Derogation Licence – Supporting Information

Dromoland Castle and Estate, Dromoland Co. Clare

Prepared for the Attention of the Licensing Unit of NPWS

ecologyireland

October 2025

Contents

Summary

Ecology Ireland was commissioned to undertake ecological surveys, including a suite of bat surveys at Dromoland Castle and Estate as part two planning applications for development at various sites within estate.

Targeted building inspections, active dawn/dusk surveys and passive monitoring recorded a Lesser Horseshoe Bat night roost with minor day use in the Stables (north building); a Soprano Pipistrelle summer/small satellite roost in the East Wing Storage Room; and sustained Soprano pipistrelle (and Brown Long-eared) activity associated with a Farm shed. All Irish bat species are protected under the Wildlife Act (1978-2018) and Annex IV of the EU Habitats directive, and the Lesser Horseshoe Bat (*Rhinolophus hipposideros*) has additional protection under Annex II.

Over the course of the surveys conducted at Dromoland, Lesser Horseshoe Bat activity has been recorded in only two locations; The Stables, and a castle drain. The castle drain does not form part of the programme of works for Dromoland Castle and Estate and will not be impacted by the works.

The proposed works poses potential risks to the bat roost, including disturbance, loss of roosting features, obstruction of access routes, and impacts from artificial lighting.

This document supports three separate derogation licence applications under Regulation 54 for works at (i) the Stables (Lesser Horseshoe Bat), (ii) the East Wing (Soprano Pipistrelle), and (iii) the Farm (Soprano Pipistrelle and Brown Long-eared Bat) within the Dromoland Castle estate.

(i) Derogation Application: The Stables. It is proposed to install a purpose-designed Bat Loft at the existing Lesser Horseshoe Bat roost location; programme works 1 Sept – 1 May and only once bat activity has dropped to very low levels; deliver improved, bat-sensitive lighting.

(ii) Derogation Application: The East Wing. It is proposed that the initial demolition works of the East Wing Storage Room will be overseen by a Project Ecologist and carried out using soft demolition techniques; bat boxes to be erected on the trees to the southwest, at the rear of the East Wing, prior to the commencement of works.

(iii) Derogation Application: The Farm. It is proposed that the initial demolition works of large, locked shed will be overseen by a Project Ecologist and carried out using soft demolition techniques in line with licenced asbestos removal; bat boxes to be erected within the woodland to the east, at the rear of the East Wing, prior to the commencement of works. Works will be scheduled outside the breeding period (late May–mid-Aug).

The design of lighting for Dromoland Castle and Estate will follow the Bat Conservation Trust in partnership with the Institution for Lighting Professionals (ILP) Best Practice Guidance (BTC & ILP, 2018) on considering the impact on bats when designing lighting schemes.

Enhancement measures to strengthen roosting opportunities for Lesser Horseshoe Bat are proposed, including the installation of two Cathedine Night Roosts, and the refurbishment of a vaulted brick cellar.

All conditions of the derogation licence will be fully implemented. Collectively, these measures are designed to meet legal obligations, ensuring that the works will not result in detrimental impacts on the maintenance of bat populations, including Lesser Horseshoe Bat, at a favourable conservation status in their natural range.

Introduction

Ecology Ireland was commissioned to undertake ecological surveys, including a suite of bat surveys at Dromoland Castle and Estate as part two planning applications for development at various sites within estate.

This report is provided as an explanation as to why the derogation licence sought is the only available option for works and no suitable alternative exists as per Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations. The purpose of this report is to support the derogation licence applications relating to:

- the proposed development at the Stables;
- the proposed development at the East Wing;
- the proposed development at the Farm.

All of these areas are within the landholding of Dromoland Castle and Estate, Dromoland, Co. Clare.

The proposed development will be subject to Ecological Impact Assessment, and a Natura Impact Statement will be prepared in support of the Appropriate Assessment process.

Statement of Competence

Dr Gavin Fennessy

Dr Gavin Fennessy (BSc PhD MCIEEM) is the Director & Principal Ecologist of Ecology Ireland Wildlife Consultants, a consultant ecologist with 25 years of experience in environmental consultancy. Dr Fennessy has contributed to and Project Managed numerous ecological impact assessment projects including EcIA, EIA, AA, SEA etc. Gavin is also an experienced Expert Witness having presented expert testimony at several An Bord Pleanála Oral Hearings. He is also an experienced lecturer and has regularly contributed to B.Sc. Env. Sc. Courses at UCC.

Marie Kearns

Marie Kearns has over six years of professional experience in ecological surveying, ecological impact assessment and the appropriate assessment process. She has worked on numerous projects related to renewable energy, infrastructure, housing, and various other development projects. She is an experienced field ecologist with a diverse ecological survey profile, including habitats and flora, marine and terrestrial mammals, and birds. She has held NPWS Licenses for photographing wild animals and conducting bat surveys. She is also experienced in producing maps and visualising biological datasets using QGIS.

Site location

Dromoland Castle and Estate is located within the townland of Dromoland, near Newmarket-on-Fergus, Co. Clare. The site is centred on a historic castle and demesne landscape, situated approximately 12 km north of Shannon Town and 13 km west of Ennis (See Figure 1). The estate is bounded by agricultural lands and scattered rural dwellings, with the M18 motorway located to the west. Access to the site is via the R458 Road to the west. The Castle overlooks Dromoland Lough, a

proposed Natural Heritage Area (pNHA), which is designated for a diverse range of flora, particularly marshland species, and supports a range birds, bats, and other fauna.

Dromoland Castle operates as a luxury hotel and golf course and includes the castle itself, the golf club house and restaurant, leisure centre, golf maintenance facilities (referred to herein as the Stables), on-site staff and office accommodation, associated outbuildings, internal road networks, and car parking. The lands surrounding the castle include the highly maintained Dromoland golf course, Dromoland Lough, manicured parkland and areas of mature woodland, with farmland and associated farm buildings located in the wider environment of the estate.

Proposed Development

Planning Application 1

Dromoland Castle intends to apply for permission for development at various sites within Dromoland Castle and Estate, Dromoland, Newmarket-on-Fergus, Co. Clare, V95 (Dromoland Castle is a Protected Structure: RPS No. 278).

The development consists of:

- The renovation and conversion of the existing stables building from golf storage/maintenance to visitor accommodation to provide 12 no. rooms/ suites, including an integrated bat loft and associated landscape works;

- The renovation and conversion of the existing 'Gardener's Cottage' from staff accommodation to visitor accommodation, including reconfiguration to two adjoining houses (as original), to provide 2 no. interconnecting guest houses;

- Alterations and extension of existing clubhouse building to provide an enhanced wellness area and associated facilities, including restoration of external deck, together with internal reconfigurations to existing WC facilities;

- Installation of 3 no. sauna huts on lake island accessed via existing bridge, including raised timber walkways and floating timber jetties with plunge pools;

- The demolition and temporary relocation of existing golf maintenance shed (adjacent to stables) to a temporary structure within the farmyard area.

- The provision of a replacement staff and overflow car park to the south of the stable block to reprovide 90 -100 no. staff spaces.

The proposed development will also comprise all ancillary landscaping and boundary treatment works, biodiversity mitigation measure (Bat Loft as proposed in the accompanying licence application), site services, site lighting, and all other associated site excavation, infrastructural and site development works.

Planning Application 2

Dromoland Castle intends to apply for permission for development at Dromoland Castle, Dromoland, Newmarket-on-Fergus, Co. Clare, V95 (Dromoland Castle is a Protected Structure: RPS No. 278).

The development consists of:

- The demolition of the 20th century/ non-original infill structures at the castle courtyard and the construction of a glazed roof structure (max height c. 11m) to provide additional internal guest recreation/ dining space for guests (c. 300sq m additional floor area);

- Demolition of existing part one part two element and the construction of a part three part four storey extension to the existing 21st century castle's east wing to provide additional guest accommodation, resulting in the loss of 1 no. existing guest room and an additional 17 no. Guest rooms, resulting in a total uplift of 16 no. rooms within this part of the castle.

- Internal upgrades and reconfiguration to the ground floor, resulting in a consolidated kitchen/ back of house area and improved and extended guest dining and bar facilities, installation of new lift, alterations to ancillary facilities and loss of 1 no. guest bedroom.

- Internal upgrades and reconfiguration at the lower ground floor level, to provide additional bar space, kitchen facilities, the upgrade of existing spa areas together with the introduction of new wet spa facilities, all resulting in the loss of back of house space and 2 no. guest bedrooms.

- The extension of the existing clubhouse building through the reinstatement of the former orangery building to provide a guest restaurant/ event space; and

- Demolition of existing farm structures and construction of golf maintenance facility and central delivery and procurement hub for the estate.

The proposed development will also comprise all ancillary landscaping and boundary treatment works, site services, site lighting, and all other associated site excavation, infrastructural and site development works.

Bats: Legal Protection

Bats in Ireland are protected under the EU Habitats Directive (92/43/EEC) which aims to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community Interest*." In Ireland, these EU obligations are implemented through the European Communities (Birds and Natural Habitats) Regulations 2011–2021 (S.I. No. 477 of 2011) ("the Habitats Regulations"), alongside the Wildlife Acts (as amended). All Irish bat species are on Annex IV (strict protection), and the Lesser Horseshoe Bat (*Rhinolophus hipposideros*) is on Annex II, requiring designation and management of SACs within the Natura 2000 network.

Works that could affect bats or their roosts may only proceed with a derogation licence obtained under Regulation 54 of the 2011 Regulations via application to the National Parks and Wildlife Service (NPWS). The derogation licence can only be granted for the specific reasons set out in the Regulations and where the applicant shows no satisfactory alternative and no adverse effect on favourable conservation status. Mitigation to reduce or compensate for any impact of development, such as

timing of works and the retention/creation of roost features, is generally a condition of the licence and should be proportionate to the impact.

Figure 1. Site location.

Methods

Desk Study

A desktop review of relevant data available for the site was undertaken for this report and published data on habitats and species of interest in the vicinity of the site was consulted. The following datasets and ecological resources were consulted:

- National Parks and Wildlife Service (NPWS) online datasets and literature;
- National Biodiversity Data Centre (NBDC) online mapping and datasets;

The site lies within 2km grid square R37V. Species records for this grid squares were downloaded from the NBDC database and are described below. Online aerial mapping and satellite imagery was used in conjunction with publicly available GIS files to generate mapping, which together, helped inform the desktop review.

The NBDC website hosts the Model of Bat Landscapes for Ireland, which has assessed the relative importance of landscape and habitat associations for bat species across Ireland (see Lundy *et al*. 2011). The landscape resource value for bats surrounding the study area was assessed.

Data requests

A data request was submitted to Bat Conservation Ireland for the provision of datasets relating to bat species records and confirmed bat roosts within 10km of Dromoland Castle and Estate. An information request was submitted to the National Parks and Wildlife Service (NPWS) to obtain records of rare and protected species, including bat species records and confirmed bat roosts within the 10km grid square, R37, in which Dromoland Castle is located. The NPWS provided the relevant records on 1st of September 2025.

Field Surveys

Dromoland Castle and associated lands were visited by a team of specialist ecologists since the 31st of July 2025 (Table 1). Bat surveys were undertaken by Marie Kearns and Dr Gavin Fennessy who both hold roost inspection licences (DER-BAT-2025-275 and DER-BAT-2025-276) and have many years of experience in conducting bat surveys.

The survey strategy for Dromoland Castle was designed in accordance with best practice guidelines outlined in Collins (2023) and Marnell *et al.* (2022). The survey strategy was developed to include internal/external building inspections, dawn/dusk surveys, and the deployment of passive bat detectors. Inspections and dawn/dusk surveys were completed using a thermal imager (Pulsar Telos LRF XP50), and bat detectors including an Elekon Batlogger M2, Echo Meter Touch 2 PRO, and a Pettersson D240x outputting to Roland Edirol R01 Digital Recorder. Passive detectors deployed as part of the project include Wildlife Acoustics SM4BAT and SM4Mini. Data collected during dawn/dusk surveys, and by the deployed passive detectors were subsequently analysed using Kaleidoscope Pro (v. 5.4.9) software.

At the time of this report, passive detectors have been deployed across 23 locations of Dromoland Castle and grounds, including 4 locations within the Stables structure (See Table 2, Figure 2 and Figure 3). Two dusk surveys and one dawn survey were conducted at the Stables structure and at the rear of the East Wing section of Dromoland Castle and Estate (See Table 3 below) in September 2025. The location of the surveyor for all three active surveys, E1, is shown in Figure 3. Figure 4 shows the location of the surveyor for the dusk survey on the 5th of September, E2, and the dusk and dawn survey conducted on the 17th and the 19th of September, E3.

Bat droppings were collected on 26th of August within the north building of the Stables structure for eDNA analysis by SureScreen Scientifics, in order to confirm bat species identification. Samples were gathered following the recommended methodology outlined by SureScreen Scientifics for bat droppings, which involved the use of sterile gloves, tools to avoid contamination, transfer into sterile containers, and immediate sealing and labelling. The results of the eDNA analysis were returned on the 22nd of September and are shown in Appendix A.

Table 1. Summary of field surveys carried out at the site in Bunratty, Co. Clare.

Date	Ecologist(s)	Surveys undertaken
31/07/2025	MK	Site Walkover, Internal/external building inspections, deployment of passive bat detectors
06/08/2025	MK	Internal/external building inspections, deployment of passive bat detectors
09/08/2025	COC, MK	Habitat Survey on Island near Dromoland Lough, Bird Survey (Point Count at Dromoland Lough)
13/08/2025	MK	Internal/external building inspections, deployment and collection of passive bat detectors
26/08/2025	MK, GF	Site meeting with design team, Internal/external building inspections, deployment and collection of passive bat detectors
29/08/2025	MK	Internal/external building inspections, deployment and collection of passive bat detectors
05/09/2025	MK, SE	Internal/external building inspections, Dusk Survey
09/09/2025	MK	Site meeting with NPWS, deployment and collection of passive bat detectors
17/09/2025	MK, SD	Internal/external building inspections, deployment and collection of passive bat detectors, Dusk Survey
19/09/2025	MK, GF	Internal/external building inspections, Dawn Survey

Ecologist: MK (Marie Kearns), GF (Gavin Fennessy), COC (Cian O'Ceallaigh), SE (Sara Ellis), SD (Sean Dundon).

Table 2. Passive detector deployment details.

Detector number	Location	Dates active
BD01	Inside the north building in the Stables structure, hanging from the rafters	31 July – 13 August; 26 August – 17 September
BD02	Inside the south building in Stables structure, in the ceiling void of the linen storage area	31 July – 13 August

Detector number	Location	Dates active
BD03	Inside the north building in the Stables structure, in attic space above office	13 August – 29 August
BD04	Inside the northwest corner of the Stables structure	26 August – 05 September, 17 September – 25 September
BD05	The external roof of the East Wing	31 July – 13 August
BD06	Inside the East Wing 4th floor ceiling void	31 July – 13 August; 26 August – 09 September
BD07	Inside the East Wing storage lean-to on the third floor	13 August – 26 August; 09 September – 17 September
BD08	Inside ceiling void by Room 200	31 July – 13 August
BD09	Outside on false roof of Room 200	31 July – 13 August
BD10	Lean-To wooden structure outside Room 200	13 August – 26 August
BD11	Basement Wine Cellar	06 August – 13 August; 13 August – 29 August; 29 August – 17 September
BD12	Basement staff area inside services cavity in the wall	06 August – 29 August
BD13	Inside Castle Drain	06 August – 13 August, 29 August – 03 September
BD14	Club House (West)	26 August – 09 September
BD15	Club House (East)	26 August – 09 September
BD16	Stone shed between Club House and Cottage	26 August – 09 September
BD17	Lean-to structure by cottage	26 August – 09 September
BD18	Cottage Attic	26 August – 09 September
BD19	Office space in the Brian Boru section of the hotel	29 August – 17 September
BD20	Farm Sheds to the west of the hotel	29 August – 24 September
BD21	Gate lodge to the west of the hotel	29 August – 17 September
BD22	Treeline to the south of the hotel	17 September – 25 September
BD23	Island adjacent to Dromoland Lough pNHA	17 September – 23 September

Table 3. Active Dawn/Dusk Survey Details.

