure that the local landscape character is maintained, whilst adding an element of maturity to the landscape of the new development.

The tree survey plans, removal plans and protection plans are demonstrated in figures 4-6

Lighting

An external lighting report has been prepared by Sabre. It outlines the following details in relation to proposed outdoor lighting on site:

Luminaires

Luminaire A Data

Supplier	C U Phosco
Type	E950-28-F2A-727-C600-15W
Lamp(s)	727N
Lamp Flux (klm)	2.23
File Name	E950-28-F2A-727-C0600-15W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	623.6, 113.9, 0.3
No. in Project	8

Luminaire B Data

Supplier	C U Phosco
Type	E950-28-P4A-727-C600-15W
Lamp(s)	727N
Lamp Flux (klm)	2.19
File Name	E950-28-P4A-727-C0600-15W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	11

Luminaire C Data

Supplier	C U Phosco
Type	E950-28-R3A-727-C400-10W
Lamp(s)	727N
Lamp Flux (klm)	1.55
File Name	E950-28-R3A-727-C0400-10W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	716.7, 30.5, 0.3
No. in Project	18

Luminaire D Data

Supplier	C U Phosco
Type	E950-28-R3A-727-B2-C0250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.84
File Name	E950-28-R3A-727-B2-C0250-7W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	748.7, 23.8, 0.3
No. in Project	32

Luminaire E Data

Supplier	C U Phosco
Type	E950-28-F2A-727-B2-C0250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.80
File Name	E950-28-F2A-727-B2-C0250-7W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	708.0, 79.8, 0.4
No. in Project	1

Luminaire F Data

Supplier	C U Phosco
Type	E950-28-P4A-727-B2-C0250-7W
Lamp(s)	727N
Lamp Flux (klm)	0.83
File Name	E950-28-P4A-727-B2-C0250-7W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	709.7, 142.6, 0.4
No. in Project	2

Luminaire G Data

Supplier	Urbis Schreder
Type	AXIA 2.1 5165 Integrated lenses Front louvers 8 OSLON SQUARE
Lamp(s)	8 OSLON SQUARE GIANT@350mA WW 727 230V 00-36-648
LampFlux(klm)/Colour	0.80 WW 2700K/70
File Name	AXIA 2.1 5165 8 OSLON SQUARE GIANT 350mA WW 727 10.3W 434252 Integrated l...
Maintenance Factor	0.88
Imax70,80,90(cd/klm)	1353.5, 126.6, 2.8
No. in Project	12

The proposed lighting strategy has been discussed and modified to reduce the potential impact of the development on bats. This has included keeping riparian corridors dark with no light spill onto these habitats. Warm white LED lighting (2700K) with full cut-off optics is proposed to minimise impacts on bat foraging and reduce light spill towards treelines and hedgerow boundaries, in addition to the Royal Canal. The proposed public lighting layout is demonstrated in Figure 7.

