ALTEMAR

Marine & Environmental Consultancy

Ecological Impact Assessment (EcIA) for a proposed development at Main Street Upper, Newcastle, Co. Dublin.

19th July 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: LIDL Ireland GmbH

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Report	Ecological Impact Assessment		
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Version	Author	Reviewed	Date
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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 LIDL Ireland GmbH. The project relates to a proposed development at Main Street Upper, Newcastle, Co. Dublin.

Study Objectives

The objectives of this EcIA are to:

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

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

- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2002);
- Guidelines on the information to be contained in EIARs (EPA,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 26 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. He is currently contracted to Inland Fisheries Ireland as the sole "External Expert" to environmentally assess internal and external projects. He is also chair of an internal IFI working group on environmental assessment. Bryan Deegan (MCIEEM) holds a MSc in Environmental Science, BSc (Hons.) in Applied Marine Biology, NCEA National Diploma in Applied Aquatic Science and a NCEA National Certificate in Science (Aquaculture). Bryan Deegan carried out all elements of this Ecological Impact Assessment (EcIA).

Project Description

Permission for development at Main Street Upper, Newcastle, Co. Dublin, principally consisting of the construction of a Discount Foodstore Supermarket with ancillary off-licence sales. The proposed development comprises:

1) The construction of a single storey Discount Foodstore Supermarket with ancillary off-licence use (with mono-pitch roof and overall building height of c. 6.74 metres) measuring c. 2,207 sqm gross floor space with a net retail sales area of c. 1,410 sqm;
2) Construction of a vehicular access point to Main Street Upper and associated works to carriageway and including partial removal of boundary wall / façade, modification of existing footpaths / public realm and associated and ancillary works including proposed entrance plaza area;
3) Demolition of part of an existing rear / southern single storey residential extension (and related alterations to remaining structure) of 'Kelly Estates' building. The original 'Kelly Estates' building (a protected structure - Eircode: D22 Y9H7) will not be modified;
4) Demolition of detached single storey accommodation / residential structure and ancillary wall / fence demolitions to rear of existing 'Kelly Estates' building;
5) Demolition of existing single storey (stable) building along Main Street and construction of single storey retail / café unit on an extended footprint measuring c. 118 sqm and associated alterations to existing Main Street boundary façade;
6) Renovation and change of use of existing (vacant) two storey vernacular townhouse structure to Main Street, and single storey extension to rear, for retail / commercial use (single level throughout) totalling c. 61 sqm;
7) Repair and renewal of existing Western and Eastern 'burgage plot' tree and hedgerow site boundaries; and,
8) Provision of associated car parking, cycle parking (and staff cycle parking shelter), pedestrian access routes and (ramp and stair) structures (to / through the southern and western site boundaries to facilitate connections to potential future development), free standing and building mounted signage, free standing trolley bay cover / enclosure, refrigeration and air conditioning plant and equipment, roof mounted solar panels, public lighting, hard and soft landscaping, boundary treatments and divisions, retaining wall structures, drainage infrastructure and connections to services / utilities, electricity Substation and all other associated and ancillary development and works above and below ground level including within the curtilage of a protected structure.

In order to provide sufficient additional detail in relation to the project additional information in relation to the project layout, landscape, drainage, arborist and lighting has been provided.

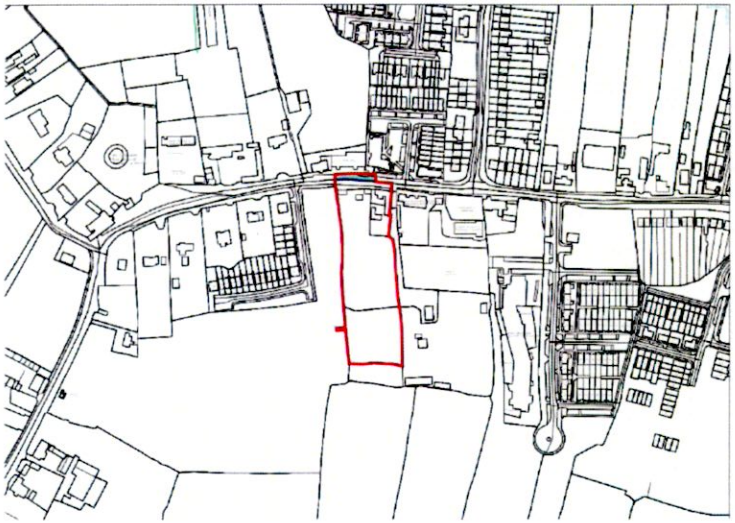
The proposed site outline, location, site plan, and contextual elevations are demonstrated in Figures 1-5.

Landscape

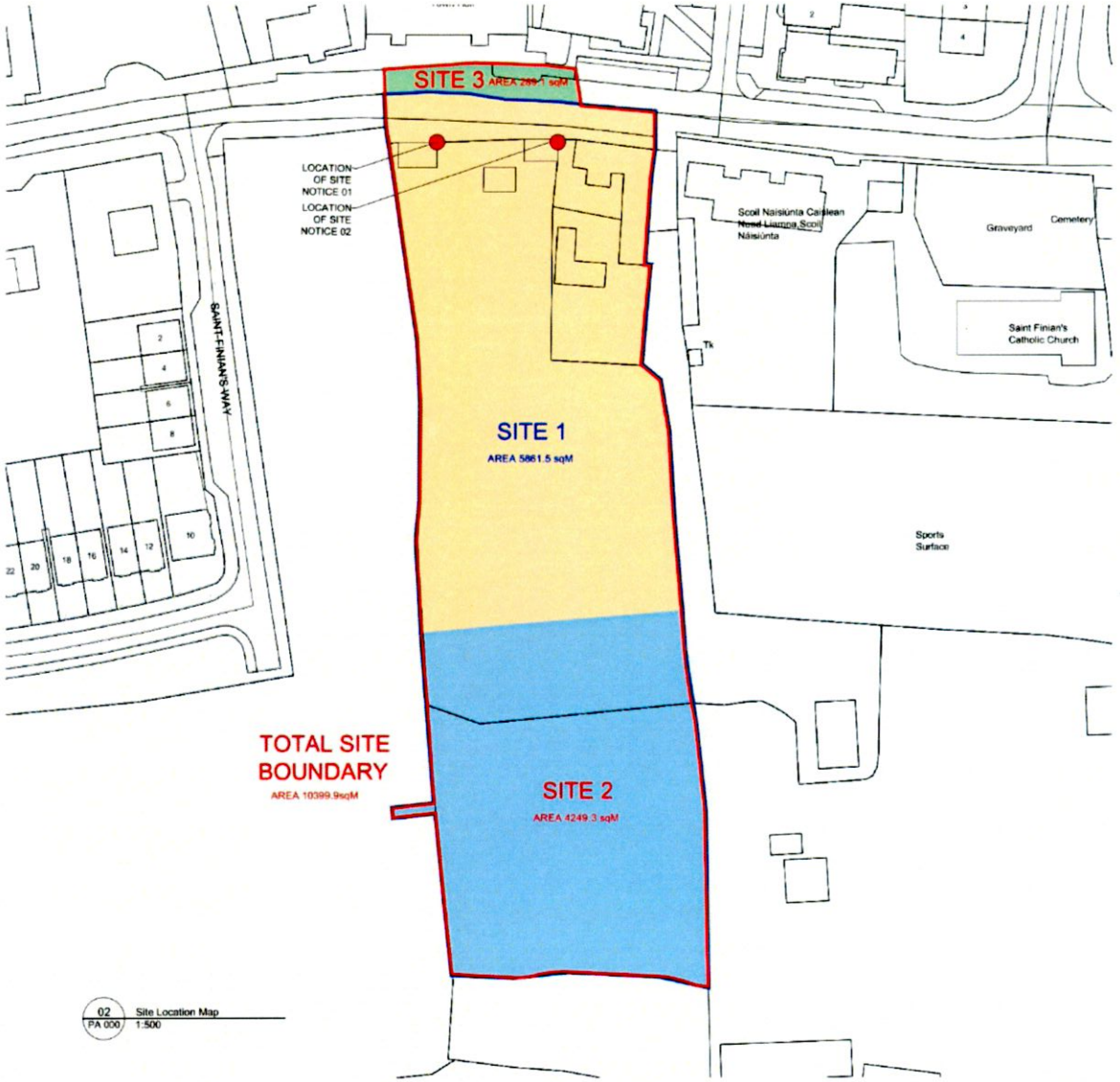
The landscape design for the proposed development has been prepared by Austen Associates. The proposed landscape masterplan is demonstrated in Figure 6.

Figure 1. Site outline and location

Figure 2. Site outline



01 PA 000 Local Map 1:2500



02 PA 000 Site Location Map 1:500

Description:
Digital Landscape Model (DLM)

Publisher / Source:
Ordnance Survey Ireland (OSi)

Data Source / Reference:
PRIME2

File Format:
Autodesk AutoCAD (DWG_R2013)

File Name:
v_50265853_1.dwg

Clip Extent / Area of Interest (AOI):
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LRX,LRY= 699819.8087,728500.9025
ULX,ULY= 699673.8087,728632.9025
URX,URY= 699819.8087,728632.9025

Projection / Spatial Reference:
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Centre Point Coordinates:
X,Y= 699796.8087,728666.9025

Reference Index:
Map Series | Map Sheets
1:2,500 | 3387-B

Data Extraction Date:
Date= 04-May-2022

Source Data Release:
OSMLS Release V1.151.113

Product Version:
Version= 1.4

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Ní hionann bóthar, bealach nó cosán a bheith ar an léarscáil seo agus éirmse ar cheart sil.

Ní thaispeánann léarscáil de chuid Ordanáis Shuirbhéireacht na hÉireann teorainn phríobháideach dealbhúil de mhaoin riamh, ná úinéireacht de ghnéithe fisiciúla.

NOTES:
Do not scale from this drawing.
Any discrepancies found on site to be reported to Dairmody Architects immediately.
Any discrepancies found on drawings to be reported to Dairmody Architects immediately.
Refer to engineer's drawings for structural details.
All dimensions sized to Blockwork.

Rev.	Description	Date	Initials

O.S.I COPYRIGHT LICENCE NO. AR0050522
ORDNANCE SURVEY IRELAND AND GOVERNMENT OF IRELAND
MAP SHEETS No. 3387-B
ITM CENTRE COORDINATES: 699796, 726666

DRAWING KEY
- Delineates Site Boundary
- Delineates Area within Applicants Ownership
- Site Area within Kelly Estate Ownership
- Site Area SDCC Ownership
- Site Area within Cairn Homes Properties Ownership

SCALE BAR
1:500: 0, 25, 50m
1:2500: 0, 100, 200m

DRAWING KEY | NORTH POINT

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Rev. No.	Scale	Date	Drn. By	Chkd. By	Issue
	1:500 / 1:2500 @ A1	20/05/2022	Kevin Barry	AR	PLANNING

Project: Proposed Lidl Store at Newcastle, Co. Dublin
Title: Site Location Map & Local Map
Client: Lidl Ireland GmbH
Dwg. No.: PA-000
Job No.: 22013

Figure 3. Site location map

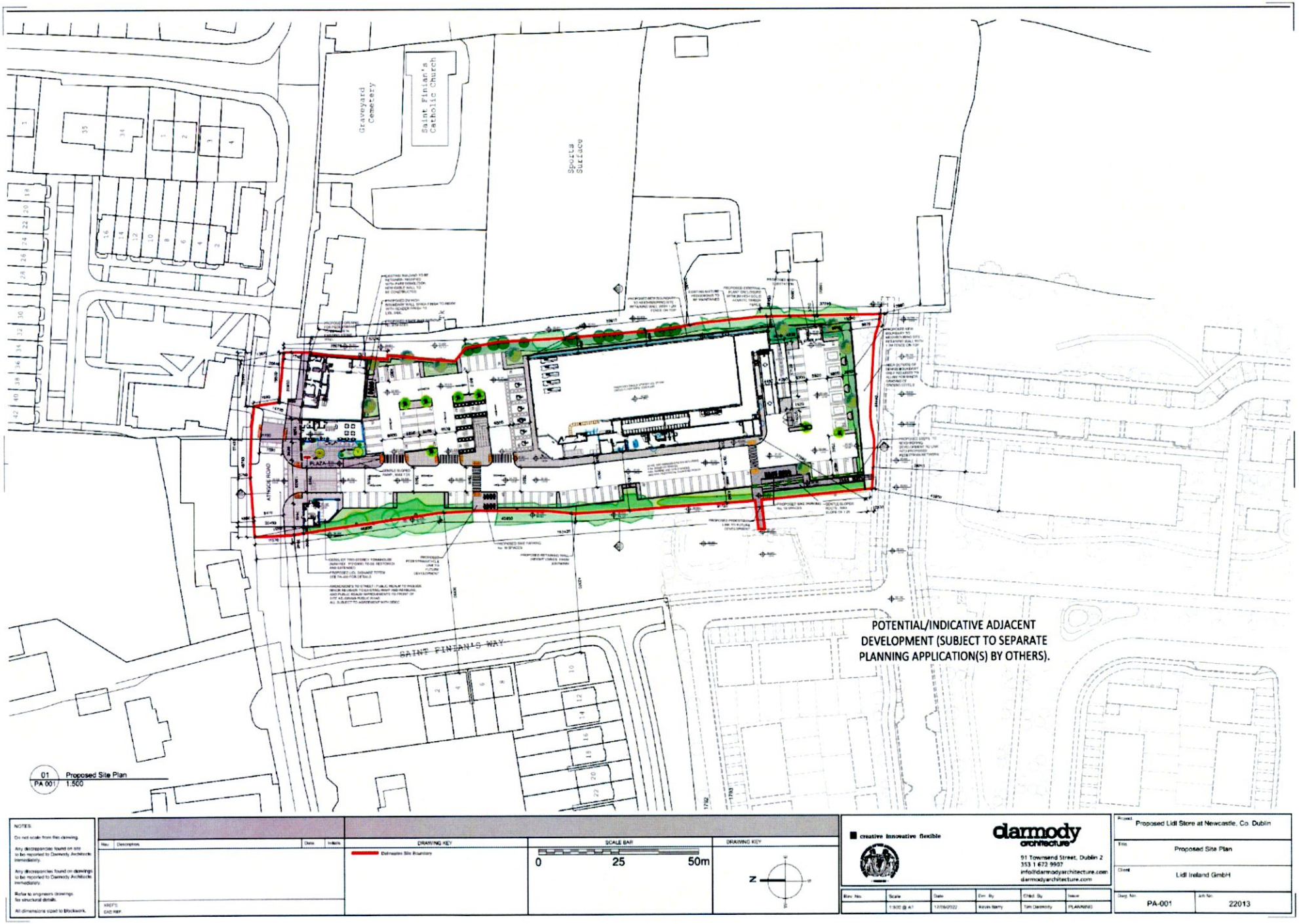
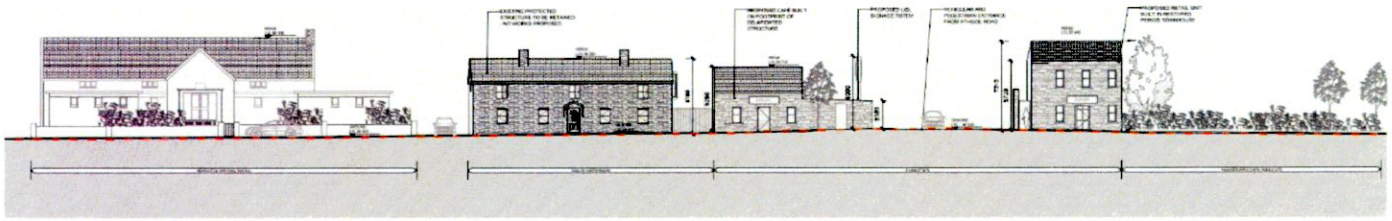


Figure 4. Proposed site plan



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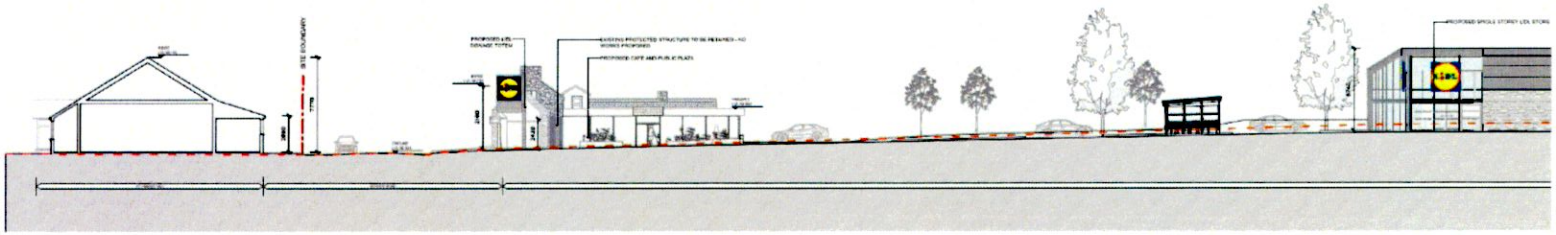

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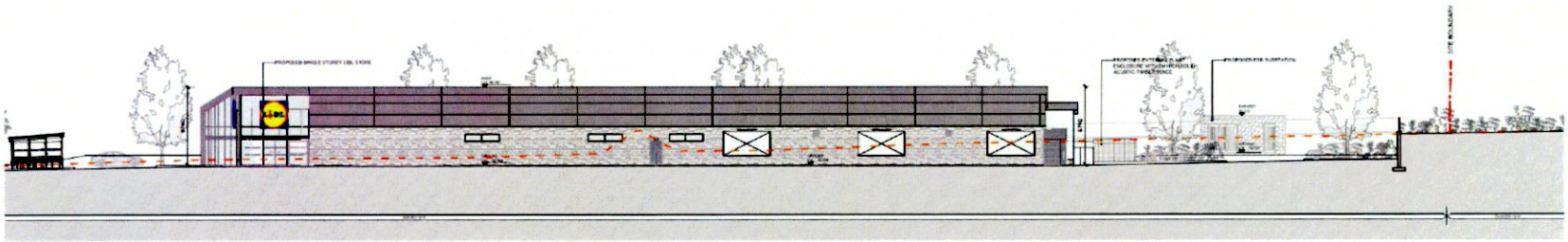

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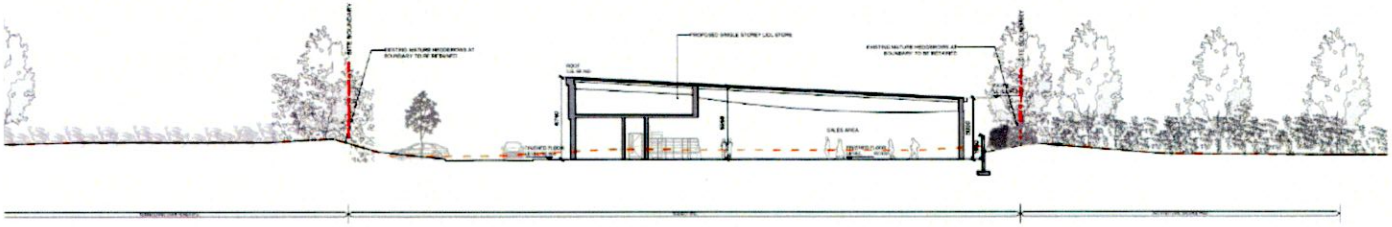

04 PA 200 Proposed Site Section BB
1:200

NOTES
Do not scale from this drawing.
Any discrepancies found on site to be reported to Dermody Architects immediately.
Any discrepancies found on drawings to be reported to Dermody Architects immediately.
Refer to engineers drawings for structural details.
All dimensions sized to Brickwork.

