

**An Evaluation of the Hillview site
For Potential For Bat Roost Sites and
For Feeding and Commuting and Potential Impacts
Of the Proposed Development of the Site Upon Bats**

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August 2022

Introduction

Bats are a widespread element of the Irish fauna and make up one quarter of all terrestrial mammal species. They are known to occur from much of the rural landscape which predominates on the island of Ireland, but they are also present within the urban environment and here they occupy buildings and occasionally trees for short or long periods. Buildings are a vital element of the annual cycle of all Irish bat species and at no time more so than the period summer to early autumn, but many bats may also avail of buildings as hibernation sites often when the presence of bats may be impossible to determine.

Trees are less commonly noted as roost sites, partly due to a younger tree population for the island than in the rest of Europe and partly due to under-reporting.

Habitat loss or modification is an issue for bats as well as many other species. Changes to a site such as tree-felling and hedgerow clearance and the introduction of new houses and entire estates may remove roost sites and reduce the lands available to bats as a feeding site or in some way prevent full utilisation of the area by bats by interfering with a bat's ability to commute through a site or roost within the site.

Bats are protected by Irish and EU law, and to prevent unlawful injury or death it is essential that a full understanding of the site is available in advance, both to protect the resident bats from unintentional disturbance and to create a pathway by which a legal derogation and

exemption may be designed, in consultation with the National Parks and Wildlife Service. This is a service of the Heritage Division of the Department of Housing, Local Government & Heritage, if impacts are likely to be severe. Prior to further significant changes to a site, it may be necessary to ensure that there will be no impact upon protected species.

Bats of less common species may be present within a site unbeknownst to owners and residents and there is a requirement to undertake a survey by suitably qualified ecologists with the appropriate equipment to determine which species are present. Should bats be present, knowledge of the species concerned and the potential consequences of the modifications of the site can assist in identifying measures to alleviate the negative effects of these changes. This is a legal requirement given the protection level for these species to ensure that the nine species' conservation status are not reduced by major changes to an area.

Seasonal surveys provide a picture of the use of a site by bats. Feeding may, for example, be more concentrated in some areas due to better shelter from wind or rain. Trees or buildings may be occupied for various purposes at the different phases in the bat's annual cycle. Bats breed in the period May to August and maternity roosts may be encountered in trees, albeit that this is rare in Ireland. Individuals or small numbers of bats may use a tree throughout the rest of the year. Male bats may use trees to perch and establish mating perches or roosts in the summer and autumn. Bats may hibernate in trees from late October (in colder autumn / winter periods) to the end of March or April.

Similarly, buildings may serve for all of the above functions. In addition to the roosting potential of buildings and trees, these elements may serve as feeding areas for bats and a substrate for their prey. Trees are essential for insect diversity, shelter for wind and rain and as landmarks. Buildings are high-potential as roost sites but may also serve as feeding areas, especially during inclement weather, when insects may shelter from wind or rain and are available as prey for species such as pipistrelle, brown long-eared bat, Natterer's bat etc.

This assessment was undertaken during the breeding season in 2022, when young bats are born but incapable of flying and hunting for themselves. Maternity roosts have been formed and there is very high bat activity as mothers either feed their young on milk or prepare to give birth. Surveying for bats in July is a highly suitable time to address the usage of a site during the breeding season.

Methodology

The survey of the Hillview site was undertaken on the night of the 5th to the 6th of July 2022 by two bat specialists with the aid of two x Echometer Touch 2 Pro (EMT) handheld “real time expansion” (a term used by the manufacturer to explain that the equipment records all signals across the ultrasonic range and then speeds up the signal to create a real-time equivalent of the sounds produced by any bats encountered) bat detector. A static detector (the Songmeter Mini Bat or “Mini”) was placed on a ledge in the back garden of the site.

Surveying was undertaken for at least 1.5 hours from prior to sunset and from one hour prior to sunrise on the same night. The interior and exterior of the house were examined for suitability for bat habitation, as were all garden sheds on the property. One surveyor then monitored the back garden while another monitored the front garden for bat activity over the night. Visual examination was accompanied by ultrasonic monitoring with the EMTs.

An examination of available information from Bat Conservation Ireland, previous data from neighbouring sites was undertaken to compile a list of most likely species in the overall area in addition to the evaluation of the habitat and active bat survey.