Date	Surveyors	Survey Details	Location
05/09/2025	MK/SE	Dusk Survey. Start Time 20:18, End Time 21:45, Sunset Time 20:14. Survey start time was delayed due to access issues on site. Overcast, Cloud 8/8, Wind F1, Start Temperature 16°C, End Temperature 12°C	MK. East Wing E2; SE Stables E1. See Figure 3 and Figure 4.
17/09/2025	MK/SD	Dusk Survey. Start Time 19:20, End Time 21:15, Sunset Time 19:46. Weather: Clear night, Cloud 2-4/8, Wind F2, Start Temperature 15°C, End Temperature 12°C	MK East Wing E3; SD Stables E1. See Figure 3 and Figure 4.
19/09/2025	MK/GF	Dawn Survey. Start Time 05:45, End Time 07:30, Sunrise Time 07:17. Dry initially after rain overnight. Mild c. 14°C. Wind F0/F1. Occasional light drizzle. Brightening between 06:45 and 07:00.	MK East Wing E3; GF Stables E1. See Figure 3 and Figure 4.

Figure 2. Deployment locations of Passive Bat Detectors at Dromoland Castle to date.

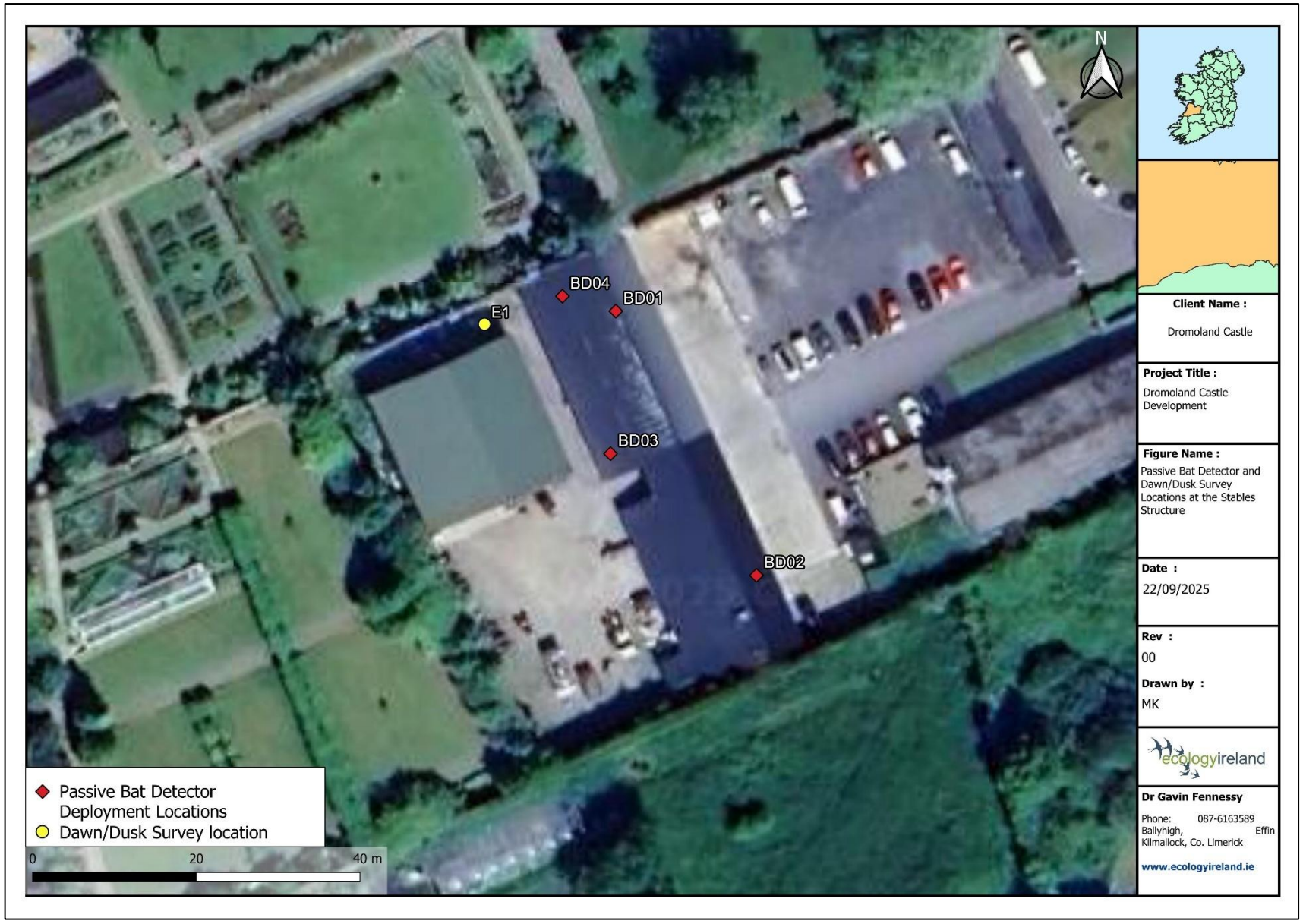


Figure 3. Deployment locations of Passive Bat Detectors and the location of the surveyor for the dawn/dusk surveys at the Stables structure.

Figure 4. Deployment locations of Passive Bat Detectors and the location of the surveyor for the dawn/dusk surveys at the East Wing section of Dromoland Castle and Estate.

Results

Desktop Study

Lesser Horseshoe Bat is the only Annex II bat species in Ireland and therefore requires the designation of Special Areas of Conservation (SAC). Dromoland Castle is not located within any Natura 2000 site. There are 12 SACs located within 15km of Dromoland Castle for which Lesser Horseshoe Bat is a qualifying interest species. The nearest of these is Poulnagordon Cave SAC (000064), located c. 4.6km to the northeast. Table 4 shows the estimated minimum distances of the Natura 2000 sites, designated for Lesser horseshoe Bat, from Dromoland Castle and Estate.

The NBDC database holds records for six species in the 2km grid square (R37V) in which Dromoland Castle is located: Brown Long-eared Bat (*Plecotus auritus*), Common Pipistrelle (*Pipistrellus pipistrellus*), Daubenton's Bat (*Myotis daubentonii*), Leisler's Bat (*Nyctalus leisleri*), Lesser Horseshoe Bat, and Soprano Pipistrelle (*Pipistrellus pygmaeus*).

All bat species recorded are listed as "Least Concern" in Ireland at present (Marnell *et al*. 2019). Bats and their roost spaces are protected.

The Model of Bat Landscapes (Lundy *et al.* 2011) suggests that the 2km grid square (R37V) in which Dromoland Castle is located is part of a landscape that has a relatively high resource value for bats in general (48.56), and Lesser Horseshoe Bat (48.56).

An NPWS sensitive data request was returned on the 1st of September 2025 and contained records from the Lesser Horseshoe Bat Database for Dromoland Castle and the lands within the 10km grid square R37. The dataset confirms the occurrence of Lesser Horseshoe Bat within the wider landscape and identified the nearest known roost for this species within lands controlled by Dromoland Castle and Estate. This roost site is known to Dromoland Castle and the NPWS, with NPWS surveying the roost on an annual basis. According to the returned NPWS sensitive dataset, there are historical records of Lesser Horseshoe Bat here going as far back as 1984, with regular records taken annually between 2006 and 2015. This roost site is considered to be sub-optimal due to access issues for bats and general disturbance caused by lighting. Lesser Horseshoe Bat has not been recorded using this roost in recent years. This was confirmed by the NPWS representatives at the site meeting on the 9th of September.

Table 4 Estimated Distance from Dromoland Castle to designated nature conservation sites in the wider area.

Site Name	Site Code	Minimum Estimated Distance (km)
Natura 2000 sites		
Poulnagordon Cave SAC	000064	4.6
Old Domestic Building (Keevagh) SAC	002010	5.4
Newhall and Edenvale Complex SAC	002091	6.5
Ratty River Cave SAC	002316	8.8
Knockanira House SAC	002318	9.7
Kilkishen House SAC	002319	9.8
Pouladatig Cave SAC	000037	10
Newgrove House SAC	002157	11

Site Name	Site Code	Minimum Estimated Distance (km)
Old Domestic Buildings, Rylane SAC	002314	12
Dromore Woods and Loughs SAC	000032	13.5
Danes Hole, Poulnalecka SAC	000030	13.5
Toonagh Estate SAC	002247	14

Field Survey

The Stables Structure

Building Inspection

The Stables is located to the west of Dromoland Castle and comprises a long structure with a pitched roof, joined by a large central archway providing access through to the Stables yard (See Plate 1). The structure is built of traditional stonework with a modern corrugated sheet roofing on which solar panels are installed. The east face of the building looks out over staff car-parking while the west side faces onto the golf maintenance yard and associated galvanized steel shed. The north boundary of the structure forms a high wall running east to west, that overlooks the hotel's manicured gardens and golf club house. The south boundary is also connected to a high stone wall running east to west, overlooking additional gardens.

The north building of the Stables is currently in use as a fuel, storage, and chemical store associated with the golf maintenance facility, and also contains offices, canteens and welfare facilities. The building is roofed with corrugated sheeting which does not provide a stable internal temperature regime. The roof is supported internally by wooden trusses in the larger chemical store section, which is open with a loft space that extends over the staff facilities (Plate 2). At night the building is secured, with the exception of an entry point at the northwest corner that remains open, providing access to the storage and chemical store areas. There is no internal lighting at night; however, security lighting illuminates the west and east elevations externally. The golf maintenance team begin work within and external to the Stables between 05:30–06:00 during the summer, and 6:30 – 07:30 over the winter period, at which time the interior of the north building becomes noisy, active, and artificially lit (Plate 3).

The most obvious access point for bats into the north building is through the doorway at the northwest corner of the north building, which is the only doorway in the Stable structure that remains open overnight (Plate 4). There is missing blockwork just above the doorway that also can provide access for species, such as Lesser Horseshoe Bat, that typically enter roosts in flight rather than by crawling. Other access points include gaps beneath the gutters where the sheet roofing meets the stonework of the building wall as well as gaps beneath the archway.

Internal inspections confirmed the presence of bat droppings and feeding signs, indicating use of the building by bats, with the highest concentration of droppings found within one shallow recess in the internal stonework (Plate 5). Additional scattered droppings were observed across insulated loft areas, showing intermittent use for roosting and feeding. The nature of the droppings suggests regular bat presence, though no large accumulations were consistent with a maternity site.

The south building of the Stables structure is currently used as a mixed facility containing the energy centre for Dromoland Castle and Estate, a linen storage and sorting facility, and some areas of general storage for the golf maintenance team (Plate 6). The energy centre occupies a substantial portion of the building and is warm, loud, and brightly lit at all times due to the presence of large industrial plant. The linen storage and sorting facility also takes up significant space and is busy with human activity during daylight hours. This section has an installed ceiling with a void space above, containing

fibreglass insulation and utility services, which was inspected where accessible. No evidence of bats (e.g. droppings, staining, feeding remains) was recorded within the energy centre, linen facility, or ancillary storage areas during the inspections. The constant heat, light, and disturbance levels within the energy centre, make this space unsuitable for roosting.

To the west of the structure is the Stables yard, which contains a large shed comprised of galvanized steel and is used as a garage and as storage for the quad bikes used by the golf maintenance team (Plate 7). No feeding signs or droppings were recorded here during inspection, and the structure is deemed to have little to no value as a roosting structure for bats.

Bat droppings that were collected on the 26th of August within the north building of the Stables structure were confirmed via eDNA analysis to be Lesser Horseshoe Bat droppings (See Appendix A).

As previously discussed, the Stables structure is mostly well lit up with security lighting at night. However, there are unlit areas directly north, south and west of the Stables which provide commuting belts and areas to forage. These areas contain the Dromoland gardens and are connected to the Stables via the adjoining wall, planted with trees and shrubs, which connect to treeline corridors stretching north towards Dromoland Lough, and west/south towards patches of woodland and scrub. It has not been confirmed if this species is utilising these corridors.

Active Surveys

Dusk surveys were completed on the 5th and on the 17th of September 2025. A dawn survey was completed on the 19th of September 2025. A description of the survey schedule is shown in Table 3.

For the dusk survey on the 5th, the surveyor was stationed opposite the open doorway in the northwest corner of the north buildings, with a view of this doorway and the rear section of the north building. An individual Lesser Horseshoe Bat was observed engaging in light sampling behaviour, flying in and out of the doorway into the north building of the stables complex from 20:23 until 20:37. This behaviour was repeated by an individual Lesser Horseshoe Bat at 20:45 to 20:57, and again at 21:03 until 21:07 until the bat exiting the doorway and flew west over the adjoining stone wall. A Lesser Horseshoe Bat was observed looping in the doorway from 21:09 until 21:36 before flying out of the entrance and heading west along and over the adjoining wall. A third individual was observed looping in and out of the doorway from 09:41 until 09:43 before heading west. No bats were observed emerging from any other section of the Stables visible to the surveyor, nor were any bats observed returning to the Stables. Table 5 below shows the results of the bat call analysis for this dusk survey. Note, the passive bat detector used for the survey had a technical issue with the mic, resulting in a high level of noise recorded over any potential bat calls.

Table 5. Bat activity recorded during Dusk Survey conducted on the 5th of September at the Stables.

Species	No of Bat Call Registrations
Leisler's Bat	1
Lesser Horseshoe Bat	2
Soprano Pipistrelle	2

For the dusk survey on the 17th, the surveyor was stationed in the same location as the dusk survey conducted on the 5th. From 19:19 to 19:26 Lesser Horseshoe Bat calls were recorded but no bats were observed. At 19:31, a bat, species unknown, was observed flying into the north building through the doorway. From 19:35, Lesser Horseshoe Bat, either a single individual or a pair, was frequently observed engaging in light sampling behaviour within the open doorway of the north building, and this activity continued until it started to drop off around 20:07, occurring once more at 21:07. At 20:04, a single Lesser Horseshoe Bat was observed flying out of the doorway, heading west and then north over the adjoining wall. A second bat was observed flying west out of the north building via the doorway at 21:18.

Other species recorded include Common Pipistrelle, Leisler's Bat and Soprano Pipistrelle. At 19:30, a Common Pipistrelle was observed flying west. Soprano Pipistrelles were frequently observed flying in proximity to the north building, either heading south into the Stables yard or heading west along the adjoining wall, although none were recorded exiting the building. This species was observed at 19:37, 19:54, 20:09, and then with frequency between 20:43 and 21:01, with a final record at 21:19. Leisler's Bat was recorded rarely and never observed by the surveyor. The surveyor noted that security lighting around the Stables was turned on at 20:43 and remained on for the duration of the survey. Overall, recorded bat activity is deemed to be low. Table 6 below shows the results of the bat call analysis.

Table 6. Bat activity recorded during Dusk Survey conducted on the 5th of September at the Stables.

Species	No of Bat Call Registrations
Common Pipistrelle	1
Leisler's Bat	4
Lesser Horseshoe Bat	36
Soprano Pipistrelle	26

For the dawn survey on the 19th, the surveyor was stationed in the same location as the dusk surveys conducted on the 5th and on the 17th. The building was lit up by security lighting which turned off at 06:38. The surveyor noted that the maintenance staff began work at 05:30 which resulted in a high level of disturbance associated with noise (machinery, vehicles, personnel), with internal lights within the north building of the Stables structure switched on for the duration of the survey. In terms of bat activity, very little was recorded, apart from a Soprano Pipistrelle calling between 06:13 and 06:15, and again at 06:16. A Leisler's Bat was observed commuting at 06:39.

Passive Surveys

Passive detectors were deployed at four locations within the Stable Structure, three in the north building and 1 in the south building, between the 31st of July and the 25th of September 2025. Full analysis of the recorded calls from each detector and deployment period is provided in Appendix B (BD01 – BD04). Across the four deployment locations, bat activity was recorded at the three locations within the north building (BD01, BD03, and BD04), with no bat activity recorded by the passive deployed in the south building (BD02). The species recorded by the passive detectors were Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat and Lesser Horseshoe Bat.

Low levels of Lesser Horseshoe Bat activity were recorded within the main structure of the Stable's north building (BD01), with a total of 31 registrations recorded, with 7 being the highest number of

registrations for any one night (the 3rd September). Between the 26th of August and the 17th of September, BD01 was set to run continuously, and 12 Lesser Horseshoe Bat registrations were picked up between 06:00 - 20:00, 6 of which were recorded after 19:30. The passive placed within the attic space of an office in the north building (BD03), recorded 11 Lesser Horseshoe Bat registrations across 16 nights of active deployment.

