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National Parks and Wildlife Service  
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10/01/2025

Dear Sir/Madam,

Please find enclosed a bat report in support of a derogation licence application submitted by Karen Banks, Greenleaf Ecology, on behalf of NCD Investments Ltd. The derogation is required for demolition of an existing dwelling to facilitate the proposed Residential Development at Newmarket, Co. Cork, Planning Ref: 24/04324.

This application for derogation qualifies under Regulation 54(2)(C) of the European Communities (Birds and Natural Habitats) Regulations as the proposed development is required to fulfil a housing need and, as such, is of social and economic importance.

Alternative solutions considered included not demolishing the existing dwelling. However, that option is not feasible as the dwelling is not fit for habitation in its current condition. Demolition of the dwelling is required in order to facilitate the proposed Residential Development comprising 19 no. dwelling units; there is no suitable alternative to the proposed demolition works. With the implementation of the mitigation measures outlined within the attached bat report, the proposed development and actions outlined within this report will not be detrimental to the maintenance of populations of bat species at favourable conservation status in their natural range (as required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.

Yours sincerely,

Karen Banks

# Bat Roost Survey and Assessment

Proposed Residential Development

Newmarket

Co. Cork

Report prepared for NCD Investments Limited.

By Karen Banks MCIEEM

26<sup>th</sup> August 2024



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## Contents

1	Introduction .....	3
1.1	Site Summary and Context .....	3
1.2	Description of the Proposed Project .....	3
1.3	Legislative Context.....	4
1.4	Objectives .....	4
2	Methodology.....	5
2.1	Desk Study .....	5
2.2	Field Survey.....	5
2.3	Surveyor Information .....	5
2.4	Bat Roost Inspection Survey.....	5
2.5	Emergence Roost Survey .....	6
3	Results.....	7
3.1	Existing Bat Data .....	7
3.2	Habitat Description.....	7
3.3	Bat Roost Survey.....	10
3.3.1	Potential Bat Access Points .....	10
3.3.2	Bat Roosting Potential.....	13
3.3.3	Evidence of Bats .....	13
3.4	Bat Activity Survey .....	13
3.5	Significance of Buildings for Bats.....	14
3.5.1	Bats.....	14
4	Potential Impacts .....	15
5	Recommendations and Mitigation .....	16
6	References .....	17

## Appendices

Appendix A Description of Irish Bat Species

## List of Figures

Figure 1-1: Site Location Map .....	3
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## List of Plates

Plate 3-1: Rear of HSE building illustrating flat roof extension and a-frame roof .....	8
Plate 3-2: Rear of dwelling and flat roof-extension .....	8
Plate 3-3: Rear of shed .....	9
Plate 3-4: Workshop and 2-storey building .....	9
Plate 3-5: Raised section of roofing .....	10
Plate 3-6: Gaps are present in wooden soffits .....	11
Plate 3-7: Raised flat roof material .....	11
Plate 3-8: Raised fascia board .....	12
Plate 3-9: Potential access points at fascia board and window .....	12

## List of Tables

Table 2-1: Criteria for Assessing the Potential Suitability of the Proposed Development Site for Bats.	6
Table 3-1: NBDC and NPWS bat records within a 4km radius of the proposed site.....	7

