June
2024

Bat Survey & Report

St. Andrew's Court
Fenian St,
Dublin 2

ASH Ecology & Environmental

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Contents

Tables

Figures

Appendices

1. INTRODUCTION

1.1 Purpose of the Report

Ash Ecology and Environmental Ltd (AEE) was commissioned to carry out a Bat Survey with Report on behalf of Dublin City Council (DCC) for a proposed Part 8 development.

The site is known as 'St. Andrew's Court' and is located along Fenian St, Dublin 2, see Figures 1 and 2. A bat survey was required to assess the value of the site for bats, namely the existing buildings on the site for demolition.

A bat survey was conducted to ensure a comprehensive assessment of the site's ecological value and to comply with best practice guidelines as demolition works are involved and the structure currently vacant.

A bat survey was previously carried out by AEE during July 2020 and the results are referred to within this updated report. Photos of the site during June 2024 are shown within Appendix A.

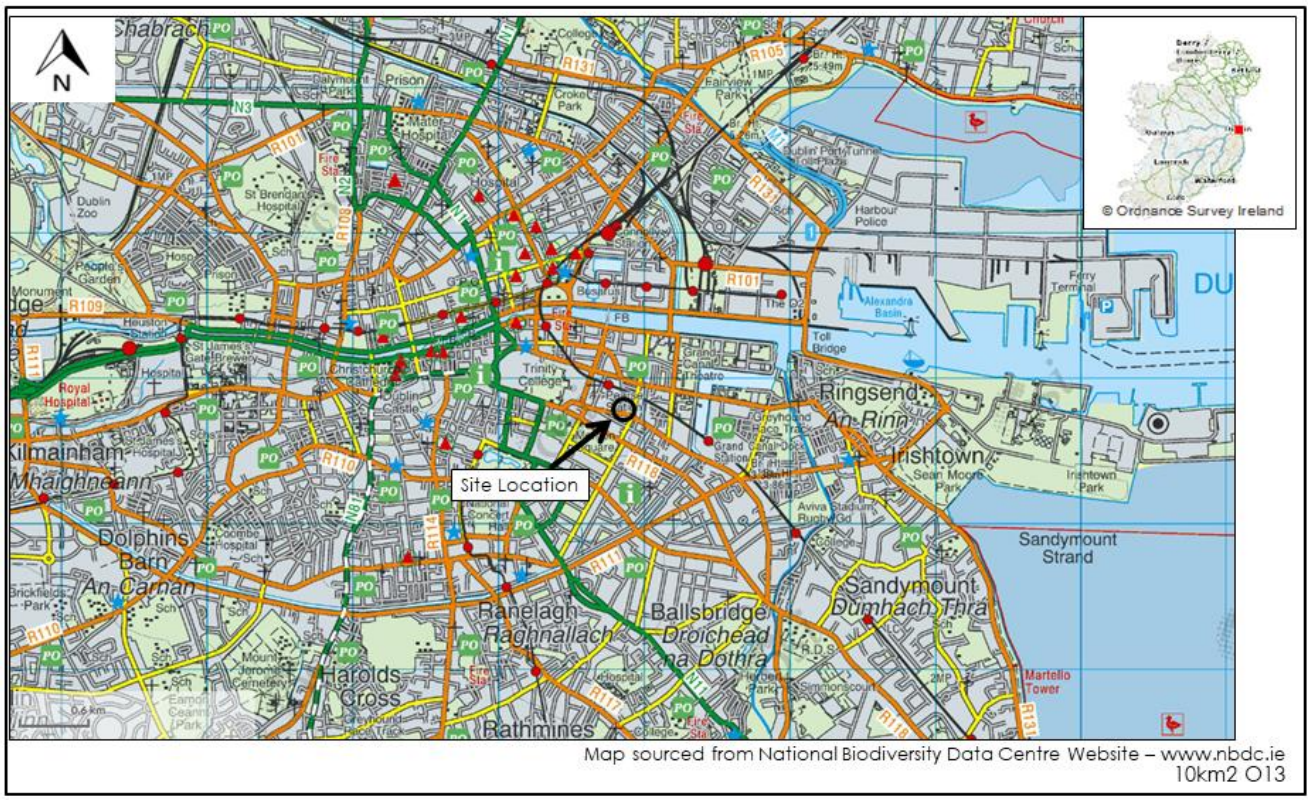


Figure 1 Site Location Map

Figure 2 Aerial Photo of Site showing existing layout and surrounding city landscape

1.2 Competency of Assessor

This report has been prepared by Ash Ecology & Environmental Ltd (AEE) whose managing director and leading ecologist is Aisling Walsh who is a full member of the Chartered Institute of Ecological & Environmental Management (CIEEM) while the company, AEE, is a Registered Practice by the CIEEM.

Aisling's qualifications include M.Sc. (Dist) in Biodiversity and Conservation (TCD) and B.Sc. (Hons) Zoology (NUIG), a Diploma in Applicated Aquatic Science (GMIT) and a Certificate in Applied Biology (GMIT).

Aisling is a licenced bat ecologist (example of recent: DER/BAT 2020 – 46 EUROPEAN, DER/BAT 2020 – 48 EUROPEAN, DER/BAT 2021 – 89 EUROPEAN, DER/BAT 2022 – 12 EUROPEAN, DER/BAT 2023 – 23 EUROPEAN, DER/BAT 2023 – 106 EUROPEAN, DER/BAT 2023 – 135 EUROPEAN, DER/BAT 2024 - 25 EUROPEAN) and a member of Bat Conservation Ireland and associate member of the Institute of Lighting Professionals (ILP). In addition she has completed several bat courses to continue her training and CPD e.g. a Lantra-accredited course, developed by the Bat Conservation Trust and supported by the Arboricultural Association to access bat tree roost features and a course in 'Understanding Obtrusive Light' accredited by the Institute of Lighting Professionals. Over the past 17 years Aisling has completed 100s of bat surveys providing her with more than adequate experience in the profession.

1.3 Project Description

The subject site is located in south Dublin City Centre, at the intersection of Fenian Street and Sandwith Street Upper. The Site is bounded by Fenian Street to the south, Sandwith Street Upper to the east, Bass Place to the west, and Boyne Street to the north. Pearse St. Train station is located ca.100m to the north, with the rail-line running within ca.106m to the north-east of the Site.

The site is 0.1229ha in size and comprises a three-storey apartment block with an area of associated hardstanding to the rear. The block consists of 14 units, including 2 one-bedroom apartments, 4 bedsits, and 8 duplex units. The demolition is proposed as the existing units are below current Building Regulation and housing standards. The building is currently vacant. The existing site layout showing structures for demolition is shown on Figure 3.