Rev.	Description	Date	Initials

DRAWING KEY

SCALE BAR
0 10 20m

DRAWING KEY

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Rev. No.	Scale	Date	Drn. By	Chkd. By	Issue
	1:200 @ A1	11/08/2022	Kevin Berry	Alan Ryan	PLANNING

Project: Proposed Lidl Store at Newcastle, Co. Dublin
Title: Proposed Site Contextual Elevation and Site Sections
Client: Lidl Ireland GmbH
Dwg. No.: PA-200
Job No.: 22013

Figure 5. Proposed contextual elevations

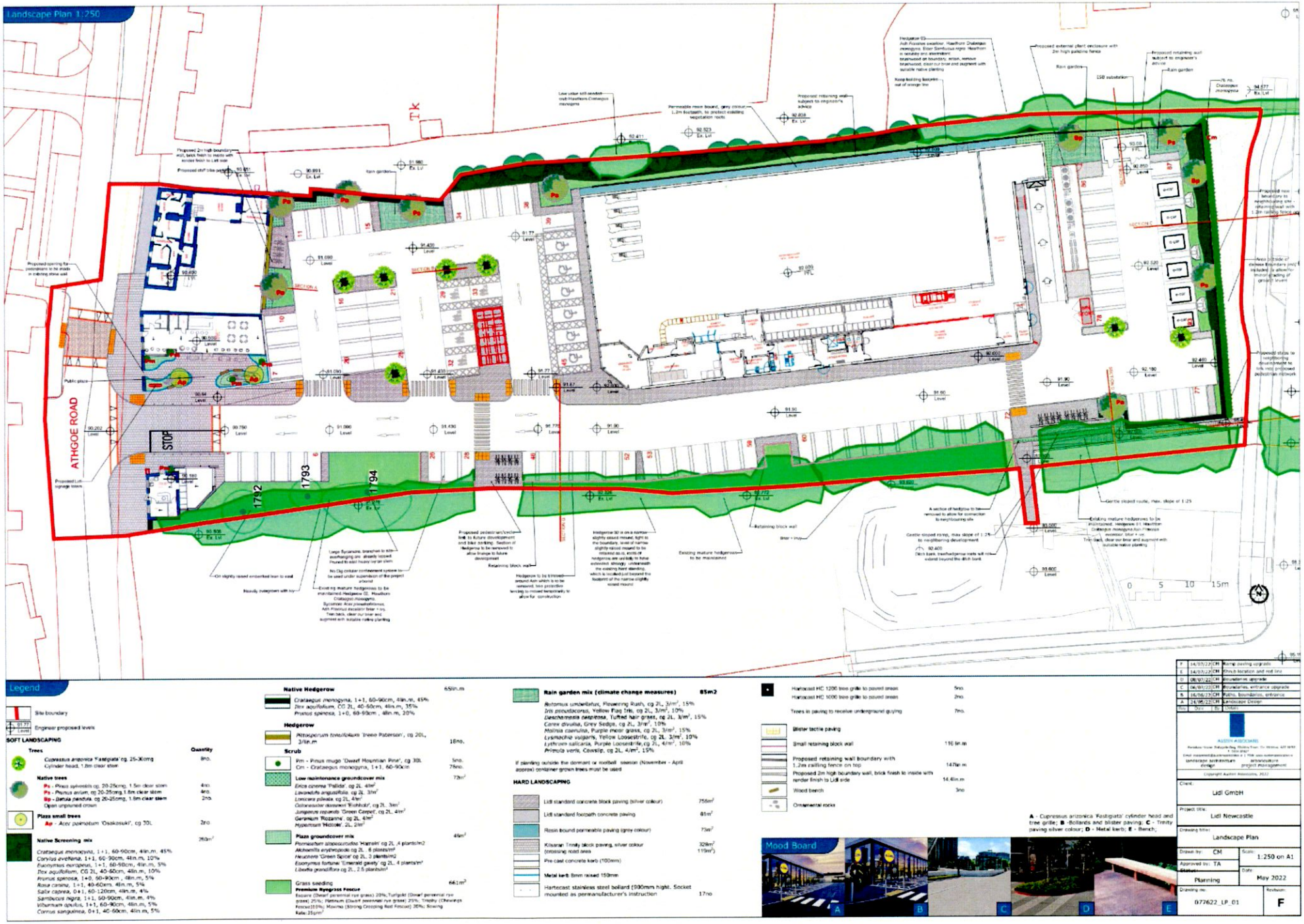

Figure 6. Proposed landscape plan

Arborist

An arborist report has been prepared by Austen Associates to accompany this planning application. This report concludes with the following:

'*The burgage plot boundaries are of important cultural, historic and ecological value and are to be retained and protected.*

Part of the eastern burgage plot boundary is made up of unsuitable vegetation, including a large tract of Leyland Cypress X Cuprocyparis leylandii, along with some self-seeded poor-quality vegetation. It is proposed that this is removed, apart from a section of self-seeded vegetation that may be retained, Hawthorn Crataegus monogyna species.

Replacement and augmentation planting is proposed to re-instate the burgage plot boundaries. These works will see the removal of unsuitable spreading non native species. These species will be replaced with more suitable native spe-cies, resulting in an improvement to the burgage plot boundaries.

Tree protective fencing will be erected to prohibit access to the rooting area of the trees. This tree protective fencing to BS 5837:2012 will be in place all through construction, along with adherence by all on site with the instructions regarding the protection of the RPA. These steps are critical to the successful retention of trees.'

The tree survey plan and tree protection plan are demonstrated in Figures 7 & 8.

Lighting

A Lighting Impact Assessment Report has been prepared by Lawler Consulting to accompany this planning application. It should be noted that bats were noted foraging on site. As a result discussions took place to ensure the lighting complied with bat lighting guidelines. In relation to potential impacts on the surrounding areas due to the proposed lighting scheme, this report outlines the following:

'***7.1. Light pollution reduction***

Careful consideration was taken when preparing our lighting schemes to ensure there is no risk of light pollution. Lighting systems frequently emit light that, in addition to performing their primary function of illumination of exterior functions, illuminate beyond what is necessary. Light Pollution is often considered a nuisance, a safety hazard when it causes 'blind' spots to pedestrians and drivers and also poses environmental concerns as it disrupts human health, affects bird migration patterns and other natural cycles. Another negative condition that arises from light pollution is the inability to view the night sky by the general public.

The requirements which we shall be following in our design of the relevant lighting schemes shall be as follows:

- *BSEN 12464-2:2014 'Lighting of Work Places – Part 2 – Outdoor Workplaces'*
- *BS5489-1 (2020) – Code of practice for the Design of Road Lighting – Lighting of roads and public amenity areas*
- *Guidance note for the Reduction of Obtrusive Light – GN01:2020, produced by the Institute of Lighting Professionals (ILP)*
- *We shall specify light fittings which have lighting shields to prevent the risk of light pollution to adjacent properties.*
- *We shall specify Light Emitting Diode (LED) lamps and fixtures for all exterior lighting including parking lots and streets.*

As highlighted within our calculations and within Section 5.1 of this report we achieve all regulations in relation to potential light intrusion/spill and skyglow.

7.2. Impact upon wider urban area and landscape

Careful consideration was taken when preparing our lighting schemes to ensure there is no risk of upsetting the existing lighting schemes throughout the local area. The proposed lighting scheme will only enhance the lighting within our boundary thus enhancing the general feel while driving through the area.'

'7.4 Impact upon Bats

Introduction:

Many Species of Bat, insects and other wildlife are in danger from increasing urbanisation in general and lighting is part of the problem. Legislation protects the Roost (Resting places for Bats) from being intentionally or recklessly disturbed. If a lighting scheme is being developed in an area with Bats, a survey is carried out to plan and minimise the disruption to Bats.

For safety reasons lighting will be required to illuminate the car park on the site. However, several factors have been included in the lighting design to mitigate the disruption to Bats at the boundary areas.

The requirements which we shall be following in our design of the relevant lighting schemes are as follows:

ILP – Guidance Note 08/18 : Bats and artificial lighting in the UK/Bats and the Built Environment series and recommendations of the Environmental Consultants Report.

The Proposed Lighting Design Factors which will minimise the effect on Bats at the boundary areas:

1. *The lighting installation has been designed to only illuminate the new car parking. The proposed luminaires minimise light spill to any other area forming part of the Bats commute. The luminaires provide no uplight, and have narrow downward beams of light, and optics that prevent back spill.*
2. *Lighting Cowls/Shields shall be installed on luminaires where there may be the potential for any light spill on the perimeter to further minimise the effects on bats.*
3. *Lighting Controls - The peak time for feeding for Bats is dusk. This is when they exit the Roost to go foraging. The light output from dusk to dawn can be restricted using LED controls to dim the luminaires located across the carpark and along the boundaries, this would benefit the Bats as the dimmer can be set to suitable times throughout the year.*
4. *Artificial Lighting – LED*

   This is the light source of choice for most local authorities. The light emitted is more directional and normally controlled by lenses or sometimes reflectors. The light is produced in a narrow beam. It is an instant light source. LED is available in several colour temperatures.

   'Warm white' (more yellow/orange colour) at 2700°K can now be used with little reduction in lumen output. LED typically features no UV component and research indicates that while lower UV components attract fewer invertebrates, warmer colour temperatures with peak wavelengths greater than 550nm (~2700°K) cause less impacts on bats (Stone, 2012, 2015a, 2015b).'

The proposed lighting layout is demonstrated in Figure 9.