The highest rate of Lesser Horseshoe Bat registrations occurred at BD04, which was located in the northwest corner of the north building in proximity to the shallow recess containing bat droppings. In total, 1088 Lesser Horseshoe Bat registrations were recorded with a mean number of c. 57 Lesser Horseshoe Bat registrations recorded at this location during Deployment 1 and Deployment 2, with a peak count of 156 registrations on the 27th of August. As shown in Figure 5, Lesser Horseshoe Bats were primarily active within the north building of the stables between sunset and sunrise. However activity after sunrise, while considerably less, was still recorded, so it is likely that the bats are using this structure as a day roost, albeit in very small numbers. Also shown in Figure 5, the majority of the registrations were recorded during Deployment 1 which was carried out earlier in the season, between the 26th of August and the 5th of September, than in the later Deployment 2 which was carried out between the 17th and the 25th of September. Figure 6 shows that activity has markedly decreased between the earlier and later deployments.

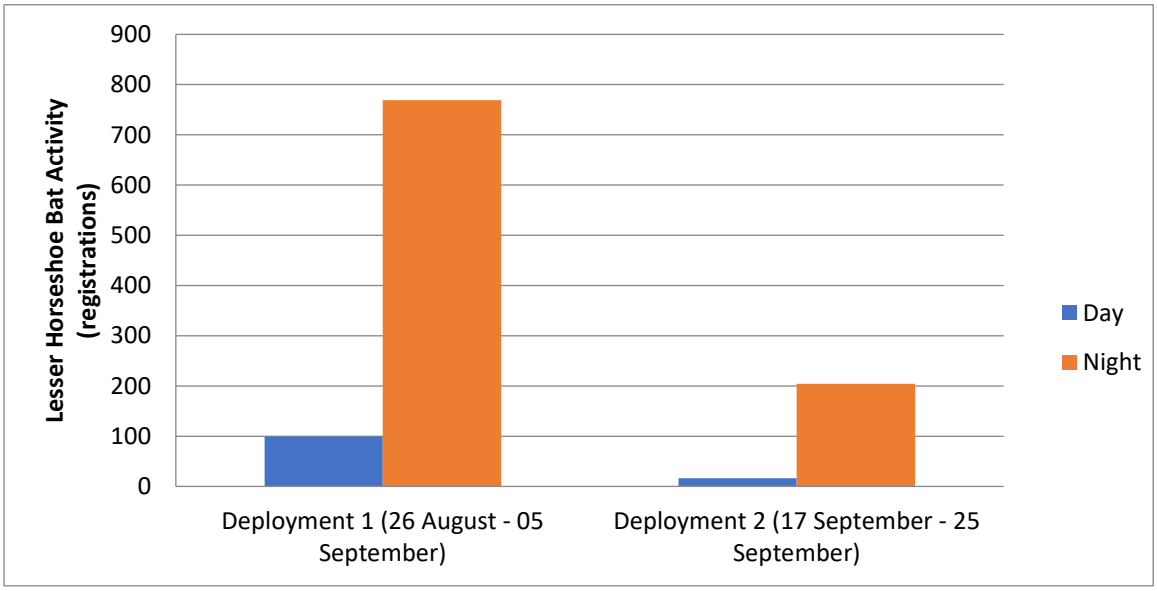


Figure 5. Lesser Horseshoe Bat activity at BD04 between sunrise and sunset (Day) and between sunset and sunrise (Night).

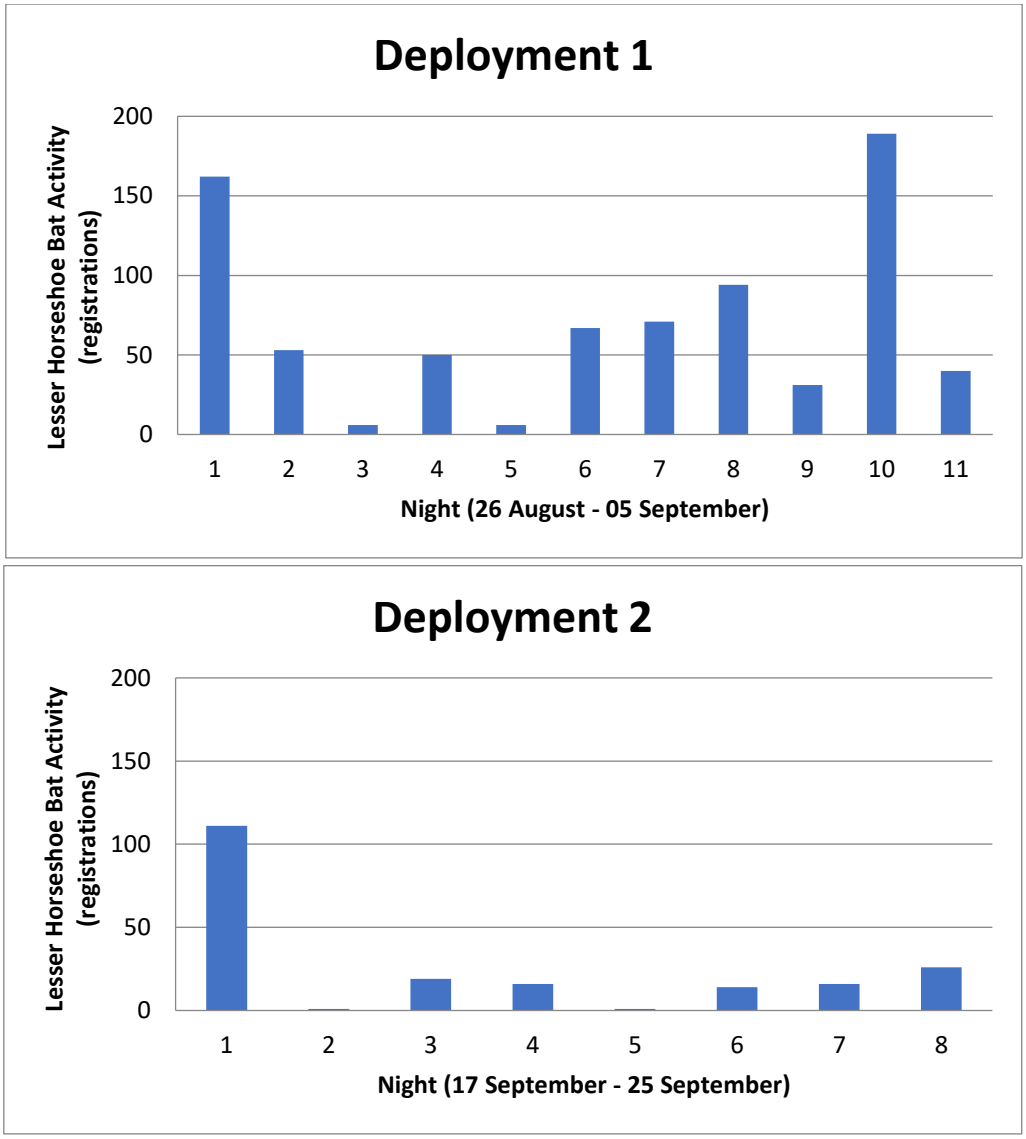


Figure 6: The number of Lesser horseshoe Bat registrations per night during Deployment 1 and Deployment 2.

With regard to other species, there were few registrations in comparison to Lesser Horseshoe Bat within the north building in the stables structure with Common Pipistrelle (7 registrations total), Soprano Pipistrelle (113 registrations total) and Leisler's Bat (62 registrations) recorded across the three deployment locations in August and September. Common Pipistrelle was only recorded at BD03 with a peak count of 2 registrations on the 15th and the 18th of August. Leisler's Bat was recorded at BD01 and BD03, with a peak of 30 registrations on the 17th of August 2025 at BD03. Soprano Pipistrelle activity was picked up at all three deployment locations, with a peak count of 18 on the 27th of August. Based on activity timing, it appears that these three species are primarily entering or flying in proximity to the north building at night. For Soprano Pipistrelle in particular, the timing of activity recorded limited activity near and after sunrise, suggesting that there is a small number of these bats roosting in the structure, at least on an occasional basis.

Population Size Class Assessment

The Stables is considered to be unsuitable as a roost site for bats in general given the galvanised steel roof which has poor thermal properties, the level of daytime activity and noise by the maintenance

team personnel, particularly in the early pre-dawn hours, and the level of artificial security lighting external to the building.

Based on the dawn/dusk surveys and the registrations recorded by the deployed passive bat detectors, the north building of the stables structure provides a roosting site Lesser Horseshoe Bats. This site is primarily used as a night roost, with a small number of bats, 2 – 3 confirmed individuals based on the two emergence surveys conducted, utilising the site as a minor day roost.

Plate 1: East side of the Stables structure.

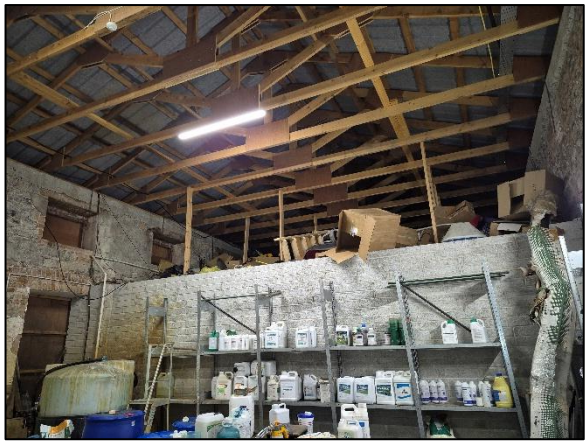


Plate 2: Internal photos of the north building – chemical store with loft space extending over the staff facilities.

Plate 3: External photos of the north building lit up at night on the east side (Left) and west side (Right).

Plate 4: Doorway used by Lesser Horseshoe Bat to enter the north building of the Stables structure during the day (Left) and in the early morning (Right).

Plate 5: Bat signs in the north building of the Stables in the form of feeding remains (Left) and droppings (Right).

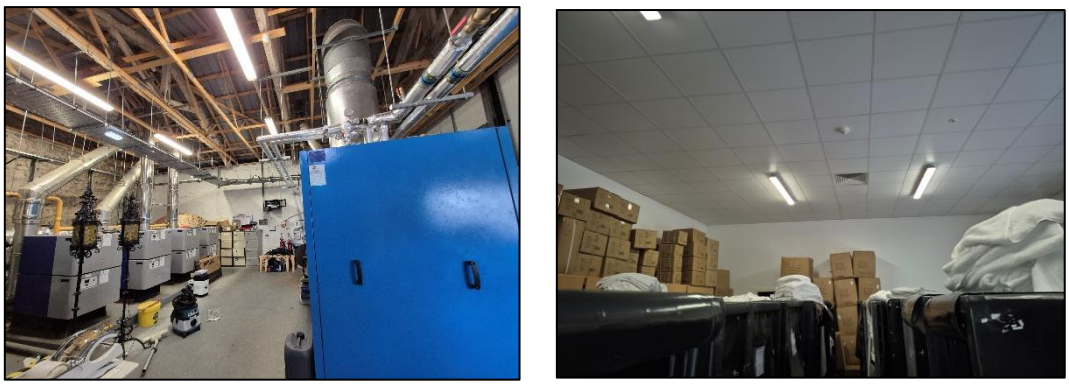


Plate 6: Interior of the south building of the Stables structure showing the Energy Centre (Left) and Linen Storage (Right).

Plate 7: Galvanized steel shed to the west of the Stables, inside the yard.

The East Wing

Building Inspection

The East Wing is a contemporary extension of the main castle hotel, comprising guest bedrooms with connecting corridors, a stairwell, and an operational lift system. A flat roof covers the main section, while a small turret structure containing plant and machinery is located to the rear (See Plate 8). An additional small room, here referred to as the East Wing Storage Room, is built onto the third floor with its own flat felt roof (See Plate 9). The East Wing is connected to the rest of the hotel via corridors to the southwest.

The north-facing frontage of the East Wing is ivy-clad, brightly lit at night, and overlooks managed lawns, roads, and the main castle to the north. The rear of the hotel is bordered by a hotel access road and overlooks treelines and scrubby vegetation and is comparatively darker, although some light spill from the west, originating from the security lighting associated with the Stables area and staff car-parking area, was noted, along with light spill from hotel rooms.

Surveys of accessible areas of the main East Wing Building included corridors, stairwells, and small linen storage areas, where no evidence of bat activity was recorded. Due to occupancy, individual guest bedrooms could not be inspected. Externally, the front of the hotel is mostly obscured by ivy cover, reducing the ability to check for access points for bats. No access points suitable for bats were recorded along the rear face of the main East Wing Building.

The East Wing Storage Room contained cavities within walls and ceilings and a single window obscured by a blanket, reducing natural light. No direct evidence of bats was recorded internally in this room. Externally, the East Wing Storage Room was found to have gaps beneath the roof overhang and wall junction on the south-facing external wall (See Plate 10). No other gaps along the west-facing or north-facing external walls were noted. Bat droppings were observed trapped within cobwebs beneath some of these gaps.

The turret structure was inspected and found to be permanently lit and noisy from plant operation (See Plate 11). No evidence of bat use was recorded, and it is considered to provide negligible roosting suitability.

Active Surveys

Dusk surveys were completed on the 5th and on the 17th of September 2025. A dawn survey was completed on the 19th of September 2025. A description of the survey schedule is shown in Table 3.

For the dusk survey on the 5th, the surveyor was stationed on an elevated area of grassland, with a view that covered most of the rear of the building. Two bats were recorded dropping down from the flat roof in front of the doorway of the East Wing Storage Room on the third-floor level of the East Wing section of the hotel at 20:18 and again at 20:20. The species could not be confirmed at the time as no calls were recorded. Over the course of the survey, no bats were observed foraging or flying in close proximity to the rear of the east wing. No bats were observed emerging from any other section of the East Wing visible to the surveyor. No bats were observed returning to the lean-to structure or any other section of the hotel visible to the surveyor. Several calls belonging to Soprano Pipistrelle,

Common Pipistrelle and Leisler's Bat calls were picked up during the dusk survey, where bats were occasionally observed to be foraging in the vegetation and trees to the rear of the surveyor. Overall, recorded bat activity is deemed to be low. Table 7 below shows the results of the bat call analysis.

Table 7. Bat activity recorded during Dusk Survey conducted on the 5th of September at the rear of the East Wing.

Species	No of Bat Call Registrations
Common Pipistrelle	4
Leisler's Bat	2
Soprano Pipistrelle	33

For the dusk survey on the 17th, the surveyor was stationed atop the turret structure to the rear of the East Wing, with a view of the south and west facing walls of the East Wing Storage Room and partial views of other parts of the rear of the East Wing. A total of five Soprano Pipistrelle were observed dropping down from the flat roof in front of the doorway of the East Wing Storage Room over the course of the survey, at 19:48, 20:00, 20:15, 20:19 and 20:21 (Plate 12). All five bats were recorded exiting the roof and flying directly south towards the trees and vegetation at the rear of the hotel. A single Soprano Pipistrelle was recorded returning to the roost site at 21:12. No bats were recorded foraging in proximity to the hotel although several Soprano Pipistrelle and Leisler's Bat calls were picked up during the emergence survey. Overall, recorded bat activity is deemed to be low. Table 8 below shows the results of the bat call analysis.

Table 8. Bat activity recorded during Dusk Survey conducted on the 17th of September at the rear of the East Wing.

Species	No of Bat Call Registrations
Leisler's Bat	6
Soprano Pipistrelle	40

For the dawn survey on the 19th, the surveyor was stationed in the same location as for the dusk survey on the 17th, atop the turret structure at the rear of the East Wing. Two Soprano Pipistrelle bats exited the roost, one at 5:59 and the other at 06:58, heading south. In total, Eight Soprano Pipistrelles were observed entering the roost, just above the doorway of the East Wing Storage Room, at 05:59, 06:01, 06:19, 06:54, 06:57 and 06:58. Several times over the course of the survey, Soprano Pipistrelles were observed flying in proximity to the roost and attempting to enter before flying off to the south to attempt entering the roost. While not observed by the surveyor to enter or exit the East Wing, calls from Leisler's Bat were recorded continuously over the course of the survey, likely foraging just to the south of the East Wing, in among the trees and vegetation. One call belonging to a Brown Long-eared Bat was recorded over the course of the survey. The surveyor noted the occurrence of a light drizzle at 06:42 which stopped at 06:50 While the number of bat call registrations recorded during the survey is higher than what has been recorded during previous surveys, overall activity at this roost site is considered to be low. Table 9 below shows the results of the bat call analysis.

Table 9. Bat activity recorded during Dusk Survey conducted on the 17th of September at the rear of the East Wing.

