



Bat Roost Survey

Westport Convent

Westport, Co. Mayo

DEC Ltd.

October 2024

Bat Survey Report

Westport Convent

Westport, Co. Mayo

Document Stage	Document Version	Prepared by
Final	1	Pat Doherty MSc, MCIEEM

Table of Contents

1.0 INTRODUCTION	1
1.1 BAT SURVEY: AIMS & OBJECTIVES	1
1.2 LEGISLATIVE CONTEXT	2
1.3 CONSERVATION STATUS	1
2.0 METHODOLOGY	1
2.1 DESK STUDY	1
2.2 BAT ROOST POTENTIAL OF STRUCTURES	2
2.3 DAYTIME INSPECTION	3
2.4 ROOST SURVEYS	4
2.4.1 MANUAL ROOST SURVEY	4
2.4.2 STATIC DETECTOR ROOST SURVEY	1
2.5 CONSERVATION EVALUATION	1
3.0 PROJECT DESCRIPTION	2
3.1 OVERVIEW	2
3.2 DESIGN STATEMENT	2
4.0 RESULTS	6
4.1 DESKTOP ASSESSMENT	6
4.2 SITE OVERVIEW	6
4.3 DAYTIME INSPECTION SURVEYS	6
4.4 BAT ROOST SURVEY RESULTS	9
4.4.1 14 TH /15 TH MAY 2024	9
4.4.2 16 TH JULY 2024	10
4.4.3 17 TH SEPTEMBER 2024	10
4.5 STATIC BAT DETECTOR MONITORING	11
4.5.1 MP1 – EASTERN CLASSROOM, FIRST FLOOR, SCHOOL HOUSE	11
4.5.2 MP2 – WESTERN CLASSROOM, FIRST FLOOR, SCHOOL HOUSE	11
4.6 SUMMAY OF BAT SURVEY RESULT	12
4.7 CONSERVATION SIGNIFICANCE	13

5.0	IMPACT ASSESSMENT	13
6.0	MITIGATION MEASURES	14
6.1	HIBERNATION ROOST	14
6.1.1	NEW HIBERNACULUM	16
6.1.2	PRE-WORKS SURVEY & TRANSLOCATION	19
6.2	MATERNITY/MATING ROOST	20
6.3	LIGHTING & LANDSCAPING	21
6.4	DEROGATION LICENCE & REQUIRED MEASURES	21
7.0	CONCLUSION	22
	REFERENCE	22
	APPENDIX 1 :PLATES	24



Plate 1: View of former school building from the northeast



Plate 2: View of north facing gable of convent, Annex 2 and old kitchen from left to right on image



Plate 3: north o



Plate 4: View of sloping ground to the north of the convent building



Plate 5: View of west to old kitchen and delapidated glass house



Plate 6: with bat

1.0 INTRODUCTION

Doherty Environmental Consultants (DEC) Ltd. has been commissioned by Jennings O’Donovan & Partners Ltd. on behalf of Mayo County Council to undertake a bat survey of structures at the Westport Convent site, Westport, Co. Mayo. The location of the convent site and the structures that were the subject of the bat surveys are shown on Figure 1.1.

1.1 BAT SURVEY: AIMS & OBJECTIVES

The primary aim of the bat surveys completed at the Westport Convent site was to establish the presence or absence of roosting bats at the structures on site and where present to identify the species of bats; estimate the number of bats roosting at the structures on site; and determine the bat roost type supported by the structure. Roost types have been defined by Collins et al. (2016) and are outlined in Table 1.1 below.

Table 1.1: Bat Roost Type

Roost Type	Definition
Day roost	A place where individual bats or small groups of males, rest or shelter in the daytime but are rarely found by night in the summer.
Night roost	A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single bat on occasion or it could be used regularly by the whole colony.
Feeding roost	A place where individual bats or a few bats rest or feed during the night but are rarely present by day.
Transitional/occasional roost	A place used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Swarming site	Where large numbers of males and females gather. Appear to be important mating sites.

Mating site	Where mating takes place.
Maternity roost	Where female bats give birth and raise their young to independence.
Hibernation roost	Where bats are found, either individually or in groups in the winter months. They have a constant cool temperature and humidity.
Satellite roost	An alternative roost found in close proximity to the main nursery colony and is used by a few individuals throughout the breeding season.

