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Bat fauna impact assessment for a proposed development at Boyne Road, Drogheda, Co. Louth.



29th September 2026

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On behalf of: Lagan Homes Boyne Ltd

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Document Control Sheet			
Client	Lagan Homes Boyne Ltd.		
Project	Bat fauna impact assessment for the proposed development at Boyne Road, Drogheda, Co. Louth.		
Report	Bat Fauna Impact Assessment		
Date	29th September 2026		
	Author	Reviewed	Date
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SUMMARY

Structure:	Six derelict, unoccupied two-storey houses in varying states of disrepair within the survey area in the southern part of the proposed development site. Several are fire damaged and partly roofless. The survey area is dominated by scrub and bounded by mature trees along Strand Road (R167) to the south and along the western boundary.
Location:	Boyne Road, Drogheda, Co. Louth
Bat species present:	Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*) and Brown long-eared bat (*Plecotus auritus*) were recorded foraging on site. Three day roosts, each used by a single Common pipistrelle, were recorded in Buildings 1, 2 and 4. No roosting bats were recorded in Buildings 3, 5 and 6, which may be demolished in advance of the derogation licence. A derogation licence from NPWS will be obtained before any works affecting Buildings 1, 2 and 4 take place.
Proposed work:	Large-scale Residential Development comprising 192 no. residential units (42 no. houses and 150 no. apartments), a childcare facility, café, gymnasium and community workspace, with associated access, parking, open space, landscaping, attenuation ponds, public lighting and all ancillary works, including demolition of the existing buildings on site.
Surveys by:	Tadhg Lonergan, Frank Spellman, Uma Isselee, Hugh Butler and Saoirse Ó Faoileán
Survey dates:	4th and 16th of September 2026

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Competency of Assessor

This report has been reviewed by Bryan Deegan MSc, BSc (MCIEEM), who has over 30 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 (Marnell et al. (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 4th Edition (Collins, J. (Ed.) 2023) and Marnell et al. (2022), Bat Mitigation Guidelines for Ireland V2 (which update and replace the Bat Mitigation Guidelines for Ireland published in 2006).

This report and field surveys were undertaken by Tadhg Lonergan (PhD Biology & Environmental Sciences, BSc (Hons) Zoology). Tadhg has extensive experience in carrying out a wide range of fauna surveys as both a researcher and consultant ecologist in Ireland, the UK, France, Denmark and Central America. These include roving and static acoustic bat surveys, bat roost inspections and emergence/re-entry surveys. Tadhg specialises in bat ecology, with fieldwork experience spanning long-term mark-recapture studies and roost monitoring of multiple species. Tadhg holds an NPWS Section 23/34 licence for bat handling and a Regulation 54 personal derogation licence for bat survey work. The desk and field surveys were carried out having regard to the guidance: Bat Surveys for Professional Ecologists – Good Practice Guidelines 4th Edition (Collins, J. (Ed.) 2023) and Marnell et al. (2022), Bat Mitigation Guidelines for Ireland V2 (Irish Wildlife Manuals No. 134).

Survey effort was contributed to by Frank Spellman (MSc (Ind) Zoology, BSc Zoology). Frank has extensive experience in carrying out a wide range of ecological surveys as both a sub-contractor and employee for environmental consultancies and organisations in Ireland and the US. These include both roving and static acoustic bat surveys, terrestrial non-avian mammal surveys, breeding/wintering bird surveys, freshwater ecology surveys as well as flora/invasive plant surveys. Frank has been lead surveyor on numerous development projects within Ireland carrying out full avian/non-avian mammal, wintering bird, breeding bird, Fossitt and invasive species assessments.

Survey effort was contributed to by Hugh Butler. Hugh is currently completing an MSc in Applied Environmental Science at University College Dublin, a CIEEM-accredited programme. Hugh is an Ecologist Intern with Altemar and has experience contributing to Appropriate Assessment Screenings, Natura Impact Statements (NIS), and Ecological Impact Assessments (EcIA). He has undertaken numerous bat surveys in the field and has assisted in the preparation of associated technical reports.