Species	No of Bat Call Registrations
Brown Long-eared Bat	1

Leisler's Bat	199
Soprano Pipistrelle	115

Passive Surveys

For the East Wing, passive detectors were deployed at three locations, two internally, within the East Wing Storage Room (BD07) and within a ceiling void on the top floor (BD06), and one external, placed on the roof of the East Wing (BD05). Full analysis of the recorded calls from each detector and deployment period is provided in Appendix B (BD05 – BD07). Bat activity was recorded at all three locations and species recorded were Common Pipistrelle, Soprano Pipistrelle, and Leisler's Bat.

The external passive recorded a high level of bat activity across 13 nights (BD05). Soprano Pipistrelle were the most frequently recorded, with a total of 3433 registrations, with a peak in activity on the 12th of August (908 registrations). Leisler's Bat activity was also high, at a total of 1680 registrations with a peak of 615 registration on the 1st of August. Low numbers of Common Pipistrelle were recorded, 121 registrations total, with a peak of 42 registrations also on the 12th of August. Activity timing was checked by grouping the number of registrations collected at Dusk (sunset + 1.5hr), Dawn (sunrise -1.5hr). For all three species, there was no real peak in activity associated with either dawn or dusk, with the majority of registrations spread throughout the night.

A passive was deployed on two separate occasions within the ceiling void space on the top floor of the East Wing (BD06). During the first deployment the passive recorded Leisler's Bat (355 registrations) and Soprano Pipistrelle (32 registrations) between the 31st of July and the 13th of August. Based on the results of the spectrogram analysis, it appears that what was recorded was bat activity outside of the building. This was confirmed by comparing the results of this deployment with results the passive deployed externally (BD05) on the roof above BD06's location which was deployed for the same length of time. For both species, there is a considerable difference between the number of registrations recorded between BD05 and BD06. For Leisler's Bat the majority of the calls are broken up, indicating that there is an intervening structure degrading the call quality. Additionally, the median pulse of the Leisler's Bat calls picked up by BD06 is 2, while the median pulse of the Leisler's Bat calls picked up by BD05 is 17, indicating that some pulses are being lost. With regard to Soprano Pipistrelle, the only calls recorded were social calls which are typically louder and carry farther than echolocation calls. With regard to the position of the passive bat detector, on collection it was noted that the passive was close to wall at the rear of the East Wing, and faced south towards the wall. During the second deployment at this location, from the 26th of August to the 9th of September, no bat activity was recorded. For this deployment the passive was deployed facing away from the south wall of the East Wing.

A passive bat detector was deployed three times within the East Wing Storage Room (BD07). For the first deployment, the passive was placed along the wall in the middle of the room from the 13th of August to the 29th of August with very little bat activity recorded apart from 8 Leisler's Bat registrations and 3 Soprano Pipistrelle registrations. For the second and third deployments, the passive was located close to the external door leading out onto the flat roof, near where bats had been observed entering the roof space during the dusk survey conducted on the 5th of September. There was a considerable increase in recorded bat activity, particularly in the number of Soprano Pipistrelle registrations. During the second deployment only one Leisler's Bat registration was recorded, with 526 total Soprano Pipistrelle registrations, with a peak of over half that on the 13th of September (250). For the third

deployment a total of 24 Leisler's Bat registrations were recorded, 13 of which were recorded on the 19th of September. There was a total of 488 Soprano Pipistrelle registrations, with a peak of 184 registrations on the same date as the Leisler's Bat, the 19th of September. As previous outlined, Soprano Pipistrelles were observed exiting and entering the roof space of the East Wing Storage Room during both dawn and dusk surveys completed in September.

Population Size Class Assessment

The East Wing Storage Building is a relatively quiet section of the East Wing with only minimal light spill from the Stables and carpark located to the west. While no signs of bat activity were recorded within the room, bats were observed entering/exiting the roof space.

Based on the dawn/dusk surveys and the registrations recorded by the deployed passive bat detector, the roof space of the East Wing Storage Room provides a roosting site Soprano Pipistrelle. This site is likely used as a small day/satellite roost, with a max of 8 Soprano Pipistrelle recorded entering the roost during the dawn survey.

Plate 8: The front (Left) and the rear of the East Wing building (Right).

Plate 9: A photo of the interior (Left) and exterior (Right) of the East Wing Storage Room.

Plate 10: A photo of the interior (Left) and exterior (Right) of the East Wing Storage Room.

Plate 11: Interior of the turret at the rear of the East Wing.

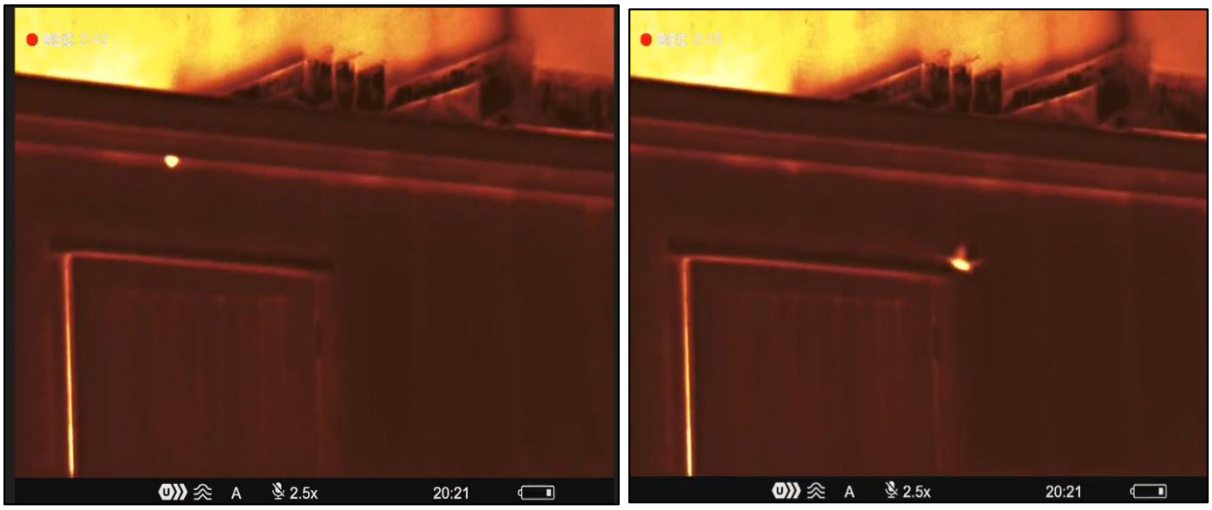


Plate 12: Thermal Imager stills of a Soprano Pipistrelle emerging from under the roof of the lean-to structure at 21:21.

The Drain

Inspection

The Drain comprises an underground drainage structure that appears to circle beneath the northeast section of Dromoland Castle and Estate. Access is via a heavy steel grate located along the southern boundary of the original Castle (Plate 13). The underground structure is built of a mixture of stonework and brickwork, with surfaces heavily encrusted in calcium deposits. Internally, the Drain extends in two directions, reducing to narrow tunnels (Plate 14). The drain was visited on an occasion when there was rainfall, with water dripping steadily into the tunnel.

Previous surveys carried out by the NPWS identified the occurrence of a Lesser Horseshoe Bat roost within the Drain, and bat droppings were recorded here (pers. comm. David Lyons and Jamie Durrant). As part of the current survey effort, eDNA analysis of droppings collected within the Drain was conducted; however, this analysis did not confirm the presence of bats (see Appendix A).

The primary access point is currently blocked by a heavy steel grate. The spacing between the bars is narrow and does not provide comfortable passage to bats (pers comm. David Lyons and Jamie Durrant) and the drain is partially blocked by ivy. Furthermore, the access location is subject to artificial lighting from the castle grounds at night.

There are no works associated with the proposed works at Dromoland Castle that will directly impact the Drain.

Passive Surveys

A passive bat detector was deployed on two occasions within the drain. For the first deployment between the 6th of August and the 13th of August, the passive was situated facing west. For the second deployment between the 29th of August and the 3rd of September, the passive was situated facing east.

For the first deployment, a high level of Leisler's Bat activity was recorded across 7 nights with a total of 656 registrations, with a peak count of 128 registrations on the 12th of August. This was followed by Soprano Pipistrelle with a total of 118 registrations and a peak count of 31 registrations on the 13th of August, and Common Pipistrelle with a low number of 28 registrations overall.

For the second deployment, low bat activity was recorded for all bat species in general with no Common Pipistrelle activity recorded. Lesser Horseshoe Bat was recorded here with 22 total registrations, 13 of which were recorded on the 31st of August. The level of Lesser Horseshoe Bat activity is considered to be low. However, there is potential that this location, as an underground structure, could provide a suitable hibernation site for this species over the winter months.

There was a very high level of noise recorded by the passive during this second deployment (5011 noise files in total), which upon analysis appeared to be caused by the sound of rain.

Plate 13: Access to the drain with the heavy steel grate lifted.

Plate 14: Drain interior.

The Courtyard

Building Inspection

The Courtyard is located centrally within Dromoland Castle and Estate. For the purposes of this report and based on the proposed Palm Court part of the project, The Courtyard includes; an outdoor courtyard space, a small lean-to shed used to store furniture, and an internal room (Room 200) with associated washroom facilities and access corridor (Plate 15). At the time of survey, Room 200 and associated spaces were used primarily for storage. The Courtyard sits above the spa facilities, with a glass roof from the spa protruding into the courtyard area above (Plate 16). The courtyard is lit up at night (Plate 16).

The roof of Room 200 is largely flat and houses hotel plant equipment, which was operational at the time of inspection and generated a constant level of noise. A section of false roof extends above Room 200, facing into the Courtyard (Plate 17). This structure is hollow but was not accessible internally for inspection. Externally, several potential access points for bats were noted where the false roof abuts the main wall, and at the rear of the structure. The false roof is adjacent to the aforementioned hotel plant.

Internal inspection of Room 200 and its associated washroom and corridor facilities found no evidence of bat activity. A ceiling void above the washroom was accessed, but this was found to be noisy due to the plant equipment installed on the flat roof above, reducing its suitability for roosting bats.

The lean-to shed was inspected both internally and externally. While no evidence of bats was identified within the structure, access points were observed in the roof tiles which could offer potential entry for bats. Light-spill during daylight hours and from the artificial lighting at night can enter the shed through the glass door.

The spa area located beneath the Courtyard was also inspected. This is a modern, section of the hotel and no evidence of bat use was recorded.

Passive Surveys

For the Courtyard, passive detectors were deployed at three locations, two internally, within the ceiling void by Room 200 (BD08) and within the lean-to shed in the courtyard (BD10), and one external, placed outside the false roof of Room 200 overlooking the courtyard (BD09). Full analysis of the recorded calls from each detector and deployment period is provided in Appendix B (BD08 – BD10). Bat activity was recorded at all three locations and species recorded were Common Pipistrelle, Soprano Pipistrelle, and Leisler's Bat.

The passive within the ceiling void by Room 200 (BD08) was deployed from the 31st of July to the 13th of August (13 Nights). No bat activity was recorded.

BD09 was deployed externally outside of the false roof overlooking the courtyard and recorded a moderate level of bat activity between the 31st of July and the 13 of August. Leisler's Bat was the most frequently recorded, with a total of 748 registrations, with a peak in activity on the 1st of August (234 registrations). A total of 118 Soprano Pipistrelle registrations were recorded with a peak of 61 registration on the 2nd of August. Low numbers of Common Pipistrelle were recorded, 22 registrations total, the majority of which (18 registrations) were recorded on the 12th of August. Activity timing was

checked by grouping the number of registrations collected at Dusk (sunset + 1.5hr), Dawn (sunrise - 1.5hr). For all three species, there was no real peak in activity associated with either dawn or dusk, with the majority of registrations spread throughout the night.

BD10 was deployed within the lean-to shed, hanging from the rafters, from the 13th of August to the 26th of August. Both Leisler's Bat (18) and Soprano Pipistrelle (40) were recorded here albeit in low numbers. As previously discussed, no signs of bat activity were observed within the structure during the building inspection, although there are access points present.

Plate 15: the Courtyard, comprising an external space (Top Left), Room 200 (Top Right), Washroom Facilities (Bottom Left), and a Lean-To structure (Bottom Right).

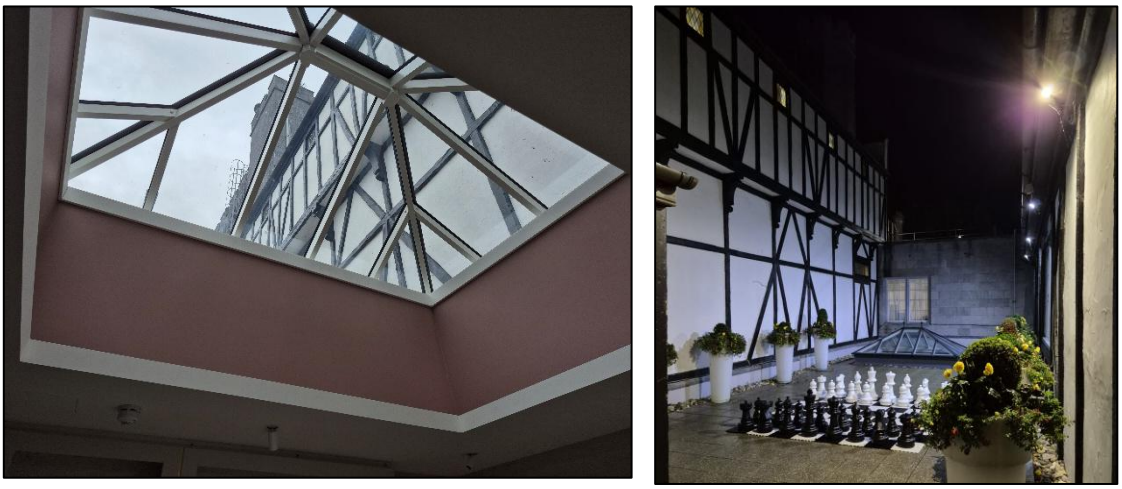


Plate 16: Glass roof of the hotel spa protruding into the courtyard (Left) and the courtyard at night (right).

Plate 17: False roof overlooking the courtyard.

The Basement

Building Inspection

The basement area of Dromoland Castle includes the cellar, staff changing facilities and offices, bedrooms, and a connecting corridor. The cellar is in use as a wine store and is warm and humid (Plate 18). During the inspection, no potential access points were identified other than the secure access door, which remains locked when the cellar is not in use by hotel staff. No signs of bat activity (droppings, staining, prey remains, or direct sightings) were observed within the cellar.

Immediately outside the cellar, are storage areas associated with the cocktail bar on the level above, containing plant and services for the bar and include an old wall hatch providing some limited access to the exterior (Plate 19). These areas were examined, and no evidence of bats was observed.

Staff changing facilities and offices also at the basement level were inspected (Plate 20). A void space was noted between the office corridor wall and the castle's external wall. This void could only be partially accessed, but no evidence of bats was observed during the survey.

Passive Surveys

Passive Bat Detectors were deployed in two locations within the basement level of the hotel, with BD11 located in the cellar section of the basement level and BD12 located inside a services cavity at the staff area section of the basement level.

For the first and second deployments, between the 6th and 29th of August, BD11 was placed within the wine cellar. No bat activity was recorded. For the third deployment, the passive was placed just outside the wine cellar in proximity to the access hatch in the wall shown in Plate 19. In total, 40 Leisler Bat registrations were recorded. The results of the Spectrogram analysis found that the majority of these calls are very faint and appear fragmented, suggesting that an intervening structure is interfering with and reducing the call quality. Soprano Pipistrelle registrations (10 in total) were also extremely faint and had to be identified manually. It is considered likely that the passive recorded bats calling outside of the hotel, via the access hatch.

No bat activity was recorded at BD12 which was deployed from the 6th to the 29th of August.

Plate 18: Basement Wine Cellar.

Plate 19: Basement area outside the wine cellar.

Plate 20: Basement corridor (Left) and back-of-house areas (Right).

The Golf Club House

Building Inspection

The Golf Club House contains a restaurant, shop, guest changing facilities, and the hotel's leisure facilities, including the swimming pool, sauna, steam room, and gym. The external survey identified potential access points into the attic space through vent structures located along the roof apex (Plate 21). The attic space was accessed and inspected. No evidence of bat activity (e.g. droppings, staining, feeding remains, or scratch marks) was recorded. The attic is largely occupied by plant and ducting infrastructure associated with the restaurant and leisure facilities (Plate 22). Skylights in the roof contribute to internal light spill, further reducing its suitability as a roosting environment.

Passive Surveys

Two passive bat detectors (BD14 and BD15) were deployed within the attic space of the Golf Club House from the 26th of August to the 9th of September (14 Nights). No bat activity was recorded.