1.2 LEGISLATIVE CONTEXT

All bat species occurring in Ireland are protected under both European and National legislation. All species are European Protected Species, listed on *Annex IV* of the *EU Habitats Directive (92/43/EEC)*, transposed into Irish law under the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended. Regulation 51 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended afford protection to all bat species. Lesser horseshoe (*Rhinolophus hipposideros*) bats are afforded special protection under the *Habitats Directive* as an *Annex II* listed species. At the national level all species are protected under the *Wildlife Acts, as amended (1976 and 2000)*.

Section 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended provides the legislative basis whereby a derogation licence can be granted by the Minister that can derogated the requirement to comply with Regulation 51. Such a derogation licence can only be granted by the Minister under strict circumstances. These circumstances are set out in Regulation 54A(2)(a) – (e).



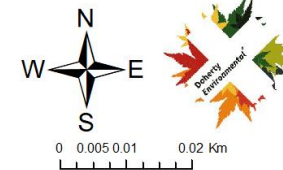
Westport Convent Site

Figure 1.1

Site Location & Overview

Name

-  Former School House
-  Annex MA1
-  Annex MA2
-  Old Kitchen
-  Greenhouse
-  Site Boundary



Drawn By	PD
Date	05/10/2024
Data Source	Bing

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

1.3 CONSERVATION STATUS

A total of 9 species of bats are resident in Ireland. The overall conservation status of each of these species, as assigned by the NPWS (2019) is as follows:

- Lesser horseshoe bats is inadequate and deteriorating;
- Common pipistrelle is favourable and improving
- Soprano pipistrelle is favourable and improving
- Nathusius pipistrelle is unknown
- Natterer's bat is favourable and stable
- Daubenton's bat is favourable and improving
- Whiskered bat is favourable and stable
- Brown long-eared bat is favourable and improving
- Leisler's bat is favourable and improving.

2.0 METHODOLOGY

2.1 DESK STUDY

A search of the National Biodiversity Data Centre (NBDC) for records of bat species previously identified within and in the vicinity of Westport Convent was completed in May 2024 and again in October 2024. All records held by the NBDC for an area of search within and surrounding the convent were downloaded from the NBDC. The extent of this area of search is shown on Figure 2.1.

Figure 2.1: Area of Search for Bat Species



In addition to the above a review of the online BCI Batlas was completed. A review of the bat landscape classification was also completed. A landscape conservation guide for Irish bat species was published in 2011 (Lundy et al., 2011). This study identified core areas of favourable habitat for bat species in Ireland. The publication was reviewed to identify the landscape suitability classification of the convent site for bat species.

2.2 BAT ROOST POTENTIAL OF STRUCTURES

Marnell et al. (2022) provide guidance on assessing the potential for structures to support roosting bats. This guidance identifies a variety of factors that increase or decrease the potential of a structure to function as a bat roost. These factors are outlined in Table 2.1 below.

Table 2.1: Factors Affecting the Probability of a building being used by bats in the summer, as described by Marnell et al. (2022)

<p>Increase Potential</p>	<p>Disused or little used; largely undisturbed</p> <p>Large roof void with unobstructed flying spaces</p> <p>Large dimension roof timbers with cracks, joints and holes</p> <p>Uneven roof covering with gaps, though not too draughty</p> <p>Entrances that bats can fly in through</p> <p>Hanging tiles or wood cladding, especially on south-facing walls</p> <p>Rural setting</p> <p>Close to woodland and/or water</p> <p>Pre-20th century or early 20th century construction</p> <p>Roof warmed by the sun</p>
<p>Decrease Potential</p>	<p>Urban setting or highly urbanised area with few feeding places</p> <p>Small or cluttered roof void</p> <p>Heavily disturbed</p> <p>Modern construction with few gaps around soffits or eaves</p> <p>Prefabricated with steel sheet materials</p> <p>Active industrial premises</p> <p>Roof shaded from the sun</p>

2.3 DAYTIME INSPECTION

A daytime inspection survey for the presence of roosting bats was completed at the site was completed during January 2024 by MKO consulting ecologist. The results of the January daytime inspections are set out in MKO (2024).

Daytime inspections of all accessible areas were completed prior to the commencement of each of the spring, summer and autumn surveys during the 2024 bat activity season. The methods used for the daytime surveys followed those set out by MKO, 2024.