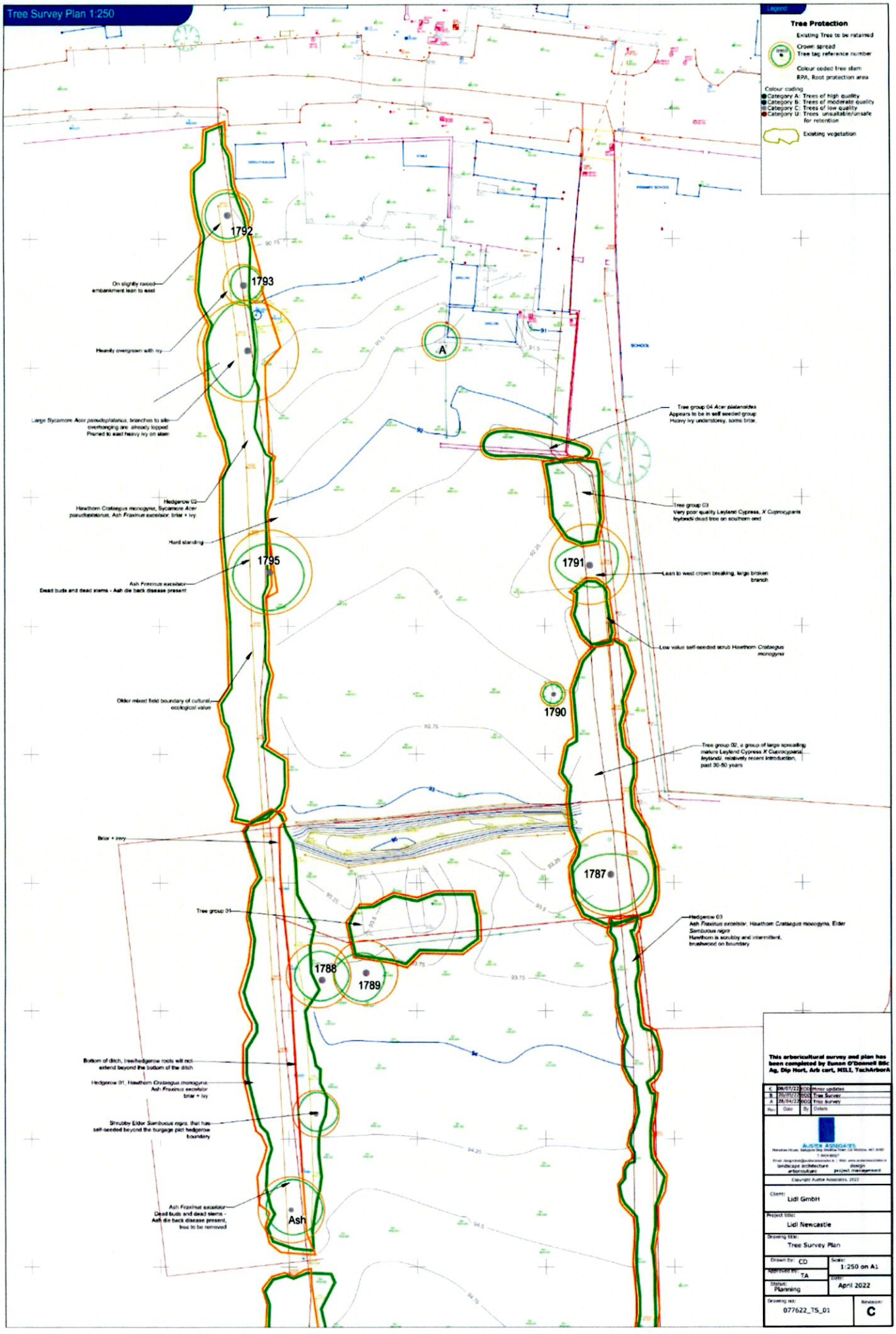

Figure 7. Tree survey plan

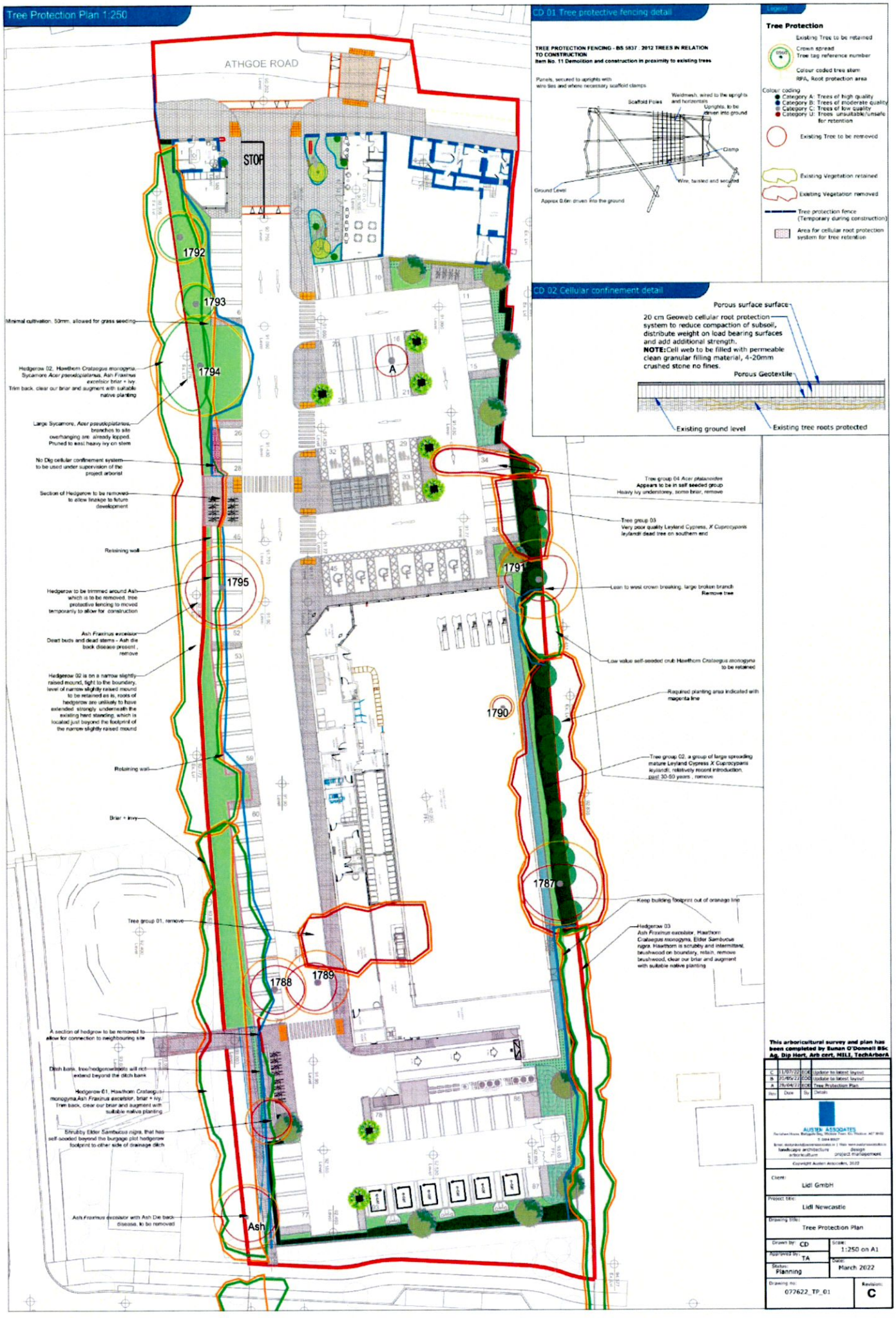

Figure 8. Tree protection plan

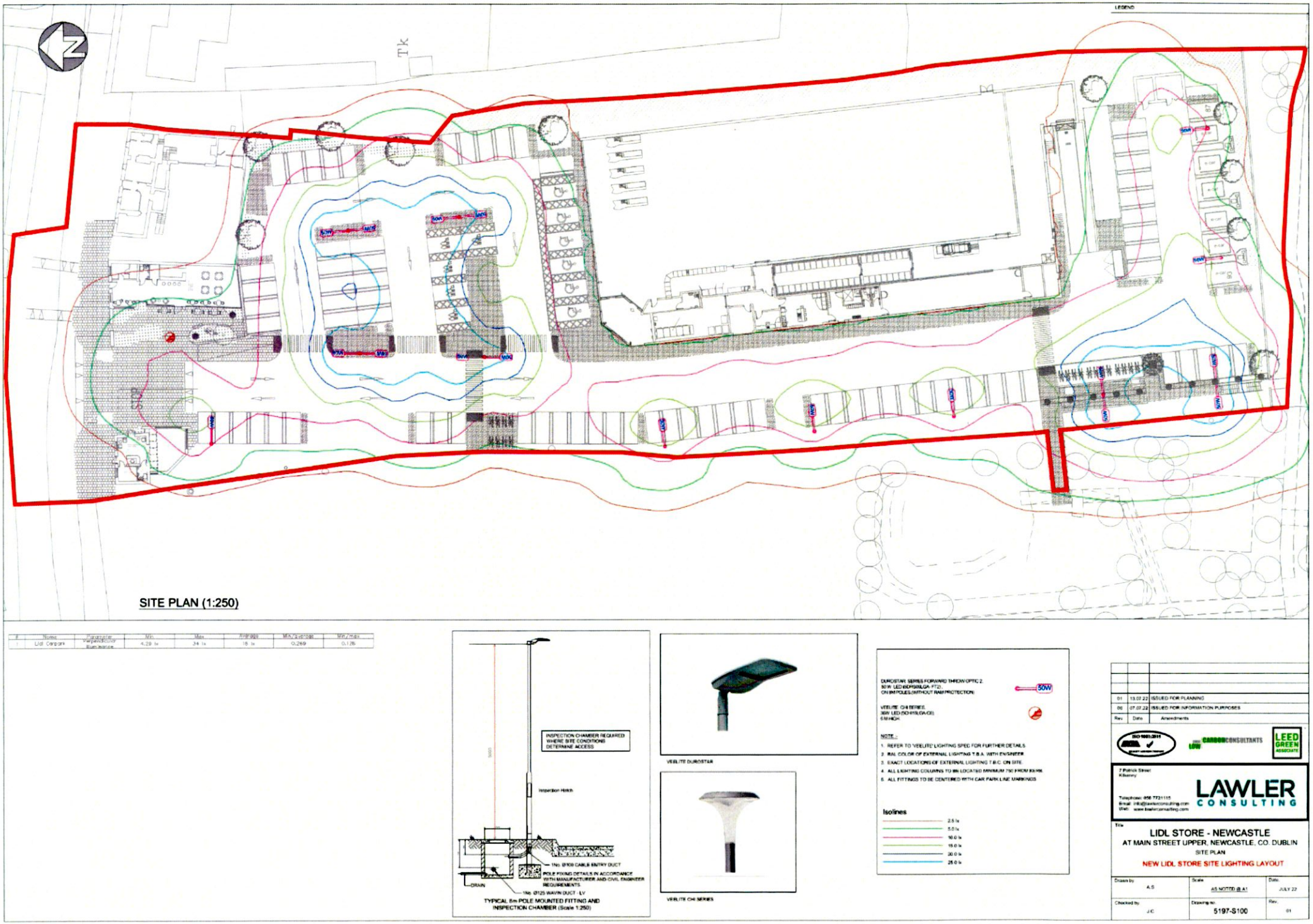

Figure 9. Site lighting layout

Drainage

A Services Design Information report has been prepared by SDS Design Engineers to accompany this planning application. This report outlines the following foul and surface water drainage strategy for the proposed development site:

Foul Water

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

'The existing foul sewer service is to be removed and a new foul sewer pipeline is proposed to be provided to service the facilities in the proposed new store. There is an existing public foul sewer located in the access road to the store that the new foul sewer will connect to again.'

In relation to the proposed foul wastewater design strategy, this report outlines the following:

'The proposed foul sewer system will be connected to an existing foul sewer network within the site. A new connection will be made to the existing public foul sewer along the adjacent public road along the northern boundary of the application site.'

Surface Water

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

'There is no existing surface water system serving the proposed Lidl site. The only hydrological feature in the area is existing drainage ditch running from south to north along the western boundary. This ditch is culverted by an existing 300mm diameter pipe that is collecting runoff from the existing spring along the western boundary and the ditch to the south, discharging to the drain to the north west of the site along Main Street Upper. The spring and culvert will be retained and it proposed to divert the existing drainage ditch to south west boundary to enable the construction of the new pedestrian access. The existing 300mm culvert will be re-routed thorough the site and a headwall will be installed to minimise flood risk. The existing spring and its connection to the culvert will be maintained within the proposed development.'

In relation to the proposed surface water drainage strategy for the proposed development site, this report outlines the following:

'Our proposal for this development is to provide a new surface water collection network, collecting surface water run-off through roof gutters/downpipes and a network of permeable tarmac, rainwater gardens and gullies located around the site to the design levels proposed for the finished car park layout. The surface water is proposed to be collected in a new surface water pipework network - see drawing no. 22058-1025 (in Appendix B) for details of the proposed collection network). All surface water collected from areas accessible to vehicle traffic will be cleansed by an inline Bypass Fuel/Oil Separator. All surface water will enter either the attenuation tank or clean stone subbase voids all to be located within the site. The outflow from the site will be limited by a Hydrobrake. See below for a more detailed description of the attenuation systems and outflow control from this site. The surface water collection network will be constructed in accordance with the following:

- *BS EN 752:2008 – Drain & Sewer Systems OutsideBuildings*
- *Building Regulations - TGD Part H – Drainage and Waste Water Disposal*

<u>Outflow from Site.</u>

In the Flood Risk Assessment carried out by JBA Consulting the associated groundwater vulnerability is classified as 'Extreme' for the proposed site which indicates that an extreme risk to the groundwater under the site and a bedrock depth of between 0-3 m. The groundwater vulnerability for the additional land to the south is classified as 'High' which indicates that a high risk to the groundwater under the site and a bedrock depth of between 3-5m These classifications are based on relevant hydrogeological characteristics of the underlying geological materials. This make infiltration unviable for the surface water treatment of the proposed development and therefore controlled discharge and storage is proposed.

The outflow from the site will be limited to the pre-development greenfield runoff rate of 2.00 l/s/ha. This practice is in accordance GDSDS requirements and SDCC-suds-explanatory-design-and-evaluation-guide. As the site area is 1.04 ha the outflow from the site will be restricted to 2.08 l/s. A Hydrobrake

Optimum by Hydro International (or similar equivalent) will be provided within the last manhole within the site to limit the outflow as above.

The discharge from this proposed development is proposed via the existing drainage ditch currently servicing the existing 0.6m diameter culvert to the north west corner of the site. A new headwall will be constructed at the proposed outlet to the existing drainage ditch.

Attenuation Tank

The attenuation tank and permeable surfacing subbase have been designed to provide storage for the surface water generated during a 1 in 100 year rainfall. The rainfall generated by a 1 in 100 year rainfall will be increased by 20% for the predicted climate changes due to global warming. The required storage volume of the attenuation has been calculated as 618m3. This will be divided between the permeable surface subbase 159m3 and geocellular storge 459m3.'

The proposed drainage layout is demonstrated in Figure 10.

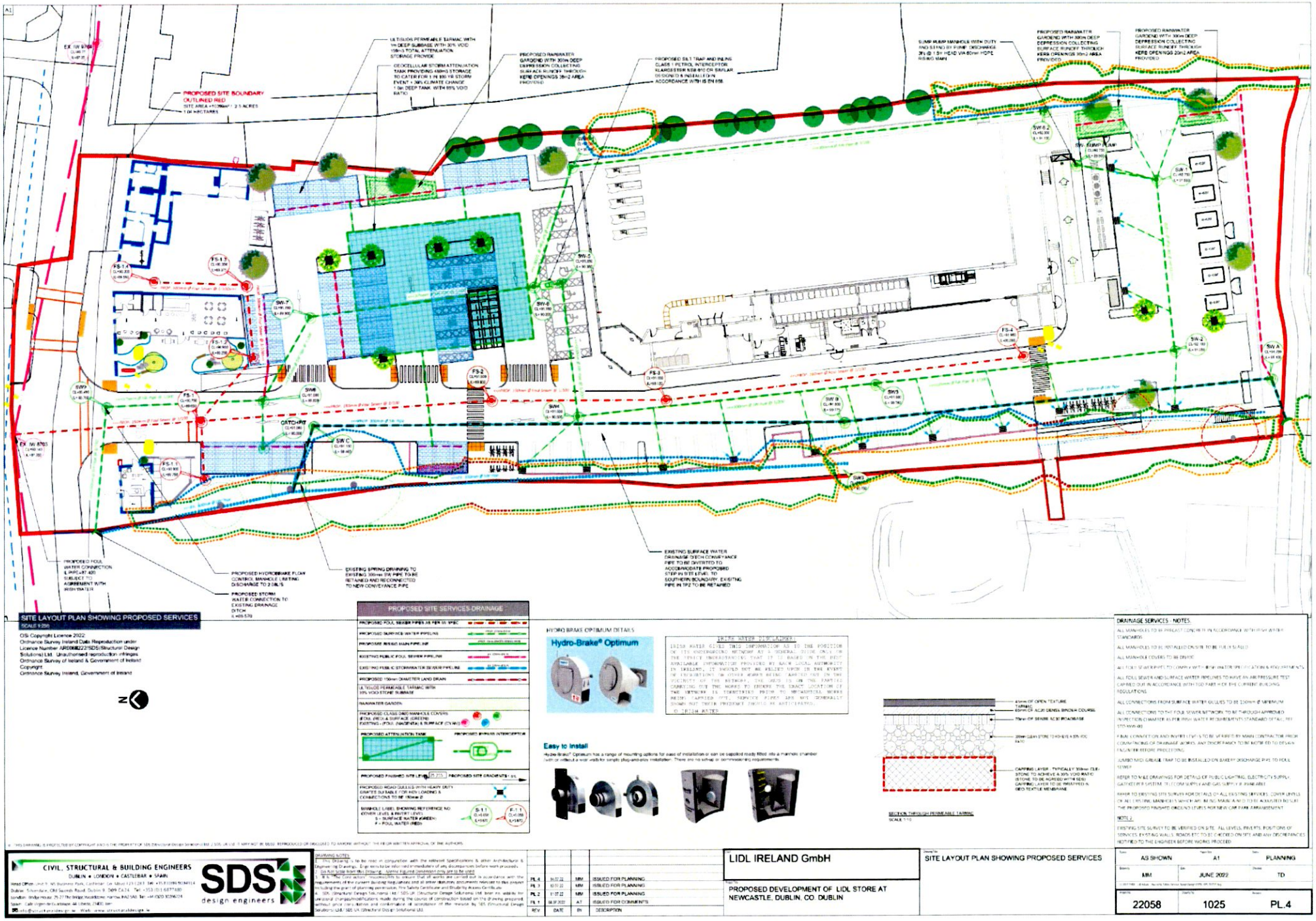

Figure 10. *Proposed drainage layout*

Ecological Assessment Methodology

Desk Study

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

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

A provisional desk-based assessment of the potential species and habitats of conservation importance was carried out in July 2022 with the final site assessment. Altemar assessed the project, the proposed construction methodology and the operation of the proposed development.

Field Survey

A site visit was carried out by Bryan Deegan (MCIEEM) on the 5th July 2022 and included a bat survey. The survey was carried out in mild dry conditions and covered all the lands 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. In addition, more detailed information on the species composition and structure of habitats, conservation value and other data were gathered.

Survey Limitations

The field survey was carried out in July. This is within the period for full species assessments of the floral cover in addition to bat surveys. Weather conditions were mild and dry and allowed a bat detector surveys to take place. However, these months are a poor time to observe terrestrial mammal activity. It should be noted that good coverage of the site was possible and there was full and clear access to all areas. This is not considered to be a limitation in relation to the survey timings.

Consultation

A request for data in relation to species of conservation interest was submitted to the National Parks and Wildlife Service (NPWS). Data of rare and threatened species were provided by NPWS within 5km of the proposed development and the information from these data is included in the EcIA. The National Biological Data Centre records were consulted for species of conservation significance.

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 ZoI of the proposed project would be seen to be restricted to the site outline, with potential for minor localised noise and lighting impacts during construction which do not extend significantly beyond the site outline. However, given the fact that there is a drainage ditch and spring on site there is potential for downstream impacts vis surface water in the absence of mitigation.

Ecological Evaluation 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 (2022) (Table 1) 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.

Table 1: Impact description terminology (EPA,2022)

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

Criteria for Establishing Receptor Sensitivity/Importance

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

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

Significance of Effects

Significance of Effect	Description of Potential Effect
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable2 changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.

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

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

Results

Proximity to Designated Conservation Sites

The proposed development site is located within a suburban / agricultural environment. It should be noted that the proposed development site is not within a designated conservation area. The nearest Natura 2000 site is Rye Water Valley/Carton SAC (7 km) (Figure 11). The nearest watercourse to the subject site is the Cornerpark Stream, located approximately 600 m to the east of the site boundary (Figure 15). There are no Natural Heritage Areas (NHA) within 15 km of the proposed development site. The nearest proposed Natural Heritage Area (pNHA) to the subject site is the Grand Canal pNHA (2.1 km) (Figure 13). The nearest Ramsar site is Sandymount Strand/Tolka Estuary, located 19.6 km from the subject site (Figure 14). National and International conservation sites and the distances from the proposed development site are seen in Tables 1 and Table 2. After consultation with SDS Design Engineers, it was outlined that after attenuation on-site, surface water drainage will be directed to an existing drainage ditch located on-site. Out of an abundance of caution, it is considered that this drainage network ultimately outfalls to a watercourse network that feeds into the River Liffey, located to the north of the site. In this case, the potential ZOI extends beyond the site, with the potential for downstream impacts to extend beyond the proposed development area via the surface water networks.