Plate 21: Photo of the roof on the exterior of the Golf Club House.

Plate 22: Photo of the interior attic space of the Golf Club House.

The Cottage and Sheds

Building Inspection

The Cottage is an older brick-built structure with later concrete additions to both the front and rear (Plate 22). The external inspection identified several gaps between the soffit and the brickwork, which could potentially provide access for bats into the roof void. The attic space was inspected and found to contain a significant number of rat droppings, alongside widespread cobwebs. The roof void construction comprises exposed timber beams and roof felt. No bat droppings, feeding remains, staining, or other evidence of bat activity were recorded during the inspection. In close proximity to the cottage is an old brick cellar (Plate 22). The cellar is currently used for storage and the only access point, an external door, is closed when not in use. No signs of bat activity were recorded within the old brick cellar.

There are other small buildings in proximity to the Cottage. There is a small lean-to shed on the north side of the Cottage containing the gas boiler. This shed is wholly unsuitable as the access door is always open and the roof is partially collapsed, with large gaps. There is a long narrow lean-to building with a slate roof against the Cottage to the rear, which is accessed via a locked door and is used as storage (bikes, refuse, etc.) (Plate 23). On inspection, no signs of bat activity were recorded, although a number of access points were noted. To the west of the lean-to and Cottage is galvanized steel shed used as storage for the quad bikes used by the golf maintenance team. The structure is deemed to have little to no value as a roosting structure for bats.

To the north of the Cottage are three small stone-walled sheds with corrugated steel roofs. Two of these sheds are linked by a stone archway (Plate 24), and each has a separate access door that is locked when not in use. Externally, the structures show typical age-related gaps in stonework that could potentially provide access for bats. Internally, the sheds are currently used for storage associated with the golf course and gardening activities (Plate 25). Two of the sheds allow light spill from windows, reducing their suitability as roosting locations. The third shed, furthest from the Cottage, also contains a window, but this has been blocked, limiting internal light levels. All sheds were subject to internal inspection. No signs of bat activity (droppings, staining, or feeding remains) were recorded during the survey.

Passive Surveys

Three passive bat detectors were deployed in this location from the 26th of August to the 9th of September (14 Nights). The passive deployed in the cottage attic (BD18) recorded no bat activity. The passives deployed in the stone shed with minimal light-spill, and the passive deployed in the lean-to structure by the cottage both recorded a single Pipistrelle call each. In both cases, the call was faint and likely originated outside of the structures.

Plate 22: The Cottage (Left) and underground cellar (Right).

Plate 23: Lean-to shed interior (Left) with visible access point (Right).

Plate 24: Stone archway.

Plate 25: Interior of one of the stone sheds, showing gaps beneath the corrugated roof (Left) and interior of one of the three stone sheds where light-spill from a window has been minimised (Right).

The Gate Lodge

Building Inspection

The Gate Lodge is a small single-storey building located at the main entrance to Dromoland Castle (Plate 26). Internally, the building is in poor condition and largely disused, except for basic staff toilet facilities. Significant mould growth, damp patches, and general degradation were recorded throughout and the rooms are relatively bright due to light spill from windows (Plate 27). The attic space is partially open to the rooms below and contains insulation, pipework, and a water tank. This space was found to be draughty, with visible gaps between the roof and wall junctions. No evidence of bat use was recorded during the inspection.

Passive Surveys

A passive bat detector (BD21) was deployed from the 29th of August to the 17th of September (19 Nights). No species were recorded.

Plate 26: Gate Lodge exterior.

Plate 27: Gate Lodge Interior (Left) and attic space (Right).

The Farm

Building Inspection

The Farm is located to the east of Dromoland Castle and consists of a number of farm sheds set on a large concrete slab. While no longer operating as a farm, the site is primarily utilised for storage by the golf course and hotel, as well as a horse stables. The structures inspected include five large concrete sheds with corrugated sheet roofs, one smaller concrete block shed with a corrugated steel roof, and two small single-storey ancillary structures that previously served as the farm office, welfare facilities and to house electrical systems. The farm is located within a remote area of Dromoland and is surrounded by grassland and broadleaved woodland. There is no artificial lighting at night.

The large sheds are typical modern agricultural buildings, with concrete walls and corrugated metal roofs, some of which incorporate Perspex clear sheets to allow light penetration. Four of the five sheds were found to be largely unsuitable for bats due to their highly exposed nature, absence of enclosed roof voids, and limited shelter opportunities (Plate 28). Several of the sheds had large open doorways or significant gaps around the roofline, leaving the interior open to weather and disturbance.

One of the five large sheds contained signs of bat activity in the form of droppings and feeding signs. Access points were visible at first-floor level, with additional gaps between the corrugated sheeting and concrete walls (Plate 29). The shed was kept locked when not in use, which reduces disturbance levels. This shed contained a small internal room at the rear (Plate 30). There is light spill from a window and external gaps between the corrugated roof and concrete wall, and gaps above the doors, to allow entry to bats as well as swallows, which were confirmed to be nesting in the shed.

The smaller concrete shed with corrugated steel roofing was used for horse-riding equipment storage (Plate 31). The building contained open gaps under the roofline. This smaller shed contained signs of roosting swallows but no evidence of bats.

The two ancillary single-storey buildings (former office and electrical shed) were in poor condition (Plate 32). The office showed light spill from a window, a broken pane, and a hole in the ceiling where daylight entered through gaps in the corrugated roofing. Both small buildings were drafty. No evidence of bat activity internally was recorded.

Passive Surveys

A passive bat detector was deployed within the large farm shed that showed signs of bat activity during the building inspection, on the first-floor level (BD20). This passive was deployed longest of all the passives, from the 29th of August to the 24th of September for 26 nights, and recorded species such as Brown Long-eared Bat, Common Pipistrelle, Leisler's Bat, Myotis sp., and Soprano Pipistrelle.

A high number of Soprano Pipistrelle registrations were recorded over the course of the deployment, A total of 2525 Soprano Pipistrelle registrations were recorded. This is a mean number of c. 97 registrations per night across 26 nights with a peak count of 269 registrations on the 1st of September. The majority of the calls were spread out nightly, but there was a peak of calls, 465 registrations total,

that occurred at Dusk (Sunset + 1.5hr). As shown in Figure 7, Soprano Pipistrelle were consistently recorded throughout deployment, with more sustained high activity in the first half of September.

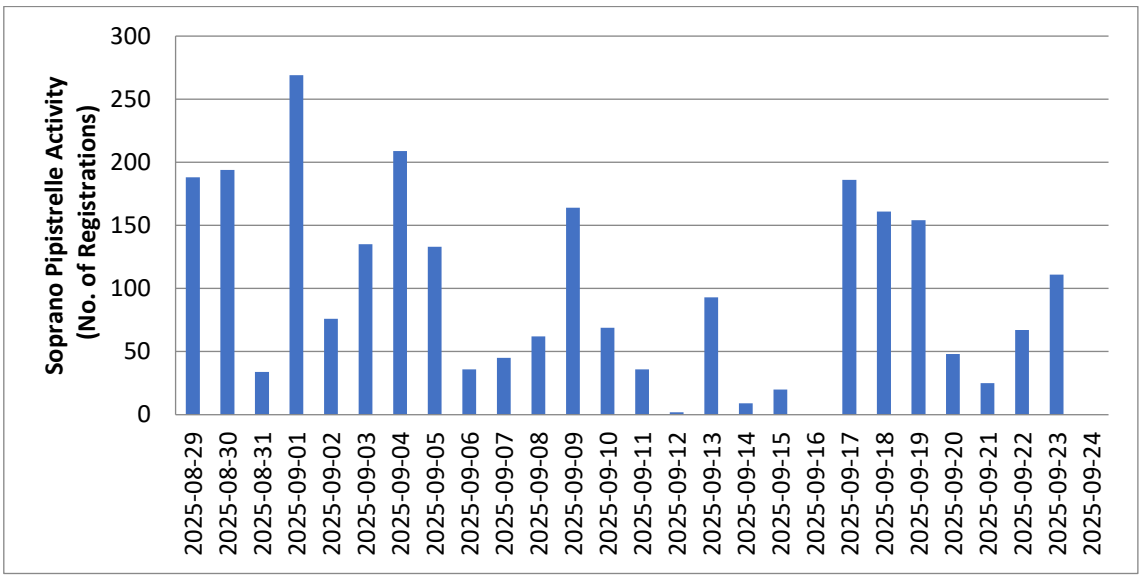


Figure 7. Nightly activity of Soprano Pipistrelle at BD20 from the 29th of August to the 24th of September.

A moderate number of Brown Long-eared Bat was recorded for the deployment duration, with A total of 584 Brown Long-eared Bat registrations were recorded with a mean number of c. 22 registrations per night across 26 nights and a peak count of 68 registrations on the 6th of September, with a high number of registrations containing social calls. During the course of these surveys, Brown Long-eared Bat has only been recorded on one other occasion, during the dawn survey completed at the East Wing on the 19th of September. As seen in Figure 8, activity steadily declines after the 14th of September, with low numbers of registrations (≤ 20 per night) for the remainder of the deployment.

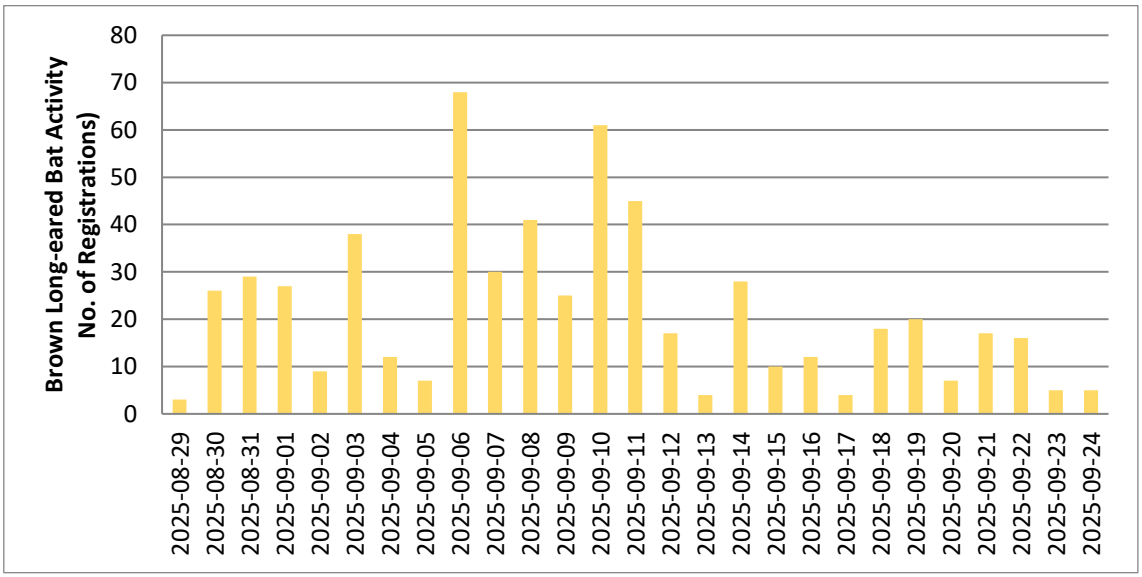


Figure 8. Nightly activity of Brown Long-eared Bat at BD20 from the 29th of August to the 24th of September.

Leisler's Bat (93 registrations), Common Pipistrelle (22 registrations) and Myotis sp. (12 registrations) were recorded in lower numbers.

Population Size Class Assessment

Of all the structures present on the Farm, the large, locked shed is the least subject to weather disturbance, although it is still a bit drafty, particularly on the first-floor level, with light-spill from the Perspex sheeting. The small room within the shed is also, in places, largely protected from the elements and is subject to light-spill. Evidence of swallows nesting was recorded in both.

Both areas contained signs of bat activity in the form of droppings and feeding signs. Based on the number of Soprano Pipistrelle registrations, it is considered likely that this structure is used as a roost for these species. The majority of recorded activity was spread out over night which, combined with the presence of feeding remains, suggests that the structure is used primarily as a night roost. However, the level of dusk activity suggests that it could be used as a day roost as well, although there was no such activity recorded at dawn. It is likely that Brown Long-eared Bats will also use this structure as a roosting site, with recorded activity suggesting that this species uses the structure spread out over night, with no peak in activity at dawn or dusk.


Plate 28: Example of the large open sheds at the Farm.


Plate 29: Locked shed with signs of bat activity (droppings and feeding signs).


Plate 30: Small room inside the locked shed shown in Plate 29.

Plate 31: Small shed used to house horse-riding equipment.

Plate 32: Interior of the now-derelict farm office (Left) and the former electrics room (right).

The Brian Boru Offices

Building Inspection

The Brian Boru Offices are located internally within the Brian Boru Conference Centre section of Dromoland Castle and Estate. These offices are no longer in use and currently function as storage and disused office space (Plate 33). They have no external frontage that would be accessible to bats. No potential bat access points were identified. The rooms vary in use, with some still containing office furniture, filing cabinets, and storage boxes. The condition of the offices is generally good, with no significant cracks, voids, or cavities that would offer potential roosting opportunities. Lighting is provided by ceiling strip lights and skylights with light-spill from internal windows. No evidence of bat activity was recorded during the survey.

Passive Surveys

A passive bat detector (BD19) Passive deployed from the 29th of August to the 17th of September (19 Nights). No species were recorded.

Plate 33: Brian Boru office space.

Additional Areas within Dromoland Castle and Estate

Other areas within the hotel subject to inspection include the cocktail bar, dining areas and kitchen, and the terrace room and smoking area, located within the original Castle. The cocktail bar, dining areas and kitchen, face north (Plate 34 – Plate 35) while the Terrace Room and Smoking Area are on the south side of the castle (Plate 36 – Plate 37). These areas are all operational areas of the hotel. No sign of bat activity was recorded within these areas.

Plate 34: Chimney in the cocktail bar inspected for signs of bat activity.

Plate 35: Kitchen.

Plate 36: Terrace room interior.

Additional Passive Survey Areas around Dromoland Castle

Additional passive bat detectors were deployed at two locations on the grounds of Dromoland Castle and Estate. BD22 was deployed along a patch of woodland and scrub adjacent to the proposed carpark, from the 17th to the 25th of September. BD23 is on the island where the proposed sauna will be located, adjacent to Dromoland Lough pNHA, where the passive was deployed from the 17th to the 20th of September.

Species recorded at the BD22 location include Myotis sp., Leisler's Bat, Soprano Pipistrelle, and Common Pipistrelle. Soprano Pipistrelle (358 registrations) and Leisler's Bat (335 registrations) were the most frequently recorded species. Low numbers of Common Pipistrelle (35 registrations) and Myotis sp. (11 registrations) were recorded.

The island adjacent to Dromoland contains many mature trees including large oaks with Potential Roost Features (PRFs). A high level of activity was recorded here (BD23) over 3.5 nights, including species such as Leisler's Bat, Soprano Pipistrelle, Common Pipistrelle, *Myotis* sp. and Nathusius' Pipistrelle (*Pipistrellus nathusii*). Soprano Pipistrelle was by far the most frequently recorded species with 3500 registrations recorded, with a peak of 1,329 registrations recorded on the 18th of September. Activity timing was checked by grouping the number of registrations collected at Dusk (sunset + 1.5hr), Dawn (sunrise -1.5hr). There were peaks in activity around dawn/dusk periods, with 305 total registrations occurring within the dawn period and 551 registrations occurring within the dusk period. Leisler's Bat had a total of 55 registrations, followed by Common Pipistrelle with 29 registrations. Nathusius' Pipistrelle, which was not recorded at any other location within Dromoland, was recorded on 12 occasions, with 10 of these registrations recorded on the 19th of September. There were 9 *Myotis* sp. registrations recorded.

Foraging and Roosting Potential for Bats at Dromoland

Overall, the Dromoland Castle and Estate estate offers high bat foraging and roosting potential due to its mosaic of broadleaved woodlands, mature parkland trees and the adjoining Dromoland Lough pNHA which together provide sheltered, insect-rich edge habitats, woodland foraging opportunities and dark linear corridors linking roosts to feeding areas. While parts of the estate are brightly lit at night, particularly around the stables, car park, castle and East Wing façade, extensive areas remain unlit, and these darker belts are likely to function as primary commuting and foraging routes. For Lesser Horseshoe Bat, optimal foraging typically occurs within 2.5 km of roosts in woodland/scrub, along dense hedgerows and at vegetated water edges. Therefore, it is likely that this species is utilising the lough and woody habitats present within Dromoland for commuting and foraging purposes.

