Bat Survey and Assessment

Toe Head

Castletownshend

Co. Cork

Report prepared for Garlandford UC

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12th March 2026

Greenleaf Ecology

[redacted]

Contents

Appendices

List of Figures

List of Plates

List of Tables

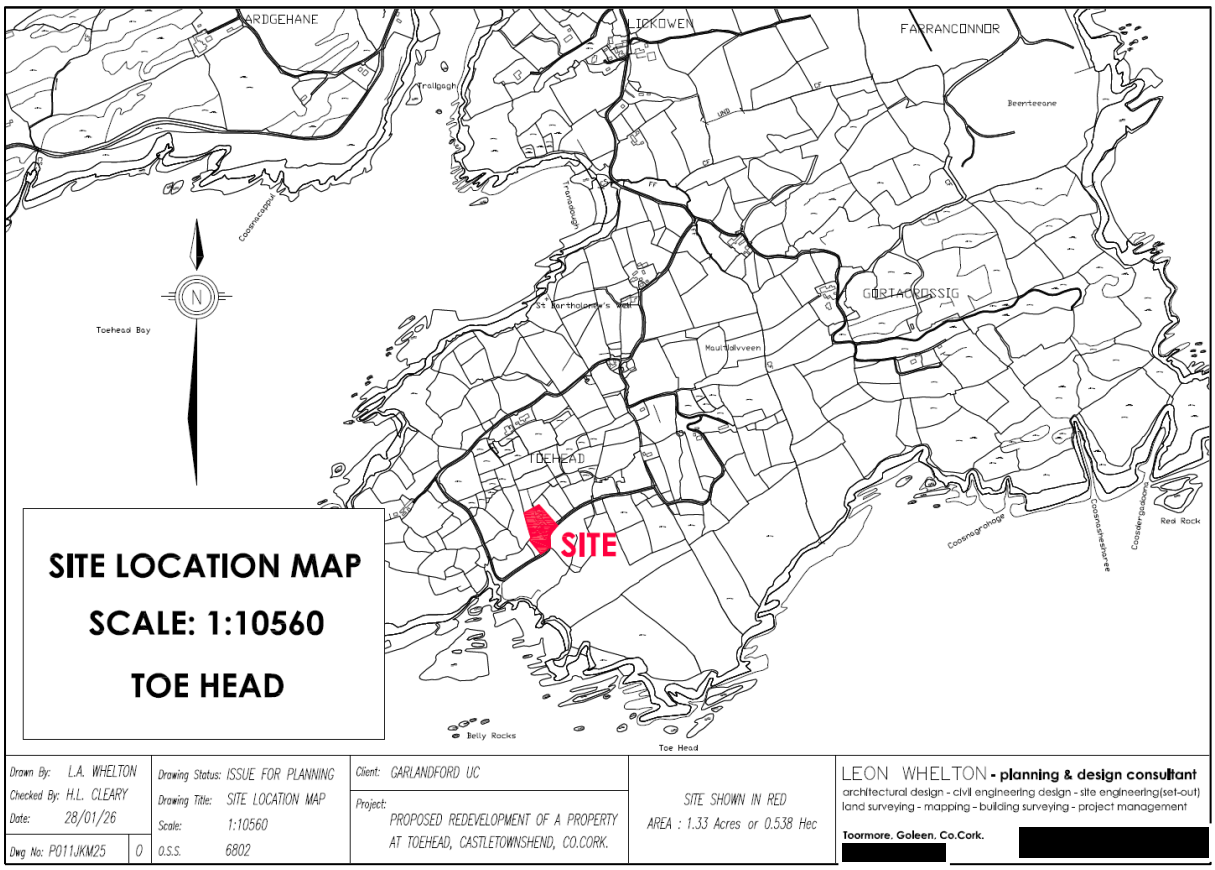
1 Introduction

This report has been prepared by Karen Banks, Greenleaf Ecology, at the request of Garlandford UC. Planning consent is being sought from Cork County Council for works to an existing disused dwelling house at Toe Head, Castletownshend, Co. Cork.

A protected species survey of the proposed site, comprising a bat survey, was undertaken to inform the planning application.

The site is located in the townland of Toehead, as illustrated in Figure 1.1.