The proposal is for construction of new development consisting of 33 no. residential units all with private amenity space in 3 interconnected blocks arranged around a communal courtyard. These new homes will be for social housing and will be managed by Dublin City Council. Bike parking, bin store and plant rooms are also provided at ground floor level. The building ranges in height from 4 to 7 stories, with communal roof garden located on roof of one of the 4 story blocks. To facilitate the proposed development the scheme will require demolition of an existing 3 storey building which is currently vacant. The proposed layout is shown as Figure 4.

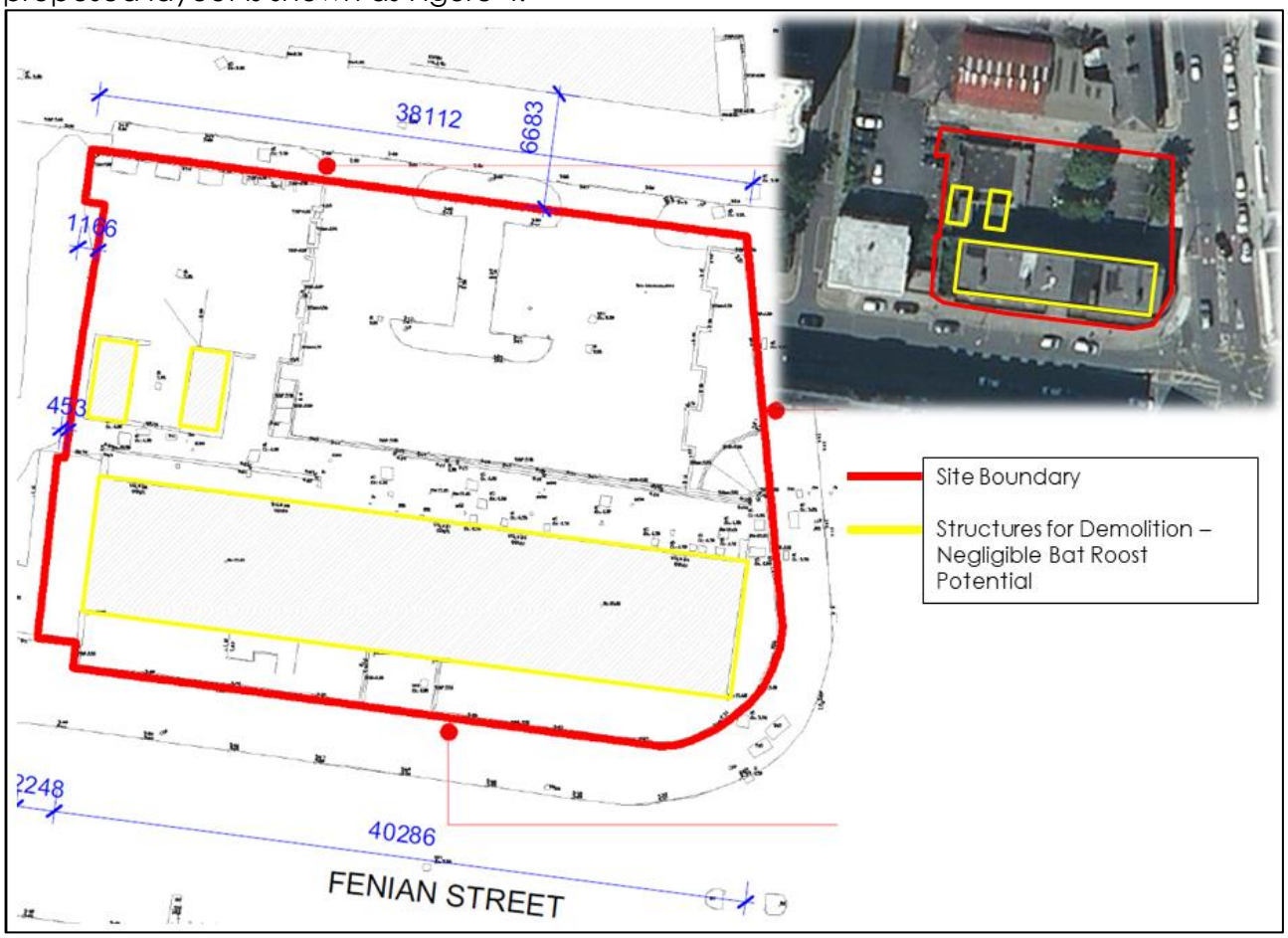


Figure 3 Existing Site Layout showing structures for demolition (outlined in yellow)