Table 1. Distances to NATURA 2000 sites within 15km of the subject site

NATURA 2000 Site	Distance
Special Areas of Conservation	
Rye Water Valley/Carton SAC	7 km
Glenasmole Valley SAC	9.6 km
Wicklow Mountains SAC	10.6 km
Red Bog, Kildare SAC	11.3 km
South Dublin Bay SAC	19.6 km
North Dublin Bay SAC	22.3 km
Special Protection Areas	
Poulaphouca Reservoir SPA	12.8 km
Wicklow Mountains SPA	14.1 km
South Dublin Bay and River Tolka Estuary SPA	19.3 km
North Bull Island SPA	22.3 km

Table 2. Distances to designated conservation sites within 15km of the subject site

Designation	Conservation Sites	Distance
pNHA	Grand Canal	2.1 km
pNHA	Slade of Saggart and Crooksling Glen	5.2 km
pNHA	Liffey Valley	6.8 km
pNHA	Kilteel Wood	6.9 km
pNHA	Lugmore Glen	7 km
pNHA	Rye Water Valley/Carton	7 km
pNHA	Royal Canal	7.6 km
pNHA	Glenasmole Valley	9.7 km
pNHA	Dodder Valley	10 km
pNHA	Red Bog, Kildare	11.1 km
pNHA	Poulaphouca Reservoir	12.7 km
pNHA	Liffey At Osbertown	14.9 km
pNHA	North Dublin Bay	19 km
pNHA	South Dublin Bay	19.6 km
pNHA	Dolphins, Dublin Docks	20.8 km
Ramsar	Sandymount Strand/Tolka Estuary	19.6 km
Ramsar	North Bull Island	22.6 km

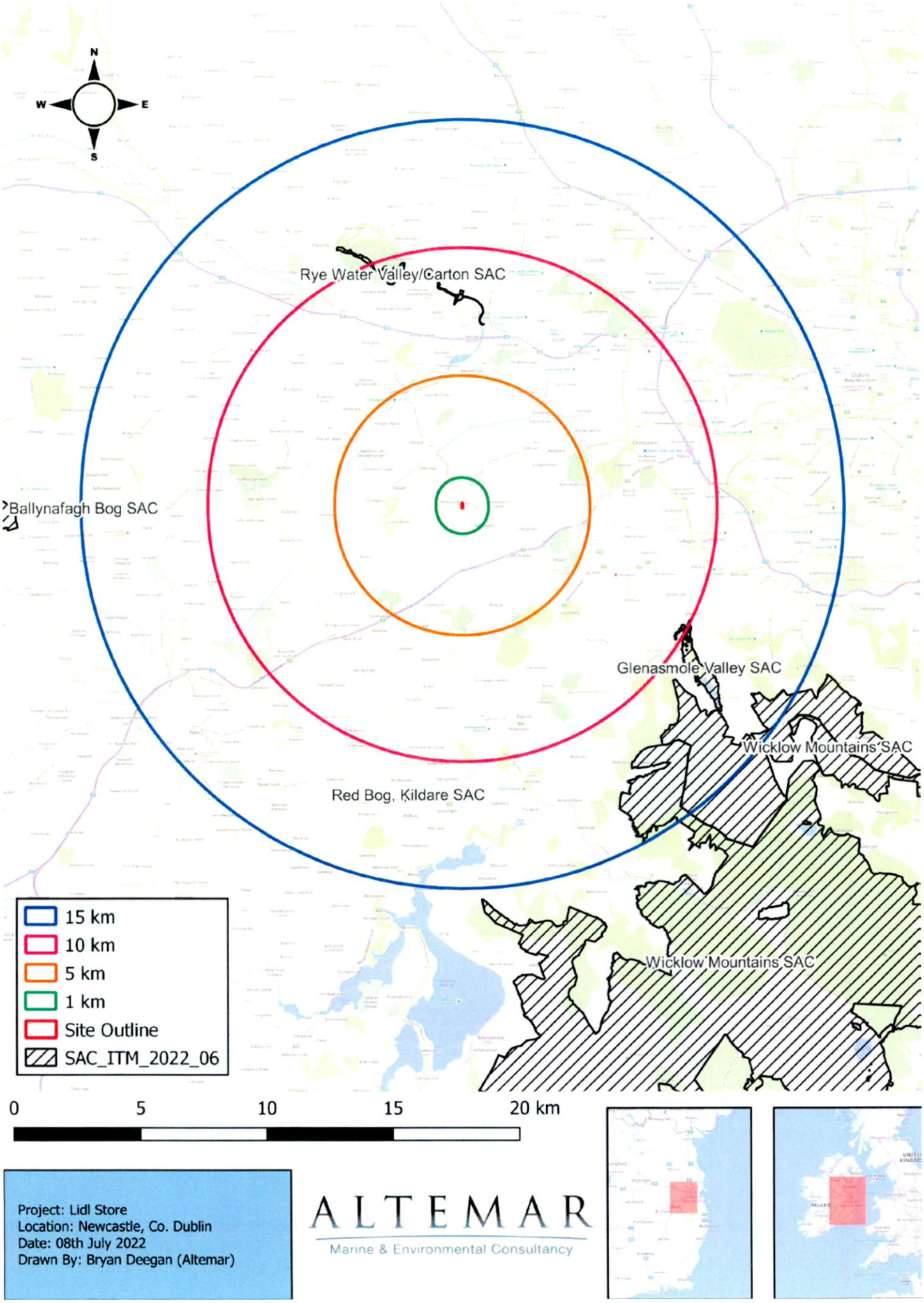

Figure 11. Special Areas of Conservation (SAC) located within 15km of the proposed development

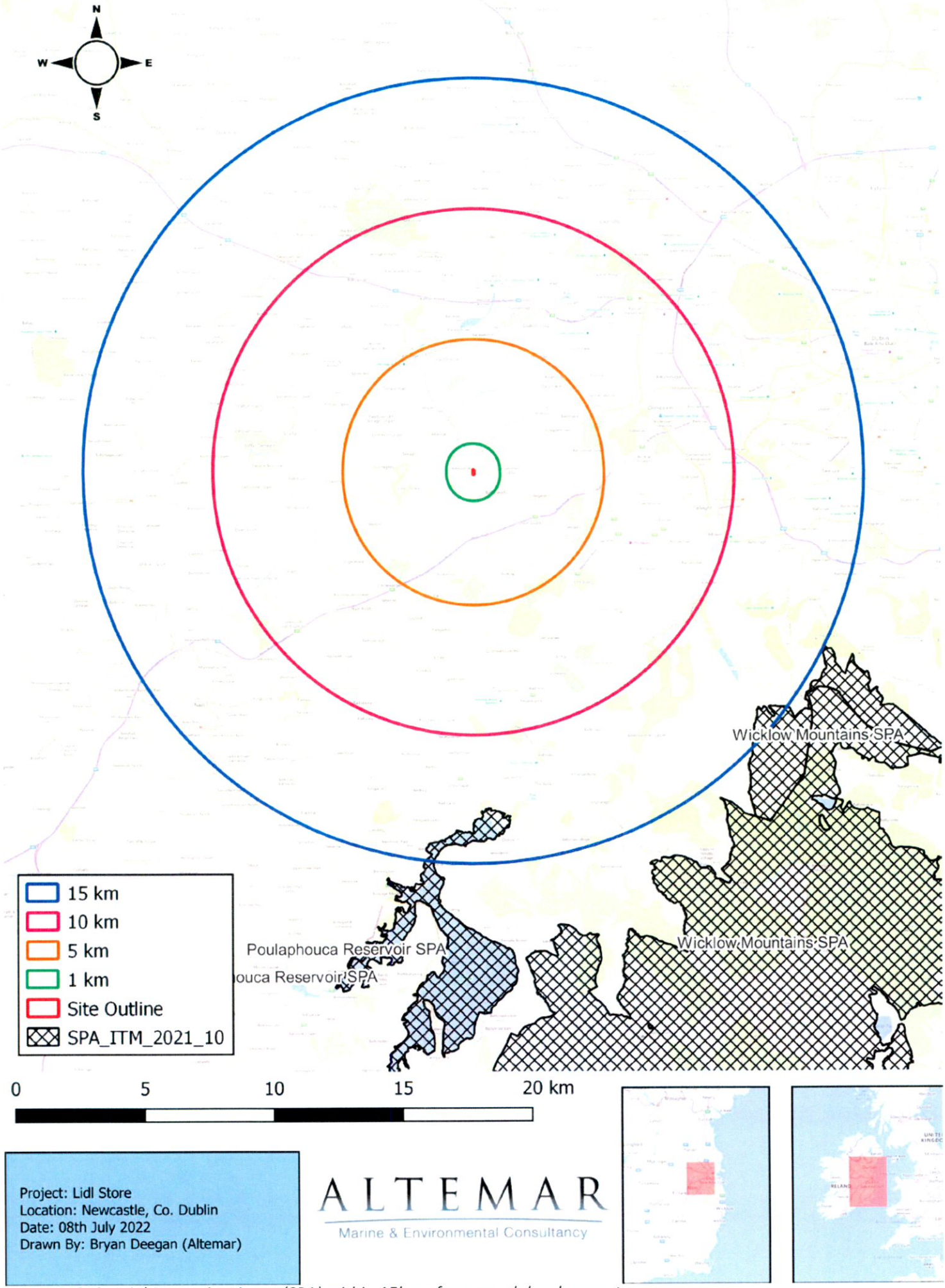

Figure 12. Special Protection Areas (SPA) within 15km of proposed development

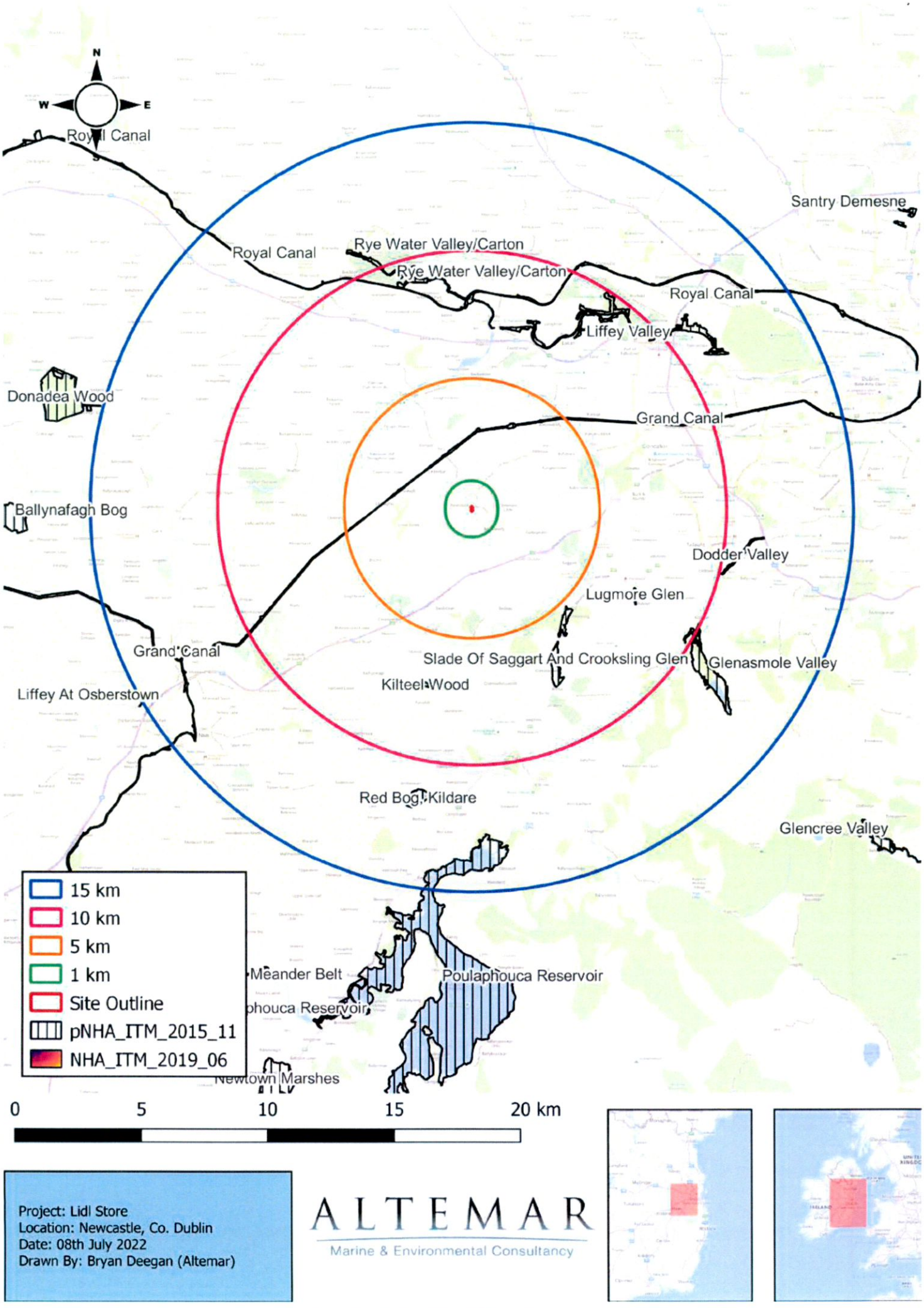

Figure 13. Proposed Natural Heritage Areas (pNHA) within 15km of the proposed development

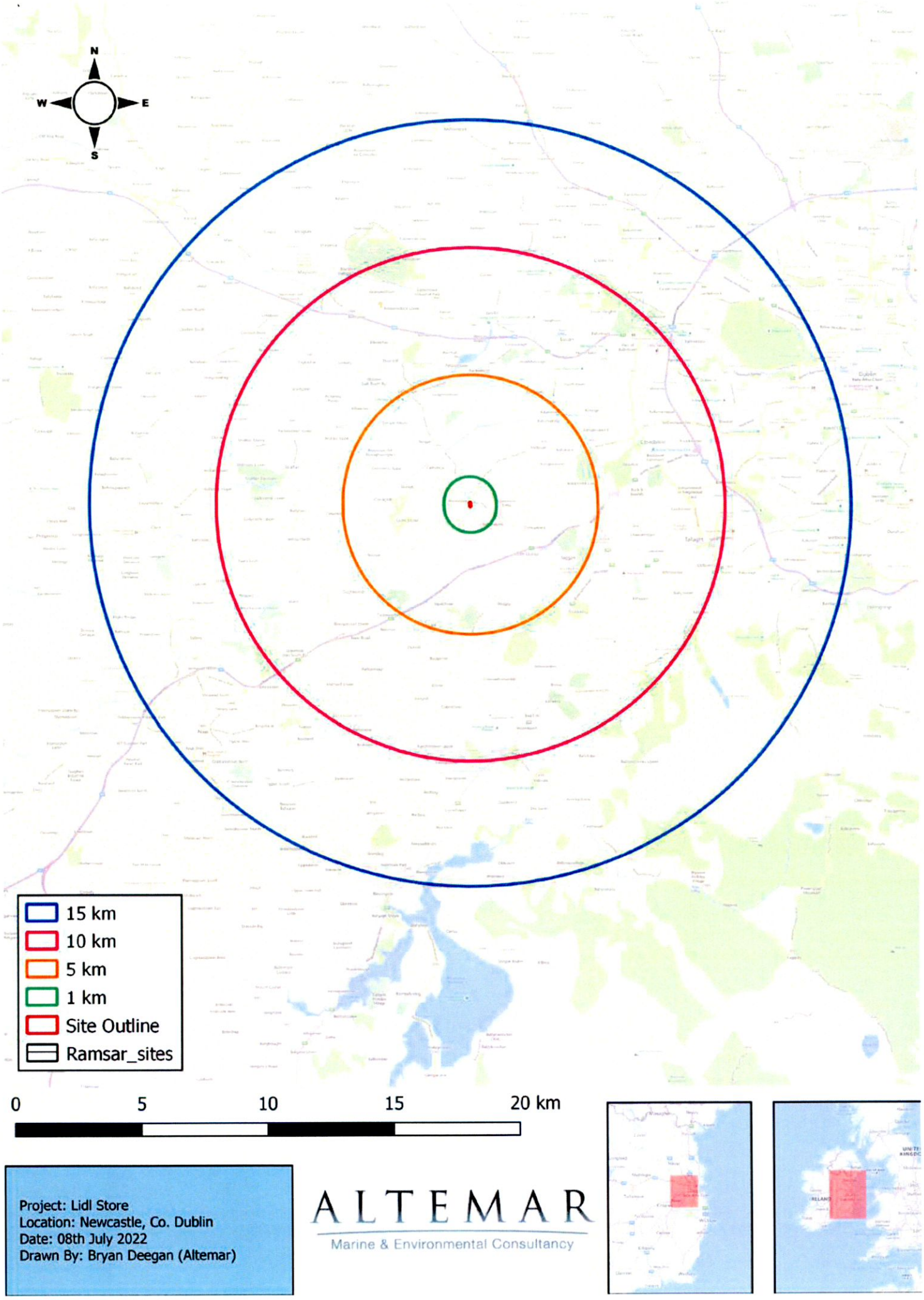

Figure 14. Ramsar sites within 15km of the proposed development (none)

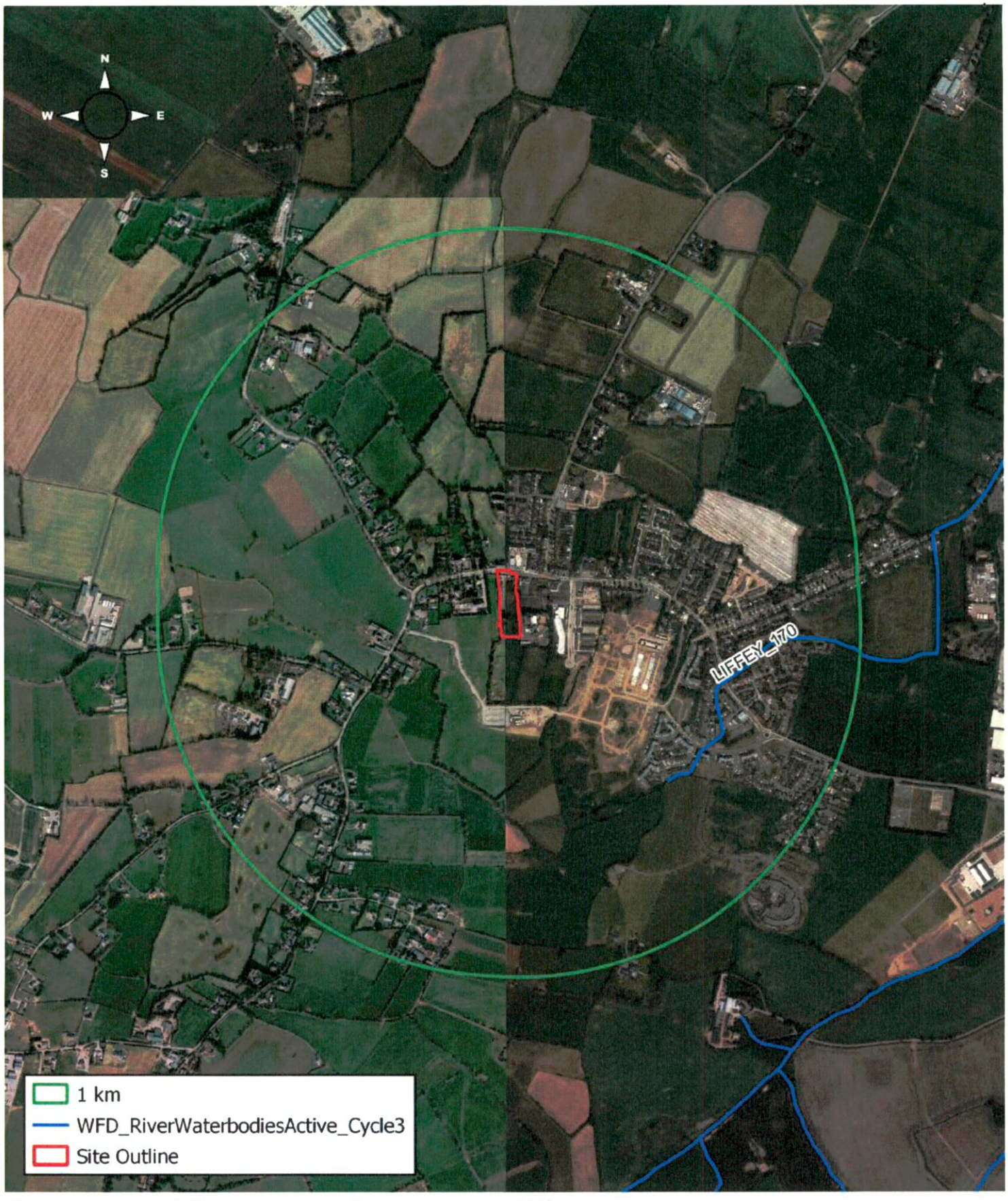

Figure 15. Watercourses within 1km of the proposed development

Habitats and Species

A site assessment was carried out on the 5th July 2022. Habitats within the proposed site were classified according to Fossitt (2000) (Figure 16).