Survey constraints

The survey was undertaken in a period of the year when bat activity is typically very high. This should allow a surveyor to identify feeding and commuting bats and resident bats and to determine the presence of important bat roosts, important feeding areas and any commuting corridors of value to bats.

Weather conditions were mild with slight drizzle after sunset and almost 100% cloud cover throughout the night. Temperature remained at 15 degrees Celsius throughout. Sunset was at 21:54 and sunrise was at 05:05 the following morning.

Existing Environment

Bat fauna of Hillview site

Roosting species: None

No bats were seen to emerge from or enter any building within or around the site.

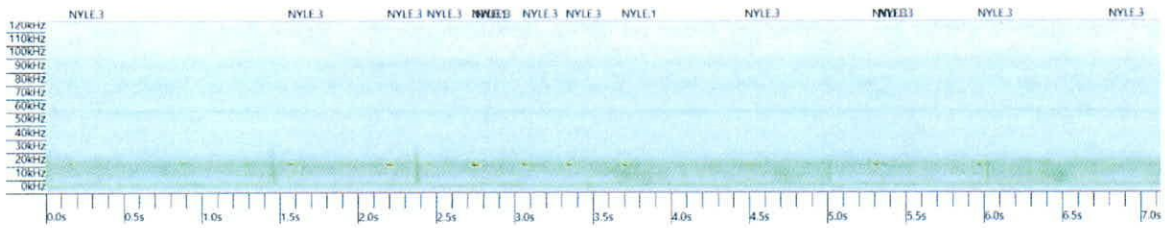
Almost all observed bat activity was Leisler's with only two recordings of a soprano pipistrelle towards the back of the site. No other species were observed. As little activity was recorded throughout the night, none of the on-site buildings were deemed likely as roosts. Additionally, the roof of the house on-site had caved in or had been removed, leaving the interior exposed to the elements and making it unsuitable for roosting. The sheds and outbuildings on-site also lacked attics or other interior roofing space which would have made them suitable as roosts. While the lawn would have provided shelter to insects and would therefore have some potential as a feeding area, little feeding activity was observed during the survey.

Bat species feeding or commuting within the site

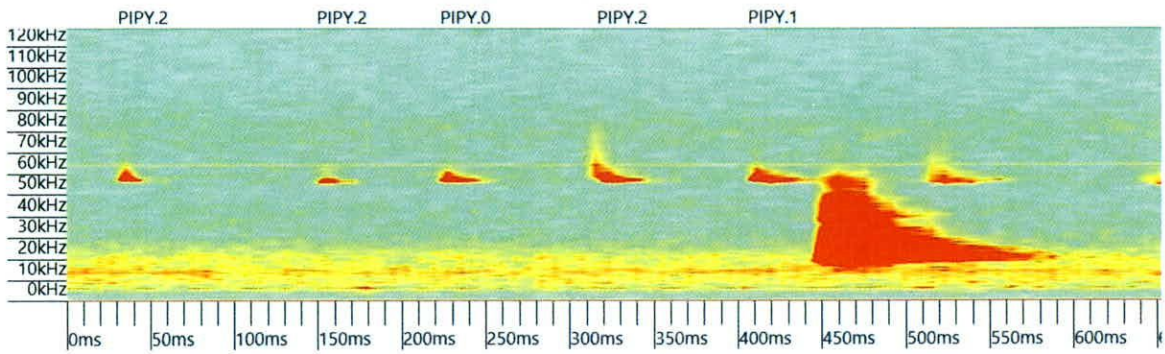
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Leisler's bat	<i>Nyctalus leisleri</i>


















Bat activity within the site 5th to 6th July 2022



Leisler's bat at 04.33 hours



Soprano pipistrelle within the site 23.20 hours

-  NYCLEI_20220705_224920
-  NYCLEI_20220705_230513
-  NYCLEI_20220705_232059
-  NYCLEI_20220706_041111
-  NYCLEI_20220706_041929
-  NYCLEI_20220706_042028
-  NYCLEI_20220706_042242
-  NYCLEI_20220706_042258
-  NYCLEI_20220706_042319
-  NYCLEI_20220706_043256
-  NYCLEI_20220706_044928
-  NYCLEI_20220706_045825
-  PIPPIP_20220705_221656
-  PIPPYG_20220705_231624
-  PIPPYG_20220705_232025

Leisler's bat signals: 22.49, 23.05, 23.21 and again at 04.11, 04.19, 04.20, 04.22 (x 2), 04.23, 04.32, 04.49, 04.58 hours.