Survey effort was contributed to by Uma Isselee (MSc Sustainable Development), who is currently completing an MSc in Applied Environmental Science at University College Dublin, a CIEEM-accredited programme. Uma is an Ecologist Intern with Altemar and has experience contributing to Appropriate Assessment Screenings, Natura Impact Statements (NIS), Preliminary Ecological Appraisals (PEA), and Ecological Impact Assessments (EcIA). She has undertaken a range of ecological surveys, including bat, flora, mammal, and bird surveys, and has assisted in the preparation of associated technical reports.

Survey effort was contributed to by Saoirse Ó Faoileán (BSc). Saoirse is an Ecologist Intern with Altemar and has experience contributing to Appropriate Assessment Screenings, Natura Impact Statements (NIS), and Ecological Impact Assessments (EcIA). She has undertaken a range of ecological surveys, including bat, flora, mammal, and bird surveys, and has assisted in the preparation of associated technical reports.

Legislative Context

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

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

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

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

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

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

Description of the Proposed Project

Planning permission is sought by Lagan Homes Boyne Ltd for a Large-Scale Residential Development (LRD) on a site which extends to c.3.8 ha, on lands at Boyne Road, Drogheda, Co. Louth. The application is being made under the provisions of the Planning and Development (Amendment) (Large Scale Residential Development) Act 2021.

The proposed development will consist of:

i) The Construction 192 no. residential units comprising of:

   a. 42 no. dwellings (22 no. 3-beds, and 20 no. 4-beds)

   b. 150 no. apartments (41 no. 1-beds, 95 no. 2-beds, and 14 no. 3-bed)

ii) New vehicular, cycle and pedestrian access to the site from the Newtown Road (L2307) including new crossing points;

iii) Replacing and upgrading of existing pedestrian steps to the site from Strand Road (R167)

iv) The provision of non-residential uses on the site:

   a. Childcare facility/Creche (394 sq.m)

   b. Café (81 sq.m)

   c. Gymnasium (554 sq.m)

   d. Community Workspace/Community Space (77 sq.m)

v) The provision of 196 no. basement and surface level parking spaces, including EV spaces, Disabled parking spaces, and Go Car spaces;

vi) The provision of 344 no. sheltered cycling spaces for residents 122 no. visitor cycle spaces;

vii) The provision of public and private open space;

viii) The provision of cycle paths throughout the site;

ix) The provision of Landscaping including planting, public art and play equipment;

x) The provision of Attenuation ponds;

xi) The provision of public lighting throughout the subject site;

xii) All internal roads, tracks and paths, including signage throughout the site;

xiii) All associated development and infrastructure works including traffic calming on Newtown Road and Newtown Link Road;

xiv) Demolition of existing buildings on site (2,113.4 sq.m);

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

Landscape

The landscape strategy for the proposed development has been prepared by Stephen Diamond Associates Chartered Landscape Architects to accompany this planning application. The proposed landscape masterplan is demonstrated in Figure 3.