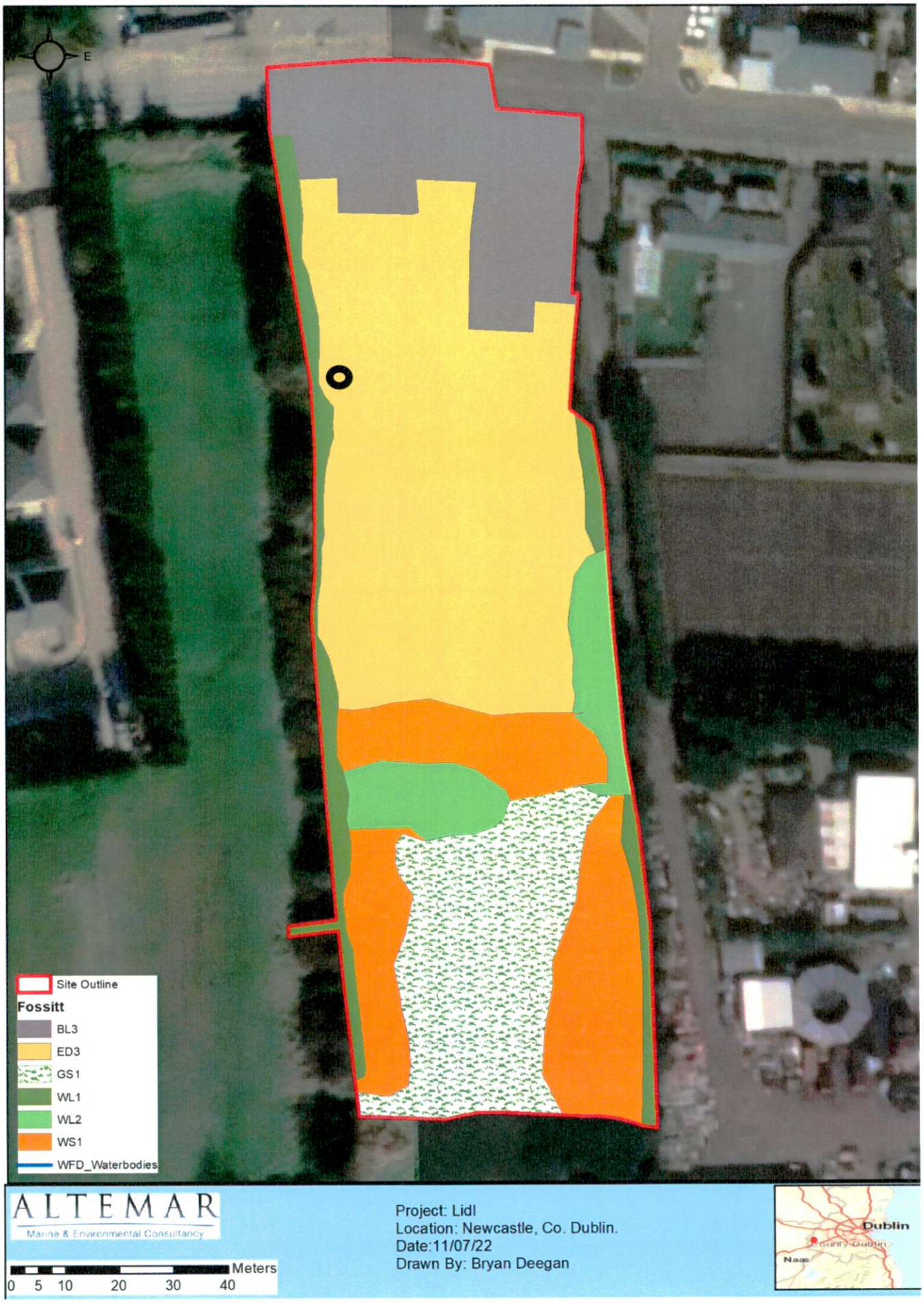

Figure 16. Fossitt (2000) Habitat map (Black circle Approximate location of active spring)

As can be seen from Figure 22, the site consists of the following habitats (Fossitt, 2000):

BL3- (Buildings and artificial surfaces)

No flora or fauna of conservation importance were noted in these areas. As outlined in Appendix I there was no evidence of bat activity in the vicinity of the buildings and no bats were observed emerging from the buildings. A derogation licence is not required to remove a bat roost as bats no evidence of bats roosting in these buildings was observed. Soprano pipistrelle (*Pipistrellus pygmaeus*) and Leisler's bats (*Nyctalus leisleri*) however, were observed foraging on site proximal to treelines and hedgerows.

Plate 1. Buildings on site.

Plate 2. Buildings on site.

ED3 Recolonising Bare Ground

As can be seen from figure 16 a substantial portion of the proposed development site consists of an area of Recolonising Bare Ground. Based upon an examination of recent satellite imagery (Google Earth Pro) the northern area appears to have been cleared in 2020/2021. Since the site clearance appears to have ceased while vegetation is recolonising the northern section of the site. area. This section of recolonising bare ground is being recolonised by opportunistic species such as great mullein (*Verbascum thapsus*), rape (*Brassica napus*), bramble (*Rubus fruticosus agg.*), clover (*Trifolium spp.*), docks (Rumex spp.), rosebay willowherb (*Chamaenerion angustifolium*), thistles (*Cirsium arvense & C. vulgare*), plantains (*Plantago spp.*), dandelion (*Taraxacum spp.*), hoary willowherb (*Epilobium parviflorum*), pineappleweed (*Matricaria discoidea*), wild teasel (*Dipsacus fullonum*), daisy (*Bellis perennis*), common centaury (*Centaurium erythraea*), great willowherb (Epilobium hirsutum), self-heal (*Prunella vulgaris*), common ragwort (*Jacobaea vulgaris*), creeping buttercup (*Ranunculus repens*), birch (*Betula sp.*), ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*), common poppy (Papaver rhoeas), common nettle (Urtica dioica), common vetch (*Vicia sativa ssp. Segetalis*), ivy (*Hedera helix*), prickly sowthistle (Sonchus asper), colt's-foot (*Tussilago farfara*), herb-robert (*Geranium robertianum*) and oxeye daisy (*Leucanthemum vulgare*). It should be noted that there is a spring located within this habitat that is actively providing water to the drainage ditch. There is an existing concrete pipe at this location.

Plate 3. ED3 Recolonising Bare Ground.

WL1- Hedgerows

Unmaintained hedgerows are present in the eastern and western boundaries of the site. Species included ash (*Fraxinus excelsior*), ivy (*Hedera helix*), sycamore (*Acer pseudoplatanus*), bramble (*Rubus fruticosus agg.*), hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), dog-rose (*Rosa canina*), hedge bindweed (*Calystegia sepium*), red dead-nettle (*Lamium purpureum*), purple-loosestrife (*Lythrum salicari*), cleavers (*Galium aparine*) cleavers (*Galium aparine*) and lords-and-ladies (*Arum maculatum*),

Plate 4. Hedgerows.

GS1 Dry calcareous and neutral grassland

GS1 Dry calcareous and neutral grassland grassland occupies the southern portion of the site. This is essentially GA1-Agricultural Grassland that has been left unmaintained sor several years. Biodiversity of the grassland is still poor however. Species included meadow buttercup (*Ranunculus acris*), thistles (*Cirsium sp.*), kidney vetch (*Anthyllis vulnerary*), clovers (*Trifolium spp.*), cleavers (*Galium aparine*), great willowherb (*Epilobium hirsutum*), nettle (*Urtica dioica*), docks (*Rumex spp.*), and plantains (*Plantago spp.*).

Plate 5. GS1 Dry calcareous and neutral grassland

WS1-Scrub

Several areas of scrub were noted on site. Species within the scrub area included sycamore *(Acer pseudoplatanus),* thistles (*Cirsium arvense & C. vulgare*), common nettle (*Urtica dioica*), docs (*Rumex spp.*), ragworts (*Senecio spp.*), hedge bindweed *(Calystegia sepium),* bramble (*Rubus fruticosus agg.*) and cleavers (*Galium aparine*). The scrub within the grassland area to the south of the site consisted primarily of bramble (*Rubus fruticosus agg.*).

Plate 6. Scrub in the centre of the site.

WL2-Treelines

The treelines on site were dominated by tall Leyland Cypress (X *Cuprocyparis leylandii*). The floral understory was extremely poor in these areas. As outlined in Appendix I the treelines did form a foraging corridor for bats on site.

Plate 7. Treelines of Leyland Cypress

Evaluation of Habitats
The proposed development site is primarily on recolonising bare ground, grassland, artificial surfaces and scrub. No habitats of conservation significance were noted within the site outline. However, the spring on site would be seen as locally important it flows from the site along the drainage ditch.

Plant Species
The plant species encountered at the various locations on site are detailed above. No plant species protected 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.

Invasive Plant species
No invasive species that are listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011) which makes it an offence under Regulation 49 to plant, disperse, allow or cause to grow these plants., were noted on site.

Terrestrial Mammals
All areas of the site were accessible. Full survey coverage of the site was possible and there are no limitations in relation to the mammal assessment. No mammal activity was noted on site. No badgers or badger activity was noted on site. Otters (*Lutra lutra*) activity was not noted on site and it is unlikely that they are present due to the lack of a nearby watercourse. No evidence of deer was noted on site. Hedgehogs (*Erinaceus erinaceus)* have been recorded by NPWS within the 10km square. No hedgehogs were seen during the site visit, but may be present on site. No protected terrestrial mammals were noted on site or in the vicinity of the site. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened faunal species were recorded within the proposed site. Two active fox (Vulpes vulpes)(not protected) dens are located approximately 50m to the south of the site.

Bats A bat survey was carried out and the results of the survey are seen in Appendix I. There were no seasonal or climatic constraints as survey was undertaken within the active bat season in good weather conditions with temperatures of 16°C after dark. Winds were very light and there was no rainfall. No evidence of a bat roost was found in any of the onsite trees or buildings. No bats were noted emerging from trees or buildings on site. The survey noted Soprano Pipistrelle (*Pipistrellus pygmaeus*) bats and a Leisler's Bat (*Nyctalus leisleri*) foraging on site, primarily in the vicinity of hedgerows.

Amphibians/Reptiles
The common frog (*Rana temporaria*) or the common lizard (*Lacerta vivipara*) were not observed on site. There are no water features (watercourses or ponds) within the site boundary that could be important to frogs. However, the spring on site does provide water to the drainage ditch within hedgerow.

Birds
Table 3. Bird Species noted in the vicinity of the proposed development

Common Name	***Scientific Name***
Woodpigeon	*Columba palumbus*
Wren	*Troglodytes troglodytes*
Jackdaw	*Corvus monedula*
Robin	*Erithacus rubecula*
Blue tit	*Parus caeruleus*
Great tit	*Parus major*
Raven (overhead)	*Corvus corax*
Barn Swallow (overhead)	*Hirundo rustica*

It should be noted the habitats on sites would not be considered appropriate for wintering birds and the site would not form an ex-situ foraging site for wintering birds.

Assessment of Biodiversity Records

The National Biodiversity Data Centre's online viewer was consulted in order to determine the extent of biodiversity and/or species of interest in the area. First, an assessment of the site-specific area was carried out by generating a report based on the site outline, however it recorded no species of interest in the site area. Following this a 2 km^2 grid, reference number N92Z, based on the Ordnance Survey Ireland (OSI) Irish Grid classification system was assessed. Table 3 provides a list of all species recorded in the species reports generated for this grid that possess a specific designation, such as Invasive Species or Protected Species.

Table 3. Table of species, NBDC

Date of Record	Species Name	Designation
31/12/2011	Barn Swallow (*Hirundo rustica*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Black-headed Gull *(Larus ridibundus)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
31/12/2011	Common Linnet (*Carduelis cannabina*)	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Pheasant (*Phasianus colchicus)*	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
31/12/2011	Common Starling (*Sturnus vulgaris)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Common Wood Pigeon (*Columba palumbus)*	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
31/12/2011	Eurasian Tree Sparrow (*Passer montanus)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	House Martin (*Delichon urbicum)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	House Sparrow (*Passer domesticus)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Rock Pigeon (Columba *livia)*	Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
31/12/2011	Stock Pigeon (*Columba oenas)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
31/12/2011	Yellowhammer (*Emberiza citrinella)*	Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
02/10/1984	Budapest Slug (*Tandonia budapestensis)*	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
02/10/1984	Common Garden Snail (*Cornu aspersum)*	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
31/12/2005	Eurasian Badger (*Meles meles)*	Protected Species: Wildlife Acts
05/08/2013	European Rabbit (*Oryctolagus cuniculus)*	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
10/05/2010	Lesser Noctule (*Nyctalus leisleri*)	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
10/05/2010	Pipistrelle (*Pipistrellus pipistrellus sensu lato)*	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
10/05/2010	Soprano Pipistrelle (*Pipistrellus pygmaeus)*	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts

An assessment of files received from the NPWS (Code No. 2022_120) which contain records of rare and protected species and grid references for sightings of these species was carried out as part of this EcIA for the proposed development. There are no recorded sightings within the site itself, however the following table (Table 4) provides a summary of the species identified, the year of identification/sample, survey name and data ID of sightings locations in the areas surrounding the proposed development.

Table 4. Species survey, NPWS

Data ID.	Species	Survey Name	Sample Year
9449	Common Frog (*Rana temporaria*)	Frog IPCC data from National Frog Survey 2011	2008
2737	Eurasian Badger (*Meles meles*)	Badger and Habitat Survey of Ireland	1992
4423	Irish Hare (*Lepus timidus subsp. hibernicus*)	Hare Survey of Ireland 2006/2007	2006

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).

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 and habitats of low biodiversity importance. The area is not deemed to be an important foraging area for terrestrial mammals or birds of conservation importance.

Designated Conservation sites within 15km

The proposed development is not within a designated conservation site. The nearest designated conservation site is the Grand Canal pNHA (2.1 km). There is no direct hydrological pathway to designated conservation sites. Out of an abundance of caution, it is considered that there is an indirect hydrological pathway to Liffey Valley pNHA (6.8 km) and designated conservation sites within Dublin Bay via surface water drainage. Surface water drainage will be directed to an existing drainage ditch located on-site, which is considered to outfall to a watercourse (located 600m from the site) which in turn outfalls to the River Liffey. In this case, in the absence of mitigation measures, given the extensive distance (6.8 km) to the nearest conservation site, settlement within drainage ditches, missing and dilution, any silt or pollutants will settle, be dispersed or diluted and will not impact on designated conservation sites would be unlikely.

Biodiversity

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

Terrestrial mammalian species

No protected terrestrial mammals were noted on site. Loss of habitat and habitat fragmentation may affect some common mammalian species including foxes (*Vulpes vulpes*).

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

Flora

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

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

Bat Fauna

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

Impacts: Low adverse / site / Negative Impact / Not significant / short term. Mitigation is needed in the form of a pre-construction survey and the control of light spill during construction. A post construction assessment of lighting will be required.

Aquatic Biodiversity

Due to the lack of any watercourse within the site boundary, and the lack of direct hydrological pathway to a watercourse, there is little potential for significant downstream impacts on biodiversity from silt or petrochemicals. There is no proposed outfall to any proximate watercourse. The spring on site that leads to the drainage ditch must be protected and redirected at the first phase of the project.

Impacts: Low adverse / local / Negative Impact / Slight Effects / short term. Mitigation is required for the protection of the spring on site.

Bird Fauna

No bird species of conservation importance have been noted on site. However, site clearance could impact on bird nesting.

Impacts: Low adverse / Local / Negative Impact / Not significant / short term. Mitigation is needed in the form of site clearance out side bird nesting season.

Operational Impacts

Once developed, the site would be seen as a stable ecological environment. Appropriate measures should be taken to prevent contaminated surface water run-off and silt into adjacent drainage ditches. Light spill should be avoided during operation of the site particularly treelines. The construction of 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

The proposed development includes a sustainable drainage strategy. The development will comply with County Council requirements and the Water Pollution Acts and standard measures will be in place to prevent downstream impacts.

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

Biodiversity

Biodiversity value of the site will improve as landscaping matures.

Terrestrial mammalian species

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

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

Flora

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

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

Bat Fauna

The proposed development will change the local environment as new structures are to be erected and some of the existing vegetation will be removed. No bat roosts or potential bat roosts will be lost due to this development and the species expected to occur onsite should persist following the implementation of the sensitive lighting strategy that complies with bat lighting guidance..

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

Aquatic Biodiversity

Foul water drainage will be treated within the existing public infrastructure. Surface water will discharge to the drainage ditch and will require standard controls.

Impacts: 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 landscaping may provide additional nesting and foraging potential for garden bird species.

Impacts: Low adverse / site / Negative Impact / Not significant / long 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), biodiversity, and local biodiversity within / proximate to the subject site are outlined in Table 5.