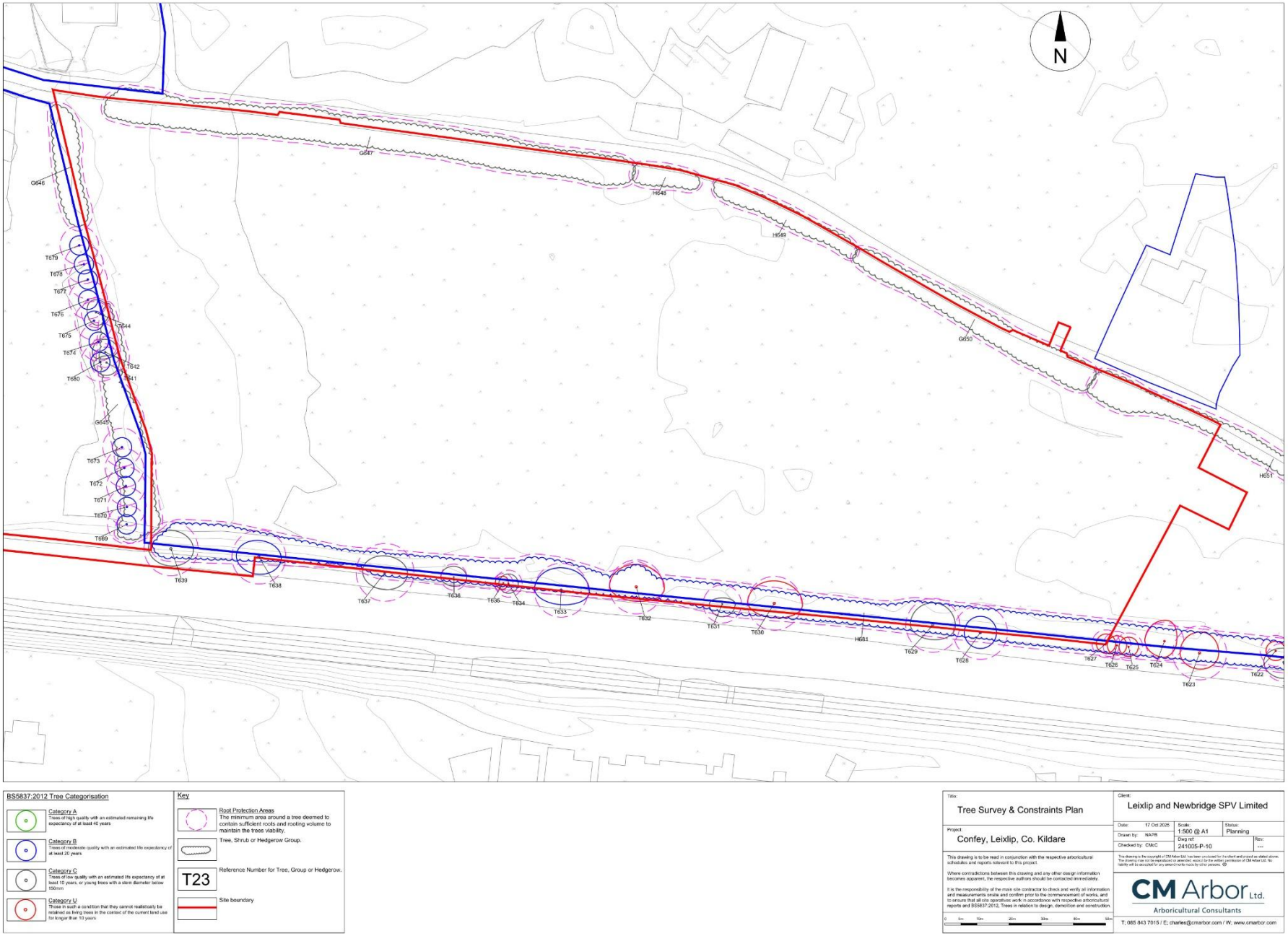

Figure 4. *Tree survey plan*

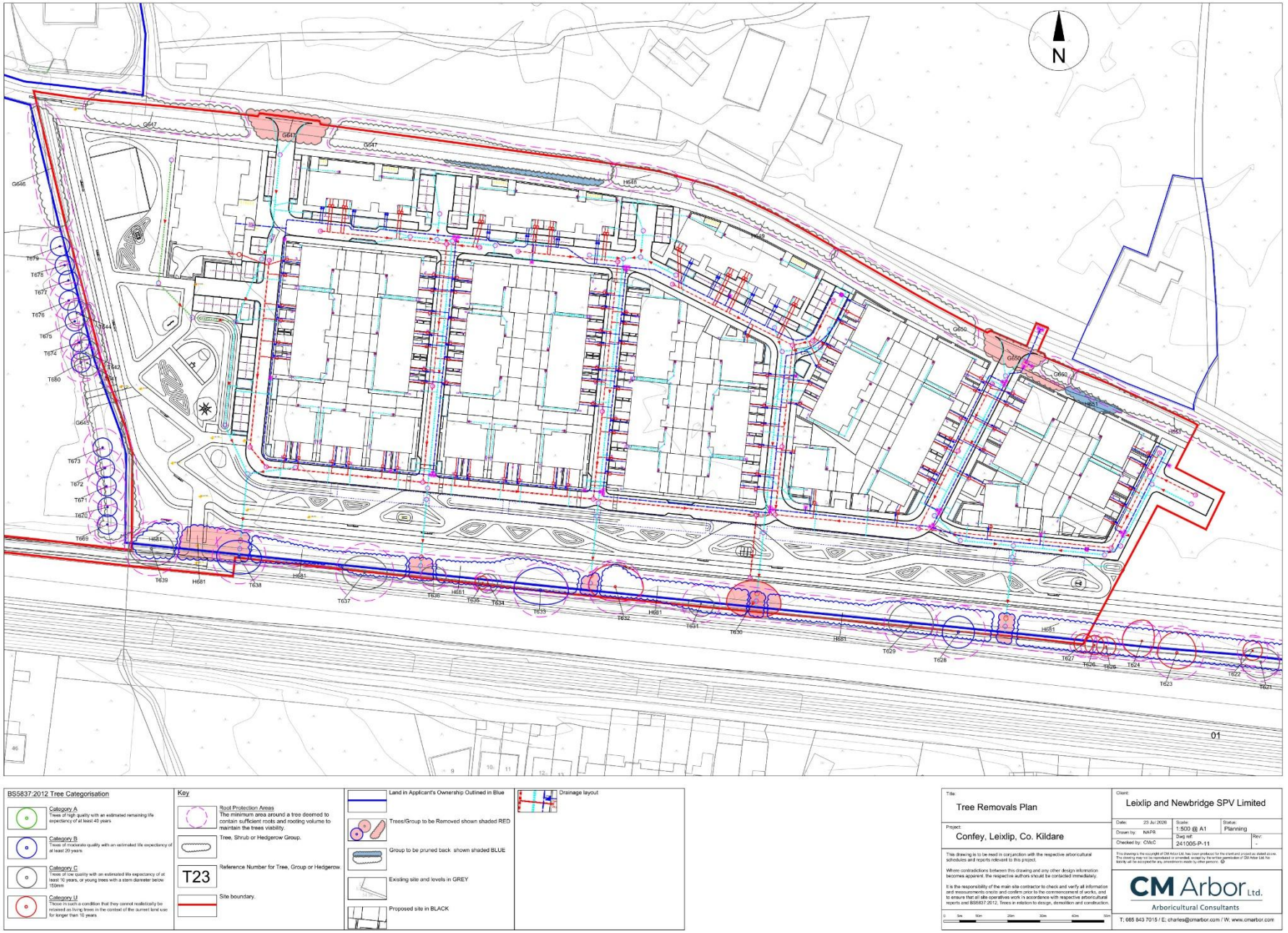

Figure 5. *Tree removals plan*

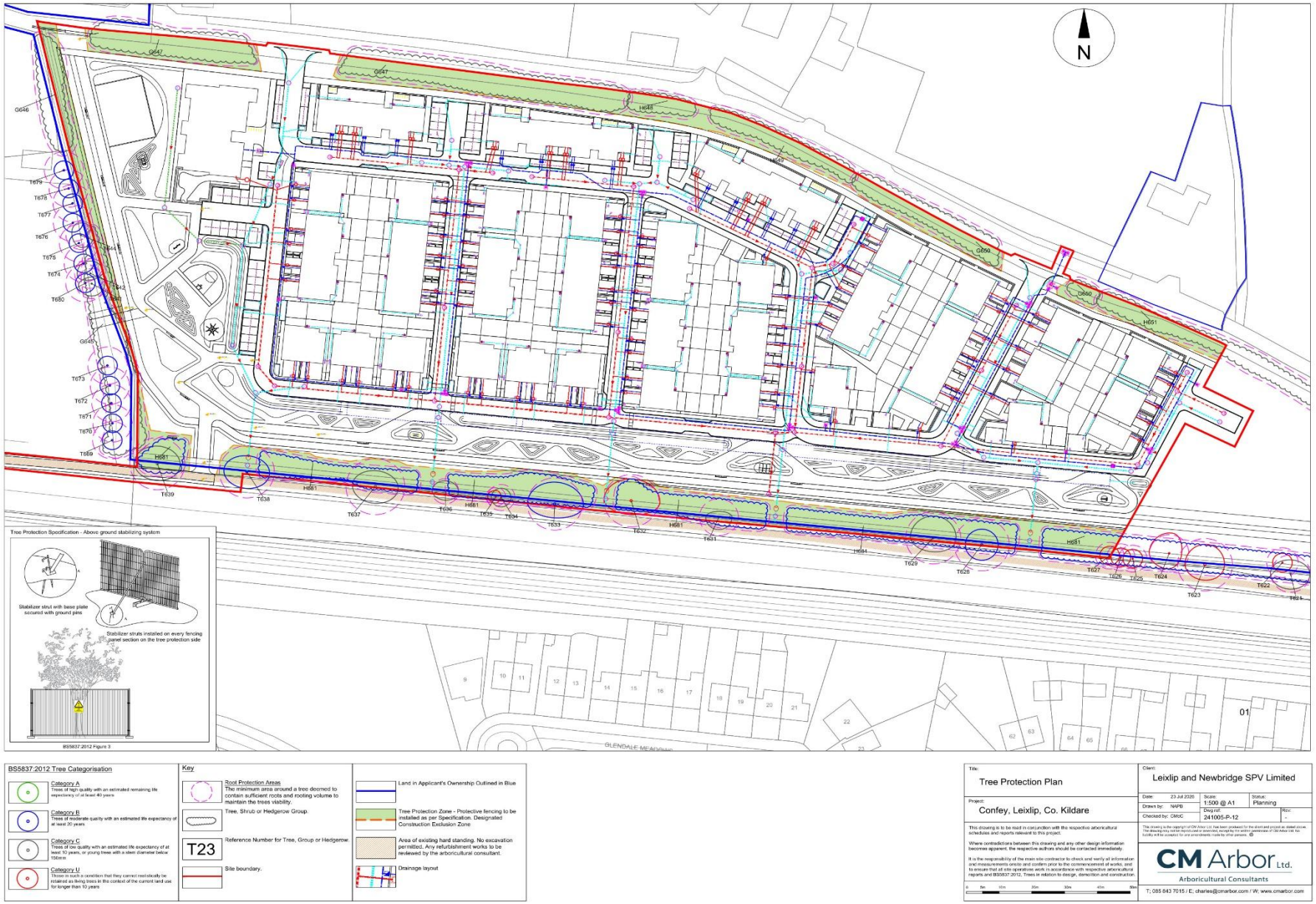

Figure 6. *Tree protection plan*

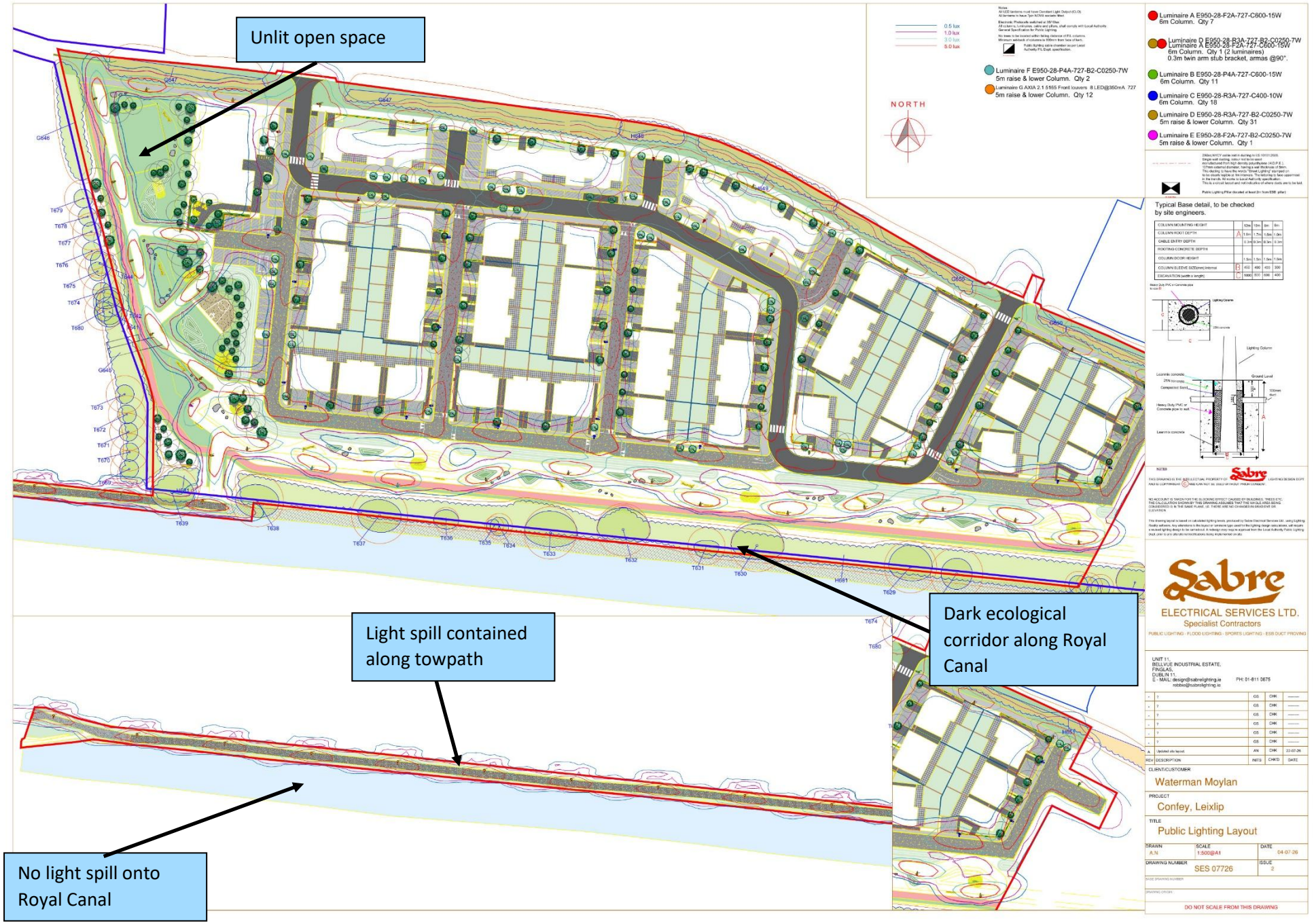

Figure 7. *Public Lighting Layout*

Bat surveys

This report presents the results of handheld emergent and detector surveys carried out on the 11th Septmeber 2025 (Kalvin Townsend Smyth), the 7th July 2026 (Jeff Boyle), and 20th July 2026 (Luke Dodebier).

Survey Methodology

As outlined in Marnell et al. 2022 '*The presence of a large maternity roost can normally be determined on a single visit at