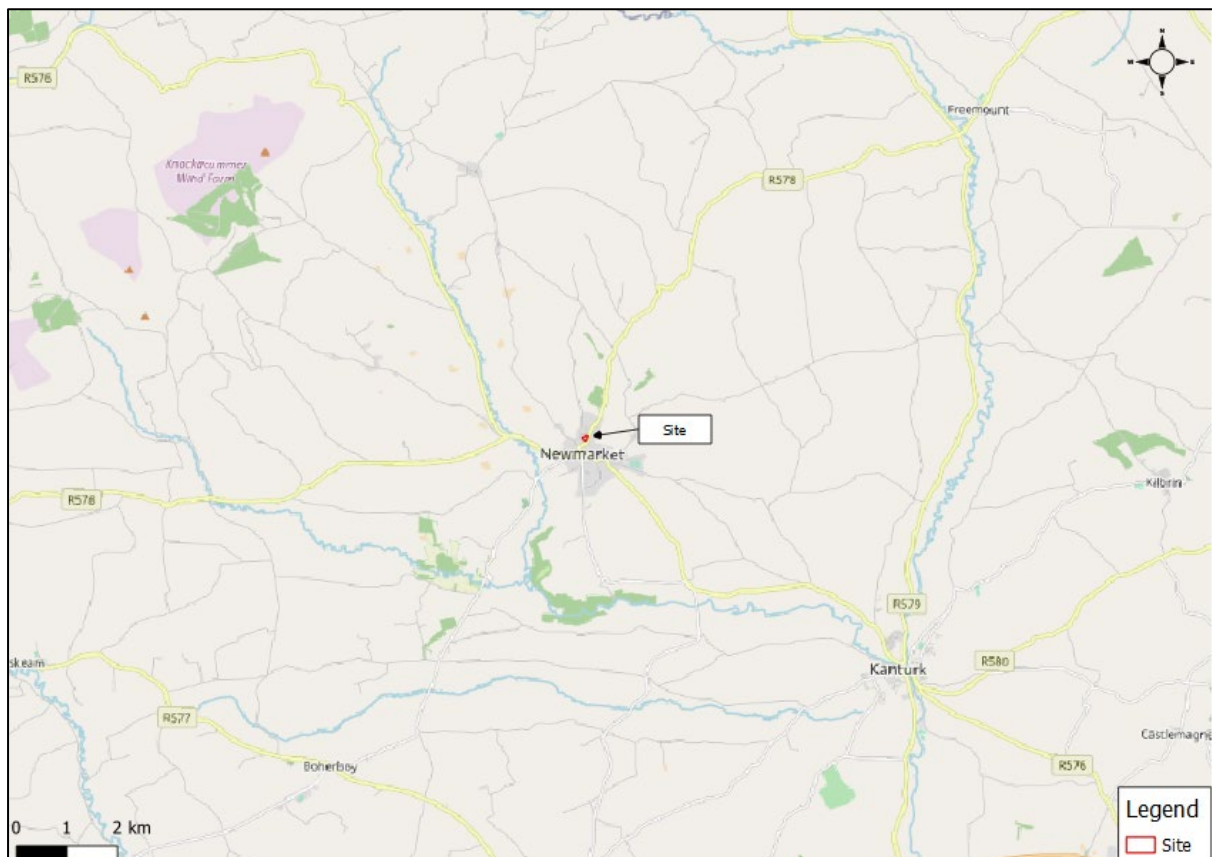
## 1 Introduction

This report has been prepared by Karen Banks, Greenleaf Ecology, at the request of NCD Investments Ltd. Planning consent is being sought from Cork County Council for a residential development at Newmarket, Co. Cork.

A protected species survey of the proposed site, comprising a bat survey, was undertaken in response to request for further information No. 1 (iv) from Cork County Council (Planning ref: 24/04324).

The site is located in Newmarket, as illustrated in Figure 1.1.

Figure 1-1: Site Location Map



### 1.1 Site Summary and Context

The proposed development is located adjacent to the R578 road in the townland of Scarteen Lower, Newmarket, Co. Cork. The site comprises of a large disused concrete yard and a series of buildings in varying states of repair. The immediate environs of the proposed site comprise domestic dwellings and associated gardens to the north, west and south; agri-businesses are present to the east. The wider landscape comprises agricultural grassland bound by hedgerows and treelines, with small parcels of forestry.

### 1.2 Description of the Proposed Project

Permission for amendments to previously granted housing development (Pl. Ref. No. 22/4174), to include change to site layout, change to house types and increase in density to 19 no. dwelling units. The proposed dwelling units will consist of 5 no. 2-bedroom terrace units, 8 no. 4-bedroom semi-detached units and all associated site development works at Scarteen Lower, Newmarket. Co. Cork.

The permitted development (Pl. Ref. No. 22/4174) includes the demolition of all existing structures on site.

### 1.3 Legislative Context

All Irish bats are protected under the Wildlife Acts. Also, the EU Habitats Directive, and Irish implementing legislation, seeks to protect rare species, including bats, and their habitats, and requires that appropriate monitoring of populations be undertaken. Moreover, the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) exists to conserve all bat species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) protects migrant bat species across all European boundaries. Ireland has ratified both these conventions.

