

**BARRACK STREET
CARLOW
CO. CAROW.**

**Bat survey and assessment of area for proposed
regeneration of currently derelict terrace of houses
and all associated site works.**

Report by

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SUMMARY

Site:	Site in Barrack Street, Carlow
Proposed Structure;	Regeneration of derelict terrace of houses.
Grid reference:	From IGR IS 72364 76542
Bat species present:	None
Roost location:	N/A
Bat access:	N/A
Bird Species Present:	Jackdaws (<i>Corvus monedula</i>) present in open chimneys on site.
Habitats present:	Buildings and Artificial Surfaces (BL3)
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Introduction

A proposal to undertake the regeneration of a derelict terrace of houses on Barrack Street, Carlow, Co. Carlow and all associated site works has resulted in a request for a bat survey to ensure that any of these animals currently using the site are safe guarded during proposed works. Gerard Tobin was asked to undertake this survey to ascertain possible presence on-site.

Site location and access

The site is located on Barrack Street in Carlow, Co. Carlow.

Bat Survey

This report presents the results of a site visit by Gerard Tobin on 08th December 2022 during which the site and structures were inspected. The fauna occurring on the site are described and the likely impacts of the proposed works on the fauna are discussed with recommendations for mitigation measures if necessary.

Survey methodology

Survey of fauna was carried out by means of a thorough search within the site. The area was inspected for bat use. Principally their signs, such as staining, lack of spider webs, feeding signs or droppings - indicate presence of bats though direct observations are also occasionally made. The nature and type of habitats present are also indicative of the species likely to be present.

The presence or absence of cavities in suitable for bats, was used as an indicator of likely bat presence. Where suitable cavities were found a further visual examination of the area was undertaken using infra-red imaging equipment and a Ciel Electronique CDB 301 HD/FD Bat detector and an Echo Meter Touch 2 (for Android) Bat detector with software app on Samsung Galaxy GT along with both a “V-Scope” flexible fibre borescope and a fibre optic video camera capable of looking into small cavities.

A Magellan Explorist handheld GPS unit was used to mark the location of items of interest on-site. Heavy tree cover may compromise the accuracy of GPS locations.

Digital cameras (Canon 1000D and Canon IXUS 185) were used to document items of interest.

Survey constraints

The survey was carried out by means of a thorough examination of the site. There were climatic and seasonal constraints in regard to survey as it was undertaken outside of the active season. Daytime temperatures reached 03’ Celsius. A survey outside the active bat season allows the presence of suitable roost habitat to be paramount in deciding on the presence or absence of bats.

Brief description of Barrack Street, Carlow from the perspective of bat habitat

This is predominantly an urban environment. These habitats tend not to be favourable to species of bat. All of the roofs are in very poor repair or no longer extant

Results of survey

The area, potentially, offers few opportunities for bats. There was no evidence that bat roost in any of the derelict houses along the footprint of the proposed development.

Indication of significance of site for bats

There is no evidence that bats are currently present in the area.

Indication of significance of site for other animals

There are Jackdaw (*Corvus corone*) nests in the chimneys on site.

Legal status and conservation issues – bats.

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

All bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat is further listed under Annex II.

Potential impacts of proposed works on bat fauna

The proposed works should not adversely affect bats.

Mitigation measures

As there are currently no bats present there is no necessity for bat specific mitigation measures.

Application for a derogation licence

NB: Works 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 can commence.

There is no licence required in this instance.

Measure 1: timber treatments

Where chemical treatment of timbers in any structures is necessary then only bat safe compounds may be used and a list of suitable chemicals is given in the appendix.

Measure 2: water tanks

Any water tanks sited within the roof spaces of site buildings shall be permanently covered to prevent future accidental drowning of and contamination by bats.

Measure 3: jackdaws

Any redevelopment must ensure there is no disturbance of nesting birds. Chimneys on site shall be sealed, to prevent ingress by nesting jackdaws, before February 28th in the year in which redevelopment commences..

Predicted and Residual impact of the proposal

No major bat roosts or foraging/commuting habitat should be lost due to the proposed works.