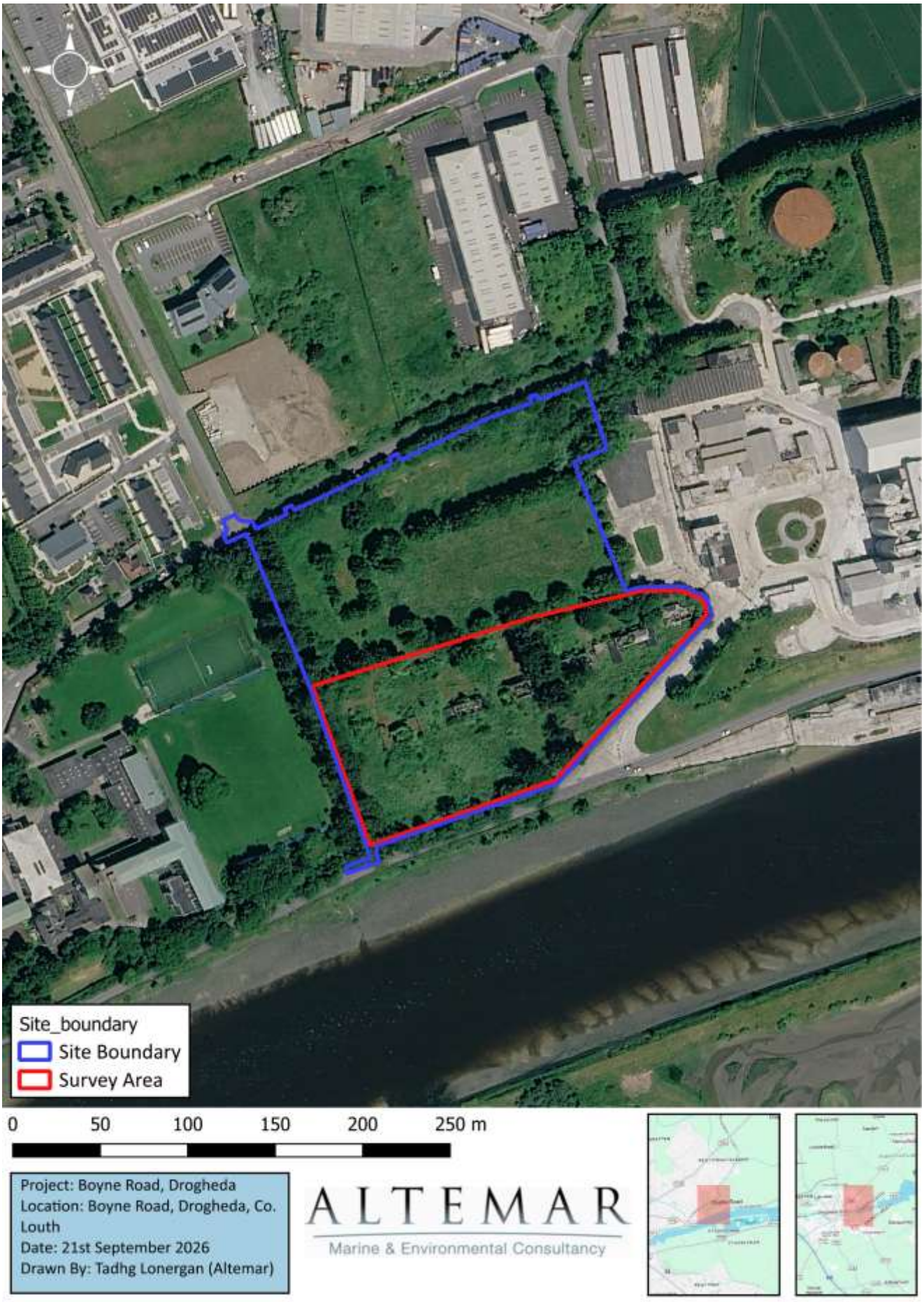


Figure 1 Site outline



Figure 2 Site Location



Figure 3 Landscape Masterplan

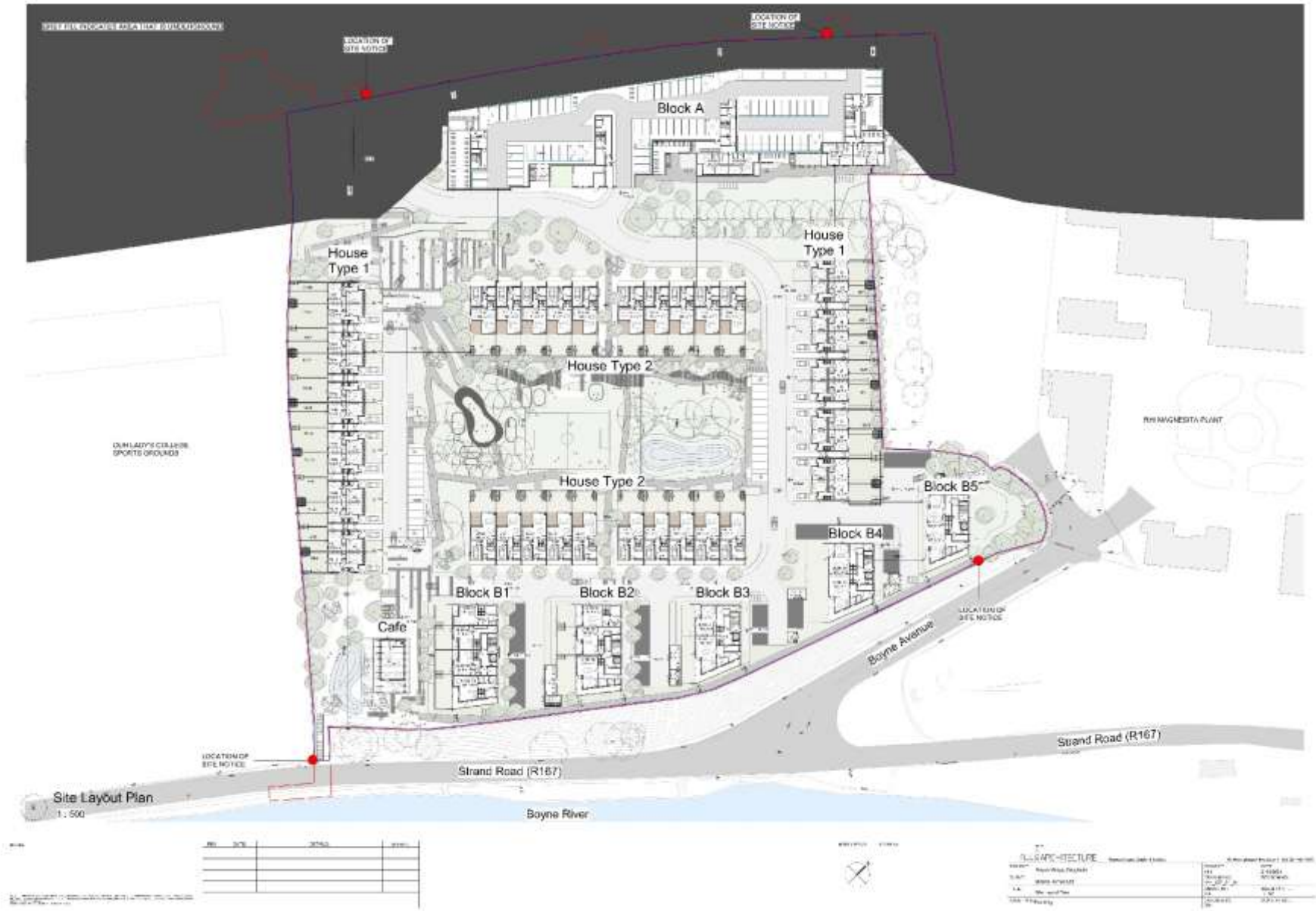


Figure 4 Proposed site layout plan

Lighting

An Outdoor Lighting Report has been prepared by Sabre Electrical Services Ltd to accompany this planning application. All luminaires are full cut-off, with no upward light. Warm white (2700K) LED is used for the majority of the scheme, in line with Bat Conservation Ireland (2010) and ILP (2023) guidance, which recommend warm colour temperatures of 2700K to 3000K or less to reduce effects on bats.

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	-130.00	-124.00	273.00	256.00	1.50	1.50
2	Grid 2	-132.45	66.42	84.00	33.00	1.50	1.50
3	Grid 3	-47.23	71.35	212.45	48.00	1.50	1.50
4	Grid 4	-122.17	20.75	84.00	46.44	1.50	1.50
5	Grid 5	83.91	94.59	1.96	6.15	0.98	0.34
6	Grid 6	-90.20	-117.90	2.11	13.82	0.53	0.36
7	Grid 7	-73.87	38.44	2.12	11.98	0.71	0.48