Figure 1-1: Site Location Map



1.1 Description of the Proposed Project

Leon Whelton – planning & design consultant, Toormore, Goleen, (Tel: 086/3088215) seeks Planning Permission for (a) alterations & extensions to an existing dwellinghouse to include the demolition of a two-storey rear extension and a single-storey front extension and the construction of a replacement two-storey extension to the rear and a two-storey link to the side (b) alterations, extension & change of use of adjacent detached stone outbuildings to form part of said dwellinghouse to also include the construction of a first floor kitchen, dining & living area (c) alterations & change of use of adjoining stone outbuildings to an ancillary hobby room & sauna (d) reconstruction of a detached shed and storehouse, all for storage use ancillary to main dwellinghouse (e) installation of a sewage treatment system (f) alterations and upgrade works to the existing vehicular entrance and for the construction of a new driveway (g) all associated site development & landscape works, at Toehead, Castletownshend, Co.Cork. for Garlandford UC. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Authority with this application. The planning application and the Natura

Impact Statement (NIS) may be inspected or purchased at a fee not exceeding the reasonable cost of making a copy at the offices of the Planning Authority, Norton House, Skibbereen during its public opening hours, i.e. 9.00a.m. to 4.00 p.m. Monday to Friday (excluding public holidays). A submission or observation in relation to the application may be made in writing to the Planning Authority on payment of the prescribed fee within the period of 5 weeks beginning on the date of receipt by the Authority of the application, and such submissions and observations will be considered by the planning authority in making a decision on the application. The planning authority may grant permission subject to or without conditions or may refuse to grant permission.

The proposed site layout is illustrated in Figure 1-2 and the proposed landscaping plan (Two Green Shoots Landscape Design) is illustrated in Figure 1-3.

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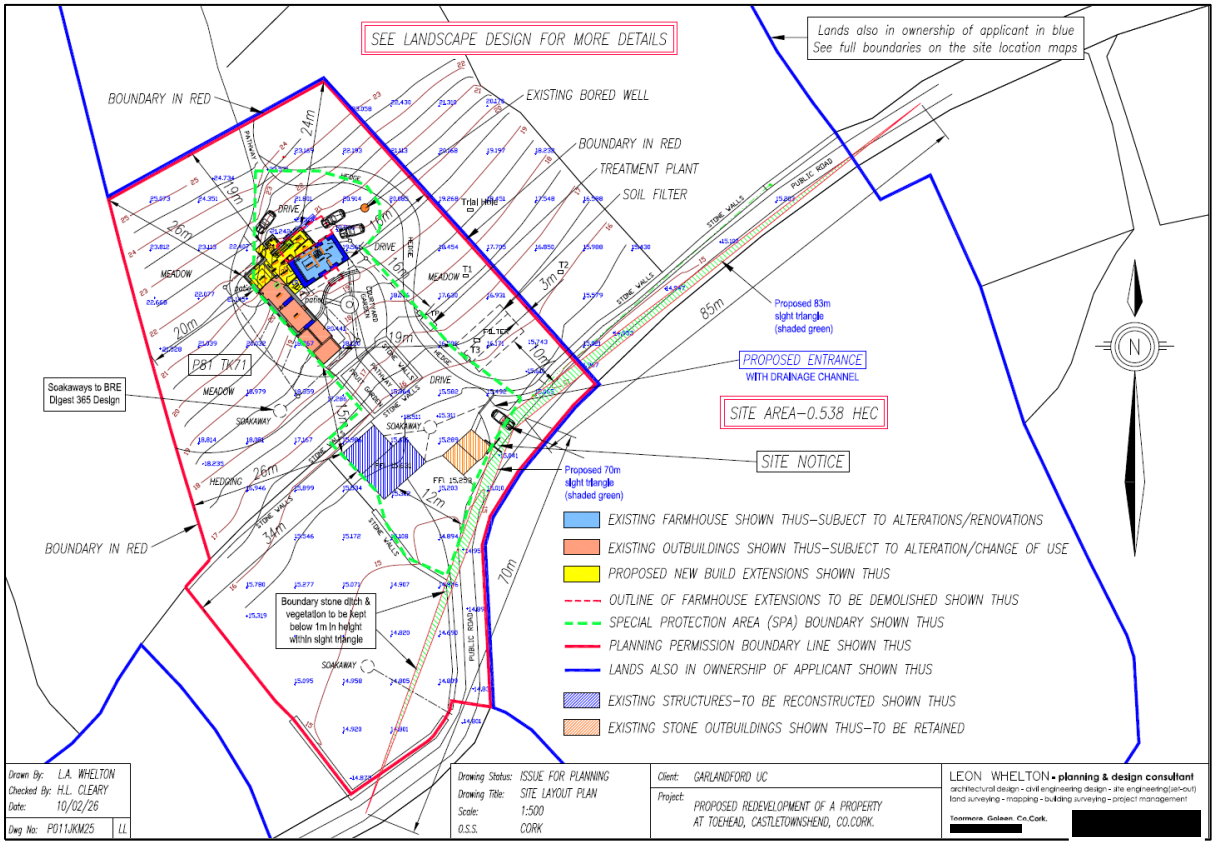