All bats are listed in Annex IV to the Habitats Directive (92/43/EC) and the Lesser Horseshoe bat is further listed under Annex II to the same Directive. Article 12 of the Directive requires Member States to establish a system of strict protection for animal species listed in Annex IV. Article 16 provides for derogation from the protection under Article 12 in certain circumstances. Articles 12 and 16 are transposed into Irish law by Regulations 51 and 54, respectively, of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

Destruction, alteration or evacuation of a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service (NPWS) before works can commence. Any works interfering with bats and especially their roosts, may only be carried out under a Regulation 54 licence issued by the NPWS. The details with regards to appropriate assessments, the strict parameters within which derogation licences may be issued and the procedures by which and the order in relation to the planning and development regulations such licences should be obtained, are set out in NPWS Guidance Series 2 – *“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”* (Mullen et al., 2021).

### 1.4 Objectives

The objectives of the bat survey were to assess:

- The potential suitability of the proposed site for roosting bats;
- Whether or not bats are roosting within the buildings present within the site and how many bats these roosts support (i.e. size and importance);
- Make an assessment of the potential impacts of the proposed demolition works to the existing buildings on bats; and
- To provide appropriate mitigation measures to remove or reduce impacts.

## 2 Methodology

### 2.1 Desk Study

A pre-survey data search was conducted in order to collate existing information from the footprint of the site and its surrounding area on bat activity, roosts and landscape features that may be used by bats. The data search comprised the following information sources:

- Collation of known bat records from the National Bat Database held by the National Biodiversity Data Centre ([www.biodiversityireland.ie](http://www.biodiversityireland.ie)); and
- Review of Ordnance Survey mapping and aerial photography of the site and its environs.

### 2.2 Field Survey

This bat survey and assessment was undertaken in accordance with the following guidelines:

- Bat Conservation Ireland, (2010). Guidance notes for Planners, Engineers, Architects, and Developers;
- Collins, J. (ed.) (2016). *Bat Surveys for Professional ecologists: Good Practice Guidelines* (3rd ed.). The Bat Conservation Trust, London<sup>1</sup>;
- Collins, J. (ed.) (2023) *Bat Surveys for Professional ecologists: Good Practice Guidelines* (4<sup>th</sup> ed.). The Bat Conservation Trust, London;
- 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.

### 2.3 Surveyor Information

The survey was undertaken by Karen Banks, MCIEEM.

Karen is an ecologist with 18 years' experience in the field of ecological assessment. Karen is an experienced and skilled bat surveyor, first gaining a scientific licence to disturb bats from Natural England, UK in 2008. Karen is trained in bat handling and capture methods and currently holds a bat disturbance licence granted by the NPWS. Karen has undertaken bat survey and assessment for numerous projects, including bridge repair and replacement works, domestic dwelling repair and demolition works, wind farm developments and large-scale infrastructure projects such as flood relief schemes, road developments and pipeline schemes.

### 2.4 Bat Roost Inspection Survey

On 26<sup>th</sup> July 2022 and 15<sup>th</sup> July 2024 the existing buildings at the site were surveyed for potential roost sites and signs of bats. The survey utilised a high-powered torch, close focussing binoculars and an endoscope (Explorer Premium 8803 with 9mm camera) where required. The external inspection involved looking for bat droppings on the ground, stuck to walls, windowsills or in crevices in the stonework and recording suitable entry and exit points.

The internal inspection involved looking for features that may be suitable for roosting bats, such as joints and crevices in wood, holes or crevices between stonework in the walls and searching for bat droppings, urine stains and feeding signs on the floor.

The following criteria were used to determine the potential suitability of the site for bats (Table 2-1)<sup>2</sup>.

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<sup>1</sup> The survey conducted in 2022 was completed before the publication of the 4<sup>th</sup> edition of the guidelines

<sup>2</sup> Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> edn). The Bat Conservation Trust, London

Table 2-1: Criteria for Assessing the Potential Suitability of the Proposed Development Site for Bats

Suitability	Description Roosting Habitats	Commuting and Foraging Habitats
<b>Negligible</b>	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
<b>Low</b>	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions 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 or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or un-vegetated 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.
<b>Moderate</b>	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only- the assessments in this table are 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 commuting 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.
<b>High</b>	A structure or tree 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 and surrounding habitat.	Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats 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, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

## 2.5 Emergence Roost Survey

A dusk survey of the buildings was undertaken by two people (Ms Karen Banks and Mr Cathal MacPartholan) on 26<sup>th</sup> July 2022 in order to watch and listen for bats exiting bat roosts to determine the presence or absence of bats at the time of survey. The emergence roost survey was repeated on 15<sup>th</sup> July 2024. The dusk emergence survey commenced approximately 15 minutes before sunset and ended approximately 90 minutes after sunset. Both surveys were conducted in appropriate weather conditions (weather at dusk over 10°C, no heavy rain or strong wind (i.e. underneath Beaufort Force 5)).