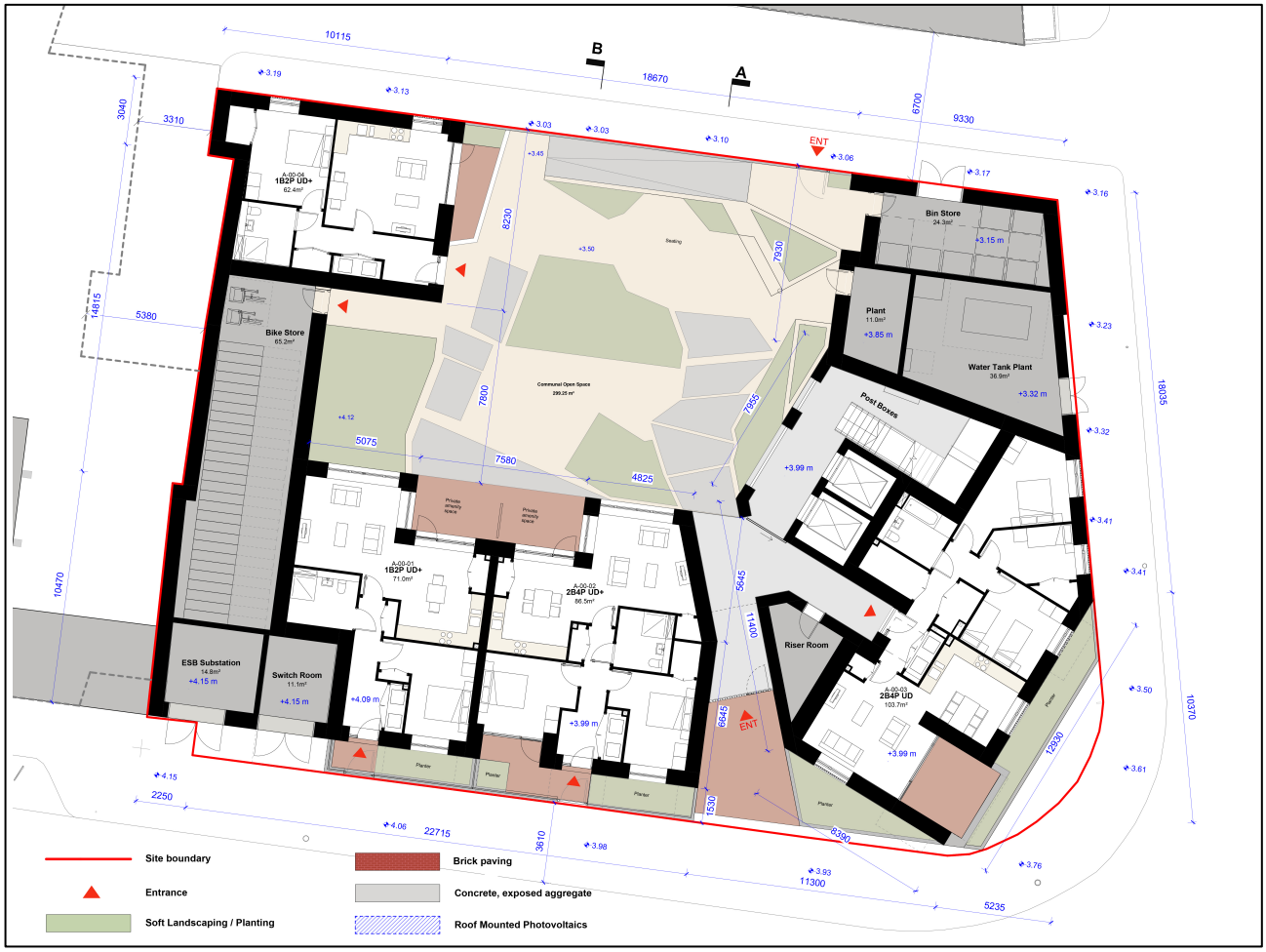


Figure 4 Proposed Site Layout

1.4 Bat Legislation

All bat species are protected under the Wildlife Act 1976 to 2021 which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species; however, the Acts permit limited exemptions for certain kinds of situations.

Section 23 of the Wildlife Act 1976 to 2021 contains several exemptions to the protection given to the species listed for protection on Schedule 5 (e.g. for agriculture or construction). In 2005 a further amendment through the European Communities (Natural Habitats) (Amendment) Regulations 2005 (S.I. No. 378 of 2005) removed all of the exemptions provided in Section 23(7) of the Wildlife Act 1976 to 2021 insofar as they relate to Annex IV species, including all species of bats. Those 2005 Regulations were revoked in 2011 except for Regulation 2 which brings about this strengthened protection for bats (and other Annex IV species). All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

- Intentionally kill, injure or take a bat;
- Wilfully interfere with the breeding or resting place of a bat

The Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("the Habitats Directive") seeks to protect rare and vulnerable species, including all species of bats, and their habitats and requires

that appropriate monitoring of populations be undertaken. All species of bat found in Ireland are listed on Annex IV of the Directive. Member States are required to put in place a system of strict protection (as outlined in Article 12) for species listed on Annex IV ('European protected species'). The lesser horseshoe bat is further protected under Annex II. This Annex relates to the designation of Special Areas of Conservation (SACs). The Habitats Directive is transposed into Irish law by the European Communities (Birds & Natural Habitats Regulations) 2011 (S.I. No. 477 of 2011) ("the Habitats Regulations"). Under the Habitats Regulations (2011), all bat species are listed on the First Schedule and Regulation 51 makes it 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.

Across Europe, bats 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 (CMS, Bonn Convention 1979) was instigated to protect migrant species across all European boundaries. EUROBATS (a daughter Agreement under CMS) is of particular relevance in relation to cooperation across international borders for the conservation of bats, many of which are known to migrate long distances. The Irish government has ratified both of these conventions as well as the EUROBATS Agreement.

1.5 Derogation licences

It is an offence, under Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 ('the 2011 Regulations') to:

a) Deliberately capture or kill a bat in the wild;
b) Deliberately disturb a bat particularly during the period of breeding, rearing, hibernation and migration;
c) Damage or destroy a bat's breeding site or resting place, or;
d) Keep, transport, sell, exchange, offer for sale or offer for exchange any bat taken in the wild, other than those taken legally before the Habitats Directive before the Habitats Directive was implemented.

A person may apply to the Minister under Regulation 54 of the 2011 Regulations for a derogation licence to carry out one or more of these prohibited activities. But, the Minister may only grant such a derogation licence if three criteria are met.

Firstly the Minister may only grant a derogation licence if it is for one of the following specified reasons listed in Regulation 54:

a) In the interests of protecting wild fauna and flora and conserving natural habitats;
b) To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property;

c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and the beneficial consequences of primary importance for the environment;
d) For the purpose of research and education, of repopulating and introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plats, or;
e) To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of bats.

Secondly, the Minister may only issue a derogation if there is no alternative to carrying out the prohibited activity. The first aim of the developer, whether from a private company or a public authority, working with professional advice, should be to entirely avoid any potential impact of a proposed development on bats and their breeding and resting places. Alternatives may involve redesigning a development so that bat roosts, and associated commuting routes and feeding areas are kept intact and that bats are not disturbed, for example by inappropriate lighting. It should be noted that the European Commission has a specific understanding of satisfactory alternative solution. "An alternative solution cannot be deemed unsatisfactory merely because it would cause greater inconvenience or compel a change in behaviour" (European Commission, 2021, page 13)[1]. Decisions about what solution is satisfactory must be science-based and should solve the problem of how to strictly protect the bats in light of the development.

Thirdly the Minister may only grant a derogation if it is not detrimental to the maintenance of the populations of bats at a favourable conservation status (FCS) in their natural range. There is case law from the Court of Justice of the European Union (CJEU) to back this up. One example is the Finnish Wolf Case C-674/17. The ruling establishes that the Member State must "clearly and precisely" identify in the derogation what the objectives of the derogation are. It must also establish that the derogation is capable of achieving those objectives and demonstrate that there is no satisfactory alternative. Cumulative effects of derogations must be taken into account when issuing derogations. The maximum number of all derogations must not be detrimental to the maintenance or restoration of the population at FCS. Consideration must be given to other human causes of mortality. Any risk to FCS must be ruled out by detailed conditions based on the level of population, its conservation status and its biological characteristics. The conditions must be precisely defined and they must be monitored to ensure they are implemented.