Table 5. Sensitive Receptors/Impacts and mitigation measures.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
Biodiversity and Watercourses	• Habitat Degradation • Dust deposition • Pollution • Silt ingress • Potential downstream impacts.	• The spring will be protected and isolated within the first phase of the development.This will allow water to remain unimpeded to drain to the drainage ditch. • Local silt traps established throughout site. • The drainage ditch will be protected by silt fencing. • Mitigation measures on site include dust control, stockpiling away from drains • Stockpiling of loose materials will be kept to a minimum of 20m from drains. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system. • Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches, excavations and other locations where it may cause pollution. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality. • Mitigation measures on site include dust control, stockpiling away from drains • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system. • Fuel, oil and chemical storage will be sited within a bunded area. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. • During the construction works silt traps will be put in place in the vicinity of all runoff channels to prevent sediment entering the public network. • Petrochemical interception and bunds in refuelling area • Maintenance of any drainage structures (e.g. de-silting operations) will not result in the release of contaminated water to the surface water network. • No entry of solids to the associated stream or drainage network during the connection of pipework to the public water system • Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks. • The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained. • The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. • Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
		• Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis. **Air & Dust** Dust may enter the surface water network via air or surface water with potential downstream impacts. Mitigation measures will be carried out reduce dust emissions to a level that avoids the possibility of adverse effects on downstream biodiversity. The main activities that may give rise to dust emissions during construction include the following: • Excavation of material; • Materials handling and storage; • Movement of vehicles (particularly HGV's) and mobile plant. • Contaminated surface runoff *Mitigation measures to be in place:* • Consultation will be carried with an ecologist throughout the demolition and construction phases; • Trucks leaving the site with excavated material will be covered so as to avoid dust emissions along the haulage routes. • Speed limits on site (15kmh) to reduce dust generation and mobilisation. • The stream is to be protected from dust on site. This may require additional measures in the vicinity of the building during demolition e.g. placing of terram/protective material over the stream. *Site Management* • Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged. • Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. • Make the complaints log available to the local authority when asked. • Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. *Monitoring* • Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces within 100 m of site boundary, integrity of the silt control measures, with cleaning and / or repair to be provided if necessary. *Preparing and Maintaining the Site*

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
		• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. • Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period. • Avoid site runoff of water or mud. • Keep site fencing, barriers and scaffolding clean using wet methods. • Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. • Cover, seed or fence stockpiles to prevent wind whipping. • Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic. • Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions. *Operations* • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • Use enclosed chutes and conveyors and covered skips. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. • Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. *Waste* • Avoid bonfires and burning of waste materials. *Measures Specific to Earthworks* • Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. • Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. • Only remove the cover in small areas during work and not all at once. • During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust. • The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be appropriate and/or required.

Sensitive Receptors	Potential Impacts	Designed-in Mitigation
		Storage/Use of Materials, Plant & Equipment • Materials, plant and equipment shall be stored in the proposed site compound location; • All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater; • Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages; • Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use. • Drip trays will be turned upside down if not in use to prevent the collection of rainwater; • Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips; • No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction;
Birds (National Protection)	• Removal nesting habitat. • Removal foraging habitat. • Destruction and/or disturbance to nests (injury/death). • Predation .	• Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent. This would include nesting gulls on buildings if present. Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent. • 10 Nest boxes are to be placed on site to compensate for resource loss. • During Construction Light falling upon any areas of benefit to birds such as hedgerow will not exceed 3 lux to ensure that resting and nesting species are not unnecessarily disrupted.
Bats (International Protection)	• Removal roosting/foraging habitat. • Lighting Impacts	• Pre Construction building inspection for bats • Compliance with conditions of the bat derogation licence if required following the inspection. • Lighting at all stages should be done sensitively on site with no direct lighting of treelines. • Post Construction assessment/compliance with proposed lighting strategy.
Mammals	• Death/injury • Disturbance	• A pre-construction survey will be carried out for terrestrial mammals of conservation importance. If terrestrial mammals of conservation importance are noted on site NPWS will be consulted in relation to removal and the appropriate permissions obtained.

Cumulative Impacts

There are several proposed developments located in the area immediately surrounding the subject site. The following is a list of planning applications as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Database' portal[1]:

Table 1. Planning application details and reference numbers of sites proximate to the proposed development

Ref. No.	Address	Proposal
SD22A/0286	Main Street, Newcastle, Dublin	Demolition of 2 sheds and the construction of 30 dwellings; 1 vehicular and pedestrian link with Main Street, Newcastle; vehicle and pedestrian linkk with Glebe Square, Newcastle and all associated and ancillary site development works.
SHD ABP-313814	Within townland of Newcastle South, Newcastle, Co. Dublin	Strategic Housing Development - Application (Case is due to be decided by 05/10/2022) 280 no. residential units (128 no. houses, 152 no. apartments), creche and associated site works.(www.newcastlesouthplanning.com) This application borders the site and ecological assessments were carried out by Altemar Limited.
SD19A/0040	Cornerpark, Peamount Road, Newcastle, Co. Dublin.	Demolition of existing stables/sheds; construction of 28 dwellings comprised of 8 three bedroom, two storey semi-detached houses (Type A); 7 three bedroom, 2 storey terraced houses (Type B); 6 three bedroom, 2 storey terraced houses (Type C); 3 three bedroom, 2 storey terraced houses (Type D); 4 three bedroom, 2 storey semi-detached houses (Type E); all associated site development works, car parking, landscaping, open spaces, public lighting, connections to foul and surface water drainage/attenuation and water supply.
SHD3ABP-305343-19	Newcastle South & Ballynakelly, Newcastle, Co. Dublin	(1) The demolition of 5 structures on site, total area measuring 359sq.m, comprising 2 habitable dwellings and 3 associated outbuildings/sheds located to the northwest of the site; (2) development of 406 residential homes; (3) a childcare facility (518sq.m GFA); (4) 1 commercial unit (67.7sq.m GFA); (5) reservation of a school site (1.5ha); (6) new vehicular, cycle and pedestrain access from Main Street; (7) continuation of Newcastle Boulevard forming part of a new east-west link street; (8) a new Public Park (2ha); (9) pocket parks and greenway together with associated internal access roads, pedestrain and cycle paths and linkages; (10) 1 single storey marketing suite (81sqm) and signage (including hoarding) during the construction phase of development only and (11) all associated site and development works.The overall site comprises lands to the south of Main Street (c.15ha) together with 3 additional infill sites at the corner of Burgage Street and Newcastle Boulevard (c. 0.8ha); No. 32 Ballynakelly Edge (c.0.05ha); and Ballynakelly Rise (c.0.18ha)
SD18A/0363	Main Street, Newcastle, Co. Dublin	(1) Construction of 22 three bedroom dwelling houses; (2) construction of access road and footpaths; (3) provision of car parking facilities to serve the development; (4) construction of a foul sewer network to serve the development which shall connect into adjoining foul sewer network; (5) construction of a surface water sewer network to serve the development including the provision of the necessary attenuation elements and the connection of the surface water network to the adjoining surface water network; (6) provision of a waterman to serve the development and connection to adjoining water main; (7) demolition of the garden sheds; (8) provision of all necessary utility services; (9) all ancillary site works.
SD17A/0378	Newcastle, Co. Dublin	Residential development consisting of 46 units
SD17A/0010	Drumlonagher, Main Street, Newcastle, Co. Dublin.	(1) Construction of 21 no. 3 bedroom, two storey dwelling houses. (2) Construction of 2 no. 2 bedroom, two storey dwelling houses. (3) Construction of a two storey building with retail unit (convenience) at ground floor level and 2 no. 2 bedroom apartments and 2 no. 1 bedroom apartments at first floor level with a total ground and first floor area of 771sq.m. (4) Construction of a 2 storey corner building with 2 retail units (cafe and convenience) at ground floor level with 1 no. 2 bedroom apartment and 1 no. 1 bedroom apartment at first floor level with a total ground and first floor area of 303sq.m. (5) Construction of a 2m high boundary wall to East and west boundaries and 1.8m high concrete post and timber panel fences between the dwellings. (6) Construction of a Market Square to serve the proposed development and local area. (7)

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

		Construction of proposed access road and footpaths. (8) Provision of car parking facilities to serve the proposed development. (9) Construction of a foul sewer network to serve the proposed development which shall connect into the existing adjoining foul sewer network. (10) Construction of a surface water sewer network to serve the proposed development including for the provision of the necessary attenuation elements and for the connection of the surface water network to the existing adjoining surface water network. (11) Provision of a watermain to serve the proposed development and connection to existing adjoining watermain. (12) Provision of necessary utility services. (13) All signage provisions for the proposed commercial buildings and place name for the proposed development and (14) all ancillary site works.
SD09A/0489 /EP	Oakville House, Main Street, Newcastle, Co. Dublin	(1) A Nursing Home comprising 64 bedrooms in a 2-storey block forming an enclosed courtyard together with anciillary accommodation including reception area and toilets, 4 staff bedrooms, 2 offices, a kitchen and 2 dining rooms, 4 sitting rooms, 4 assisted bathrooms, 4 treatment rooms, 2 nurses stations, prayer room, 2 activity rooms, bin store, laundry, plant rooms, cleaner stores, staff room/dining room, staff changing room and stores; (2) surface car parking for 24 cars; (3) demolition of Oakville House - a 2 storey house of approx. 295sq.m and adjoining garage of 50sq.m; (4) a new access road, 240 metres in length approximately, together with footpaths, drains, landscaped areas; (5) a new vehicular and pedestrian entrance from Main Street, Newcastle; (6) surface water attenuation area together with all ancillary site works.
SD05A/0344 /EP	Ballynakelly and Newcastle South, Newcastle-Lyons, County Dublin.	A residential development of 743 no. dwellings including a neighbourhood centre

Given this, it is considered that in combination effects 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 designated conservation sites or local biodiversity will be seen as a result of the proposed development alone or combination with other projects.

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

Residual Impacts and Conclusion

Based on the successful implementation of the construction phase controls and proposed works to be carried out in accordance with this EcIA, it is likely that there will be no significant ecological impact arising from construction and the day-to-day operation of the proposed development.

No significant ecological impacts would be likely outside the immediate vicinity of the proposed development. Impacts in the vicinity of the proposed development would be considerable due to the removal of the majority existing habitats. However, due to the fact that the site is relatively poor in species diversity with no habitats of significant value, these impacts would be limited and localised.

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

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Bat Fauna Survey for a proposed development at Main Street Upper, Newcastle, Co. Dublin.

19th July 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: LIDL Ireland GmbH

SUMMARY

Structure:	Several buildings on site including prefab structures.
Location:	Main Street Upper, Newcastle, Co. Dublin.
Bat species present:	None Roosting. Minor foraging within the proposed site.
Proposed work:	Construction of Discount Foodstore Supermarket.
Impact on bats:	No confirmed bat roosts bat roosts will be lost. No trees of bat roosting potential are noted on site. The proposed development will change the local environment as new structures are to be erected and some of the existing vegetation will be removed. The development is likely to displace bats from foraging at the site during construction. Based on the small number of common species found using the site the displacement from this site it will not have any significant effect on local bat populations, and that any such effect will be only significant at the local level. No bat roosts or potential bat roosts will be lost due to this development and the species expected to occur onsite should persist. The lighting plan has been designed to comply with bat lighting guidelines. However, foraging activity on site may be reduced in the short-medium term until the landscaping matures. The proposed development is not in proximity to sensitive bat areas. The potential for collision risk and impact on flight paths in relation to bats is considered is considered low due to the low level of bat activity on site and the buildings would be deemed to be clearly visible to bats.
Survey by:	Bryan Deegan MCIEEM
Survey date:	5th July 2022

Receiving Environment

Background

Permission for development at Main Street Upper, Newcastle, Co. Dublin, principally consisting of the construction of a Discount Foodstore Supermarket with ancillary off-licence sales. The proposed development comprises:

1) The construction of a single storey Discount Foodstore Supermarket with ancillary off-licence use (with mono-pitch roof and overall building height of c. 6.74 metres) measuring c. 2,207 sqm gross floor space with a net retail sales area of c. 1,410 sqm;
2) Construction of a vehicular access point to Main Street Upper and associated works to carriageway and including partial removal of boundary wall / façade, modification of existing footpaths / public realm and associated and ancillary works including proposed entrance plaza area;
3) Demolition of part of an existing rear / southern single storey residential extension (and related alterations to remaining structure) of 'Kelly Estates' building. The original 'Kelly Estates' building (a protected structure - Eircode: D22 Y9H7) will not be modified;
4) Demolition of detached single storey accommodation / residential structure and ancillary wall / fence demolitions to rear of existing 'Kelly Estates' building;
5) Demolition of existing single storey (stable) building along Main Street and construction of single storey retail / café unit on an extended footprint measuring c. 118 sqm and associated alterations to existing Main Street boundary façade;
6) Renovation and change of use of existing (vacant) two storey vernacular townhouse structure to Main Street, and single storey extension to rear, for retail / commercial use (single level throughout) totalling c. 61 sqm;
7) Repair and renewal of existing Western and Eastern 'burgage plot' tree and hedgerow site boundaries; and,
8) Provision of associated car parking, cycle parking (and staff cycle parking shelter), pedestrian access routes and (ramp and stair) structures (to / through the southern and western site boundaries to facilitate connections to potential future development), free standing and building mounted signage, free standing trolley bay cover / enclosure, refrigeration and air conditioning plant and equipment, roof mounted solar panels, public lighting, hard and soft landscaping, boundary treatments and divisions, retaining wall structures, drainage infrastructure and connections to services / utilities, electricity Substation and all other associated and ancillary development and works above and below ground level including within the curtilage of a protected structure.

In order to provide sufficient additional detail in relation to the project additional information in relation to the project layout, landscape, drainage, arborist and lighting has been provided.

The proposed site outline and location is demonstrated in Figure 1.

Landscape

The landscape design for the proposed development has been prepared by Austen Associates. The proposed landscape masterplan is demonstrated in Figure 2.

Figure 1. Proposed site outline

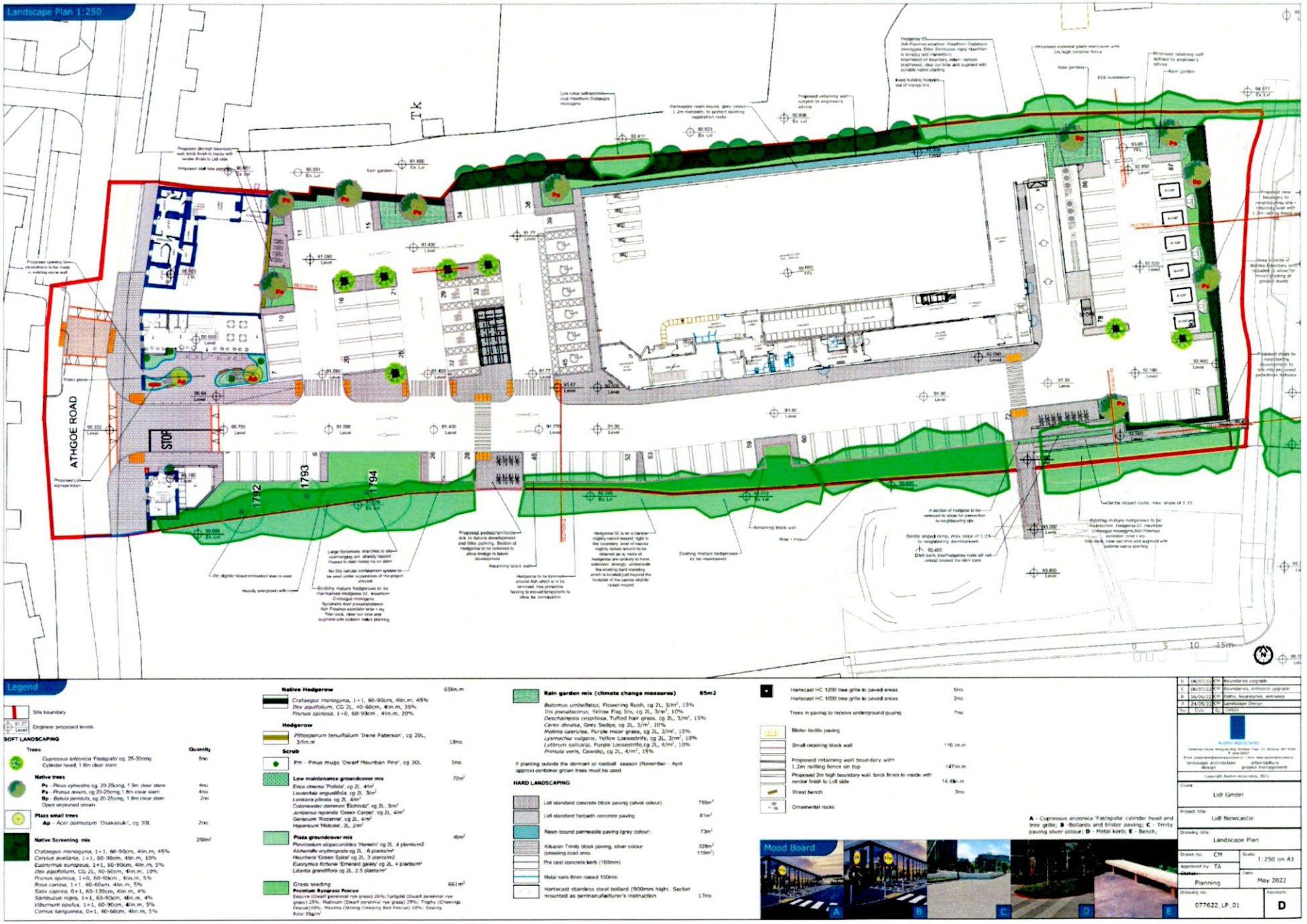

Figure 2. Proposed landscape plan

Arborist

An arborist report has been prepared by Austen Associates to accompany this planning application. This report concludes with the following:

'*The burgage plot boundaries are of important cultural, historic and ecological value and are to be retained and protected.*

Part of the eastern burgage plot boundary is made up of unsuitable vegetation, including a large tract of Leyland Cypress X Cuprocyparis leylandii, along with some self-seeded poor-quality vegetation. It is proposed that this is removed, apart from a section of self-seeded vegetation that may be retained, Hawthorn Crataegus monogyna species.