Anabat Walkabout detectors were utilised for the survey, which record bat echolocation calls directly on to an internal SD memory card. Each time a bat is detected, an individual time-stamped (date and time to the second) file is recorded. Data were then downloaded and all recordings were analysed by the Anabat Insight software analysis programme version 2.0.1.



## 3 Results

### 3.1 Existing Bat Data

The review of existing records of bat species in the area of the site (last checked 26<sup>th</sup> August 2024) indicates that four of the ten known Irish species of bat have been recorded within a 4km radius of the proposed site, namely pipistrelle species, soprano pipistrelle, Leisler's and Daubenton's bat as shown in Table 3-1 below. There are no existing records of roosting bats from the proposed site and its environs.

Table 3-1: NBDC and NPWS bat records within a 4km radius of the proposed site

Common Name	Scientific Name	Present (Y/N)	Date of Last Record	Location of Known Roost (to 1km OS Grid Square Resolution)
<b>Pipistrelle spp.</b>	<i>Pipistrellus pipistrellus sensu lato</i>	Y	28/07/2008	None
<b>Soprano Pipistrelle</b>	<i>Pipistrellus pygmaeus</i>	Y	28/07/2008	None
<b>Nathusius's Pipistrelle</b>	<i>Pipistrellus nathusii</i>	N	N/A	N/A
<b>Leisler's Bat</b>	<i>Nyctalus leisleri</i>	Y	28/07/2008	None
<b>Brown Long-eared Bat</b>	<i>Plecotus auritus</i>	N	N/A	N/A
<b>Daubenton's Bat</b>	<i>Myotis daubentonii</i>	Y	28/07/2008	None
<b>Whiskered Bat</b>	<i>Myotis mystacinus</i>	N	N/A	N/A
<b>Natterer's Bat</b>	<i>Myotis nattereri</i>	N	N/A	N/A
<b>Lesser Horseshoe Bat</b>	<i>Rhinolophus hipposideros</i>	N	N/A	N/A
<b>Brandt's Bat</b>	<i>Myotis brandtii</i>	N	N/A	N/A

The bat landscape association model (Lundy *et al*, 2011) suggests that the site is part of a landscape that is of low to moderate suitability for bats overall, is of moderate to high suitability for soprano pipistrelle, common pipistrelle, brown long-eared, Leisler's and natterer's bat; and low to moderate suitability for whiskered, Daubenton's and Nathusius' pipistrelle. The proposed site is outside of the core distribution range for lesser horseshoe bat (Roche *et al*, 2014).

### 3.2 Habitat Description

The proposed site comprises a number of used and disused buildings, as described below.

#### Former HSE Building

A two-storey building with a flat roof extension on the southern elevation. A building supports an A-frame corrugated sheet roof and concrete coping stones (Plate 3-1). There is no roof space internally.

*Plate 3-1: Rear of HSE building illustrating flat roof extension and a-frame roof*



**Dwelling**

A two-storey building with rendered walls, wooden soffits, a tile roof and a flat roof extension on the western elevation (Plate 3-2).

*Plate 3-2: Rear of dwelling and flat roof-extension*



**Shed**

A single storey building constructed of brick with a corrugated sheet roof and a wooden fascia board (Plate 3-3).

*Plate 3-3: Rear of shed*



*Workshop*

Single storey building constructed of block with a corrugated sheet roof (Plate 3-4).

*Two-storey Building*

Two-storey disused building with rendered walls and a corrugated sheet roof. The windows and door have been boarded up (Plate 3-4). A small flat roof extension is present on the western elevation.

*Plate 3-4: Workshop and 2-storey building*



No semi-mature or mature trees were present at the proposed site.



### 3.3 Bat Roost Survey

#### 3.3.1 Potential Bat Access Points

##### Former HSE Building

Potential access points to the HSE building include a vent with missing slats on the southern elevation of the flat roof extension and a raised section of corrugated sheet to the A-frame roof (Plate 3-5).