Luminaires



Luminaire A Data

Supplier	Urbis Schreder
Type	FLEXIA TOP 5307 Deep shape PC 20 LH3 51C@300mA WW 727 230V
Lamp(s)	20 LH351C@300mA WW 727 230V
LampFlux(klm)/Colour	2.94 WW 2700K/70
File Name	FLEXIA TOP 5307 20 LH351C 300mA WW 727 19.6W 445442 Deep shape PC 230V ...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	570.0, 193.4, 43.4
No. in Project	29



Luminaire B Data

Supplier	Urbis Schreder
Type	FLEXIA TOP 5300 Deep shape PC 10 LH3 51C@200mA WW 727 230V
Lamp(s)	10 LH351C@200mA WW 727 230V
LampFlux(klm)/Colour	1.01 WW 2700K/70
File Name	FLEXIA TOP 5300 10 LH351C 200mA WW 727 7.4W 445372 Deep shape PC 230V E...
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	1038.6, 131.4, 54.4
No. in Project	29



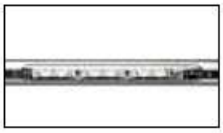
Luminaire C Data

Supplier	C U Phosco
Type	P863-128-P4-730-W3-350-46W
Lamp(s)	730SS
Lamp Flux (klm)	6.23
File Name	P863-128-P4-730-W3-350-46W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	429.6, 140.1, 0.5
No. in Project	6

Luminaire D Data

Supplier	
Type	2695 SNN-1C#
Lamp(s)	1 ST 150 17500 2000 E40
LampFlux(klm)/Colour	17.50 1950 / 23
File Name	Arc 2695 SNN 1C# 1 ST 150 17500 1950 E 40.ldt
Maintenance Factor	0.75
Imax70,80,90(cd/klm)	344.0, 99.0, 3.0
No. in Project	2

Luminaires



Luminaire E Data

Supplier	Urbis Schreder
Type	ALINEA Handrail 5117 - 3 LED 350mA WW Profiled Poly Clear, Sm
Lamp(s)	3 LEDs WW
Lamp Flux (klm)	0.37
File Name	ALINEA Handrail 5117 3 LED 350mA WW Profiled Poly Clear Smooth WO7312.ldt
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	681.0, 51.7, 4.1
No. in Project	10

The proposed public lighting layout is outlined in Figure 5.



Figure 5 Proposed public lighting plan

Bat survey

This report presents the results of a bat roost suitability assessment and dusk emergence surveys carried out by Tadhg Lonergan, Frank Spellman, Uma Isselee, Hugh Butler and Saoirse Ó Faoileán on the 4th of September and the 16th of September 2026. All structures in the survey area were examined for bat roosting potential, and dusk emergence surveys were undertaken at all buildings on site. Bat activity surveys (transect) were conducted across the entire survey area after the emergence surveys on both nights.

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 outline 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 (2023) which included the roost inspection methodologies i.e. external methodology outlined in section 5.2.10 and the internal survey outlines in section 5.2.14 of the guidelines. In addition, the methodologies for Presence/likely absence surveys (Section 7) were carried out for dusk emergence surveys.

As outlined in Collins (2023) '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.'

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

- Collins. J (ed.) (2023) *Bat surveys for Professional Ecologists: Good Practice Guidelines* (4th Edition);
- Marnell, F., Kelleher, C. & Mullen, E. (2022) *Bat Mitigation Guidelines for Ireland v2*. Irish Wildlife Manuals No. 134; and
- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes* (NRA, 2006).

Survey Results

Structures as Potential Bat Roosts

Six derelict two-storey houses are present within the survey area. Building locations and IDs shown in Figure 6. A preliminary roost assessment of each building was undertaken from ground level, in accordance with Collins (2023). Each building was examined for potential roost features (PRFs) such as missing or slipped slates and ridge tiles, gaps at the eaves, soffits and bargeboards, cracks in masonry, and dense ivy cover. Buildings were also checked for evidence of bats such as droppings, staining and feeding remains. The buildings have been unoccupied for many years, and several show evidence of fire damage and anti-social use.