Figure 1-2: Site layout plan

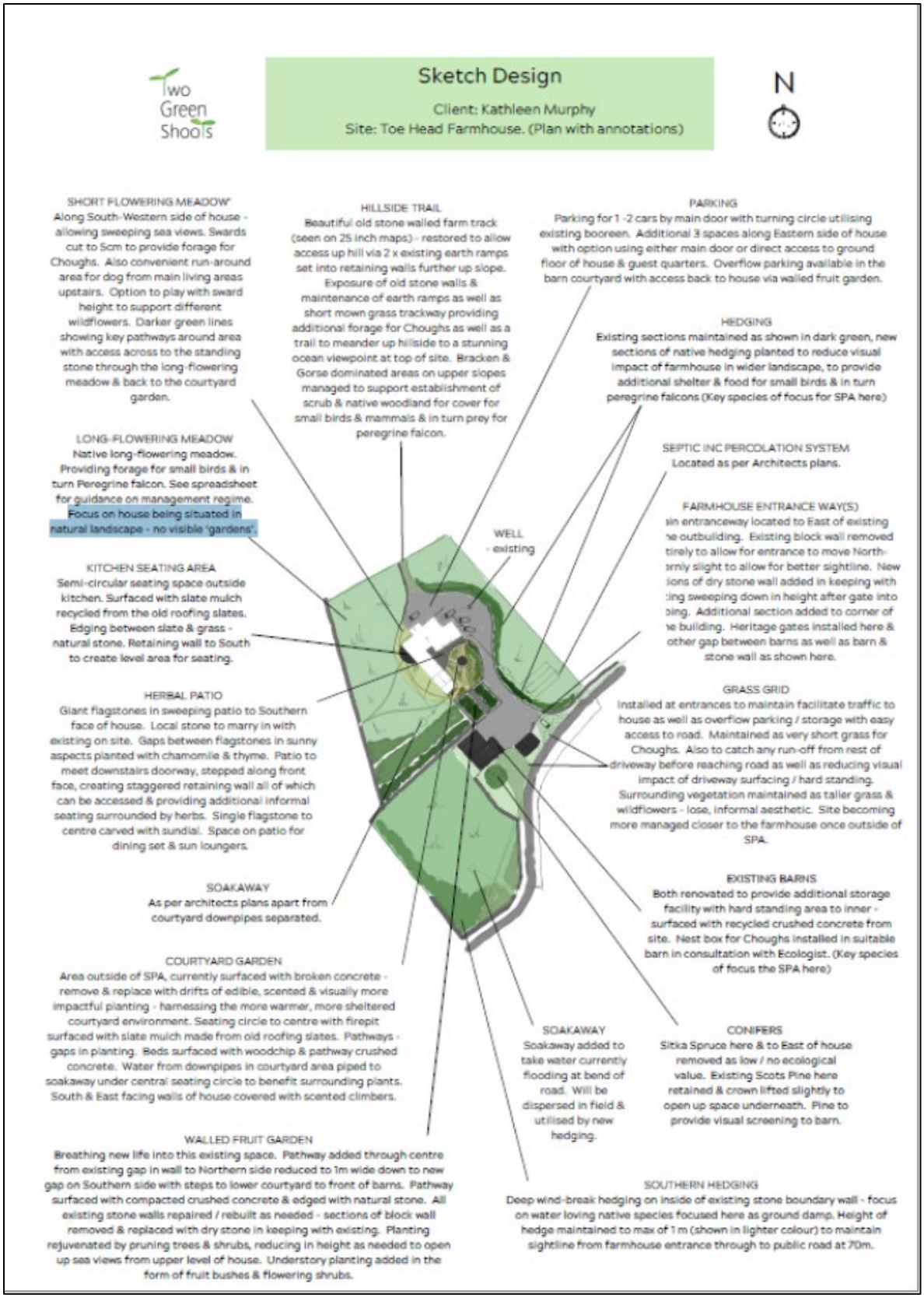

Figure 1-3: Proposed landscaping design

1.2 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).