2.4 ROOST SURVEYS

2.4.1 Manual Roost Survey

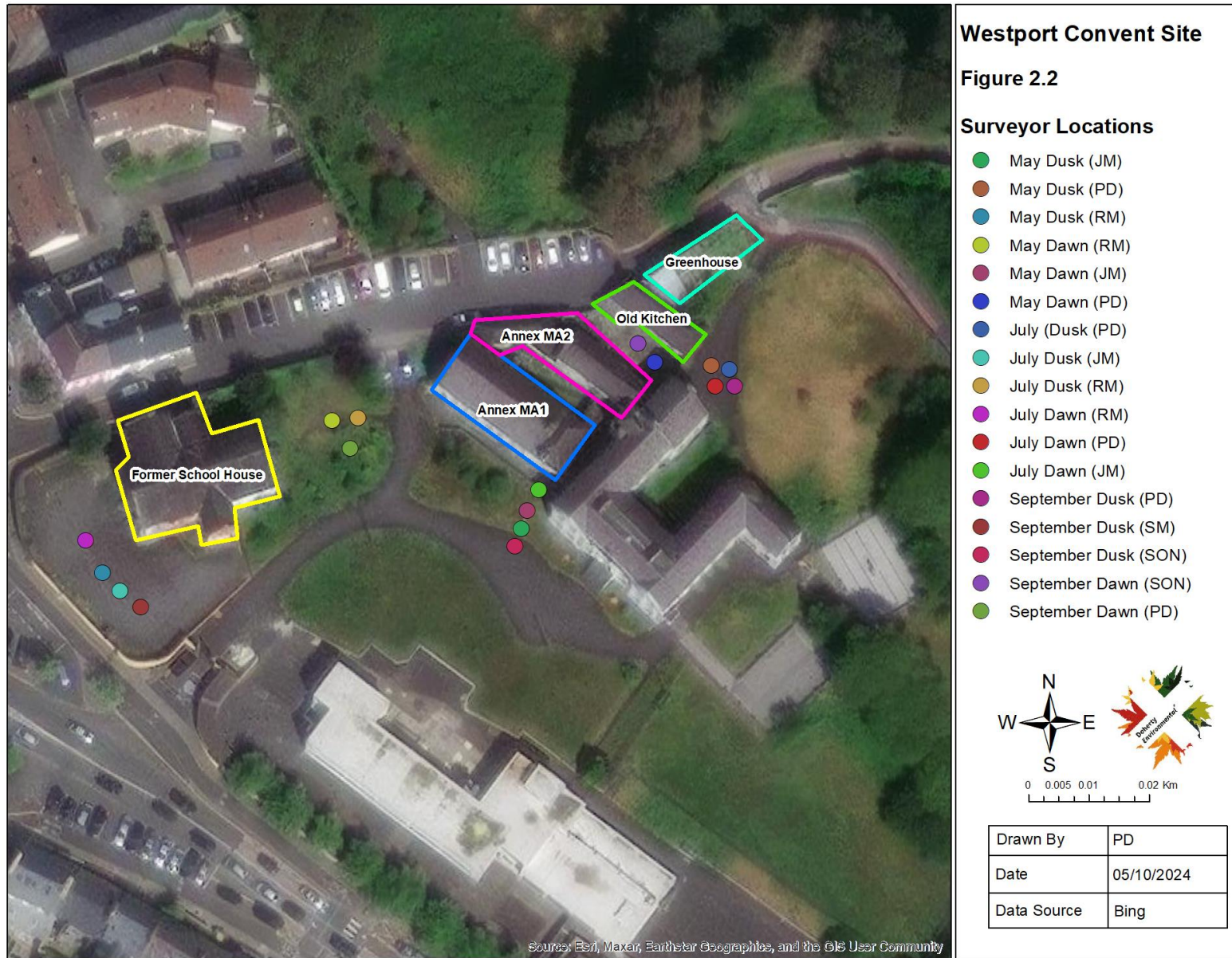
Three rounds of roost emergence and dawn re-entry surveys were completed at the site during the 2024 bat activity season. The surveys were completed on the 14th/15th May and 16th/17th July and 17th/18th September 2024.