Plate 1. Pictures of some of the derelict houses on site.



Figure 6 Building locations and IDs on site.

Emergent/Detector survey

Bat emergent/detector surveys were undertaken during the active bat season by Tadhg Lonergan, Frank Spellman, Uma Isselee, Hugh Butler and Saoirse Ó Faoileán on the 4th of September and the 16th of September 2026. Weather conditions were good, with warm temperatures greater than 10°C after sunset, winds not exceeding Beaufort 1, and no precipitation during or preceding the surveys. Insects were observed in flight throughout the survey.

As outlined in Collins (2023) in relation to weather conditions: '*The aim should be to carry out surveys in conditions that are close to optimal (with sunset temperature 10°C or above without heavy rain or strong wind), particularly where low numbers of surveys are planned. Where the temperature drops significantly below this during the surveys, the impact on bat activity should be considered and, in many cases, it may be appropriate to stop the survey.*' There were minimal constraints in relation to the survey carried out. All areas of the site were accessible, and weather conditions were optimal for bat assessments in the area surrounding the site. Winds were considered optimal for assessing foraging behaviour.

Emergent surveys began 30 minutes prior to sunset and were completed 1 hour after sunset. Following the emergence surveys, an acoustic transect survey was carried out throughout the survey area using a*n Echo meter touch 2 Pro* detector to determine bat activity on site.

Bats were recorded emerging from three of the six buildings on site (Buildings 1, 2 and 4). In each case a single Common pipistrelle was observed emerging from the building. Foraging activity was also recorded on site. Foraging activity was heavily concentrated near the southern and south-western boundary of the site where mature trees along Strand Road provide shelter and insect prey, and adjacent to the Boyne estuary.

Three species were noted foraging on site:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared bat (*Plecotus auritus*)

Bat activity and roost locations on site are displayed in Figure 7.



Figure 7 Bat Activity recorded on 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 the 10km grid square encompassing the study area (Reference grid O17) reveals that six of the nine known Irish bat species have been recorded locally (Table 1). The National Biodiversity Data Centre's online viewer was used to determine whether there have been recorded bat sightings in the wider area. The location of these records are included in figures 8 - 10.

Table 1: Status of bat species within a 10km^2 grid encompassing the subject site (Reference no. O17)

Species Name	Record Count	Last date of Record	Title of Dataset	Designation
Brown Long-eared Bat (*Plecotus auritus*)	1	25/06/1998	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*)	5	31/08/2023	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Daubenton's Bat (*Myotis daubentonii*)	15	06/08/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	9	31/08/2023	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Natterer's Bat (*Myotis nattereri*)	1	05/08/2017	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Leisler's Bat *(Nyctalus leisleri)*	2	30/06/2011	National Bat Database of Ireland	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts



Figure 8 Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*) (purple), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (yellow), and both species (orange). Source: NBDC. Site location circled in red.



Figure 9 Leisler's Bat (*Nyctalus leisleri*) (purple), Natterer's Bat *(Myotis nattereri)* (yellow), and both species (orange). Source: NBDC. Site location circled in red.



Figure 10 Brown Long-eared Bat (*Plecotus auritus*) (purple), Daubenton's bat (*Myotis daubentonii*) (yellow) and both species (orange). Source: NBDC. Site location circled in red.

Potential impacts of proposed redevelopment on bats

Three bat roosts were confirmed within the survey area, in Buildings 1, 2 and 4. Each was used by a single Common pipistrelle. Based on the low numbers of bats, the time of year and the absence of evidence of breeding, these are assessed as day roosts, as defined in Collins (2023), used by individual bats. Previous surveys by Ecofact (2022) within the maternity period recorded a maximum of three Soprano pipistrelles emerging from the derelict houses, and no maternity roost was identified. The roosts are therefore considered to be day roosts of low conservation significance for pipistrelle bats, used by small numbers of Common and Soprano pipistrelles, rather than maternity or hibernation roosts.