If any of these three criteria are not satisfied, the Minister cannot issue a derogation licence. It must never be assumed that a derogation licence will automatically be granted.

In summary, it is clear that a developer must first look to avoid all impacts on bats. This may mean looking at alternative solutions and redesigning the project accordingly. If this is not possible, the developer needs to check whether there are grounds to apply for a derogation licence, based on the reasons given in Regulation 54 of the Habitats Regulations. When applying for a derogation licence the developer must clearly state the reason and describe in detail all alternative solutions which were given serious consideration. Any mitigation intended to ensure

[1] https://op.europa.eu/en/publication-detail/-/publication/bbc7ace0-27e2-11ec-bd8e-01aa75ed71a1/language-en

that there is no impact or minimal impact on the bats must be clearly described in detail, giving examples of how it worked in other places.

If a derogation licence has been refused by the Minister, any aspect of the development for which the derogation licence was sought, must not go ahead, no matter what other permissions are in place.

A derogation licence is required when on the basis of survey information and specialist knowledge, it appears that:

- The site in question is a breeding site or resting place for bats and/or;
- The proposed activity could impact on a breeding site or resting place of a bat.

No licence is required if the proposed activity is unlikely to result in an offence. The advice given in this document (and see also Mullen et al. 2021)[2] should assist the proponent, or those acting on their behalf, in arriving at a decision on this matter, though it must be recognised that determining whether a particular site is used as a breeding or resting place can be problematic for such mobile animals as bats. Determining whether an activity undertaken near to a roost might impact on that roost (e.g. by removing important flight lines or foraging areas) will also require specialist assessment. Note that if the proposed activity can be timed, organised and carried out so as to avoid committing an offence then no licence is required.

Examples of works that are likely to need a licence because they may result in the destruction of a breeding or resting place and/or disturbance of bats include:

- Demolition of buildings known to be used by bats;
- Conversion of barns or other buildings known to be used by bats;
- Restoration of ruined or derelict buildings;
- Maintenance and preservation of heritage buildings;
- Introduction of artificial lighting inside a roost or near a roost entrance;
- Change of use of buildings resulting in increased ongoing disturbance;
- Removal of trees known to be used by bats;
- Significant alterations to roof voids known to be used by bats.

Examples of works that, if carefully planned, may not need a licence include:

- Works near to or at roosts (e.g. re-roofing) if carried out while bats are not present and the access points and roosting area are not affected;
- Remedial timber treatment, carried out with the correct (non-toxic to bats) chemicals while bats are not present.

[2] Mullen, E., Marnell, F & Nelson, B. (2021) Strict protection of animal species. Guidance for public authorities on the application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a public authority. Unpublished Report, National Parks and Wildlife Service. Department of Housing, Local Government and Heritage, Dublin. https://npws.ie/sites/default/files/files/article-12- guidance-final.pdf

2. METHODOLOGY

2.1 Information Sources

A desk-based review of information sources was completed. Information contained on the websites of the National Parks and Wildlife Service (NPWS)[3] and the National Biodiversity Data Centre (NBDC)[4] was reviewed. The following publications and websites were also reviewed and consulted:

Bat Guidance

- Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition
- Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management (CIEEM), Ampfield.
- Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- Mullen, E., Marnell, F & Nelson, B. (2021) Strict protection of animal species. Guidance for public authorities on the application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a public authority. Unpublished Report, National Parks and Wildlife Service. Department of Housing, Local Government and Heritage, Dublin. https://npws.ie/sites/default/files/files/article-12- guidance-final.pdf
- Bat Conservation Ireland https://www.batconservationireland.org/
- Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-Care and Ecology Professionals (2018)
- Bat Conservation Trust (2018) Bats and artificial lighting in the UK Bats and the Built Environment series[5]
- Mitchell-Jones, A.J, & McLeish, A.P. (eds). 2004., 3rd Edition Bat Workers' Manual, JNCC, Peterborough, ISBN 1 86107 558 8
- Bat Conservation Ireland (2012) Bats and Appropriate Assessment Guidelines, Version 1, December 2012. Bat Conservation Ireland, www.batconservationireland.org[6]
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (National Roads Authority, 2005).
- Guidelines for the Treatment of Bats during the Construction of National Road Schemes (National Roads Authority, 2005).
- Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011.
- McAney, K & Hanniffy, R (2015) The Vincent Wildlife Trust's Irish bat box schemes
- Bat Conservation Ireland https://www.batconservationireland.org/
- Andrews H & Gardener M (2016) Bat Tree Habitat Key – Database Report 2016. AEcol, Bridgwater.

[3] The National Parks and Wildlife Services map viewer http://webgis.npws.ie/npwsviewer/
[4] The National Biodiversity Data Centre www.NBDC.ie
[5] https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/
[6] https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIreland-AA-Guidelines_Version1.pdf

- Aughney, T., Kelleher, C. & Mullen, D. (2008) Bat Survey Guidelines: Traditional Farm Buildings Scheme. The Heritage Council, Áras na hOidhreachta, Church Lane, Kilkenny.
- IPL and BCT (2023) Guidance Note GN08/23 Bats and Artificial Lighting At Night

2.2 Desk Study

2.2.1 Species Background

Ireland had ten known bat species until February 2013, when a single live greater horseshoe bat (*Rhinolophus ferrumequinum)* was found roosting in Co. Wexford[7]. On 8th June 2020, a single audio recording was confirmed in the Glendaough area, Co. Wicklow. It was found on two more occasions in the same area in early July 2020 (Bat Conservation Ireland, July 2020).

The ten species (excluding the greater horseshoe) are briefly described overleaf. For a more comprehensive overview see McAney, 2006.[8]

The dependence of Irish bat species on insect prey has left them vulnerable to habitat destruction, land drainage, agricultural intensification and increase use of pesticides. Also, their reliance on buildings as roosting sites has made them particularly vulnerable to renovation works and the use of timber chemical treatment. Buildings are highly important as roosting sites for bats and all Irish bat species use buildings for all roost types. Most significant in terms of roosts in houses are maternity roosts, but cellars and even attics may serve as hibernation sites for bats. Roosts within buildings can far exceed the numbers encountered in trees, bridges, caves or cliffs and roosts of over 1,000 bats have been recorded in buildings.[9]

2.2.1.1 Family Vespertilionidae:

Common pipistrelle *Pipistrellus pipistrellus*
This species was only recently separated from its sibling, the soprano or brown pipistrelle P. pygmaeus[10], which is detailed below. The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland.