During the May, June and July surveys 3 no. surveyors surveyed the site. Surveyors comprised Mr Pat Doherty (PD) (DEC Ltd.); Ms Ruth Minogue (RM) (MEC Ltd.); & Mr Jim Minogue (JM) (MEC Ltd.). The surveyors during September comprised PD, Sarah Moore (Jennings O'Donovan) and Siobhan O'Neill (SON).

All surveyors are experienced bat surveyors with a minimum of 5 years experience undertaking bat surveys. Pat, Ruth and Jim have all held licences for bats issued under the Wildlife Act and the Birds and Natural Habitats Regulations. All 5 surveyors hold degrees in Environmental and Ecological Sciences.

The position that each of the surveyors took up during the dusk emergence time and dawn re-entry time are shown on Figure 2.2. The surveys focused on the old kitchen and Annex 2 from the northeast facing elevation of the Annex 2; the southwest facing elevation of Annex 2; the east, northeast elevation of the former school building and the west, southwest facing elevation of the former school building.

The dusk surveys commenced 15 minutes prior to sunset and continued for 2 hours after sunset. The pre-dawn surveys commenced 90 minutes before sunrise and terminated 15 minutes after sunrise.



A constant watch of the buildings on site was undertaken during this time, with the high-powered LED torch lights focused on the potential access/egress points to the structures. The Echometer Touch bat detector was set to record throughout the emergence surveys. Conditions during the emergence and pre-dawn re-entry surveys were recorded.

Following the completion of the roost surveys foraging activity survey was completed by walking a transect within the convent site and well as along the greenway southwest to the Carrowbeg River. The foraging activity survey aimed to identify the species of bats foraging within the vicinity of the project site.

2.4.2 Static Detector Roost Survey

Two no. Wildlife Acoustics SM Mini Detector was installed within the first floor of the former school building. MP1 was installed at the southwestern classroom whilst the other, MP2 was installed in the northeastern classroom. The detectors were installed on the 16th July 2024. MP1 was left in-situ to monitor bat activity within the first floor of the school from the 16th July until the 14th August. MP2 was collected the following morning after installation on the 17th July. Both detectors were mounted vertically at a height of 2m. MP1 was positioned along the southwest facing cable wall with the microphone directed into the classroom to monitor for activity. MP2 was positioned at the northeastern gable wall with the microphone directed into the classroom.

2.5 CONSERVATION EVALUATION

A guideline for establishing the conservation significance of bat roosts is provided by Marnell et al. (2022). Figure 20 of the Marnell et al. (2022) sets out a sliding scale of conservation significance of bat roosts from low to high. For the purposes of this assessment this scale is used to determine the conservation significance of structures at the site in terms of their roost status.

3.0 PROJECT DESCRIPTION

3.1 OVERVIEW

This project, which entails the development of a new Public Library, Civic Offices, Community Facilities, and Public Realm/Civic Spaces, will be located entirely within the existing grounds of the historic former Sisters of Mercy Convent site on Altamont Street, in the centre of Westport town, County Mayo.

The Proposal:

The Regeneration of the former Convent site, will deliver new and improved public spaces for Westport, creating an iconic and welcoming focal point for community and civic activities and services. Specific outputs are:

- Restoration/extension of a derelict former primary school for a new Public Library and co-located Municipal District Offices.
- Restoration of decaying laundry buildings and Meals-on-Wheels to provide a new Community Groups Hub
- Creation of new landscaped Public Realm Area and official Western Greenway trailhead

3.2 DESIGN STATEMENT

- To create a library building that has a striking visual presence in Westport as an important public building, open, inviting and enjoyable to be inside, or gather outside.
- To create a multifunctional library that can also host important community and civic events, exhibitions and performances as well as all the latest library functions.
- To create a strong Civic centre by combining the Library with new Westport Civic Offices.
- To renovate, repurpose and extend the disused 1874 former St Patricks School building.

This is a unique opportunity for Westport.

- The benefits for the community include:
- Provision of much needed new and improved facilities and services in one central location
- Transformation of a highly visible town centre area of dereliction and decay
- A more accessible and user-friendly centre for a broad mix of civic, social, and community functions
- Greater community cohesion by creating a focal point for the entire community
- Facilities for a range of community groups
- Securing the future of Protected Structures of ‘Regional’ importance through restoration and appropriate re-use
- Increased footfall and vibrancy in an area in need of regeneration
- A catalyst for further investment in the area
- Cleaner environment through reduced car usage, more sustainable and efficient buildings

Former St Patricks (Industrial) School;

The design aims to restore internal and external building elements as much as is possible given the condition of the existing building. The high-ceilinged classrooms, lit by large beautifully proportioned Georgian windows on all sides, are perfect for library use. The exposed Queenpost trusses on the upper level present exciting architectural forms and superb spatial quality embellished with a glazed screen of significant proportions.