any time of year, provided that the entire structure is accessible and that any signs of bats have not been removed by others. However, most roosts are less obvious. A visit during the summer or autumn has the advantage that bats may be seen or heard. Buildings (which for this definition exclude cellars and other underground structures) are rarely used for hibernation alone, so droppings deposited by active bats provide the best clues. Roosts of species which habitually enter roof voids are probably the easiest to detect as the droppings will normally be readily visible. Roosts of crevice-dwelling species may require careful searching and, in some situations, the opening up of otherwise inaccessible areas. If this is not possible, best judgement might have to be used and a precautionary approach adopted. Roosts used by a small number of bats, as opposed to large maternity sites, can be particularly difficult to detect and may require extensive searching backed up by bat detector surveys (including static detectors) or emergence counts.'* In relation to the factors influencing survey results the guidelines outlines the following *'During the winter, bats will move around to find sites that present the optimum environmental conditions for their age, sex and bodyweight and some species will only be found in underground sites when the weather is particularly cold. During the summer, bats may be reluctant to leave their roost during heavy rain or when the temperature is unseasonably low, so exit counts should record the conditions under which they were made. Similarly, there may be times when females with young do not emerge at all or emerge only briefly and return while other bats are still emerging thus confusing the count. Within roosts, bats will move around according to the temperature and may or may not be visible on any particular visit. Bats also react to disturbance, so a survey the day after a disturbance event, may give a misleading picture of roost usage.'*