Replacement and augmentation planting is proposed to re-instate the burgage plot boundaries. These works will see the removal of unsuitable spreading non native species. These species will be replaced with more suitable native spe-cies, resulting in an improvement to the burgage plot boundaries.

Tree protective fencing will be erected to prohibit access to the rooting area of the trees. This tree protective fencing to BS 5837:2012 will be in place all through construction, along with adherence by all on site with the instructions regarding the protection of the RPA. These steps are critical to the successful retention of trees.'

The tree survey plan and tree protection plan are demonstrated in Figures 3 & 4.

Lighting

A Lighting Impact Assessment Report has been prepared by Lawler Consulting to accompany this planning application. It should be noted that bats were noted foraging on site. As a result discussions took place to ensure the lighting complied with bat lighting guidelines. In relation to potential impacts on the surrounding areas due to the proposed lighting scheme, this report outlines the following:

'***7.1. Light pollution reduction***

Careful consideration was taken when preparing our lighting schemes to ensure there is no risk of light pollution. Lighting systems frequently emit light that, in addition to performing their primary function of illumination of exterior functions, illuminate beyond what is necessary. Light Pollution is often considered a nuisance, a safety hazard when it causes 'blind' spots to pedestrians and drivers and also poses environmental concerns as it disrupts human health, affects bird migration patterns and other natural cycles. Another negative condition that arises from light pollution is the inability to view the night sky by the general public.

The requirements which we shall be following in our design of the relevant lighting schemes shall be as follows:

- *BSEN 12464-2:2014 'Lighting of Work Places – Part 2 – Outdoor Workplaces'*
- *BS5489-1 (2020) – Code of practice for the Design of Road Lighting – Lighting of roads and public amenity areas*
- *Guidance note for the Reduction of Obtrusive Light – GN01:2020, produced by the Institute of Lighting Professionals (ILP)*
- *We shall specify light fittings which have lighting shields to prevent the risk of light pollution to adjacent properties.*
- *We shall specify Light Emitting Diode (LED) lamps and fixtures for all exterior lighting including parking lots and streets.*

As highlighted within our calculations and within Section 5.1 of this report we achieve all regulations in relation to potential light intrusion/spill and skyglow.

7.2. Impact upon wider urban area and landscape

Careful consideration was taken when preparing our lighting schemes to ensure there is no risk of upsetting the existing lighting schemes throughout the local area. The proposed lighting scheme will only enhance the lighting within our boundary thus enhancing the general feel while driving through the area.'

'7.4 Impact upon Bats

Introduction:

Many Species of Bat, insects and other wildlife are in danger from increasing urbanisation in general and lighting is part of the problem. Legislation protects the Roost (Resting places for Bats) from being intentionally or recklessly disturbed. If a lighting scheme is being developed in an area with Bats, a survey is carried out to plan and minimise the disruption to Bats.

For safety reasons lighting will be required to illuminate the car park on the site. However, several factors have been included in the lighting design to mitigate the disruption to Bats at the boundary areas.

The requirements which we shall be following in our design of the relevant lighting schemes are as follows:

ILP – Guidance Note 08/18 : Bats and artificial lighting in the UK/Bats and the Built Environment series and recommendations of the Environmental Consultants Report.

The Proposed Lighting Design Factors which will minimise the effect on Bats at the boundary areas:

5. *The lighting installation has been designed to only illuminate the new car parking. The proposed luminaires minimise light spill to any other area forming part of the Bats commute. The luminaires provide no uplight, and have narrow downward beams of light, and optics that prevent back spill.*
6. *Lighting Cowls/Shields shall be installed on luminaires where there may be the potential for any light spill on the perimeter to further minimise the effects on bats.*
7. *Lighting Controls - The peak time for feeding for Bats is dusk. This is when they exit the Roost to go foraging. The light output from dusk to dawn can be restricted using LED controls to dim the luminaires located across the carpark and along the boundaries, this would benefit the Bats as the dimmer can be set to suitable times throughout the year.*
8. *Artificial Lighting – LED*

   This is the light source of choice for most local authorities. The light emitted is more directional and normally controlled by lenses or sometimes reflectors. The light is produced in a narrow beam. It is an instant light source. LED is available in several colour temperatures.

   'Warm white' (more yellow/orange colour) at 2700°K can now be used with little reduction in lumen output. LED typically features no UV component and research indicates that while lower UV components attract fewer invertebrates, warmer colour temperatures with peak wavelengths greater than 550nm (~2700°K) cause less impacts on bats (Stone, 2012, 2015a, 2015b).'

The proposed lighting layout is demonstrated in Figure 5.

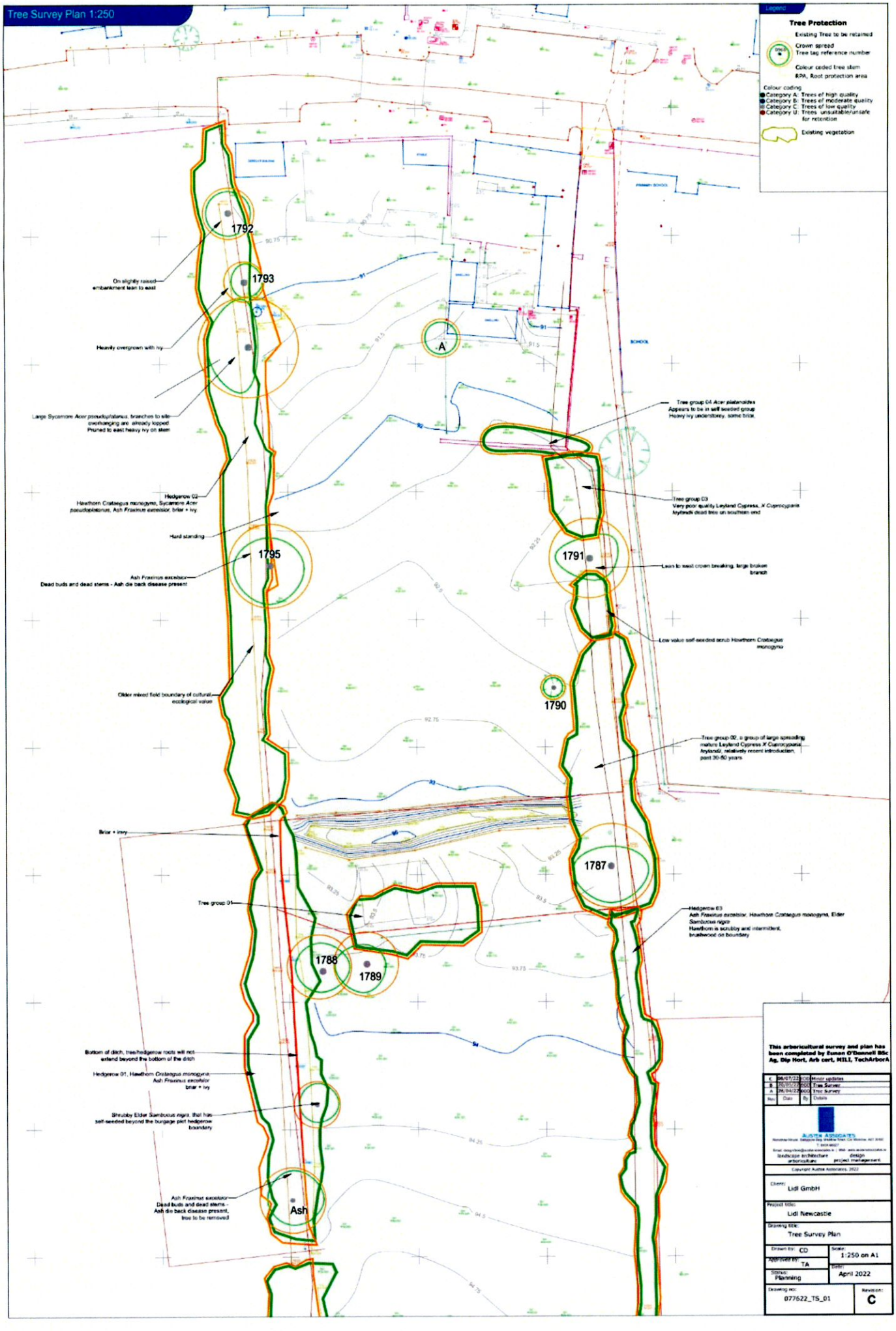

Figure 3. Tree survey plan

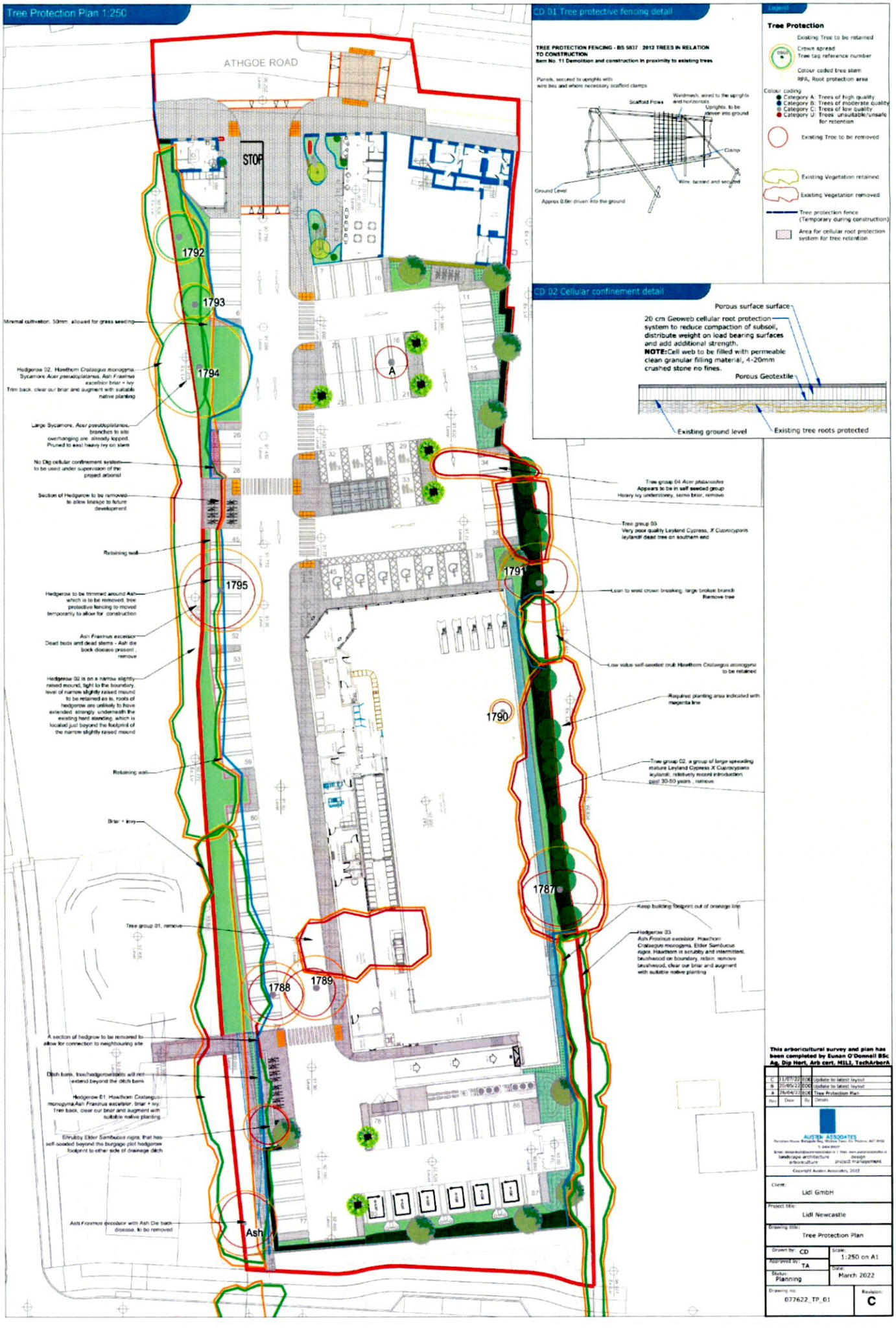

Figure 4. Tree protection plan

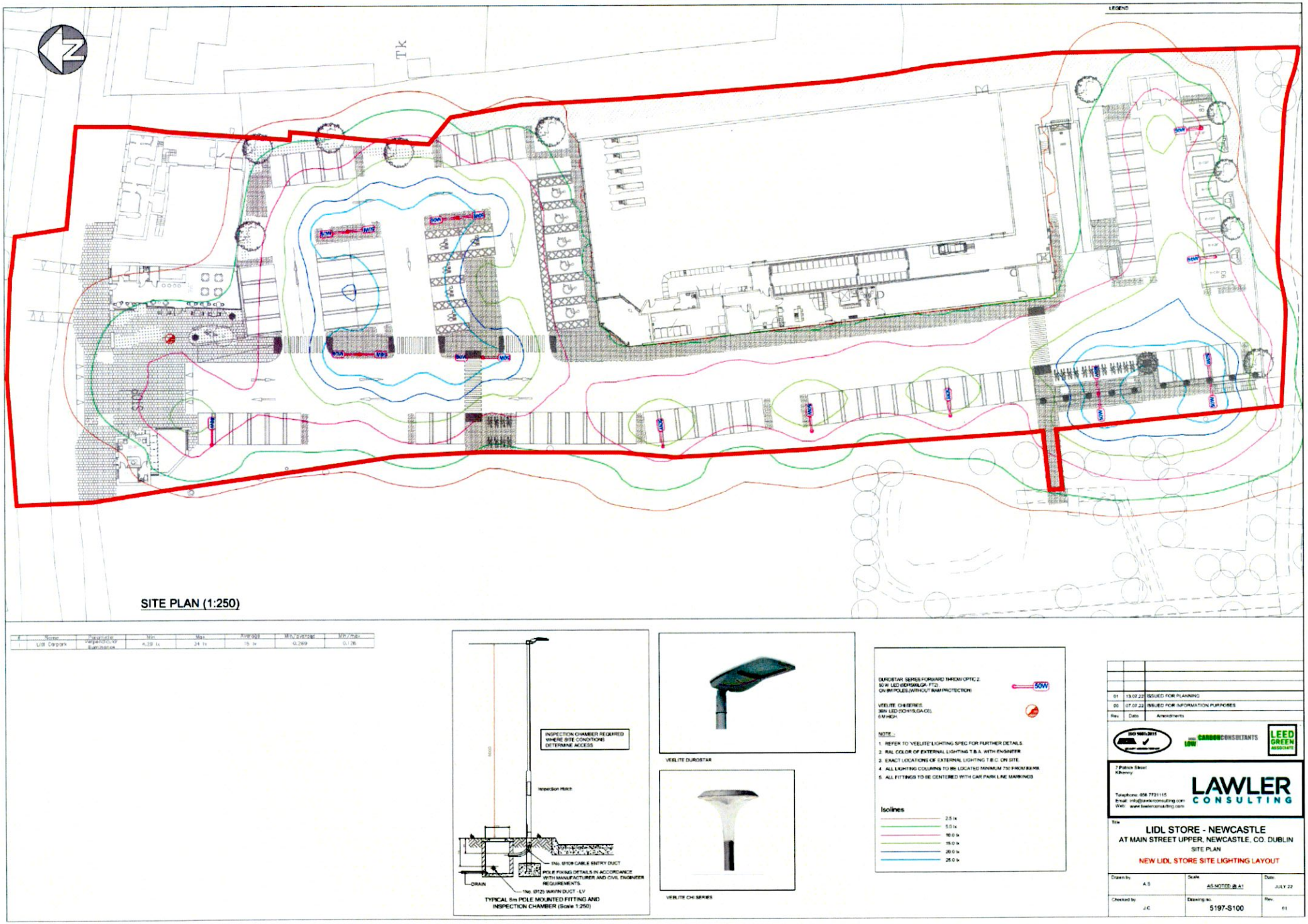

Figure 5. Site lighting layout

Competency of Assessor

This report has been prepared by Bryan Deegan MSc, BSc (MCIEEM). Bryan has over 27 years of experience providing ecological consultancy services in Ireland. He has extensive experience in carrying out a wide range of bat surveys including dusk emergence, dawn re-entry and static detector surveys. He also has extensive experience reducing the potential impact of projects that involve external lighting on Bats. Bryan trained with Conor Kelleher author of the Bat Mitigation Guidelines for Ireland (Kelleher and Marnell (2022)) and Bryan is currently providing bat ecology (impact assessment and enhancement) services to Dun Laoghaire Rathdown County Council primarily on the Shanganagh Park Masterplan. The desk and field surveys were carried out having regard to the guidance: Bat Surveys for Professional Ecologists – Good Practice Guidelines 3rd Edition (Collins, J. (Ed.) 2016) and Marnell, Kelleher and Mullen (2022), Bat Mitigation Guidelines for Ireland V2 (which update and replace the Bat Mitigation Guidelines for Ireland published in 2006).

Legislative Context

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

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

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

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

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

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

Bat survey

This report presents the results of site visit by Bryan Deegan (MCIEEM) on the 5th July 2022. A bat emergent and detector survey was carried out. Trees and buildings on site were examined for bat roosting potential.

Survey methodology

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

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

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

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

Survey Results

Trees as potential bat roosts.

A ground level roost assessment was carried and used to examine the trees on site for features that could form bat roosts. Potential roosting features include heavy ivy growth, broken limbs, areas of decay, vertical or horizontal cracks, cracks in bark etc. None of the trees on site had features that would be considered to be of importance to roosting bats. All trees on site were assessed. No bats, evidence of bats or bat roost were identified in any of the onsite trees. A derogation license is therefore not required for the removal of trees on site.