New Library Building (Oval extension); The design aims to create an open inviting public ‘gateway’ building that addresses all approach streets in its vicinity and to provide an entrance landing and navigation space. The glazed entrance elevation is directly on axis with Mill Street. A modern colonnaded façade will be the focal point in the long vista from ‘The Clock’, the heart of Westport town, and along Mill Street. The oval form clearly stands alone away from the former school building, connecting to it on one level only. Therefore, the School building stands alone in its original form.

Accessibility: The Oval will form the main entrance atrium from the public street and will be the principle navigation space providing vertical access to the main Library Floor (Ground Floor) via, a sweeping stair (designed to ambulant standards) and a passenger lift. Sanitary accommodation will be provided at various locations on each floor throughout. Two other passenger lifts will be provided – one in the link with the Civic Office and another in the existing north stairwell of the former schoolhouse.

Public Realm Area and Library Readers Garden:

The site is located close to the rear entrance of the town secondary schools and is close to the primary school. This is a popular gathering place for students before and after school and at lunch time.

The creation of a large green open area, with seat height steps to address natural level changes, will form an attractive meeting and civic space directly associated with the Library function. The design also proposes a south facing 'Reading Garden'. A combination of civic open space with the civic function of the library is designed to enhance the role of the Library as one of Westport's most important civic facilities, available for everybody to enjoy.

General Services, Mechanical & Electrical Design (Patrick McCaul Environmental Consulting Engineers)

The Library & Civic Office Buildings will be mechanically ventilated utilising a hybrid system:

- Ventilation - Mechanical extract (stale air) and fresh air delivery.
- Heating and Cooling – air conditioning with Air to Air Heat Pumps.

Natural ventilation will remain a part of the works specification. For example, high level openable glazing sections in the Oval Library extension building will be programmed to operate at night-time to provide night cooling thus reducing energy load on air-conditioning.

Community Annex Buildings:

- Ventilation - mechanical extract from wet rooms and Meals-on-Wheels kitchen

- Heating and cooling – air conditioning with Air-to-Air Heat Pumps.

Basement Plenum

The extant basement of the former school, and directly beneath the main Library wall, will be constructed as a ‘Plenum’. A pressurised void space to deliver fresh air through floor grilles in the ground floor. This shall achieve the requisite airtightness in accordance with the BSRIA(UK) Guide for Floor Plenum Airtightness (BG 65/2016). The maximum permissible leakage rate is 0.7 l/(s.m2)@50 Pa as verified by testing.

Cleanliness The presence of dirt and debris can present a fire risk, and can affect the efficiency and correct operation of the system and the health of building occupants. Sealers such as floor and wall paint are specified, but it is the Contractor’s responsibility to maintain the cleanliness of the plenum up until commissioning, induction and occupation of the building.

Building performance

The Library and Civic Office have achieved a provisional non-domestic BER rating of A2 (with solar PV) and Community Buildings received a provisional rating of A3.

The primary heating and cooling source is electric, with heat pumps located externally. Energy use will be off-set with the provision of Photo-voltaic panels located on the pitched roof of the Civic Office and flat roof of the Oval.

Provision (infrastructure) will be made under this contract for A.V in the Oval, the Creative Technologies Space, meetings rooms and the large Library Meeting Room with Fit-out by others. The sensory room will be enabled with multiple power and data to facilitate fit-out post construction contract. The Library will be served with a multitude of power and data points with public desks served via. floor boxes.

4.0 RESULTS

4.1 DESKTOP ASSESSMENT

The NBDC does not hold any historical records for bats within the area of search shown on Figure 2.1 above.

The review of the bat landscapes suitability mapping shows that the convent site lies within an area that has been classified at moderate-high habitat suitability for all bat species.