Soprano pipistrelle *Pipistrellus pygmaeus*
The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings, but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer.

[7] National Biodiversity Data Centre http://www.biodiversityireland.ie/new-bat-species-found-in-ireland/
[8] McAney, K. (2006) *A Conservation Plan for Irish Vesper Bats.* Irish Wildlife Manual No.20. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government.
[9] NRA (2005) Guidelines for the Treatment of Bats Prior to the Construction of National Road Schemes. National Roads Authority, Dublin
[10] Barratt, E. M., Deauville, R., Burland, T. M., Bruford, M. W., Jones, G., Racey, P. A., & Wayne, R. K. (1997) *DNA Answers the Call of Pipistrelle Bat Species. Nature* 387: 138 - 139.

Nathusius' pipistrelle *Pipistrellus nathusii*
Nathusius' pipistrelle is a recent addition to the Irish fauna and has mainly been recorded from the north-east of the island in Counties Antrim and Down[11] and also in Fermanagh, Longford and Cavan. It has also recently been recorded in Counties Cork and Kerry.[12] However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The status of the species has not yet been determined.

Leisler's bat *Nyctalus leisleri*
This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddisflies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. This species is uncommon in Europe and as Ireland holds the largest national population the species is considered as Near Threatened here.

Brown long-eared bat *Plecotus auritus*
This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversize ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector. Furthermore, keeping within the foliage, as it does, it is easily overlooked. It prefers to roost in old buildings.

Natterer's bat *Myotis nattereri*
This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddisflies and spiders. Known roosts are usually in old stone buildings but they have been found in trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland.

Daubenton's bat *Myotis daubentonii*
This bat species feeds close to the surface of water, either over rivers, canals, ponds, lakes or reservoirs but it can also be found foraging in woodlands. Flying at 15 kilometres per hour, it gaffs insects with its over-sized feet as they emerge from the surface of the water - feeding on caddis flies, moths, mosquitoes, midges etc. It is often found roosting beneath bridges or in tunnels and also makes use of hollows in trees.

Whiskered bat *Myotis mystacinus*
This species, although widely distributed, has been rarely recorded in Ireland. It is often found in woodland, frequently near water. Flying high, near the canopy, it

[11] Richardson, P. (2000) *Distribution Atlas of Bats in Britain and Ireland 1980 - 1999*. The Bat Conservation Trust, London, England.
[12] Kelleher, C. (2005) *International Bat Fieldcraft Workshop, Killarney, Co. Kerry*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government.

maintains a steady beat and sometimes glides as it hunts. It also gleans spiders from the foliage of trees. Whiskered bats prefer to roost in buildings, under slates, lead flashing or exposed beneath the ridge beam within attics. However, they also use cracks and holes in trees and sometimes bat boxes. The whiskered bat is one of our least studied species and further work is required to establish its status in Ireland.

Brandt's bat *Myotis brandtii*
This species is known from five specimens found in Counties Wicklow (Mullen, 2007), Cavan, and Clare in 2003, a specimen in Kerry in 2005[13] and another in Tipperary in 2006.[14] No maternity roosts have yet been found. It is very similar to the whiskered bat and cannot be separated by the use of detectors. Its habits are similar to its sibling.

2.2.1.2 Family Rhinolophidae:

Lesser horseshoe bat *Rhinolophus hipposideros*

This species is the only representative of the Rhinolophidae or horseshoe bat family in Ireland. It differs from our other species in both habits and looks, having a unique nose leaf with which it projects its echolocation calls. It is also quite small and, at rest, wraps its wings around its body. Lesser horseshoe bats feed close to the ground, gleaning their prey from branches and stones. It often carries its prey to a perch to consume, leaving the remains beneath as an indication of its presence.

The echolocation call of this species is of constant frequency and, on a heterodyne bat detector, sounds like a melodious warble. The species is confined to six counties along the Atlantic seaboard: Mayo, Galway, Clare, Limerick, Kerry and Cork. The current Irish national population is estimated at 12,500 animals. This species is listed on Annex II of the EC Habitats Directive and 41 Special Areas of Conservation have been designated in Ireland for its protection. Where it occurs, it is often found roosting within farm buildings.

2.2.2 Previous Records & Landscape Suitability

The National Biodiversity Data Centre (NBDC) maps landscape suitability bats based on Lundy *et al.* (2011). The maps are a visualisation of the results of the analyses based on a 'habitat suitability' index. The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. On average for all bat species the highest range is between 36.44 - 58.56. The overall assessment of bat habitats for the current study area is given as '18.33', deemed 'Low' by the author.

Eight species of bat have previously been recorded in the 10km^2 grid square O13:

- Brown Long-eared Bat (Plecotus auritus)
- Daubenton's Bat (Myotis daubentonii)
- Lesser Noctule (Nyctalus leisleri)
- Nathusius's Pipistrelle (Pipistrellus nathusii)
- Natterer's Bat (Myotis nattereri)
- Pipistrelle (Pipistrellus pipistrellus sensu lato)

[13] Kelleher, C. 2006a Nathusius pipistrelle Pipistrellus nathusii and Brandt's Bat Myotis brandtii - New Bat Species to Co. Kerry – Irish Naturalists' Journal 28: 258.
[14] Kelleher, C. 2006b Brandt's Bat Myotis brandtii, New Bat Species to Co. Tipperary. Irish Naturalists' Journal 28: 345.

- Soprano Pipistrelle (Pipistrellus pygmaeus)
- Whiskered Bat (Myotis mystacinus)

Table 1 gives the suitability of the study area for the bat species found in the study area (based on NBDC) along with their Irish Red List Status (from Marnell *et al.*, 2019).[15]

Table 1 Suitability of the study area for the bat species found in the Dublin City Centre area (based on the NBDC data) with Irish Red list status indicated.