1.3 Objectives

The objectives of the bat survey were to assess:

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

1.4 Surveyor Information

The survey was undertaken by Karen Banks, MCIEEM.

Karen is an ecologist with 19 years' experience in the field of ecological assessment. She holds a BSc in Environment and Development from Durham University and is a full member of the Chartered Institute of Ecology and Environmental Management. 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. Karen has also represented Cork County Council as an expert witness for bats at an Oral Hearing.

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 within a 4km radius[1] of the proposed site from the National Bat Database held by the National Biodiversity Data Centre (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:

- Andrews, H. (2018) Bat Roosts in Trees. A guide to identification and assessment for tree-care and ecology professionals. Pelagic Publishing.
- Bat Conservation Ireland (2010) G*uidance notes for Planners, Engineers, Architects, and Developers*;
- Collins, J. (ed.) (2023) *Bat Surveys for Professional ecologists: Good Practice Guidelines (4th ed.)*. The Bat Conservation Trust, London; and
- 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 Bat Roost Inspection Survey

On 29th August 2025 the existing buildings at the site was 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)[2].

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

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).

[1] A 4km radius search distance was selected to encompass records of bat roosts within Core Sustenance Zones (CSZ) of the study area for Irish species of bat. A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the conservation status of the colony using the roost (Collins, 2016).

[2] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London

Negligible	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 behaviour.
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 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).	Habitat that could be used by small numbers of bats as flight-paths such as a 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.
Moderate	A structure 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, such as maternity and hibernation- the categorisation described 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 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 and surrounding habitat. These structures have the potential to support high conservation status roosts e.g. maternity or classic cool/ stable hibernation site.	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, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

2.4 Bat Roost Emergence Survey

A dusk survey of the dwelling was undertaken on 29th August 2025 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 dusk emergence survey commenced approximately 15 minutes before sunset and ended approximately 90 minutes after sunset. The survey was undertaken in suitable weather conditions (avoiding periods of very heavy rain, strong winds (> Beaufort Force 5), mists and dusk temperatures below (10°C)). Two people surveyed the structure (Karen Banks and Cathál MacPartholan), one surveyor was located at the front of the building and one surveyor was located to the rear of the building.

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 was then downloaded and all recordings were analysed by the Anabat Insight software analysis programme version 2.1.4-0.

The emergence survey was aided by the use of the TrackIR Pro 19 thermal imaging scope.

3 Results

3.1 Existing Bat Data

The review of existing records of bat species in the environs of the site indicates that three of the ten known Irish species of bat have been recorded within a 4km radius of the site (last checked February 2026). These bats include common pipistrelle (*Pipistrellus pipistrellus*) soprano pipistrelle (*P. pygmaeus*) and Daubenton's bat (*Myotis daubentonii*) as shown in Table 3-1 below. The NBDC does not hold any records of bats roosting within 4km of the proposed site.

Table 3-1: NBDC bat records from within a 4km radius of the proposed development

Common Name	Scientific Name	Present (Y/N)	Known Roost (Y/N)	Date of Last Record
Pipistrelle sp.	*Pipistrellus pipistrellus sensu lato*	N	N/A	N/A
Common Pipistrelle	*Pipistrellus pipistrellus*	Y	None	18/08/2018
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Y	None	18/08/2018
Nathusius's Pipistrelle	*Pipistrellus nathusii*	N	N/A	N/A
Leisler's Bat	*Nyctalus leisleri*	N	N/A	N/A
Brown Long-eared Bat	*Plecotus auratus*	N	N/A	N/A
Daubenton's Bat	*Myotis daubentoniid*	Y	None	16/07/2018
Whiskered Bat	*Myotis mystacinus*	N	N/A	N/A
Natterer's Bat	*Myotis nattereri*	N	N/A	N/A
Lesser Horseshoe Bat	*Rhinolophus hipposideros*	N	N/A	N/A
Brandt's Bat	*Myotis brandtii*	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 moderate to high suitability for common and soprano pipistrelle, brown long-eared bat, Leisler's bat and Natterer's bat and low to moderate suitability for lesser horseshoe bat, whiskered bat, Daubenton's bat and Nathusius' pipistrelle.