Derogation Application: The Stables

This section has been completed with reference to Part D of the NPWS Derogation Licence Application Form (Rev 2.0, July 2025).

The proposed development will involve the renovation and conversion of the existing stables building from golf storage/maintenance to visitor accommodation to provide 12 no. rooms/ suites, including an integrated bat loft and associated landscape works.

Due to the confirmed presence of a Lesser Horseshoe Bat roost within north building of the Stables structure a derogation licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) is required.

Part D: Evidence to support the Derogation Tests

Test 1: Reason for Derogation

(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

The purpose of the development is to provide guest accommodation as part of the Dromoland Castle and Estate. The current condition and nature of the existing Stables structure is not compatible with the proposed development.

Measures to minimize impacts to Lesser Horseshoe Bat, and support the conservation of this species, have been incorporated into the design of the proposed development. In order to maintain access to a roost space within the Stables for Lesser Horseshoe Bat, it is proposed to provide a loft space, herein referred to as a Bat Loft, within the north building. Details on the design of the Bat Loft are outlined in the Mitigation Approach section of this report.

As previously discussed, this site is not considered to be suitable as a maternity roost and is primarily used by Lesser Horseshoe Bat as a night roost, with small numbers utilising the site as a minor day roost. The commencement of works, specifically in relation to north building of the Stables structure, will be carried out at a time outside the summer months from 1st September to 1st May only. This has been determined to be appropriate for a summer roost, which is not a maternity site, having regard for NPWS guidance (Marnell *et al.* 2022). However, works will not commence on the north building until it has been confirmed through bat surveys that the level of activity of Lesser Horseshoe Bats and any other species present has dropped to extremely low levels. As outlined in Marnell *et al.* 2022 Lesser Horseshoe Bat are known to prolong the use of summer roosts into the autumn/winter. Based on the current condition of the stables, this is considered to be unlikely to occur. This timeline may change subject to the requirements of the NPWS and any contrary conditions of the derogation licence.

Test 2: Absence of Alternative solutions

As set out in Stage 3 of the Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland (NPWS 2021) we considered the alternatives available. Annex IV

species are present and therefore the potential to avoid such impacts, in every way possible needs to be considered. As stated in Stage 3 of Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland (NPWS 2021) "*A satisfactory solution is one which addresses the situation faced by the project proponent while protecting the species at the same time*."

Alternative Option 1. 'Do nothing' scenario. In the absence of a plan for the Stables, this structure would continue to be used for golf storage/maintenance facility with a high level of activity from personnel, machinery and vehicles from early morning, including areas the bats use to roost in and access the building. At night, the site would continue to be lit up with obtrusive security lighting. The roost potential of the site would remain poor would likely be lost given the current use of the structure.

Alternative Option 2. Roost avoidance was considered but is not feasible: the roost occupies the north building of the stables structure and is an integral part of the Stables and inseparable from necessary refurbishment works. In-situ retention during works would cause significant disturbance and risk of injury to bats, contrary to the legal requirement to avoid harm to protected species.

Alternative Option 3. The construction of a permanent stand-alone structure i.e., Bat House was considered but this was not a viable option for the following reasons. As part of the surveys to inform this report Lesser Horseshoe Bat roosting activity has only been recorded in two locations within the grounds of Dromoland Castle and Estate; the Stables (north building) and the Drain by the castle. No Lesser horseshoe Bat activity was picked up by the four externally placed passive bat detectors, one by Dromoland Lough to the north, one by a patch of woodland to the south, and two placed externally on the roof of the Dromoland Castle and the East Wing. As has been previously outlined, the Drain is considered to be a sub-optimal roosting site. The surveys have recorded consistent Lesser Horseshoe Bat activity at the Stables, despite the less than suitable internal conditions, and no significant roosts (e.g., maternity or large satellite roosts) have been recorded to date elsewhere within Dromoland. It is considered that the placement of a permanent Bat House structure, to mitigate for the loss of a known roost for Lesser Horseshoe Bat within Dromoland, should be informed by detailed surveys on the activity of Lesser Horseshoe Bat within Dromoland and their commuting corridors. In the case of the proposed development, the programme of works does not allow for such surveys to be completed. Recognising the species' fidelity to established roosts, integrating a Bat Loft within the Stables as outlined in the Mitigation Approach section of the report offers the most robust solution.

A Bat Loft for Lesser Horseshoe Bat within an occupied structure is entirely achievable when the space is purpose-designed and managed. As previously described, the conditions of the current roost site within the existing north building are not suitable as a long-term viable roost for this species and the incorporation of a more thermally stable, dark, open loft tailored to the species' needs will be a considerable improvement on these existing conditions. The loft is located where activity has already been recorded and, despite the change of use to guest accommodation, disturbance will be minimised by high levels of insulation for heat retention and sound attenuation, a locked hatch with controlled access (ecologist/NPWS). The lighting design for the Stables will be a considerable improvement on the existing obtrusive lighting conditions. A relevant Irish case study, Flahive's Lodge, demonstrates the feasibility of co-occupation by humans and Lesser Horseshoe Bats. At Flahive's Lodge, Glengarriff Woods Nature Reserve (Co. Cork), a well-insulated Bat Loft was installed as part of the renovation works of the structure. In this case, the roost increased from 101 in 2007 to 318 in 2021 (NPWS &

VWT (2022). This outcome demonstrates that, with targeted design, light and noise control, the integration of a Bat Loft within an occupied building is both practicable and effective.

Test 3: Impact of a Derogation on Conservation Status

Based on the results of the surveys conducted at the site in support of this report, the north building of the Stables structure hosts a night roost and a minor day roost for Lesser Horseshoe Bats. In its current condition the site is not considered to be suitable as a maternity roost. Population-level impacts of the proposed development are not considered to be likely in this case. As outlined in the Mitigation Approach section below, a purpose-built Bat Loft will be incorporated into the Stables where the bats have been recorded. In addition, there will be several enhancement measures included as part of the proposed development of Dromoland Castle and Estate, including the provision of a Cathedine Night Roost, as published by the Vincent Wildlife Trust, and the refurbishment of the Cottage Cellar as a hibernaculum for Lesser Horseshoe Bat.

The Bat Loft, the minimized lighting design, along with these proposed enhancement measures, will be effective in facilitating bats to continue to roost at the site. The actions permitted by a derogation licence to allow works at Stables will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range, as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.

Derogation Application: The East Wing

This section has been completed with reference to Part D of the NPWS Derogation Licence Application Form (rev 2.0, July 2025).

This proposed development will require the Demolition of existing part one part two element and the construction of a part three part four storey extension to the existing 21st century castle's east wing to provide additional guest accommodation, resulting in the loss of 1 no. existing guest room and an additional 17 no. Guest rooms, resulting in a total uplift of 16 no. rooms within this part of the castle.

Due to the confirmed presence of a Soprano Pipistrelle roost within the East Wing Storage Room a derogation licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) is required.

Part D: Evidence to support the Derogation Tests

Test 1: Reason for Derogation

(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

The purpose of the development is to provide guest accommodation as part of the Dromoland Castle and Estate. The proposed works, namely the addition of 17 no. guest rooms, cannot be completed without the demolition of the East Wing Storage Room. Measures to minimize impacts to Soprano Pipistrelle, and support the conservation of this species, have been incorporated into the design of the proposed development. These measures are outlined in the Mitigation Approach section below.

Test 2: Absence of Alternative Solutions

As set out in Stage 3 of the Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland (NPWS 2021) we considered the alternatives available. Annex IV species are present and therefore the potential to avoid such impacts, in every way possible needs to be considered. As stated in Stage 3 of Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland (NPWS 2021) "*A satisfactory solution is one which addresses the situation faced by the project proponent while protecting the species at the same time*."

Alternative Option 1. 'Do nothing' scenario. In this case, the East Wing will not be developed to include an additional floor and house 17 no. additional guest bedrooms, and the East Wing Storage room would likely be retained.

Alternative Option 2. Retain the roost during works. Roost avoidance was considered but is not feasible: the roost occupies the East Wing storage room roof space, integral to the structure and inseparable from necessary demolition. In-situ retention during works would cause significant disturbance and risk of injury to bats, contrary to the legal requirement to avoid harm to protected species.

The final option considered for the proposed development is to carry out the proposed demolition works whilst adhering to the mitigation measures outlined in the Mitigation Approach section below. A total of 10 no. bat boxes suitable for a range of species including Soprano and Common Pipistrelle as well as Leisler's Bat, will be installed on the trees to the rear of the East Wing Hotel. These bat boxes will be in place prior to the commencement of works. The removal of the roof of the East Wing Storage room will be done under the supervision of the project ecologist and will be carried out using soft-dismantling techniques. Where roosting bats are encountered, they will be carefully removed where necessary, by a bat specialist with a handling licence, for safe release away from the works area.

Test 3: Impact of a Derogation on Conservation Status

Based on the results of the surveys conducted at the site in support of this report, the East Wing Storage Room of the Stables structure is considered to be a summer roost. Population-level impacts of the proposed development are not considered to be likely in this case. As previously discussed, and outlined in the Mitigation Approach section below, bat boxes will be provided as a replacement roosting habitat which will be effective in facilitating bats to continue to roost at the site. The actions permitted by a derogation licence to allow works at the East Wing will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range, as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.

Derogation Application: The Farm

This section has been completed with reference to Part D of the NPWS Derogation Licence Application Form (rev 2.0, July 2025).

This proposed development will require the demolition of existing farm structures and construction of golf maintenance facility and central delivery and procurement hub for the estate.

Due to the level of a Soprano Pipistrelle and Brown Long-eared Bat activity within the large, locked farm building on the farm a derogation licence under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) is required.

Part D: Evidence to support the Derogation Tests

Test 1: Reason for Derogation

(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

As part of the proposed development, the Stables will undergo a change in use from a golf storage/maintenance facility to guest accommodation. The golf course maintenance team will be moved to the Farm, which will be converted to the golf maintenance facility, central delivery and procurement hub for Dromoland Castle and Estate. The current condition and nature of the existing Farm is not compatible with the proposed development.

Test 2: Absence of Alternative Solutions

As set out in Stage 3 of the Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland (NPWS 2021) we considered the alternatives available. Annex IV species are present and therefore the potential to avoid such impacts, in every way possible needs to be considered. As stated in Stage 3 of Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland (NPWS 2021) "*A satisfactory solution is one which addresses the situation faced by the project proponent while protecting the species at the same time*."

Alternative Option 1. 'Do nothing' scenario. In the absence of a managed scheme for the former farm complex east of Dromoland Castle and Estate, the sheds and ancillary buildings, many of which have asbestos coated corrugated roofs, would predictably continue to deteriorate which is not a satisfactory alternative. Although the site currently benefits from a dark setting (no artificial lighting), the ongoing decay of the large, locked shed in particular, together with ad hoc storage use, would progressively reduce bat roost potential. Given the present condition of much of the structure, this loss is likely to occur within a short number of years.

As previously discussed, the site is likely used as a night roost by both Soprano Pipistrelle and Brown Long-eared Bat, with recorded dawn activity indicating that Soprano Pipistrelles may well use it as a day roost. This has not been confirmed by active dawn/dusk surveys.

Alternative Option 2. Retain the roost during works. Roost avoidance was considered but is not feasible. While the exact location of the roost within the large, locked shed is not known, the entire structure will be demolished as part of the proposed works. In-situ retention during works would cause significant disturbance and risk of injury to bats, contrary to the legal requirement to avoid harm to protected species.

The final option considered for the proposed development is to carry out the proposed demolition works whilst adhering to the mitigation measures outlined in the Mitigation Approach section below. A total of 20 no. bat boxes suitable for a range of species including Soprano and Common Pipistrelle, Brown Long-eared Bats and Leisler's Bat, will be installed within the woodland area to the east of the site. These bat boxes will be in place prior to the commencement of works. The condition of the large, locked shed is as such that it is considered unlikely to house a maternity roost. However, no active dawn/dusk surveys were conducted at this location to confirm the level of bat activity and the location of any potential roost. The commencement of works, specifically in relation to the large, locked shed, will be carried out outside of the breeding period (late May to mid-August). A bat emergence survey is to be carried out prior to works on the building commencing. Where it is noted that bats are roosting within a building, demolition must not proceed unless mitigation measures relating to timing, exclusion, and re-location are in place.

Test 3: Impact of a Derogation on Conservation Status

While a high level of Soprano Pipistrelle activity was recorded, with an average of c. 97 registrations per night across 26 nights, the condition of the building is such that it is unlikely to be a maternity site for this species. Population-level impacts of the proposed development are not considered to be likely in this case. As previously discussed, and outlined in the Mitigation Approach section below, bat boxes will be provided as a replacement roosting habitat which will be effective in facilitating bats to continue to roost at the site. The actions permitted by a derogation licence to allow works at the Farm will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range, as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.

Mitigation Approach

An approach has been developed to minimise the potential effects of the various projects proposed for development at Dromoland Castle and Estate on roosting, foraging and commuting bats.

All conditions of the derogation licence for the Stables, East Wing and the Farm will be fully implemented.

The Stables

The commencement of works, specifically in relation to the north building of the Stables structure, will be carried out at a time outside the summer months from 1st September to 1st May only. However, works will not commence on the north building until it has been confirmed through bat surveys that the level of activity of Lesser Horseshoe Bats and any other species present has dropped to extremely low levels. As outlined in Marnell *et al.* 2022 Lesser Horseshoe Bat are known to prolong the use of summer roosts into the autumn/winter. Based on the current condition of the stables, this is considered to be unlikely to occur. This timeline may change subject to the requirements of the NPWS and any contrary conditions of the derogation licence.

The Project Ecologist will provide a toolbox talk to the construction personnel and will attend the site on a weekly basis during the removal of the roof and initial internal refurbishment work on the north building. The bat specialist will be on call throughout this phase and will provide advice and support to the project team throughout.

All conditions of the derogation licence will be fully implemented.

The design of the Bat Loft is shown in Appendix C. Details on the design of the Bat Loft are as follows:

- The location of the Bat Loft has been selected based on the recorded activity of Lesser Horseshoe Bat within the Stables i.e., in the north section of the north building.
- Cognisance of Lesser Horseshoe Bat behaviour has been taken and the trusses within the proposed Bat Loft will be removed, and the new roof will utilise purlin's without interior trusses to facilitate open space for this species.
- The roof lining will be traditional hessian bitumen roofing felt or wooden sarking. breathable roofing membranes should not be used. Rough untreated timber will be used to line the Bat Loft.
- The bats are currently accessing the north building via the open door in the northwest corner of the building. Access to the Bat Loft will be located just above this doorway further back along the roof via a dormer, facing west/southwest.
- In order to be incorporated into the design of the building, the Bat Loft will be a large space, with an apex height of 4m and will be 9.4m in length and 7.9m in width. Given the size of the space, a boxed off area will be included in the loft space in order to create different microclimates.
- It is likely that Pipistrelle species and Leisler's Bat may roost within the structure. Additional roosting spaces for crevice-dwelling bats will be included within the loft space.
- The Bat Loft will be accessed by a locked hatch in the floor. Access will be strictly controlled with keys held by the project ecologist and with access also provided to NPWS.

- The floor of the loft will be covered with marine plywood so that the space is safe to be accessed by the ecologist/NPWS personnel.
- Additional insulation to improve heat retention and to reduce sound travelling from the neighbouring hotel guest units will be included will be installed, reducing disturbance levels.
- The access point to the bat loft will not be illuminated. The lighting design for the Stables has been developed to minimise light-spill in the area near the Bat Loft including light-spill from guest units, with skylights removed where appropriate. The commuting corridor that bats were observed to use during dusk surveys, heading west and north from the Stables, will not be illuminated. The lighting design for the Stables will use low level, controlled lighting that follows guidance from Bats and Artificial Lighting at Night Guidance Note 08/23.
- A passive detector will be deployed within the structure and activity within and outside of the structure will be monitored.
- The landscape plan for the area to the west of the Stables, which currently contains the large galvanized steel shed, will include the planting of species valuable to bats, e.g. Oak, Spindle and Ivy and with associated woodland species e.g. Pine, Hazel, Holly, Dogwood and Guelder Rose to support pollinators and to improve the corridor for commuting and foraging bats. This area will not be illuminated.

A selection of 10 bat boxes will be erected within proximity to the Stables structure, including winter roost/hibernation boxes. These boxes will be selected and erected under the supervision of the project ecologist. While Lesser Horseshoe Bats will not use such structures, these bat boxes will be deployed as enhancement for other bat species that occur within the site. The design and type of bat box will be agreed in consultation with NPWS. There will be no artificial lighting installed resulting in light-spill in proximity to the bat boxes.