The survey involved the methodologies outlined in Collins (2016) which included the roost inspection methodologies i.e. external methodology outlined in section 5.2.4.1 and the internal survey outlines in section 5.2.4.2 of the guidelines. In addition, the methodologies for Presence absence surveys (Section 7) was carried out for dust emergent surveys.' As outlined in Collins (2016) *'The bat active period is generally considered to be between April and October inclusive (although the season is likely to be shorter in northern latitudes). However, because bats wake up during mild conditions, bat activity can also be recorded during winter months.'*

Tree Potential Bat Roost Inspection

A ground level roost assessment was carried and used to examine the trees on/proximate to the site for features that could form bat roosts. Potential roosting features include heavy ivy growth, broken limbs, areas of decay, vertical or horizontal cracks, cracks in bark etc. All onsite trees were inspected for bat roosting potential during all surveys.

Emergent Surveys

An emergent survey was carried out on the 11th September 2025 (Kalvin Townsend Smyth), 7th July 2026 (Jeff Boyle) and 20th July 2026. Bat activity was determined through visual observation and the use of an *Echo meter touch 2 Pro* handheld detector. Surveyors were positioned at areas containing features of bat roosting potential at dusk to determine evidence of bat roosting onsite.

Night-time Bat Detector Surveys

Following an emergent survey, a bat detector survey was carried out on each occasion. Detector surveys were carried out onsite using an *Echo meter touch 2 Pro* handheld detector to determine bat activity. Bats are identified by their ultrasonic calls coupled with behavioural and flight observations. All areas of the site and along the Royal Canal along the southern site boundary were surveyed for bat activity during the detector surveys.

Desk Study

A pre-survey bat data search was carried out in September 2025 with a final update in June 2026. This included examining records and data from the National Parks and Wildlife Service (NPWS), National Biological Data Centre (NBDC), Bat Conservation Ireland (BCI), in addition to aerial, 6-inch maps and satellite imagery. Additionally, records of previous bat surveys undertaken within / proximate to the subject site were examined.

Survey Constraints

All three surveys were conducted within the active bat season and the transects covered the entire site multiple times during the night. Weather conditions for all three surveys were good with mild temperatures of above 10^{o}C after sunset. Winds were light and there was no rainfall. Insects were observed in flight during all surveys.

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

Results

Buildings as Potential Bat Roosts

No buildings are located within the proposed development site.

Trees as Potential Bat Roosts.

Trees of bat roosting potential contain features such as gaps in bark, ivy-clad trunks, and broken limbs. No trees of bat roosting potential were identified onsite or along the Royal Canal.

Emergent/Detector Surveys

2025 Survey

An emergent detector survey was carried out by Kalvin Townsend Smyth on the 11th September 2025. Foraging and transiting activity of the following bat species was recorded across the emergent and detector surveys:

- Common Pipistrelle (*Pipistrellus pipistrellus sensu lato*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Leisler Bat (Lesser Noctule (*Nyctalus leisleri*)

No bats were recorded emerging from any on site trees. All three bat species were recorded foraging and transiting along linear hedgerows. Two soprano pipistrelles (*Pipistrellus pygmaeus*) were identified foraging on site along the western treeline during the activity survey. No bat roosts were recorded in any trees on site.

Further details of bat activity recorded in 2025 is demonstrated in figure 8.

2026 Survey

An emergent and detector survey was carried out by Jeff Boyle on the 7th July 2026 and by Luke Dodebier on the 20th July 2026. The surveys covered the site and the adjacent Royal Canal along the site outline. Foraging and transiting activity of the following bat species was recorded:

- Common Pipistrelle (*Pipistrellus pipistrellus sensu lato*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Leisler Bat (Lesser Noctule (*Nyctalus leisleri*))

No bats were recorded emerging from any on site trees. Foraging activity was concentrated along the southern site boundary adjacent to the Royal Canal.

Further details of bat activity recorded in 2026 is demonstrated in figure 9.