*Plate 3-5: Raised section of roofing*



##### Dwelling

Potential entry points for bats to the dwelling at the proposed site include gaps in the wooden soffits (Plate 3-6), raised roof tiles and raised edges to the flat roof material (Plate 3-7).

*Plate 3-6: Gaps are present in wooden soffits*



*Plate 3-7: Raised flat roof material*



Shed

Potential access points were limited to a gap behind the wooden fascia board present to the southern elevation of the building (Plate 3-8).

*Plate 3-8: Raised fascia board*



Workshop

No potential access points were recorded.

Two-storey Building

Potential access points were limited to gaps to the fascia board present on the flat roof extension and small gaps around a second storey window (Plate 3-9).

*Plate 3-9: Potential access points at fascia board and window*





### 3.3.2 Bat Roosting Potential

#### HSE Building

There were potential roosting sites between the corrugated roof sheets and the high ceiling of the two-storey section of the building; there is also potential for bats to roost behind the vent of the flat roof section of the building.

#### Dwelling

Potential roosting sites included the roof space of the dwelling, within the wooden soffits and under raised sections of the flat roof material.

#### Shed

Potential roosting spaces were limited to gaps behind the wooden fascia board.

#### Workshop

No potential roosting spaces were recorded.

#### Two-storey Building

No access was gained internally, however the potential for roosting habitat to be present underneath the roofing material cannot be excluded.

The site is bound by treelines to the north and south. These treelines provide connectivity to potential foraging habitat in the surrounding landscape, including treelines/hedgerows, woodland edge and linked back gardens. However, the buildings within the site are poorly connected to surrounding vegetation. Overall, the dwellings and surrounding habitat are considered to be of low to moderate suitability for roosting and foraging bats.

No features of potential as roosting or resting places for bats were recorded within the vegetation present at the site.

### 3.3.3 Evidence of Bats

The outside of the buildings and the inside of the HSE building, shed and warehouse were examined with close focussing binoculars and a high-powered torch (as appropriate). No evidence of bats (e.g. actual sightings, droppings, feeding remains, scratch marks, urine stains) was observed during the internal and external inspection of the buildings.

## 3.4 Bat Activity Survey

No emergent bats or bat roosts were identified during the emergence roost survey of the buildings during the roost emergence survey conducted in 2022.

During the emergence survey conducted on 15<sup>th</sup> July 2024, a single soprano pipistrelle was recorded emerging from the roof of the dwelling. No emergent bats or bat roosts were identified from any of the other buildings within the proposed site.

Three species of bat were recorded foraging at the site: soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle (*P. pipistrellus*) and Leisler's bat (*Nyctalus leisleri*). Leisler's bat was recorded close to sunset commuting overhead during both the survey in 2022 and 2024 and soprano pipistrelle and common pipistrelle were recorded in low numbers foraging around the buildings and the site boundary.

### 3.5 Significance of Buildings for Bats

#### 3.5.1 Bats

The dwelling at the proposed site provides roosting opportunities for at least one species of bat. The surrounding landscape comprises agricultural grassland bound by hedgerows and treelines and parcels of forestry; potential foraging and commuting habitat is present along hedgerows, treelines and woodland edges. One soprano pipistrelle was recorded emerging from the dwelling on 15<sup>th</sup> July 2024. The dwelling is considered to be a day roost for soprano pipistrelle in the summer. The roost is of low conservation significance (in accordance with the *Bat Mitigation Guidelines for Ireland*).

The bat species recorded at the site are of Least Concern (Marnell et al., 2019) and are of Favourable conservation status (NPWS, 2019).



## 4 Potential Impacts

It is proposed to demolish the existing buildings at the site. There is potential for disturbance to a minor soprano pipistrelle roost should the proposed demolition works be undertaken during the active season for bats (April to September).

## 5 Recommendations and Mitigation

Bats utilise the roof of the existing dwelling at the proposed site for roosting, therefore, safeguards are recommended to ensure the safety of these animals during works.