Common name	Scientific name	Suitability index	Irish red list status
All bats	-	18.33	Least Concern
Soprano pipistrelle	*Pipistrellus pygmaeus*	33	Least Concern
Brown long-eared bat	*Plecotus auritus*	23	Least Concern
Common pipistrelle	*Pipistrellus pipistrellus*	31	Least Concern
Lesser-horseshoe bat	*Rhinolophus hipposideros*	0	Least Concern
Leisler's bat	*Nyctalus leisleri*	37	Least Concern
Whiskered bat	*Myotis mystacinus*	13	Least Concern
Daubenton's bat	*Myotis daubentonii*	11	Least Concern
Nathusius' pipistrelle	*Pipistrellus nathusii*	10	Least Concern
Natterer's bat	*Myotis nattereri*	7	Least Concern

2.2.3 Bat Roosts

Bats were originally cave and tree dwelling animals but many now find buildings just as suitable for their needs. Bats are social animals and most species congregate in large colonies during summer. These colonies consist mostly of females of every reproductive class, with some juvenile males from the previous year. Male bats normally roost individually or in small groups meeting up with the females in the late autumn-early winter, when it is time to mate. In summer, bats seek warm dry buildings in which they can give birth and suckle their young. In winter, they seek out places with a constant low temperature and high humidity where they can become torpid and hibernate during adverse weather conditions. However, bats do not hibernate continuously during winter and will awake and hunt during mild nights when there are insects available, and it is energetically advantageous to forage.

2.2.3.1 Maternity Roosts

Maternity roosts are the most significant roosts and they are predominantly all-female aggregations that are formed from late May onwards and remain as a relatively cohesive unit until mid to late August. Not all female bats give birth annually. These females that do bear young in a given year avail of a suitable building, tree and sometimes cave (or equivalent). The young are flightless for several weeks and hence are vulnerable to dangers such as tree felling and restoration, reinforcement or demolition of structures such as buildings and bridges.

[15] Marnell, F., Looney, D. & Lawton, C. (2019) Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

2.2.3.2 Mating Roosts

Most bat species mate in autumn but pregnancy does not occur until the following spring. During this time males will take possession of a cavity in a building, tree, bridge, cave or mine and attract females to these sites to establish a harem. Male bats call both from a perch and in flight in much the same manner that male birds sing.

2.2.3.3 Hibernation Roosts

Bats have a high metabolic rate and in temperate countries, such as Ireland, flying insects are not available in sufficient numbers during winter to sustain bats. Therefore, bats hibernate during winter. In hibernation sites, bats are often completely inactive for several days and are extremely vulnerable to disturbance by human activities due to the time taken for them to become sufficiently active to allow escape. Hibernation may extend from November to the end of March, during which time bat activity will take place sporadically.

2.2.3.4 Night Roosts

These are roosts which are used as resting places for bats between foraging bouts. They also provide retreats for bats from predators or during inclement weather conditions. They also function as feeding perches and may be important for socialising.

2.3 Bat Activity and Emergence Survey Methodology

2.3.1 Previous Survey – July 2020

A bat activity and emergence was carried out by AEE for the current site on the 13th of July 2020. The weather conditions were favourable, with temperatures of 13-14°C and a gentle breeze. The survey, which followed the Bat Conservation Trust's 2016 guidelines, recorded a very low level of bat activity. Only one species, Leisler's bat (*Nyctalus leisleri*), was detected, with a couple of passes recorded flying high overhead. No bats were observed emerging from any of the structures on site.

2.3.2 Current Survey – June 2024

A bat activity and emergence survey of the site was undertaken again on 3rd June 2024 from 21.16 and 23.46 (sunset 21:46). Surveys followed the latest BCT Guidelines 2023 and involved monitoring the area by walking the site and observing any bat roost potential trees or structures. Weather conditions were optimal during the survey (15-16°C in calm, dry conditions).

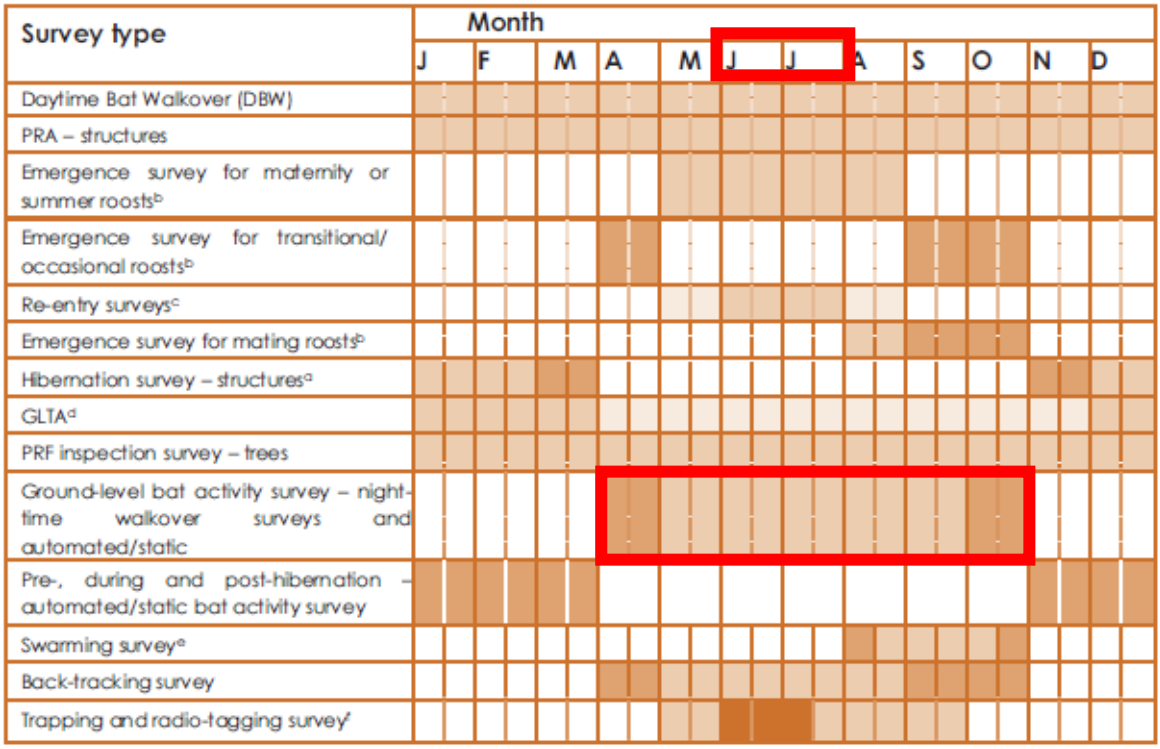
The survey was done within acceptable guidelines for general activity surveys as per BCT Guidelines 2023, see Table 2. The favourable weather conditions during survey were deemed suitable for observing any bat emergence from any structures, along with any bat activity onsite. General Site photos are contained in Appendix A.

The equipment used for the bat emergence and activity surveys included a Elekon Bat Logger M detector. Visual observations were taken with the aid of a powerful L.E.D. torch (AP Pros-Series 220 Lumens High Performance Spotlight) and Celestron12x56 Prism Binoculars.