4.2 SITE OVERVIEW

The project site is located towards the east of Westport. Land cover to the south and west is dominated by buildings and artificial surfaces. Grassland, hedgerows and treelines along with scrub occur to the north of the convent site. The start of the Great Western Greenway is located to the northeast of the site. A vegetation corridor occurs along the northside of the walking route. High lux lighting is provided along this section of the greenway and the luminaires remain lit throughout the night, resulting in high levels of illumination along and adjacent to the route.

High value bat foraging habitat occurs to the east of the convent site along the Carrowbeg River and at Colonels Wood. There is connectivity in the form of linear corridors between the convent site and these areas of high value bat foraging habitat. The presence of lighting particularly along the former railway bridge crossing may detract from the quality of these corridors.

4.3 DAYTIME INSPECTION SURVEYS

Bat roost inspection surveys were completed by MKO consultant ecologist during January 2024 to assess potential use of the structures on site to be used by bats and provide recommendations for future survey work and mitigations.

As part of the inspection survey a daylight inspection of all accessible spaces involved in the proposed works was carried out. All buildings inspected are shown in Figure 1.2. The aim was to determine the presence of roosting bats, as well as compile information on actual and potential access points and

roosting locations. The searches comprised detailed inspections of the exteriors and interiors of the structures to look for evidence of bat use, including live and dead specimens, droppings, feeding remains, urine splashes, fur oil staining and noises.

The exterior of each of the buildings was inspected from ground level. The search included the ground, accessible windowsills, walls, eaves, roof slates, gutters, downspouts and the roof ridge. A systematic search of all accessible interiors was also undertaken. Searches were carried out with the aid of binoculars, torches, and a ladder and focused on walls, floors, roof beams, windowsills, lintels, shelves, tops of large equipment and furniture, etc. An endoscope was utilised during the inspection to search in gaps and cracks of walls, wood panelling and stonework.

A walkover of the study area was carried out on the same day. The landscape features on the site were visually assessed for potential use as bat roosting habitats and commuting/foraging habitats using a protocol set out in BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.) (Collins, 2016). The aim of the survey was to identify suitable habitats within the site to guide further survey efforts. No trees were found on site and none were assessed.

During the inspection survey multiple potential access points including tile gaps throughout the roof, within the eaves and via the flashing along gutters. Most of the windows on the house have been broken and would allow bats to access the house to roost internally.

The two-storey main building includes a separate attic space and separate basement spaces. The attic was not accessible for the survey as the ceiling entrance point was located too high for safe ladder access. The two main floors of the school, the boiler room and the basement coal store were surveyed in full.

Within the ground floor of the former school building evidence of bats was observed underneath the stairwell 01, classroom 01 and the female WC's. Accumulation of recent droppings and evidence of feeding remains were found in each of these rooms. Further evidence of bats in the form of feeding remains were discovered on stairwell/ The holes on the walls of the stairwell were examined with an endoscope and could potentially support roosting bats. However, no evidence of roosting was found. There were also recent scattered droppings discovered on the windowsills of both windows on the stairwell. Droppings were also observed during the activity daytime surveys along with prey remains.

On the first floor bat droppings were observed in 2 of the five classrooms at the building.

The former school has a basement that consists of temporary hangar coal store, boiler room and void space. During the January inspection survey at least 5 no. lesser horseshoe bats were found to be hibernating within the basement. Given the confirmed status of the basement as a roost site, the basement was not entered or surveyed during the activity season surveys between May and September.

The second structure located on the site, labelled MA1 is a two storey building that is currently used as a charity shop. No evidence of bat roosting or bat activity was recorded within the first or second floor of this building during the inspection survey. The attic of this structure was also inspected and no evidence of its use as a roost site by bats was recorded. During the activity season surveys this building was again inspected. No evidence indicating the presence of bats was observed in the ground and first floor. Access to the attic was not gained during the activity season due to locked doors and an absence of a key to the rooms where the hatch is located.

The third structure on site (labelled MA2) is a two-storey building with two separate attic spaces. No evidence of bat activity was recorded in the ground floor. In the western store room of this building a small number of bat droppings were found within one of the cupboards, indicating likely opportunistic use. On the first-floor bat droppings were observed in the bathroom, on the floor next to the toilet and in the sink. These first floor rooms have high daytime light levels. The attic space to this building was not inspected for health and safety concerns and no evidence of bats was observed from a visual inspection of the attic from the hatch location. Access to MA2 was not gained during the activity season surveys due to the absence of keys providing access to the building.