A soprano pipistrelle was noted at 23.16 hours and again at 23.20 hours.

Proposed development

The demolition of 1 existing derelict dwelling and sheds and the construction of 3 new houses, 2 parking spaces for each house, and all associated works on a site of 569 m².

The houses, (2 semi-detached and 1 detached unit) each extend to 131.50 m² over 3 storeys.

Potential Impacts

Disturbance from lighting

At present, the site is unlit as the property is now derelict, with some light overspill from neighbouring properties. Lighting will be introduced for two different functions: 1) Access and safety 2) Security and policing. The former is to allow ease of use at night while the latter ensures a perceived higher security level.

Lighting may affect bat species, in particular, light-intolerant bat species during foraging and if directed at emergence points would affect all bat species, even those that will feed in illuminated areas. For species such as Leisler's bats, it may also serve as a focus for feeding activity.

This is a long-term moderate negative impact without the implementation of mitigation.

Mitigation

Provision of bat boxes

Specially designed bat boxes shall be incorporated into the site to provide roosts for bats. The following Woodcrete design offer high roost potential - 2 x Schwegler 2F with double front panel (or similar). If these cannot be facilitated within the site (i.e., no area provides sufficient darkness, a height of 3 metres and low disturbance), bat access into the built structures shall be provided using specially designed bat access elements (e.g., bat access bricks, built-in boxes etc.).

Lighting

Lighting must be designed that will limit overspill from the required area for illumination and prevent light pollution. This should aim to avoid mature trees and flanking vegetation. LED is the most energy efficient source available and wherever a permanent source of night lighting is unessential, it should be motion-activated.

- Dark corridor for movement of bats along the grounds of the site. Lighting should be directed downwards away from the treetops.
- All luminaires shall lack UV elements when manufactured and shall be LED
- A warm white spectrum (ideally <2700 Kelvin) shall be adopted to reduce blue light component
- Luminaires shall feature peak wavelengths higher than 550 nm
- Tree crowns in the adjacent lands shall remain unilluminated
- Planting shall provide areas of darkness suitable for bats to feed and commute through the site. Trees must not be illuminated as this would prevent their use for feeding by bats.

Planting

Native shrubs and trees must be used within the new development. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan – All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf (pollinators.ie). (<https://pollinators.ie/wp-content/uploads/2021/03/All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf>)

Impacts of the Development following Mitigation

There will be no adverse impacts upon bats if mitigation is implemented in full.

APPENDICES

Bat Conservation Ireland data: search results

BCIreland data: search results 12 Aug 2022					
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all bats within 1000m of O0331635173.					
Roosts					
Name	Grid reference	Grid ref easting	Grid ref northing	Address	Species observed
Anna Liffey House	O0436	304000	236000	Lucan; County Dublin	Pipistrellus spp. (45kHz/55kHz); Plecotus auritus
Esker House	O037343	303700	234300	Lucan; County Dublin	Pipistrellus spp. (45kHz/55kHz); Plecotus auritus
Lucan Spa Hotel Roost	O024351	302400	235100	Lucan; Co. Dublin	Pipistrellus spp. (45kHz/55kHz)
Ad-hoc observations					
Survey	Grid reference	Grid ref easting	Grid ref northing	Date	Species
Bat Survey - Scott Cawley	O037343	303700	234300	28/04/2011	Myotis daubentonii; Nyctalus leisleri; Pipistrellus pipistrellus (45kHz); Pipistrellus spp. (45kHz/55kHz); Unidentified bat
Bat Surveys - Tina Aughney	O0300035000	303000	235000	14/05/2002	Myotis daubentonii; Nyctalus leisleri; Pipistrellus pygmaeus; Plecotus auritus
BATLAS 2010	O033253533	303325	235533	16/05/2008	Myotis daubentonii; Pipistrellus pygmaeus
BATLAS 2020	O0336635510	303366	235510	06/08/2016	Pipistrellus pipistrellus (45kHz); Pipistrellus pygmaeus
BATLAS 2020	O0394734307	303947	234307	02/09/2016	Pipistrellus pipistrellus (45kHz); Pipistrellus pygmaeus
EIS surveys - Brian Keeley	O0280035800	302800	235800	01/09/2005	Nyctalus leisleri; Pipistrellus pipistrellus (45kHz); Pipistrellus pygmaeus