### *Application for a derogation licence*

*NB: Work on a known bat roost is a notifiable action under current legislation and a derogation licence has to be obtained from the National Parks and Wildlife Service before works on the roost can commence. Such a licence is required for the proposed demolition of the existing dwelling at the proposed site and no works should be undertaken to the roof of the existing dwelling before the licence is granted by the NPWS.*

In accordance with Marnell *et al* (2022), the dwelling at Newmarket supports a bat roost considered to be of low conservation significance. As stated in Figure 20, page 46, this necessitates:

*“Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring”*

### **Measure 1: timing of works**

While, as noted above, there is no requirement to comply with timing conditions, it is noted that disturbance to individual bats can be avoided by completing works at an appropriate time of year. In accordance with the *Bat Mitigation Guidelines for Ireland*, the optimum time for undertaking works to a building supporting a summer roost (not a proven maternity site) is between 1<sup>st</sup> September and 1<sup>st</sup> May.

Demolition works to the existing dwelling shall occur between 1<sup>st</sup> September and 1<sup>st</sup> May.

Demolition works shall only proceed under licence.

### **Measure 2: Demolition of existing dwelling**

The existing dwelling will be subject to a daytime inspection or dusk emergence survey for evidence of bat usage immediately prior to the commencement of works. In the event that no evidence of bat usage is found during the survey, works can commence. Should bats be found within the building, works will be delayed until they are no longer present (i.e. they have naturally flown from the roost). Prior to commencement of works the bat specialist will brief the contractor on the possible presence of bats on the site, the subsequent need to take appropriate care and attention whilst carrying out the works and the steps to take should bats be discovered at the site at any time (i.e. stop works and inform the bat specialist). Active bats will usually keep out of the way of any operations, but torpid bats may need to be gently temporarily placed in a box until dusk and released on site.

## 6 References

Altringham, J. (2003) *British Bats The New Naturalist Series 93*. Harper Collins.

Aughney, T., Kelleher, C., & Mullen, D. (2008): *Bat Survey Guidelines, Traditional Farm Buildings Scheme*. Heritage Council, Kilkenny.

Bat Conservation Ireland, (2010). *Guidance notes for Planners, Engineers, Architects, and Developers*.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Coastal, Freshwater and Marine*. The Institute for Ecology and Environmental Management.

Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4<sup>th</sup> edn)*. The Bat Conservation Trust, London.

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn)*. The Bat Conservation Trust, London.

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.

National Roads Authority (2006): *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes*. National Roads Authority, Dublin.

National Roads Authority (2006): *Guidelines for the Treatments of Bats Prior to the Construction of National Road Schemes*. National Roads Authority, Dublin.

Russ (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing.

## A: Description of Irish Bat Species

Ireland has ten known bat species from two distinct families. Each is briefly described below. For a more comprehensive overview see Roche *et al* (2014). The conservation status of each species is derived from NPWS (2019).

### Vespertilionidae:

#### **Common pipistrelle (*Pipistrellus pipistrellus*)**

This species was only recently separated from its sibling, the soprano or brown pipistrelle *P. pygmaeus*, which is detailed below (Barratt et al, 1997). 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. The conservation status of this species is Favourable.

#### **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. The conservation status of this species is Favourable.

#### **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 (Richardson, 2000) and also in Fermanagh, Longford and Cavan. It has also been recorded in Counties Cork and Kerry (Kelleher, 2005). However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The conservation status of this species is Favourable.

#### **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, caddis-flies 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. The conservation status of this species is Favourable.

#### **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. The conservation status of this species is Favourable.

### **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, caddis-flies 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. The conservation status of this species is Favourable.

### **Daubenton's bat (*Myotis daubentonii*)**

This bat species prefers feeding close to the surface of smooth 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. The conservation status of this species is Favourable.

### **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 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 conservation status of this species is Favourable.

### **Brandt's bat (*Myotis brandtii*)**

According to NPWS (2013), whiskered and Brandt's bats are cryptic species and can only be told apart using DNA techniques. Brandt's bat has been confirmed only once from Ireland; a single specimen found in 2003 in Wicklow (Mullen, 2006). Following this discovery, an intensive re-survey, involving DNA testing, was undertaken of all known whiskered bat roosts in Ireland, by the Centre for Irish Bat Research. Woodland mist-netting was also conducted for the species. Despite the extensive survey-work, no further Brandt's bats were identified. The most recent Red Data List for Irish Mammals (Marnell *et al.* 2009) lists Brandt's bat as data deficient. There is no evidence of any roosts for this species in the country and at present the single record for the species is considered an anomaly. Boston *et al.* (2010) concluded that "M. brandtii .... cannot currently be considered a resident species. This species is now considered a vagrant to the country and consequently, a detailed assessment has not been carried out.

## **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. The conservation status of this species is Inadequate.