Buildings as potential bat roosts.

All buildings on site were assessed. No bats, evidence of bats or bat roost were identified in any of the onsite buildings. A derogation license is therefore not required for the removal of trees on site. However, the stone ruin has potential for bats roosting but is within a brightly lit area by the street. As a precaution all buildings will be assessed prior to demolition in case bats have commenced roosting in the interim.

Emergent/detector surveys.

Emergent/detector surveys were carried out by Bryan Deegan on the 5th July 2022.The detector surveys were undertaken within the active bat season and the transects covered the entire site multiple times during the night. Weather conditions were good with mild temperatures of 16°C after sunset. Winds were light and there was no rainfall. Insects were observed in flight.

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

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

Soprano Pipistrelle (*Pipistrellus pygmaeus*) bats were observed foraging on site (Figure 12). A single Lesser Noctule (*Nyctalus leisleri)* was also noted foraging along the treeline located to the east of the subject site. No bats were observed emerging from onsite trees or structures proximate to the subject site. Activity was concentrated along the treeline and hedgerow to the east and centre of the site.

Bat assessment findings

Review of local bat records

The review of existing bat records (sourced from Bat Conservation Ireland's National Bat Records Database) within a 2km^2 grid (Reference grid N92Z) encompassing the study area reveals that three of the nine known Irish species have been observed locally (Table 1). The National Biodiversity Data Centre's online viewer was consulted in order to determine whether there have been recorded bat sightings in the wider area. This is visually represented in Figures 6 & 7. The following species were noted in the wider area: Daubenton's Bat (*Myotis daubentonii*), Brown Long-eared Bat (*Plecotus auritus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), and Lesser Noctule (*Nyctalus leisleri*) (Figures 6 & 7).

Table 1: *Status of bat species within a 2km^2 grid encompassing the subject site (Reference no. O22E)*

Species name	Record count	Date of last record	Note
Lesser Noctule (*Nyctalus leisleri*)	2	10/05/2010	National Bat Database of Ireland
Pipistrelle (*Pipistrellus pipistrellus sensu lato)*	2	10/05/2010	National Bat Database of Ireland
Soprano Pipistrelle (*Pipistrellus pygmaeus)*	2	10/05/2010	National Bat Database of Ireland

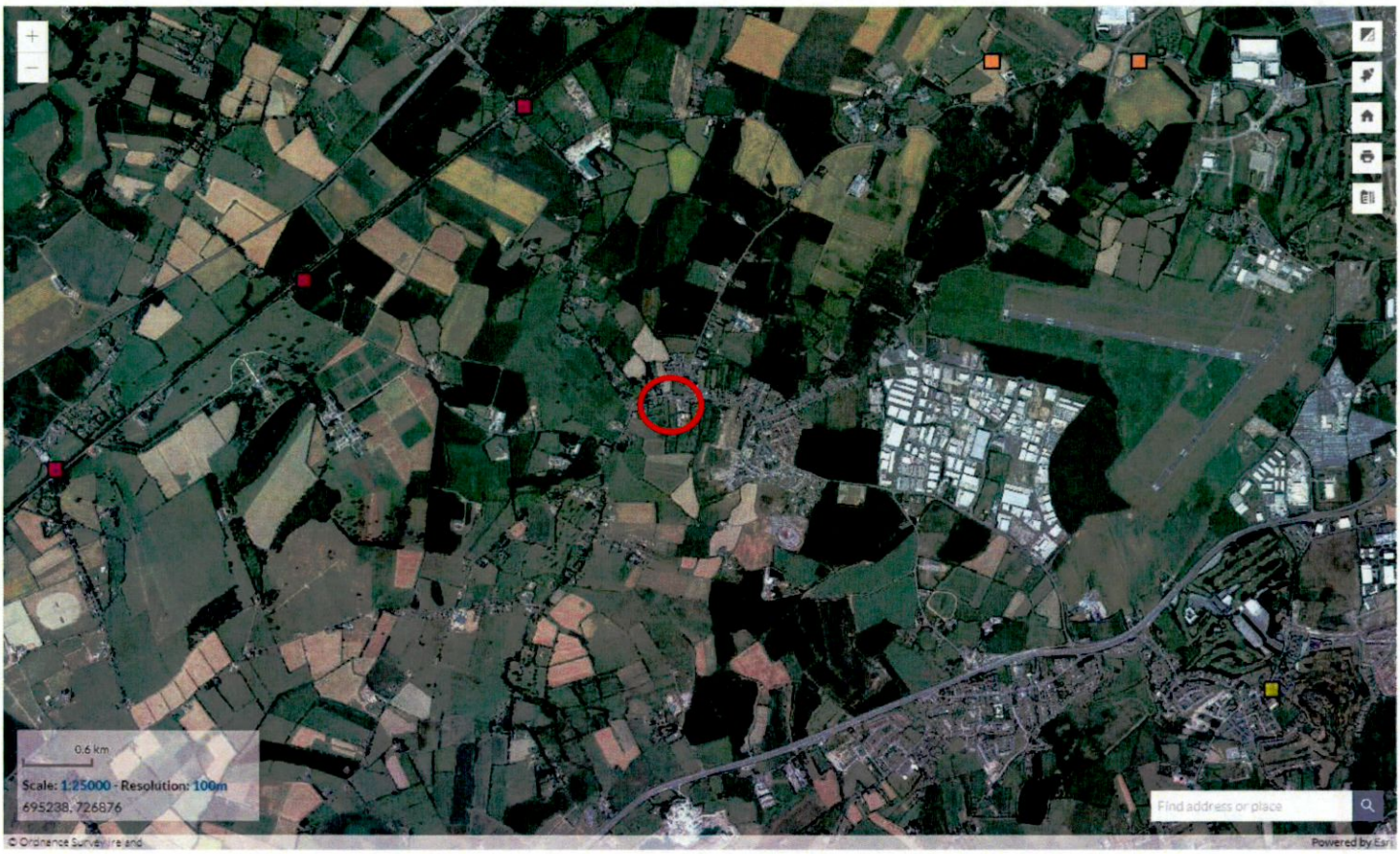

Figure 6. Brown Long-eared Bat (*Plecotus auritus*) (yellow), Daubenton's Bat (*Myotis daubentonii*) (purple), and both Brown Long-eared Bat and Daubenton's Bat (orange) (Source NBDC) (Site location – red circle)

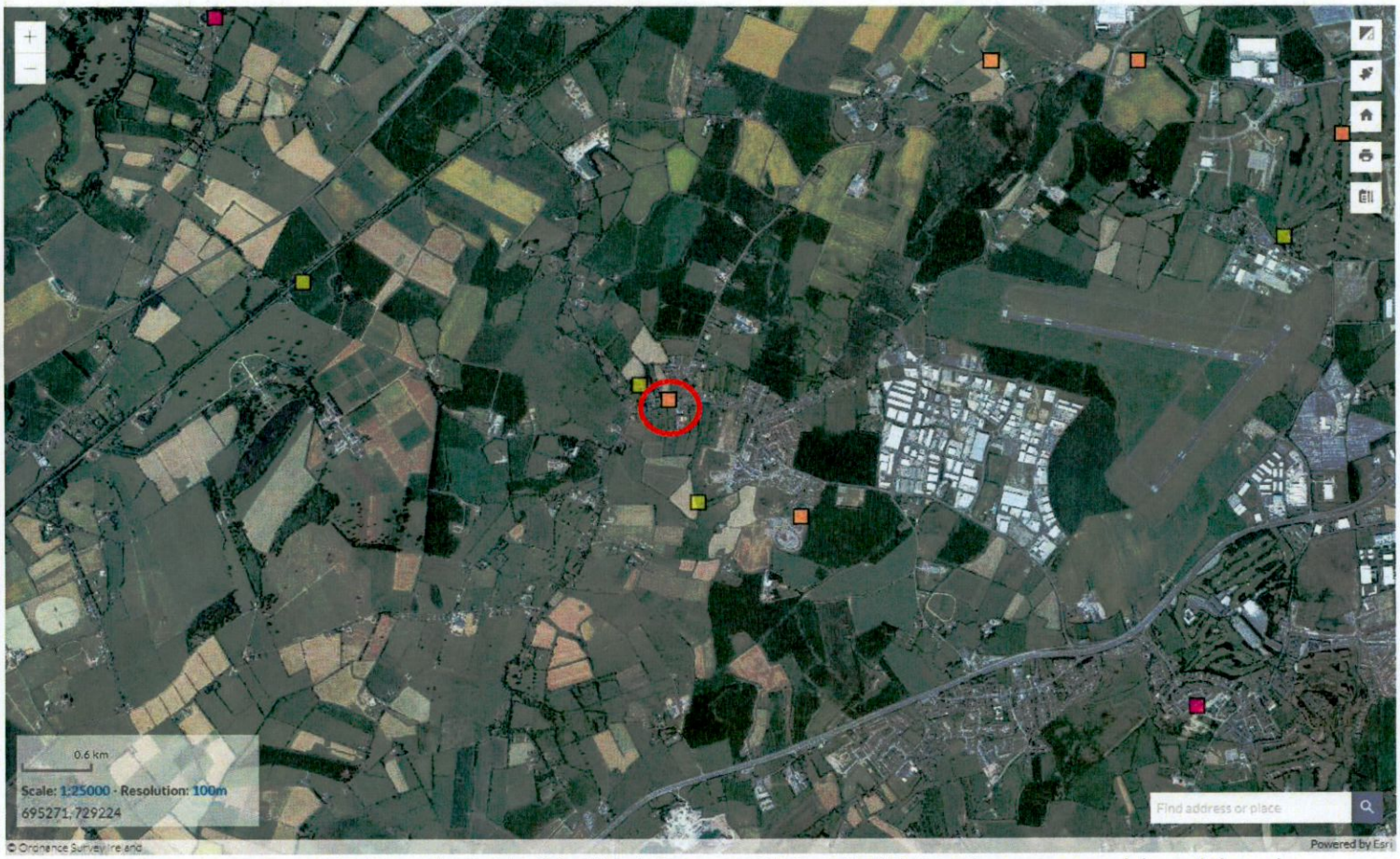

Figure 7. Lesser Noctule (*Nyctalus leisleri*) (yellow), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (purple), and both Soprano Pipistrelle and Lesser Noctule (orange) (Source NBDC) (Site location – red circle)

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

1. Soprano Pipistrelle (*Pipistrellus pygmaeus*) in grid reference N998287. Recorded on 10/05/2010 and located in a grid that encompasses the northern portion of the subject site.
2. Lesser Noctule (*Nyctalus leisleri)* in grid reference N998287. Recorded on 10/05/2010 and located in a grid that encompasses the northern portion of the subject site.
3. Lesser Noctule (*Nyctalus leisleri)* in grid reference N996288. Recorded on 20/01/2006 and located 140m North-West of the subject site.
4. Lesser Noctule (*Nyctalus leisleri)* in grid reference O000280. Recorded on 23/09/2005 and located 450m South of the subject site.
5. Lesser Noctule (*Nyctalus leisleri)* in grid reference O007279. Recorded on 29/06/2012 and located 1 km South East of the subject site.
6. Lesser Noctule (*Nyctalus leisleri)* in grid reference O007279. Recorded on 12/07/2011 and located 1 km South East of the subject site.
7. Soprano Pipistrelle (*Pipistrellus pygmaeus*) in grid reference O007279. Recorded on 29/06/2012 and located 1 km South East of the subject site.
8. Soprano Pipistrelle (*Pipistrellus pygmaeus*) in grid reference O007279. Recorded on 12/07/2011 and located 1 km South East of the subject site.

Evaluation of Results

The bat surveys comply with bat survey guidance documentation including Marnell et al (2022) and Collins (2016). No bats were observed emerging from trees or buildings on site. No evidence of bats roosting in buildings was noted. Minor bat activity was noted on site by soprano pipistrelle and Leisler's /Lesser noctule bats. However, it should be noted that historically the same bat species were noted on site in 2010. The site is of relatively low importance to the local bat population, but given the nature of the increasing development in the area and that the hedgerows are to be retained, lighting on site should comply with bat lighting guidelines.

Potential Impact of the development on Bats

No confirmed bat roosts bat roosts will be lost. No trees of bat roosting potential are noted on site. The proposed development will change the local environment as new structures are to be erected and some of the existing vegetation will be removed. The development is likely to displace bats from foraging at the site during construction. Based on the small number of common species found using the site the displacement from this site it will not have any significant effect on local bat populations, and that any such effect will be only significant at the local level. No bat roosts or potential bat roosts will be lost due to this development and the species expected to occur onsite should persist. The lighting plan has been designed to comply with bat lighting guidelines. However, foraging activity on site may be reduced in the short-medium term until the landscaping matures. The proposed development is not in proximity to sensitive bat areas. The potential for collision risk and impact on flight paths in relation to bats is considered is considered low due to the low level of bat activity on site and the buildings would be deemed to be clearly visible to bats.

Mitigation Measures

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

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

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

- Pre Construction building inspection for bats
- Compliance with conditions of the bat derogation licence if required following the inspection.
- Lighting at all stages should be done sensitively on site with no direct lighting of treelines.
- Post Construction assessment/compliance with proposed lighting strategy.

Predicted Residual Impact of Planned Development on Bats

The present survey found no evidence of roosting bats in any onsite tree or nearby structure therefore the proposed development will not result in the loss of any bat roost as no bats are roosting onsite. The proposed development will change the local environment as existing buildings are to be demolished and vegetation removed. There would be expected to be a short to medium term reduction in foraging until the landscaping and in particular the trees within the landscaping proposal mature. Based on the small number of common species found using the site the displacement from this site it will not have any significant effect on local bat populations, and that any such effect will be only significant at the local level. The external lighting for this development has been designed to achieve the performance requirements as set out in the Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010) and Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2018). All lighting is set at 2700°K in compliance with bat lighting guidelines. In the medium-long term bat foraging would be expected to continue on site and no significant effect would be foreseen.

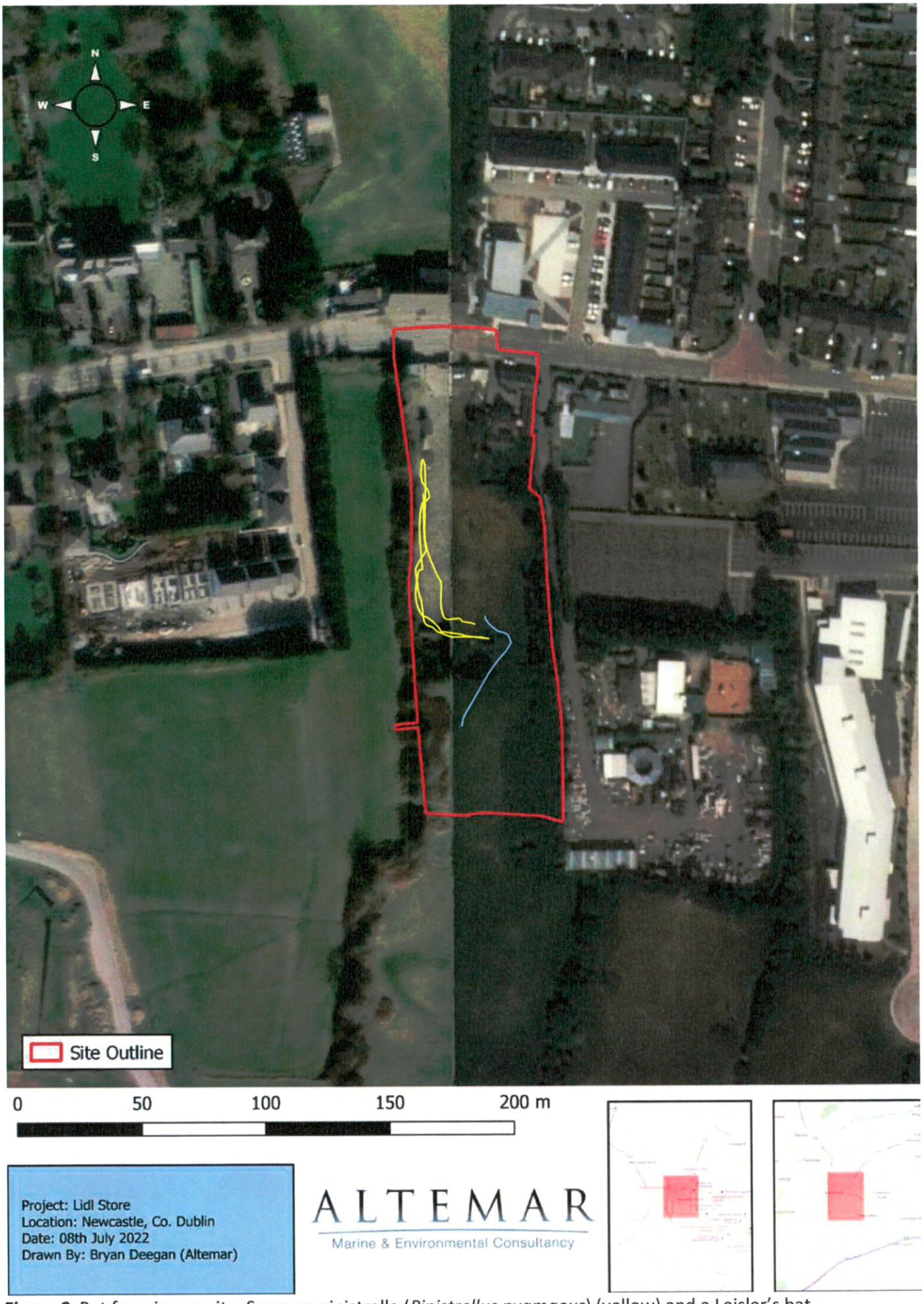

Figure 8. Bat foraging on site. Soprano pipistrelle (*Pipistrellus pygmaeus*) (yellow) and a Leisler's bat (*Nyctalus leisleri*)(blue).

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