The Bat Loft and the bat boxes will be inspected, cleaned and maintained on an annual basis by a suitably qualified ecologist.

The East Wing

The Project Ecologist shall be present on site to supervise the removal of the roof and the initial demolition work of the East Wing Storage Room.

The Project Ecologist will provide a toolbox talk to the demolition personnel and will provide advice and support to the project team throughout.

A total of 10 no. Bat boxes suitable for a range of species including Soprano and Common Pipistrelle as well as Leisler's Bat, will be installed on the trees to the rear of the East Wing Hotel. These bat boxes will be in place prior to the commencement of works. The final type and design of these bat boxes will be agreed in consultation with NPWS. There will be no artificial lighting installed resulting in light-spill in proximity to the bat boxes. The bat boxes will be inspected, cleaned and maintained on an annual basis by a suitably qualified ecologist.

Works associated with the removal of the roof of the East Wing Storage Room will be carried out using soft-demolition i.e., works will be carried out slowly and by hand. Caution will be exercised during the removal of fascia (as well as roofing material).

In the event that any bats are discovered the ecologist will advise on the appropriate actions. If bats are found, all works will cease, until the Project Ecologist has been contacted, and the NPWS (as per licence conditions) are informed and the matter discussed and resolved. If necessary, a bat specialist with a handling licence will carefully remove for safe release away from the works area.

All conditions of the derogation licence will be fully implemented.

The Farm

The commencement of works, specifically in relation to the large, locked shed, will be carried out outside of the breeding period (late May to mid-August).

The Project Ecologist shall be present on site to supervise the removal of the corrugated roof, and initial demolition work of the large, locked shed including the internal room. The Project Ecologist will provide a toolbox talk to the demolition personnel and will provide advice and support to the project team throughout.

A total of 20 no. Bat boxes will be installed within the woodland area to the east of the site. These bat boxes are to be optimised for use by Common, Soprano Pipistrelle, Brown Long-eared Bat and other species such as Leisler's Bat, with final type and design agreed in consultation with NPWS. There will be no artificial lighting installed resulting in light-spill in proximity to the bat boxes. The bat boxes will be inspected, cleaned and maintained on an annual basis by a suitably qualified ecologist.

A bat emergence survey is to be carried out prior to works on the building commencing. Where it is noted that bats are roosting within a building, demolition must not proceed unless agreed mitigation measures relating to timing, exclusion, and re-location as necessary are in place.

As previously mentioned, it is understood that the roofs of the sheds in the Farm are coated with asbestos and will need careful removal by a licenced asbestos contractor under a formal plan of work. The slow and cautious removal and lowering of corrugated sheets, intact, that such work with asbestos requires aligns with bat-sensitive practice (soft demolition techniques) by minimising noise and vibration.

In the event that any bats are discovered the ecologist will advise on the appropriate actions. If bats are found, all works will cease, until the Project Ecologist has been contacted, and the NPWS (as per licence conditions) are informed and the matter discussed and resolved. If necessary, a bat specialist with a handling licence will carefully remove for safe release away from the works area.

All conditions of the derogation licence will be fully implemented.

Additional Mitigation Measures – The Courtyard

As previously discussed in relation to the Courtyard, bat calls were recorded by the passive detector deployed within the lean-to shed, although no signs of bat activity were recorded internally. Furthermore, the false roof overlooking the courtyard was not accessible as part of the building inspection for this area. Based on the condition of these structures (lighting in the shed, noise from plant for the false roof), it is considered unlikely that either structure provides roosting opportunities for bats.

On a precautionary basis, the demolition of these structures will be overseen by the Project Ecologist.

The Project Ecologist will provide a toolbox talk to the demolition personnel and will provide advice and support to the project team throughout.

Works associated with the removal of the roof of lean-to shed and the false roof will be carried out using soft-demolition i.e., works will be carried out slowly and by hand.

In the event that any bats are discovered the ecologist will advise on the appropriate actions. If bats are found, all works will cease, until the Project Ecologist has been contacted, and the NPWS (as per licence conditions) are informed and the matter discussed and resolved. If necessary, a bat specialist with a handling licence will carefully remove for safe release away from the works area.

Lighting

The following lighting design will apply the proposed development as a whole.

The design of lighting will follow the Bat Conservation Trust in partnership with the Institution for Lighting Professionals (ILP) Best Practice Guidance (BTC & ILP, 2018) on considering the impact on bats when designing lighting schemes. The following best practice measures will be included in the lighting design:

- Incorporate specialist bollard or low-level downward directional luminaires; Where low-level downward directional luminaires are not appropriate, installation of luminaires with warm white spectrum LEDs (<2700 Kelvin) to reduce blue light, with peak wavelengths higher than 550nm will be included.
- Particular attention will be given to the lighting design to ensure that no lighting is cast any of
- the roost structures to be retained/provided on site.
- In the case of the proposed sauna which is located on the island adjacent to Dromoland Lough pNHA, timed sensor-controlled lighting in the form of specialist bollards will be installed.
- Mounted luminaires will not tilt upward, with an upward light ratio of 0% and with good optical control;
- Incorporate cowls to lighting throughout the proposed development site to spill away from the site boundaries;
- Maximise the separation distance between light mast locations and vegetated features throughout the site.

Enhancement

Cathedine Night Roost

To strengthen roosting opportunities for the Lesser Horseshoe Bat at Dromoland, two Cathedine night roost structures, after the Vincent Wildlife Trust (See Appendix D), will be installed within the estate as enhancement measures for this species. The first structure will be located near a large pond, known as the Lily Pond, within an area of Broadleaved woodland. The second will be positioned on the edge of woodland to the east of the Farm. Both locations have been selected based on the presence of attractive habitat and robust commuting corridors that this species relies on. Both locations are unlit and function as natural dark zones. The location of these structures is shown in Appendix E.

The night roosts will be inspected, cleaned and maintained annually by a suitably qualified bat ecologist, with assistance from Dromoland Castle and Estate. Tasks will include: checking integrity of roof/felt and internal panels; clearing droppings; ensuring access slots remain unobstructed; trimming encroaching vegetation; and recording usage, with any notable findings to be reported to the NPWS.

Brick Cellar

An additional enhancement opportunity for Lesser horseshoe Bat is the refurbishment of the vaulted brick cellar immediately adjacent to the Cottage. This structure is partially underground and dark with a single door access, providing a stable, cool, humid environment with low air movement suitable for Lesser Horseshoe Bat as a roost site, particularly as a potential winter refuge. Additionally, the rough brickwork in the arched ceiling provides hanging surfaces. At present the space is used for bicycle and equipment storage, which limits its value for bats.

It is proposed to replace the existing door with a solid timber door incorporating a bespoke Lesser Horseshoe Bat entrance and an internal light baffle immediately behind the entrance to keep the interior dark and reduce draughts. The door will be locked with strict controlled access (ecologist/NPWS). The space will be cleared and plywood screening panels will be installed to subdivide the chamber and create graded microclimates. No internal lighting will be installed. A bat-sensitive external lighting design for the Cottage will prevent spill onto the cellar entrance. Refurbishment of the cellar will be undertaken after the Cottage works are complete, to avoid disturbance. The cellar will be cleaned and maintained annually by a suitably qualified bat ecologist with assistance from Dromoland Castle and Estate.

Figure 9. BAT LOFT INSERT HERE

Figure 10. INSERT MAP WITH MDO RLB CONFIRMATION

Conclusion

References

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

Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) Landscape conservation for Irish bats & species specific roosting characteristics. Bat Conservation Ireland.

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

Marnell, F., Kelleher, C & Mullen, E. (2022). Bat Mitigation Guidelines for Ireland. Version 2 Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland

NPWS & VWT (2022) Lesser Horseshoe Bat Species Action Plan 2022- 2026. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland

Appendix A

Results of eDNA Analysis (SureScreen Scientifics)

Folio No:	4083-2025
Purchase Order:	PO 0925
Contact:	Ecology Ireland Ltd
Issue Date:	22.09.2025
Received Date:	08.09.2025

SureScreen Scientifics

Biological Sample Analysis

Summary

Most biological materials (tissue, feces, hair, blood, etc.) contain small amounts of DNA from the organism of which it originated. Using molecular methods such as PCR (polymerase chain reaction) and DNA sequencing, SureScreen Scientifics are able to analyze an unknown sample to determine which species the sample originates from our methods are optimized for the detection of species including bats (over 92% of bat species worldwide can be identified including all 18 UK bat species), mammals; bees, wasps & hornets; birds; fish; plants (from roots, leaves, stem and even dried wood) and many more species.

Results

Lab ID	Site Name	OS Reference	Sample Type	Species Name	Match(%)
B5436	Castle Drain	R38728 70414	Dropping	Greater white-toothed shrew (Crocidura russula)	84.50
	Genetic Sequence ACATATCATAAATGTCTGGCTTCTGCCTCCCCCTTTCATTCTACTCGTAACTCCTGCCCATGTAGAAGCCGGAGCAG GAACAGGTTGAACTGTTTATCCCCCCCTTAGCTGGAAACCTTGCCCACGCAGGAGAGGTGGTGGCCTAGGAAACC TTGCACACGCAGGAGAAC				
B5437	Stables	R38963 70576	Bat Dropping	Lesser horseshoe bat (Rhinolophus hipposideros)	100.00
	Genetic Sequence TTGGAGGCTTTGGCAACTGACTGGTTCCCTTGATAATCGGTGCACCCGACATAGCATTCCCACGTATGAACAATAT AAGCTTCTGACTCCTACCCCCCTCTTTCCTACTTCTATTGGCCTCATCTATGGTTGAATCTGGTGCTGGAACCGGCT GAACTGTTTACCCCCCTTTAGCGGGAAACCTAGCACA				

Appendix B

Results of Bat Sonogram Analysis

BD01 - Inside the north building in the Stables structure, hanging from the rafters

Species	31 July – 13 August (13 Nights)	26 August – 17 September (Recording continuously for 22 Days)
Leisler's Bat	4	8
Lesser Horseshoe Bat	19	22
Soprano Pipistrelle	1	5
Pipistrelle Species 40kHz/50kHz	0	2
Noise	4	168

BD02 - Inside the south building in Stables structure, in the ceiling void of the linen storage area

Passive deployed from the 31st of July to the 13th of August (13 Nights). No species were recorded.

BD03 - Inside the north building in the Stables structure, in attic space above office

Species	13 August – 29 August (16 nights)
Common Pipistrelle	7
Leisler's Bat	50
Lesser Horseshoe Bat	11
Soprano Pipistrelle	26
Noise	42

BD04 - Inside the northwest corner of the Stables structure

Species	26 August – 05 September (Recording continuously for 10 Days)	17 September – 25 September (Recording continuously for 8 Days)
Lesser Horseshoe Bat	868	220
Soprano Pipistrelle	61	20
Pipistrelle Species 40kHz/50kHz	1	1
Noise	262	141

BD05 - The external roof of the East Wing

Species	31 July – 13 August (13 Nights)
Common Pipistrelle	121
Leisler's Bat	1682
Soprano Pipistrelle	3433
Noise	34

BD06 – Inside the East Wing 4th floor ceiling void

Species	31 July – 13 August (13 Nights)	26 August – 09 September (14 Nights)
Leisler's Bat	355	0
Soprano Pipistrelle	32	0

Species	31 July – 13 August (13 Nights)	26 August – 09 September (14 Nights)
Noise	129	0

BD07 – Inside the East Wing storage lean-to on the third floor

Species	13 August – 29 August (13 nights)	09 September – 17 September (8 Nights)	17 September – 25 September (8 Nights)
Leisler's Bat	8	1	24
Soprano Pipistrelle	3	526	488
Noise	7	168	185

BD08 - Inside ceiling void by Room 200

Passive deployed from the 31st of July to the 13th of August (13 Nights). No species were recorded.

BD09 - Outside on false roof of Room 200

Species	31 July – 13 August (13 Nights)
Common Pipistrelle	22
Leisler's Bat	748
Soprano Pipistrelle	118
Noise	612

BD10 - Lean-to wooden structure outside Room 200

Species	13 August – 26 August (13 Nights)
Leisler's Bat	18
Soprano Pipistrelle	40
Noise	102

BD11 - Basement Wine Cellar

Species	06 August – 13 August (7 Nights)	13 August – 29 August (16 Nights)	29 August – 17 September (19 Nights)
Leisler's Bat	0	0	40
Soprano Pipistrelle	0	0	12
Noise	0	9	477

BD12 - Basement staff area inside services cavity in the wall

Passive deployed from the 6th of August to the 29th of August (23 Nights). No species were recorded.

BD13 – Inside Castle Drain

Species	06 August – 13 August (7 Nights)	29 August – 03 September (5.5 Nights)
Common Pipistrelle	28	0
Leisler's Bat	656	34

Species	06 August – 13 August (7 Nights)	29 August – 03 September (5.5 Nights)
Lesser Horseshoe Bat	0	22
Soprano Pipistrelle	118	1
Pipistrelle Species 40kHz/50kHz	180	12
Noise	191	5011

BD14 – Club House (West)

Passive deployed from the 26th of August to the 9th of September (14 Nights). No species were recorded.

BD15 – Club House (East)

Passive deployed from the 26th of August to the 9th of September (14 Nights). No species were recorded.

BD16 – Stone shed between Club House and Cottage

Species	26 August – 09 September (14 Nights)
Pipistrelle Species 40kHz/50kHz	1
Noise	9

BD17 – Lean-to structure by cottage

Species	26 August – 09 September (14 Nights)
Pipistrelle Species 40kHz/50kHz	1
Noise	90

BD18 – Cottage Attic

Passive deployed from the 26th of August to the 9th of September (14 Nights). No species were recorded.

BD19 – Office space in the Brian Boru section of the hotel

Passive deployed from the 29th of August to the 17th of September (19 Nights). No species were recorded.

BD20 – Farm sheds

Species	29 August – 24 September (26 Nights)
Brown Long-eared Bat	584
Common Pipistrelle	22
Leisler's Bat	93
Myotis Sp.	12

Species	29 August – 24 September (26 Nights)
Soprano Pipistrelle	2526
Pipistrelle Species 40kHz/50kHz	12
Noise	3062

BD21 – Gate lodge to the west of the hotel

Passive deployed from the 29th of August to the 17th of September (19 Nights). No species were recorded.