The fourth structure on site is the old kitchen. Scattered droppings were found on a shelf in the storeroom of the kitchen. The storeroom is dark and presents a hole in the ceiling which leads into a separate attic space, not connected to the attic above the old kitchen. No access into this space was possible for inspection. Furniture and peeling plaster cover coming off the wall were checked for evidence of bats. A hole was cut into the northern attic space to assess its potential for roosting; however, this provided no access into the main space above the main room, which was not inspected. The old kitchen was again inspected during the activity season surveys. Droppings were noted on surfaces within the kitchen. No droppings or evidence of bats were noted under the hole providing

access to the northern attic space. Based on the findings of the inspection survey it was concluded that the main floor space is likely to be utilised opportunistically by bats.

The fifth and final structure on site is the greenhouse. The structure is derelict, only the wooden structure remains with few pieces of glass on the top. No evidence indicating the use of this structure by bats was found.

In addition to these structures the masonry stone wall along Mill Road was also inspected for the signs of bat roosting and no evidence of their presence or use of the wall for roosting was found.

Each of the structures were evaluated for their potential to function as bat roosts and these summarised as follows:

Former school evaluated to be of High Roost Potential

Annex 1 (MA1) evaluated to be of high Roost Potential

Annex 2 (MA2) evaluated to be of Negligible to high Roost Potential

The Old Kitchen evaluated to be of High Roost Potential

Green House evaluated to be of Negligible to Low Potential

4.4 BAT ROOST SURVEY RESULTS

4.4.1 14th/15th May 2024

Conditions during the roost emergence survey were ideal for bat surveys and activity. Temperatures were 17°C at sunset and remained warm throughout the survey. Conditions were calm and dry throughout. Cloud cover was medium at OKTA 6.

No bats were recorded emerging from either the former school, Annex 1, Annex 2 or the old kitchen during the roost emergence surveys completed on the 14th May.

Seven no. Soprano pipistrelle were observed emerging from the northwest facing elevation of the main convent building adjacent to the site during the emergence survey. The bats emerged for the area of the roof adjacent to the chimney stack.

Two no. lesser horseshoe bats bat passes were detected and 1 no. lesser horseshoe bats was observed flying along the north-eastern elevation of the main convent building.

Overall bat activity was low during the emergence survey.

During the pre-dawn survey no swarming by bats was identified and very low levels of activity were recorded. No bats were observed entering the 4 no. structures that were targeted during the surveys. No lesser horseshoe bat activity was detected or observed during the pre-dawn survey.

4.4.2 16th July 2024

Conditions during the roost emergence survey were ideal for bat surveys and activity. Temperatures were 17°C at sunset and remained at this temperature throughout the survey. Conditions were calm and dry throughout. Cloud cover was medium at OKTA 4.

No bats were recorded emerging from either the former school, Annex 1, Annex 2 or the old kitchen during the roost emergence surveys completed on the 17th July.

Bat activity during the emergence survey was very low with only small numbers of Soprano pipistrelle, Common pipistrelle and Leisler's bat passes being visually recorded and detected flying generally through the site between the former school and the Annex buildings and to the east of the old kitchen.

4.4.3 17th September 2024

Conditions during the roost emergence survey were ideal for bat surveys and activity. Temperatures were 14°C at sunset and remained at this temperature throughout the survey. Conditions were calm and dry throughout. Cloud cover was medium at OKTA 6.

No bats were recorded emerging from school building during the roost emergence surveys completed on the 17th September.

Bat activity during the emergence survey was very low with only small numbers of Soprano pipistrelle pipistrelle bat passes being visually recorded and detected. Two lesser horseshoe bats were visually observed flying low along the northeast facing side of the convent building, similar to the May 2024 emergence survey. Later 1 no. lesser horseshoe bat was observed flying from near the northeast elevation of the main convent building in an easterly direction through the scrub and the grassland habitat at the northeast of the convent site.

Bat activity during the pre-dawn re-entry survey was low with only small numbers of Common pipistrelle passes (6 in total), Natterer's bat passes (3 in total), Leisler's bat (2 in total) and lesser horseshoe bats (1 in total) being detected during the survey. None of these bats were observed swarming at structures on site or entering these structures.