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Appendices

Bat ecology – general

The bat is the only mammal that is capable of true flight. There are over 1,100 species worldwide, representing almost a quarter of all mammal species. There are 47 species in Europe - in Ireland, ten species of bat are currently known to exist, which are classified into two families, the Rhinolophidae (Horseshoe bats) and the Vespertilionidae (Common bats).

Prey

All the European bat species feed exclusively on insects. A Pipistrelle, weighing only 4 to 8 grams, will eat up to 3000 insects every night, ensuring a build up of fat in the bat's body to allow it to survive the winter deep in hibernation.

Breeding and longevity

Irish bats can produce one young per year but, more usually, only one young is born every two years (Boyd & Stebbings, 1989). This slow rate of reproduction inhibits repopulation in areas of rapid decline. Although bats have been known to live for twenty or more years, this is rare as most die in their first and the average lifespan, in the wild, is four years.

Threats

All bat species are in decline as they face many threats to their highly developed and specialised lifestyles. Many bats succumb to poisons used as woodworm treatments within their roosting sites (Racey & Swift, 1986). Agricultural intensification, with the loss of hedgerows, treelines, woodlands and species-rich grasslands have impacted bat species also. Habitual roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development. Summer roosts are prone to disturbance from vandals. Agricultural pesticides accumulate in their prey, reaching lethal doses (Jefferies, 1972). Chemical treatments in cattle production sterilise dung thus ensuring that no insects can breed within it to be fed upon by bats. Likewise, river pollution, from agricultural runoff, reduces the abundance of aquatic insects. Road building, with the resultant loss of foraging and roosting sites is a significant cause in the reduction of bat populations across Europe.

Extinction

As recently as 1992, the greater mouse-eared bat *Myotis myotis* became the first mammal to become extinct in Britain since the wolf in the 18th century.

Description of bat species known or expected from the area

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.

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.

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 recently 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 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, 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. 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, 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.

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 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 (Kelleher, 2006b) and another in Tipperary in 2006 (Kelleher, 2006a). 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.

List of Irish bat species and adjudged status on site

Bats		Status on site
<i>Chiroptera</i> ¹		
Common Pipistrelle ²	<i>Pipistrellus pipistrellus</i>	Limited potential
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Limited potential
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	Limited potential
Brown Long-eared	<i>Plecotus auritus</i>	Limited potential
Leisler's	<i>Nyctalus leisleri</i>	Limited potential
Lesser Horseshoe	<i>Rhinolophus hipposideros</i>	Absent
Whiskered	<i>Myotis mystacinus</i>	Limited potential
Natterer's	<i>Myotis nattereri</i>	Limited potential
Daubenton's	<i>Myotis daubentonii</i>	Limited potential
Brandt's	<i>Myotis brandtii</i>	Limited potential

¹ Bat distribution records from O'Sullivan (1994) and Richardson (2000).

² Two common species of pipistrelle bat are present in Ireland, recent taxonomic revision. The species are identified by the frequency they use for echolocation (46Hz [Common] and 55Hz [Soprano]), and both occur in similar habitats. Roosts occur in buildings and trees.

Photographic Record

Plate 1 – Terrace of houses



Plate 2- Absent roofs



Plate 3 Ground floor of derelict house



Timber treatment list

- Products suitable for use in a bat roost can be described in terms of the active ingredients (biocides) that they contain.

Any products containing active ingredients listed in the following Table 1 are suitable for use in a bat roost. Products intended for remedial timber treatment may also carry a British HSE number indicating that they have received approval under the UK Control of Pesticides Regulations (COPR) 1986, but decorative finishes usually contain such low levels of biocides that they are exempt from this requirement (in the UK).

Table 1: Insecticides and fungicides suitable for use in bat roosts

Insecticides	Permethrin Cypermethrin Boron compounds
Fungicides and decorative finishes	Tri(bexylene glycol) baborate Disodium octaborate Borester 7 Dodecylbenzyltrimethyl ammonium chloride Alkyl(benzyl)dimethylammonium chloride (= Benzalkonium chloride) Copper naphthenate Acypetacs copper Zinc naphthenate Acypetacs zinc Zinc octoate Sodium 2-phenylphenoxide Diclofluanid 3-iodo-2propynyl-N-butyl carbamate (Polyphase/IPBC) Propiconazole

- Adapted from English Nature's Species Conservation Handbook