BD22 – Treeline to the south of the hotel

Species	17 September – 25 September (8 Nights)
Common Pipistrelle	35
Leisler's Bat	335
Myotis Sp.	11
Soprano Pipistrelle	358
Pipistrelle Species 40kHz/50kHz	12
Noise	

BD23 – Island adjacent to Dromoland Lough pNHA

Species	17 September – 20 September (3.5 Nights)
Common Pipistrelle	29
Leisler's Bat	55
Myotis Sp.	9
Nathusius' pipistrelle	12
Soprano Pipistrelle	3500
Pipistrelle Species 40kHz/50kHz	133
Noise	169

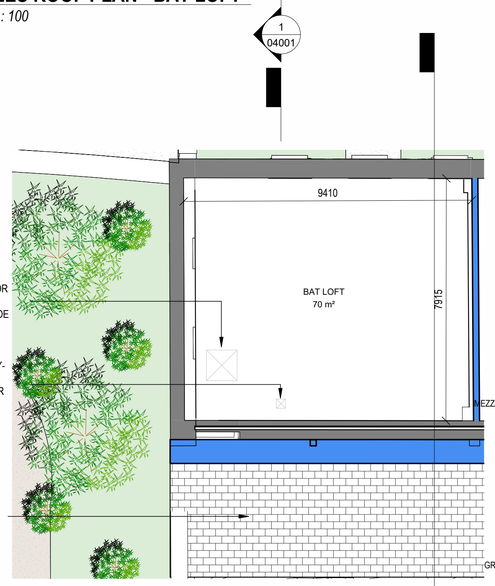
Appendix C

Proposed Bat Loft Design

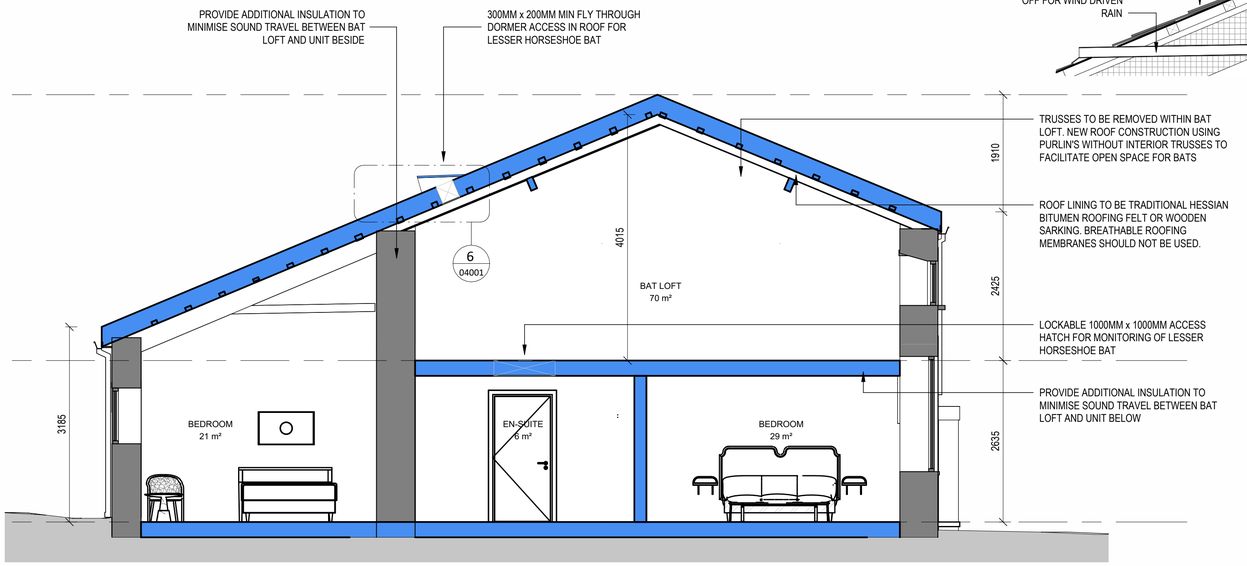
(1636-MDO-300-XX-DR-A-04001_BAT LOFT DESIGN)

A1

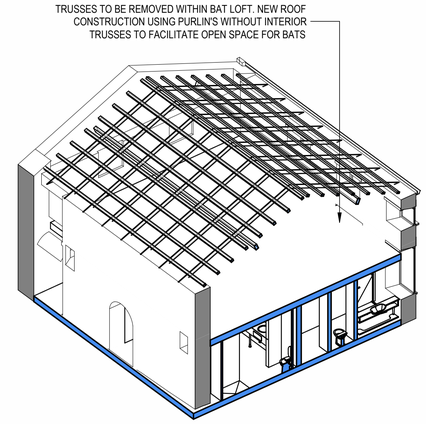
2 STABLES ROOF PLAN - BAT LOFT
Scale: 1 : 100



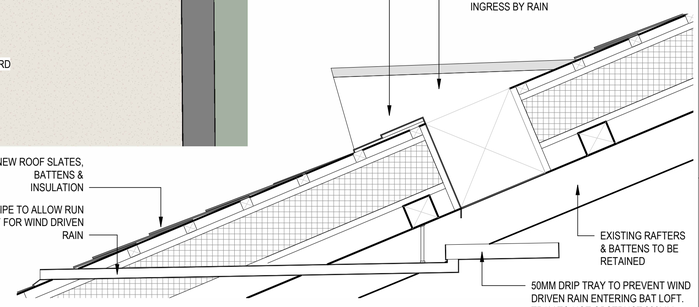
3 MEZZANINE FLOOR - BAT LOFT
1 : 100



1 PROPOSED SECTION - BAT LOFT
1 : 50



5 BAT LOFT AXONOMETRIC



6 DORMER ACCESS - DETAIL
1 : 10

4 STABLES - SITE PLAN
1 : 500

REV	DATE	DESCRIPTION	BY
1	08/09/2025	BAT ROOST ADDED	*LW*
2	26/09/2025	BAT ROOST - ISSUE 2	*CD*

PROPOSED WORKS

- PROPOSED WORKS
- EXISTING BUILDING
- LOW LEVEL CONTROLLED LIGHTING

ALL EXISTING WALLS TO BE REPOINTED AND MADE GOOD AS NECESSARY.
ALL EXISTING WINDOWS AND DOORS TO BE REPLACED WITH NEW UNITS.
EXISTING ROOF TO BE DEMOLISHED AND REPLACED WITH A NEW ROOF.

NORTH POINT

ONLY FOR REFERENCE WITH PLAN DRAWINGS

APPROVED BY

30/09/2025 09:13:56

Client:	Owner
Project:	Dromoland
Title:	BAT LOFT DESIGN
Stage:	PRELIMINARY
Status:	**S2** FOR INFORMATION
Sheet No.:	**1636-MDO-300-XX-DR-A-04001**
Scale As:	As indicated @ A1
Current Rev.:	2
Project No.:	1636

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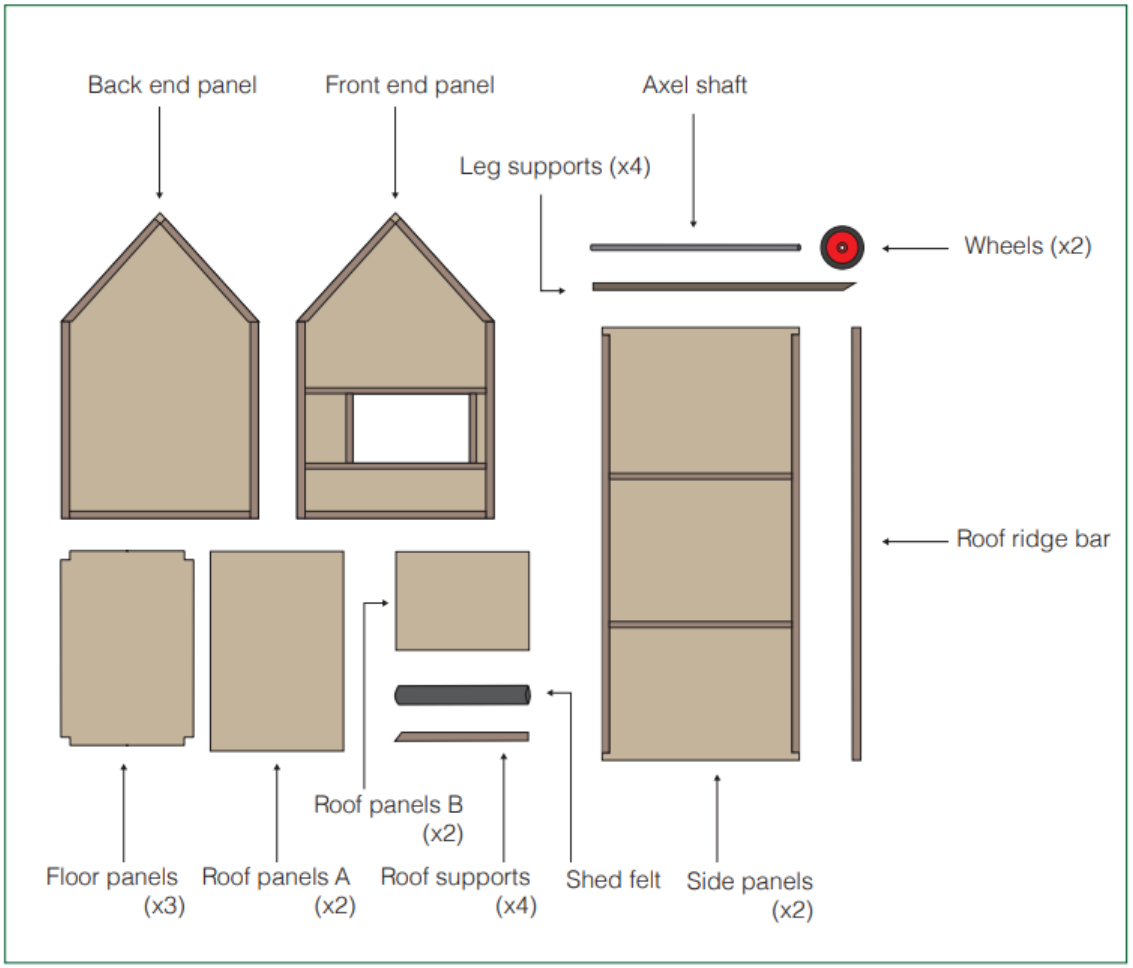
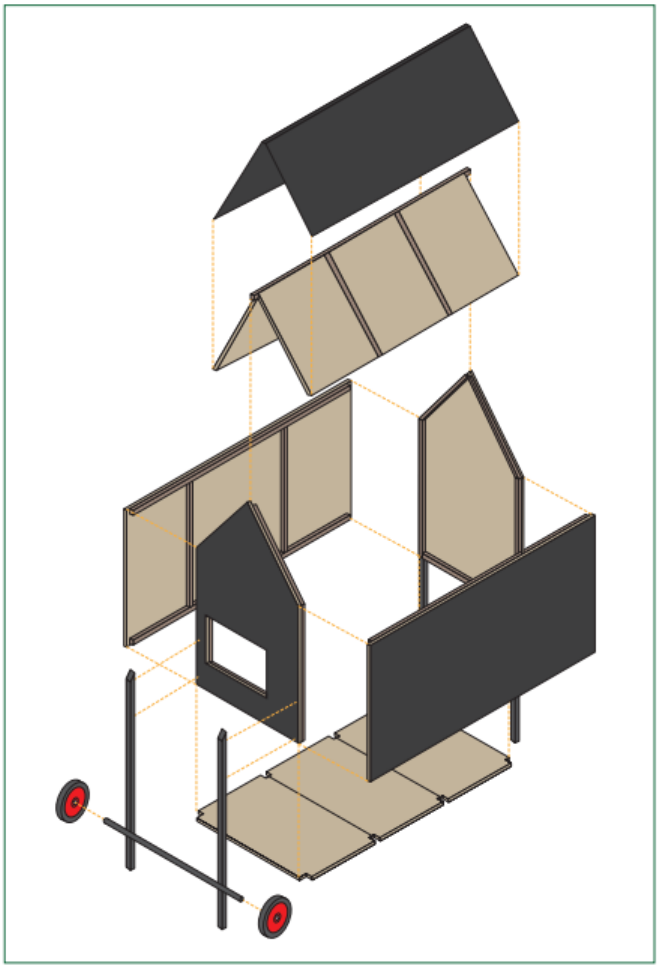
Appendix D

Cathedine Night Roost as published by the Vincent Wildlife Trust.

Cathedine Night Roost Design

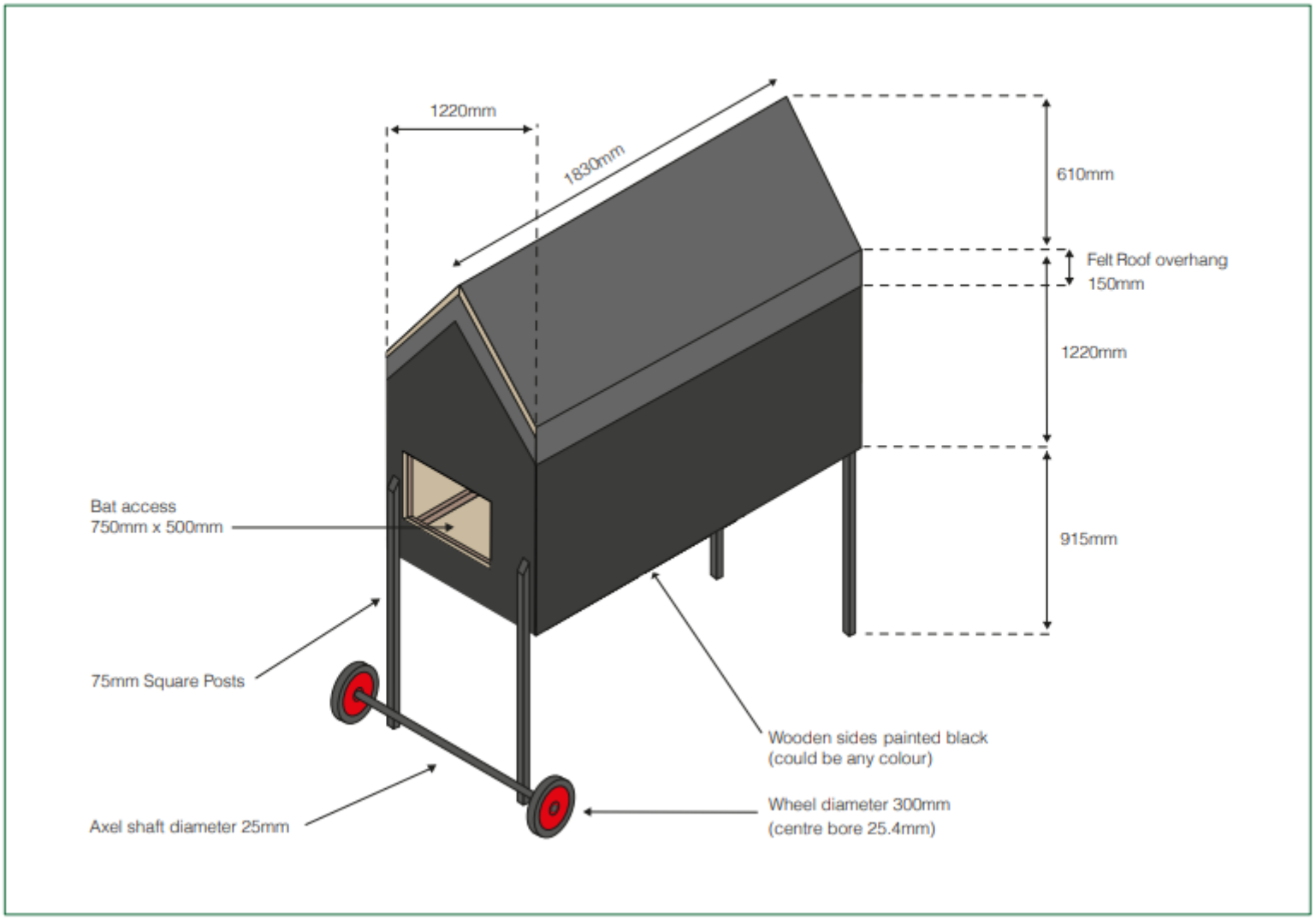
The Vincent Wildlife Trust





Cathedine Night Roost Design

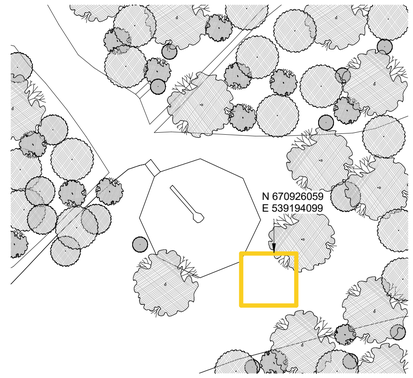
The Vincent Wildlife Trust

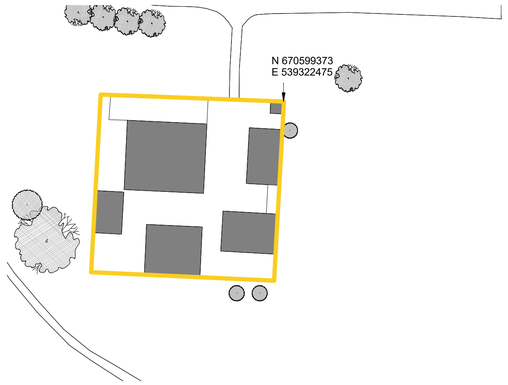


Appendix E

Cathedine Night Roost Location

A1





1 SITE PLAN - PLANNING BOUNDARIES

Scale: 1 : 1000

REV	DATE	DESCRIPTION	BY
P01	22/09/2025	PLANNING BOUNDARIES	CD
P02	03/10/2025	PLANNING APPLICATION BOUNDARIES UPDATED	CD

DROMOLAND BUILDINGS

PLANNING APPLICATION 1

PLANNING APPLICATION 2

NORTH POINT

ONLY FOR REFERENCE WITH PLAN DRAWINGS

APPROVED BY

03/10/2025 17:09:48

Client:	DROMOLAND CASTLE
Project:	DROMOLAND CASTLE
Title:	PLANNING BOUNDARIES - SITE PLAN
Stage:	PRELIMINARY
Status:	S2 FOR INFORMATION
Sheet No.:	1636-MDO-XX-XX-DR-A-01001
Scale As:	As indicated @ A1
Current Rev.:	P02
Project No.:	1636

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Autodesk Docs://1636 - Dromoland Castle /1636-MDO-500-ZZ-M3-A-0001_Site Model.rvt