Figure 8. *Bat Activity Recorded in 2025.*

Figure 8. *Bat Activity Recorded in 2026*

Review of 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 O03D) encompassing the study area reveals that five of the nine known Irish species have been observed locally (Table 6). 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 10-12.

Table 6: *Status of bat species within the 2km^2 grid encompassing the subject site (Reference no.O03D)*

Species name	Count	Date of last record	Designation
Brown Long-eared Bat *(Plecotus auritus)*	2	02/05/2022	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Common Pipistrelle *(Pipistrellus pipistrellus sensu stricto)*	6	03/05/2022	
Daubenton's Bat *(Myotis daubentonii)*	44	02/05/2022	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Leisler's Bat *(Nyctalus leisleri)*	5	03/05/2022	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	2	02/05/2022	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts

Figure 10. Brown Long-eared Bat *(Plecotus auritus)* (purple), Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*) (yellow), and both Brown Long-eared bat and Common pipistrelle (orange) (Source NBDC). Approx. site area– red circle.

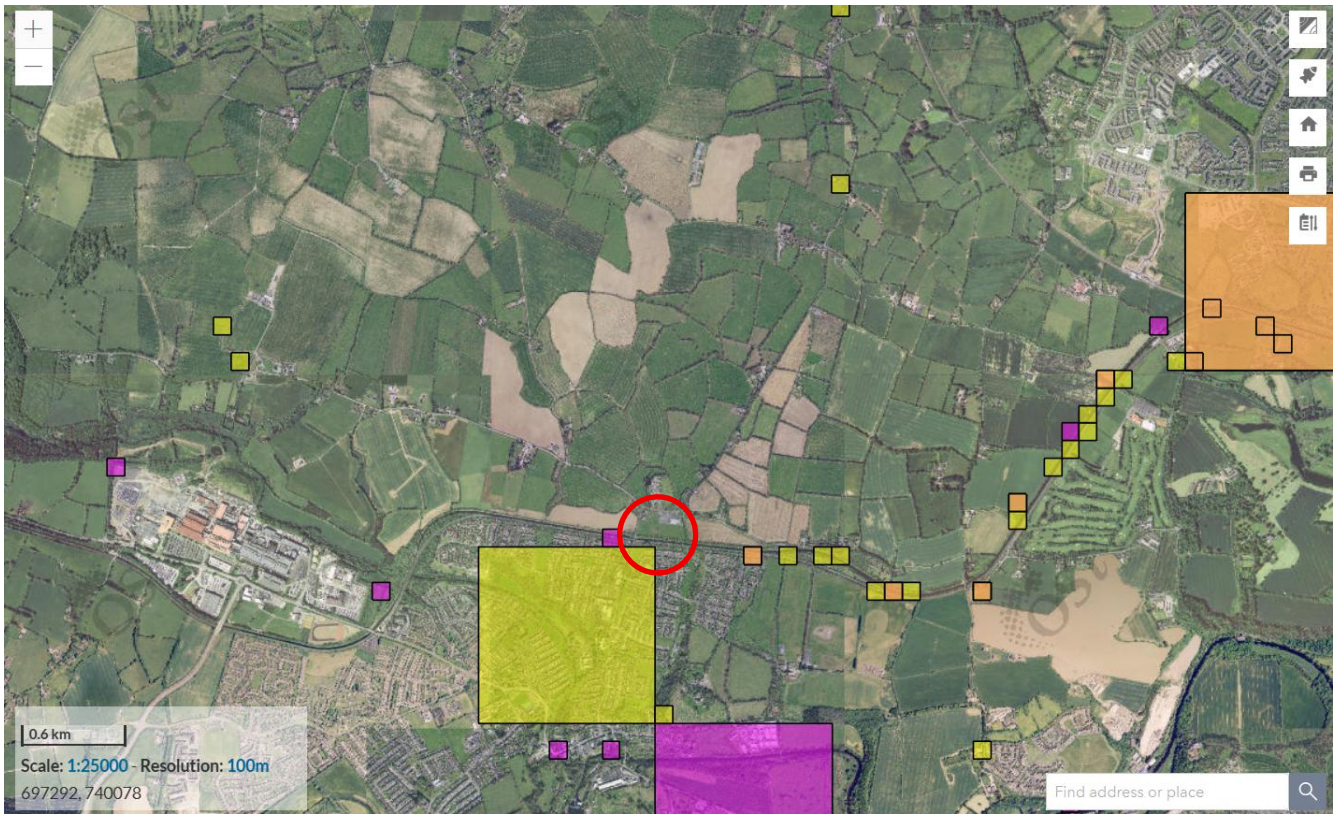

Figure 11. Daubenton's Bat (purple), Leisler's Bat *(Nyctalus leisleri)* (yellow), and both Daubenton's Bat & Lesser Noctule (orange) (Source NBDC). Approx. site area– red circle.

Figure 12. Soprano Pipistrelle *(Pipistrellus pygmaeus)* (purple) (Source NBDC). Approx. site area– red circle.

Potential Impact of the Development on Bats

Construction Phase

Given the limited extent of habitat removal and the retention of the majority of existing linear features across the site, any displacement of bats utilising the site is expected to be minimal. The site is currently characterised by low illumination, with minimal light spill from surrounding areas. Lighting during construction has the potential to impact on foraging of bats on site and the adjacent Royal Canal in the absence of mitigation. Mitigation measures are required to minimize light spill and protect retained bat foraging areas, particularly along the southern site boundary adjacent to the Royal Canal. There is the potential for habitat loss, habitat fragmentation, and disturbance impacts (human activity, lighting, & noise pollution) on the bat species recorded during the construction phase of development.

In the absence of mitigation, the proposed development would be seen to have a *negative, low adverse, short term, not significant, local and likely effect on bat fauna during construction.* Mitigation is required.

Operation Phase