All spaces that could potentially allow bats access the buildings were searched for visually for bats, signs of bats, or evidence of bat activity, using a torch where necessary. Cracks, crevices etc. were investigated for ingress / egress points and evidence of bat habitation, such as prey items, smearing lines, droppings, and staining. The inside of the buildings were not accessed for health and safety reasons but the exterior of structures up to 3m, including the ground and other likely areas were examined for examined closely for bat droppings. The 2023 BCT guidelines were followed for the assessment rating[16] and classification which is shown as Table 3.

[16] Bat Surveys for Professional Ecologists, Good Practice Guidelines (2016)

Table 2 Recommended Survey Times for Survey Types described in Table 2.2. of the BCT 2023 Guidelines.



= optimal period = sub-optimal period

= weather or location dependent (i.e. may not be suitable due to spring and autumn conditions in any one year or in more northerly latitudes). Note that October emergence surveys are not acceptable in Scotland.

= it is not acceptable to trap bats when they are heavily pregnant and have dependent pups. Mothers need to optimise foraging due to the physiological demands of pregnancy and lactation, and pups need to be regularly fed. Interrupting these activities could potentially have an impact on breeding success in the year in question. The timing of birth can vary between years – it may be as early as the end of May or as late as the start of August, therefore caution should be exercised and local information gained on birth dates before trapping activities are carried out during the summer months. Any information gained and decisions made should be kept as a record.

a Not including trees.

b Please see Chapter 7 for recommended timings for surveys to give confidence in a negative result. For sites assessed as having low suitability, a survey should be carried out between May and August. For sites with moderate and high suitability, a proportion of the surveys should be carried out between May and August (to detect maternity roosts if present) but some of the surveys may be carried out later in the year in order to detect transitional and mating roosts. The survey season for presence/likely absence surveys is defined as May to September. Roost characterisation surveys may be appropriate in April and/or October depending on the need to characterise transitional/occasional roosts at these times.

c The time that bats return to their roosts is very variable and therefore re-entry surveys are no longer recommended as a standard approach. If they are carried out the constraints should be recognised.

d GLTAs can be sub-optimal in the spring, summer and autumn due to foliage obscuring parts of the tree. If all parts of the tree are visible then the survey can be carried out at any time. If parts of the tree are obscured by foliage then it is not possible to carry out a thorough survey and this limitation should be recognised and the impact on the results acknowledged. Please refer to Chapter 6 for more information.

e Different species show a peak in swarming activity at different times, e.g. Daubenton's bat activity tends to peak in August whilst Natterer's bat activity tends to peak in September (Tomlinson, 2020) and therefore surveying across the swarming season is likely to be important.

f Trapping and tagging in cooler conditions can make release of bats difficult, which should be a consideration if trapping is carried out in spring and autumn. Tagging of bats in April and sometimes early May should be avoided following a poor spring, if bats are in poor condition. Tagging of newly volant pups should be avoided. Tagging of bats should be avoided in October due to the risk that bats will enter hibernation with the tag still attached (bats will groom less often as they enter torpor more frequently). If a tag falls off during hibernation this could leave a bald patch if the fur has been clipped, which could have negative impacts for the hibernating bat. Please refer to Chapter 9 for more information.

Table 3 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of roost features within the landscape, to be applied using professional judgement (BCT Guidelines, 2023)

Potential suitability	Description Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible[a]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behavior.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[b] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[c]).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[b] and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[b] and surrounding habitat. These structures have the potential to support high conservation status	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland,

Potential suitability	Description Roosting habitats in structures	Potential flight-paths and foraging habitats
	roosts, e.g. maternity or classic cool/stable hibernation site.	tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al*., 2016 and Jansen *et al*., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

2.4 Bat Roost Potential Tree Assessment

There are several semi-mature trees along the east boundary and to the rear of site. They do not have bat roost potential but any tree felling should consider the bird nesting season (March 1st to August 31st of a given year) or be checked in advance by an ecologist.

2.5 Landscape Evaluation

Ecological survey results were evaluated to determine the significance of identified features located in the study area on an importance scale ranging from international-national-county-local (from NRA, 2009) The local scale is approximately equivalent to one 10km square but can be operationally defined to reflect the character of the area of interest. Because most sites will fall within the local scale, this is sub-divided into two categories: local importance (higher value) and local importance (lower value).

3. RESULTS

3.1 Activity Surveys

The bat surveys carried out on July 13th 2020 and June 3rd 2024 both revealed very Low levels of bat activity across the site, with one species recorded: Leisler's Bat (*Nyctalus leisleri*). The results of both survey for 2020 and 2024 are summarised in Table 4, and site photos are available in Appendix A.

During the surveys, Leisler's Bat (x2 in 2020 and x4 in 2024) were detected and observed flying over the site and not using it for feed or forage.

The tall buildings, cityscape and lighting regime of the general area and around the site itself would deter certain bat species such as *Myotis* spp. and Brown Long Eared Bat. The lack of mature trees and treelines would also mean limited feeding opportunities.

Table 4 Bat Activity Results – July 13th 2020 and June 3rd 2024

Species Name – Common	Species Name – Latin	Number of Passes	Peak Frequency (kHz)
July 13th 2020			
Leisler's Bat	*Nyctalus leisleri*	2	24.0
June 3rd 2024			
Leisler's Bat	*Nyctalus leisleri*	4	24.0

3.2 Emergence Surveys

The potential suitability of the structures onsite was assessed using the guidelines outlined previously in Table 3. The inspection was conducted as per the methodology set out in Section 2.3.1.

The assessment took into account the potential roost spaces of the structures onsite, and the absence of evidence suggesting bat usage, ultimately leading to a 'Negligible' suitability rating for roosting bats. The main St. Andrew's Court Structure is a well-sealed buildings with no visible gaps or crevices that would allow bat access. The construction materials and high levels of lighting around the site reduces the suitability for roosting bats. No bat droppings were observed on the ground underneath any of the structures onsite.

No bats were observed emerging from any structures onsite, and therefore no bat derogation licence is required at this time.

3.3 Landscape Evaluation

The landscape surrounding the site at St. Andrew's Court is considered of local importance (lower value) for bats, with a landscape suitability score of 18.33 (Table 1). The aerial photograph reveals that the site is situated within the dense urban fabric of Dublin City Centre, which significantly reduces its overall habitat suitability for bats.