3.2 Habitat Description

The buildings at the proposed site comprise a disused dwelling and associated outbuildings, as described below.

Dwelling

Two- storey dwelling with rendered walls and a slate tile roof with two chimneys. There are three dormer windows at the front (southern elevation) of the dwelling (Plate 3-1). A 2-storey extension is present to the rear of the building, and a small single storey extension is present at the front. Internally, there is a small roof space. The roof tiles are backed by bituminous felt and a heavy cover of cobwebs was present.

Plate 3-1: Dwelling at Toehead

Outbuilding

An old stone cottage with no roof, windows or doors (Plate 3-2).

Plate 3-2: Stone outbuilding at Toehead

The landscape around the dwelling is open, with Bracken dominated grassland to the rear of the dwelling and rough grassland to the south of the dwelling.

3.3 Bat Roost Inspection Survey

The windows and door at the front of the dwelling are intact, but 3 of the dormer windows are slightly open. There are missing windows on the western gable end and the window on the eastern gable is open. There are potential entry/exit points for bats via windows, raised chimney flashing, gaps at the edge of the ridge tiles and gaps caused by rot to fascia boards and wood around the dormer windows. No evidence of bats was recorded internally or externally.

The dwelling supports potential roosting habitat between roof tiles and bituminous felt, under ridge tiles and chimney flashing and behind fascia boards. The dwelling itself is suitable to support a roost

of high conservation importance (i.e. a maternity or hibernation roost), however the dwelling is located within an open landscape close to the coastline (c.180m) and is poorly connected to high quality foraging habitat by connecting features such as hedgerows and treelines.

There is potential for individual/ small numbers of bats to roost between the stonework of the outbuilding, but the building is open and exposed and would not provide conditions suitable for a roost of high conservation importance (i.e. a maternity or hibernation roost).

3.4 Roost Emergence Survey

Two common pipistrelle were recorded emerging from the dwelling during the emergence survey conducted on 29th August 2025. One common pipistrelle emerged from the edge of the dormer window on the top left corner of the southern elevation and the other emerged from the fascia board on the western gable end.

The common pipistrelle bats foraged around the garden of the dwelling before flying from the site. No other bats were recorded during the survey.

4 Evaluation of Survey Results

The landscape immediately surrounding the proposed site comprises fields of unmanaged grassland, with Bracken abundant locally to the north of the disused dwelling. The coast (Western Celtic Sea Coastal Waterbody) is located c.180m to the south of the site. The landscape is open, however there is potential foraging and commuting habitat present along stone walls and small pockets of scrub. The proposed site and surrounding landscape is of moderate suitability for foraging and commuting bats.

The results of the bat roost inspection survey conducted in August 2025 indicate that the dwelling is suitable to support multiple bats but due the exposed nature of the site location (c.180m from the coastline), the dwelling is not likely to support roosts of high conservation importance. The outbuildings may support individual bats roosting opportunistically but are not suitable to support roosts of high conservation importance. No evidence of bats was recorded within the dwelling house or outbuildings during the inspection.

Two common pipistrelle were recorded emerging from the dwelling during the dusk survey conducted on 29th August 2025.

The dwelling has been recorded as a minor roost of a common species. In accordance with Figure 20 (p. 46) of the *Bat Mitigation Guidelines for Ireland*, the roost is of low conservation significance.

The bat species recorded at the site is of Least Concern (Marnell et al., 2019), as summarised in Table 4-1.

The latest population estimate of common pipistrelle nationally is approximately 1.9-4.2 million in the Republic (Roche, N & Langton, S. 2024).

Table 4-1: Status of Irish Bat Fauna (Marnell et al., 2019).