Given the limited extent of habitat removal and the retention of the majority of existing linear features across the site, any displacement of bats utilising the site is expected to be minimal. There is potential for bat foraging to be impacted by the artificial lighting on site. The proposed lighting strategy has been discussed and modified to reduce the potential impact of the development on bats. This has included only lighting areas where required and not lighting public open spaces unless necessary. Warm white LED lighting (2700K) with full cut-off optics is proposed to minimise impacts on bat foraging and reduce light spill towards treelines and hedgerow boundaries. The lighting strategy has been designed to maintain dark riparian corridors across the site. Compensatory planting has been incorporated into the landscape strategy.

Impacts in the absence of mitigation: *negative, low adverse, local, permanent, not significant.* Mitigation is required including consultation with the project ecologist in relation to lighting and a post lighting inspection by the ecologist.

Mitigation Measures

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

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

The following mitigation will be carried out:

- A pre-construction inspection of trees to be felled will be carried out.
- Lighting at all stages will be done sensitively on site with no direct lighting on perimeter treelines and will comply with the sensitive public lighting design. Lighting will follow the Bat Conservation Ireland "Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers (December 2010).
- Lighting will comply with bat lighting guidelines with no lighting directed onto boundary treelines and no light spill onto the Royal Canal.
- A post construction lighting assessment will be carried out by the project ecologist.

- 5 Bat boxes will be placed on site in consultation with the project ecologist.

Predicted Residual Impact of Proposed Development on Bats

Following the implementation of mitigation measures, including pre-construction inspection of trees to be felled, sensitive lighting design, avoidance of direct illumination of retained treelines,hedgerows and the Royal Canal, and post-construction lighting assessment, potential impacts on bats will be minimised. The majority of existing hedgerows, treelines and riparian corridors will be retained, maintaining suitable foraging and commuting habitat and ecological connectivity across the site. Temporary construction-related effects associated with lighting, noise and human disturbance will be limited in duration, while operational lighting will be designed to minimise impacts through the use of warm white LED lighting (2700K) with full cut-off optics, restriction of lighting to required areas, and prevention of light spill onto retained habitats. Compensatory planting and the provision of five bat boxes will provide additional habitat enhancement opportunities. Following the implementation of mitigation measures, the proposed development is expected to result in a negative, low adverse, local, not significant residual impact on bat fauna.

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