All six buildings within the survey area will be demolished. No roosting bats were recorded in Buildings 3, 5 and 6. The demolition of Buildings 1, 2 and 4 will result in the permanent loss of three day roosts, each used by a single Common pipistrelle. In the absence of mitigation, demolition could also cause the death, injury or disturbance of bats present in the buildings at the time of works. The destruction of a bat roost requires a derogation licence from NPWS under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

Site clearance will remove scrub and trees within the survey area. Loss of scrub and rough ground will reduce insect abundance and foraging opportunity across the survey area in the short to medium term, until proposed landscaping establishes. Construction and operational lighting could reduce the suitability of the southern boundary for foraging, particularly for light-sensitive species such as Brown long-eared bat. Existing lighting from Strand Road and the adjacent industrial plant already illuminates parts of the site. The proposed lighting uses warm white LED with full cut-off luminaires, which will reduce but not remove this effect.

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.*'

As a result, the following mitigation measures will be implemented:

- As the proposed development will result in the destruction of bat roosts in Buildings 1, 2 and 4, a derogation licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) is required from the National Parks and Wildlife Service. No demolition of, or works affecting, Buildings 1, 2 and 4 will take place until the licence is granted. These works, including timing, pre-demolition inspection and the removal of roost features, will be carried out only in accordance with the conditions of the licence and under the supervision of a suitably qualified and licensed bat ecologist.
- No roosting bats were recorded in Buildings 3, 5 and 6. These buildings may be demolished in advance of the derogation licence. Care will be taken not to strike, undermine or otherwise damage Buildings 1, 2 and 4 during these works. Should bats be encountered at any stage, works will stop immediately and the project ecologist will be contacted. If demolition takes place during the bat survey season (May to September), a dusk emergence survey of the buildings will be carried out the evening before.
- A suitably qualified and licensed bat ecologist (the project ecologist) will be appointed to oversee all works affecting the buildings 1, 2 and 4.
- Bat boxes suitable for crevice-dwelling pipistrelles will be installed on mature, retained trees in advance of the demolition of Buildings 1, 2 and 4. Number, locations and orientations will be selected by the project ecologist.
- Any damaged or missing bat boxes will be replaced.
- Construction lighting will be directional and will not be directed at the boundary trees along Strand Road, the western boundary or the bat boxes. Lighting will be switched off outside working hours except where required for security.
- Operational lighting will be as per the Sabre Electrical Services Ltd. (2023) lighting design, using 2700K to 3000K full cut-off luminaires. Light spill onto the retained southern and western boundary vegetation and bat box locations will not exceed 1 lux.
- A post-construction light spill survey will be undertaken by the project ecologist. Where light levels above 1 lux are recorded at the boundary vegetation or bat box locations, remedial measures (e.g. shields, dimming, re-aiming) will be implemented until compliance is achieved.

Predicted and residual impact of the proposal

The proposed development will result in the loss of three day roosts, each used by a single Common pipistrelle, and the loss of scrub and rough ground used for foraging within the survey area. With the demolition of Buildings 1, 2 and 4 carried out in accordance with the conditions of the derogation licence, no bats are expected to be killed or injured. Replacement roosts will be provided in advance of demolition. Foraging activity on site may be reduced due to the new buildings and lighting, but with the retention of the boundary tree lines along Strand Road and the western boundary and a sensitive lighting strategy, foraging by

pipistrelle bats is expected to continue on site. The proposed development will not affect the favourable conservation status of any bat species.

Legal status and conservation issues – bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Acts (1976-2023). Also, the EC Directive 92/43/EEC on the conservation of Natural habitats and of Wild Fauna and Flora ("Habitats Directive"), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat *Rhinolophus hipposideros* is further listed under Annex II. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

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

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

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

It should also be noted that any works interfering with bats and especially their roosts, including for instance, the installation of lighting in the vicinity of the latter, may only be carried out under a licence to derogate from

SI 477/2011 EC (Birds and Natural Habitats) 2011 (Reg 51 /52 provide Strict Protection and Regs 53/54 address Derogation Licences)[1].

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