Species: Common Name	Irish Status	European Status	Global Status
Resident Bat Species			
Daubenton's bat (*Myotis daubentonii*)	Least Concern	Least Concern	Least Concern
Whiskered bat (*Myotis mystacinus*)	Least Concern	Least Concern	Least Concern
Natterer's bat (*Myotis nattereri*)	Least Concern	Least Concern	Least Concern
Leisler's bat (*Nyctalus leisleri*)	Least Concern	Least Concern	Least Concern
Nathusius' pipistrelle (*Pipistrellus nathusii*)	Least Concern	Least Concern	Least Concern
Common pipistrelle (*Pipistrellus pipistrellus*)	Least Concern	Least Concern	Least Concern
Soprano pipistrelle (*Pipistrellus pygmaeus*)	Least Concern	Least Concern	Least Concern
Brown long-eared bat (*Plecotus auritus*)	Least Concern	Least Concern	Least Concern
Lesser horseshoe bat (*Rhinolophus hipposideros*)	Least Concern	Near threatened	Least Concern
Possible Vagrants			
Brandt's bat (*Myotis brandtii*)	Not Assessed	Least Concern	Least Concern
Greater horseshoe bat (*Rhinolophus ferrumequinum*)	Not Assessed	Near threatened	Least Concern

5 Impact Assessment

It is proposed to alter and extend the existing dwelling, to include demolition of extensions to the front and rear. The dwelling is a roost for 2 no. common pipistrelle. There is potential for disturbance to a common pipistrelle roost of low conservation importance should the proposed alteration, extension and demolition works be undertaken while bats are present.

6 Mitigation

6.1 Derogation Tests

Test 1, Reason for the Derogation: The proposed development is required to fulfil a housing need and, as such, is of public interest of a social and economic nature. The provision of a home supports social and economic development and, as such, outweighs the conservation interest of the bat species, particularly as the roost is minor and of low conservation importance (in accordance with Marnell et al, 2022).

Test 2, Absence of Alternative Solutions: Alternative solutions considered included not altering and extending the dwelling (i.e. 'do-nothing). However, that option is not feasible as the building is falling into disrepair and is subject to ingress of water and damage from wind and rain, if nothing is done it will fall further into disrepair. Its renovation is required to facilitate construction of the new dwelling house. The existing building has not been used for several years and is deteriorating in condition, if left unrepaired it may become beyond a reasonably proportionate cost to renovate.

An alternative location was considered; however, the proposed development is for the renovation of an existing dwelling, therefore an alternative location is not a feasible option.

The proposed dwelling refurbishment will incorporate alternative roosting habitat for crevice dwelling bats (bat box) as well as the provision of housing for humans; an alternative design is not considered to be required.

Test 3, Impact of a Derogation on Conservation Status: The national population of common pipistrelle is estimated at approximately 1.9-4.2 million at summer 2023. The number of common pipistrelle roosting in the dwelling is estimated to be 2 no. individuals during the summer period, the site does not support a maternity roost. In the absence of any mitigation, the works to the dwelling may potentially result in the mortality of individual/ small numbers of non-breeding common pipistrelle, if timed inappropriately. This would result in a slight adverse effect on the conservation status of the local population of common pipistrelle but would not be significant on a national scale. With the implementation of the mitigation measures outlined in the supporting report, using established guidelines (e.g. Marnell, 2022) the proposed development and actions outlined within the supporting 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, either locally or nationally.

6.2 Mitigation Measures

Common pipistrelle roost within the dwelling, therefore, safeguards are recommended to ensure the safety of this animal 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 works to the dwelling at the proposed site and no demolition or alteration works should be undertaken to the dwelling before the licence is granted by the NPWS.

In accordance with Marnell *et al* (2022), the dwelling at Toehead 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 1st September and 1st May.

Alteration and demolition works to the existing dwelling shall occur between 1st September and 1st May.

Alteration and demolition works shall only proceed under licence.

Measure 2: Alteration and demolition works to existing dwelling

The existing dwelling will be subject to a dusk survey or daytime inspection 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 inspection, 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.

Measure 3: provision of bat roosts in the refurbished dwelling

The dwelling supports a day roost for 2 no. common pipistrelle. Common and soprano pipistrelle are both crevice dwellers. As the building was found to be used by an individual pipistrelle, it is considered that the inclusion of a bat box suitable for crevice dwellers[3] on the eastern gable end of the building will provide suitable alternative roosting space.

Measure 4: Lighting

There shall be no external lighting at the location of the installed bat box on the eastern gable.

[3] For example: Bat Wall Shell 2FE | 00737/7 (schweglershop.de)

7 References

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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. Brand't 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.

<u>Rhinolophidae:</u>

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.