To the south of the site, Merrion Park provides a limited network of hedgerows and treelines that could potentially serve as commuting or foraging corridors for local

bat populations. The park also contains some semi-mature trees that may offer roosting opportunities. However, the park's relatively small size and its enclosure by the surrounding cityscape limit its overall value as bat habitat.

The site itself is dominated by a large, multistorey vacant housing structure, with areas of hardstanding and a few scattered semi-mature trees. These features provide minimal potential for roosting, commuting, or foraging bats. The trees on-site lack suitable cavities or crevices that could serve as roosts, while the building's well-maintained exterior offers few opportunities for bat entry or egress.

The urbanised landscape surrounding St. Andrew's Court site acts as a significant barrier to bat movement, restricting access to potential foraging areas and other roosting sites. The high levels of artificial lighting and the scarcity of linear green features in the vicinity further reduce the site's suitability for bats.

In summary, while the local landscape, including Merrion Park, provides some limited value for bats, the site's location within the heavily developed Dublin City Centre and its lack of suitable habitat features result in a low overall suitability for sustaining bat populations. The surrounding urban environment impedes bat commuting and foraging activities, making the site of low importance for local bat communities.

4. RECOMMENDATIONS

Although the proposed development is not expected to have a significant impact on the local bat population, the following recommendations are provided to further minimise any potential disturbance and enhance the site's value for bats:

- Tree retention: Where possible, retain and protect any trees as they provides habitat for birds and bats. Ensure any trees to be retained are not damaged during the construction phase if being retained for the soft landscaped area (see Figure 4).

- Landscaping: Incorporate native tree and shrub species into the landscaping scheme, to enhance the site's value for foraging and commuting bats. Species such as hawthorn, blackthorn, and elder provide valuable food sources for insects, which in turn support the local bat population.

- Bat boxes: Install 3+ bat boxes on suitable retained trees, or walls of the new development. Bat boxes should be positioned at least 4 meters above the ground, facing south or southeast, and away from artificial light sources (see Appendix B for examples).

- Lighting: The Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT) have recently released guidance note 8, "Bats and Artificial Lighting at Night" (GN08, 2023), which provides recommendations for luminaire design based on extensive research on the potential impact of lighting on bats. This guidance offers best practice mitigation measures, which form the basis of the mitigation measures pertaining to bats in this report. The key recommendations are summarised as follows:

    - Lighting should be designed to minimize light spill onto bat commuting and foraging areas;
    - Light spill modelling: Ensure illuminance of <1 lux in areas of new tree planting or if any trees are retained, which meets current best practice guidelines;
    - LED colour temperature: Use warm white (2700K or lower) LEDs to minimise blue light disturbance. Light sources should lack UV and peak above 550nm;
    - Luminaire design: Minimise upward light ratio, glare, and light spill through optical control, recessing, and horizontal mounting (i.e., no upward tilt);
    - Motion sensors and timers: Use motion sensors and short timer settings where possible to minimise lighting duration;
    - Central management systems: Implement flexible remote control of lighting times using central management systems;
    - Accessories: Consider using accessories like baffles or louvres to further reduce light spill, although they may be less effective than modern LED optics.

    By incorporating these GN08 (2023) guidelines into the lighting design of the proposed development, the impact on bats can be minimised, even within the context of an illuminated Dublin city centre.

5. CONCLUSION

The bat surveys conducted at St. Andrew's Court, Fenian St, Dublin 2 on July 13th 2020 and June 3rd 2024 revealed consistently low levels of bat activity across the site. The primary species recorded during both surveys was the Leisler's Bat (*Nyctalus leisleri*), with individuals observed flying over the site but not using it for feeding or foraging. The 2020 survey followed the Bat Conservation Trust's 2016 guidelines, while the 2024 survey adhered to the updated 2023 guidelines. Despite the slight difference in guidelines, the results of both surveys are the same, indicating a limited presence of bats in the area.

The assessment of the structures onsite, taking into account potential roost spaces and the absence of evidence suggesting bat usage, resulted in a 'Negligible' suitability rating for roosting bats. The main St. Andrew's Court structure is well-sealed, with no visible gaps or crevices that would allow bat access. The construction materials and high levels of lighting around the site further reduce the suitability for roosting bats. No bat droppings were observed on the ground underneath any of the affected structures during both surveys. The interior of the structures onsite were not accessed for Health and Safety reasons.

Given the low levels of bat activity and the negligible roosting potential of the structures for demolition, the proposed development is not expected to have a significant impact on the local bat population. At this time, the development can proceed without the need for a bat derogation licence. The recommendations outlined in Section 4, will help to further minimise any potential disturbance and enhance the site's value for bats such as landscaping enhancements, installation of bat boxes, and bat friendly lighting.

In the unlikely event that bats are discovered at any stage during the proposed demolition works, it is essential that all activities cease immediately, and a licenced bat ecologist is consulted for further advice. By adhering to the recommendations and remaining vigilant for any signs of bat presence, the proposed development at St. Andrew's Court will have negligible impacts to bats.

APPENDICES

APPENDIX A

Plate 1 Front of affected structure within city area with Negligible Bat Roost Potential.

Plate 2 Front of affected structure within city area with Negligible Bat Roost Potential.

Plate 3 Rear of affected structure located within Dubin city area with Negligible Bat Roost Potential.


Plate 4 Laneway to the rear of site, and other structures adjacent , some with Bat Roost Potential.

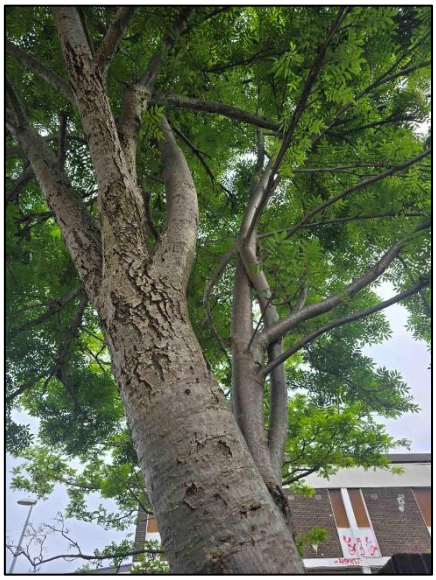



Plate 5 Trees on site with no bat roost potential.

APPENDIX B

2F Schwegler Bat Box (General Purpose)

PRO UK Build-in WoodStone Bat Box

Maternity Bat Box

4m Pole Mounted Large Colony Bat Box

Available on link below with fitting instructions on website

https://www.nhbs.com/search?q=bat+boxes

Bat Slates -

https://beddoesproducts.com/products/bat-access-slate

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