4.5 STATIC BAT DETECTOR MONITORING

4.5.1 MP1 – Eastern Classroom, First Floor, School House

MP1 was positioned in the eastern classroom on the first floor of the school on the night of the 17th July and was set to record bat activity from 30 minutes prior to sunrise until 30 minutes after sunrise on the 18th July. No bat activity was recorded by detector MP1 whilst recording within the school building on the night of the 17th July.

4.5.2 MP2 – Western Classroom, First Floor, School House

The results of monitoring within the first floor of the school building are set out in Table 3.1 below. A total of 30 nights of monitoring was completed in the school between July and August. A total of 55 bat passes were recorded during this time within the school building. The activity was dominated by Soprano pipistrelle. Brown long-eared bat, Leisler's bat, lesser horseshoe bat and Common pipistrelle were also recorded at very low levels.

The results indicate the presence of low activity within the building during the summer months.

Table 4.1: Results of Monitoring at MP2

Date	MYOSPP	NYCLEI	PIP NAT	PIPPIP	PIPPYG	PLEAUR	RHIHIP
------	--------	--------	---------	--------	--------	--------	--------

20240716	0	1	0	1	3	0	0
20240717	0	1	0	0	5	0	0
20240718	0	1	0	0	0	0	0
20240719	0	0	0	0	0	0	0
20240720	0	0	0	0	0	0	0
20240721	0	0	0	0	0	0	0
20240722	0	0	0	0	0	0	0
20240723	0	0	0	0	4	0	0
20240724	0	0	0	0	0	0	0
20240725	0	0	0	0	0	0	0
20240726	0	0	0	0	2	0	0
20240727	0	0	0	0	1	0	0
20240728	0	0	0	0	2	0	0
20240729	0	0	0	0	0	1	0
20240730	0	0	0	0	1	0	0
20240731	0	0	0	0	3	0	0
20240801	0	0	0	0	1	0	0
20240802	0	0	0	0	0	0	0
20240803	0	0	0	0	1	0	0
20240804	0	0	0	0	0	0	1
20240805	0	0	0	0	2	1	0
20240806	0	0	0	0	0	0	0
20240807	0	0	0	0	2	2	0
20240808	0	1	0	0	0	0	0
20240809	0	0	0	0	1	0	1
20240810	0	0	0	0	7	4	0
20240811	0	0	0	0	0	0	0
20240812	0	0	0	0	0	1	0
20240813	0	0	0	0	2	1	1
20240814	0	0	0	0	0	0	0
Total	0	4	0	1	37	10	3

4.6 SUMMAY OF BAT SURVEY RESULT

The results of the inspection surveys and roost emergence surveys indicate that:

- Lesser horseshoe bats are hibernating in the basement of the former school house and using this as a hibernation site.
- Lesser horseshoe bats are using the school house as a autumn swarming and mating site and are also likely to use the basement as a roost site during autumn period.
- The number of lesser horseshoe bats observed during the winter season inspection survey and the autumn surveys were low with 5 no. being observed during winter and 4 no. being observed during autumn.
- No bats were observed using any of the structures on site as summer maternity roosts or day/night roosts.
- Bat enter the structures to opportunistically forage, particularly Soprano pipistrelle and to a lesser extent brown long-eared bat.

4.7 CONSERVATION SIGNIFICANCE

Based on the findings of the surveys completed at the project site, as detailed and summarised in Section 3 above, and in accordance with Figure 20 of Marnell et al. (2022) the roost status of the convent structures that are the subject of this assessment are representative of structures supporting a “hibernation site for small numbers of common/rarer species”. Based on the sliding scale of conservation significance outlined by Marnell et al (2022) on their Figure 20, the former school is representative of a structure of Moderate Conservation Significance. Based on the findings of the surveys completed for the other structure, these are considered to be best representative of a roost that supports “feeding perches for common/rarer species”, with no evidence being gathered indicating that these structures support roosting bats. ”. Based on the sliding scale of conservation significance outlined by Marnell et al (2022) Annex 1, Annex 2 and the old kitchen are representative of structures of Low Conservation Significance.

5.0 IMPACT ASSESSMENT

The potential impact of the refurbishment of the structures at the convent site will have the potential to result in disturbance to the identified hibernation site and mating site at the former school building.

The assessment of impact focuses on the potential for the proposed project to result in disturbance to these two bat roost features.

Marnell et al. (2022) provide a guide for ranking the scale of impact to bat populations that can arise as a result of the loss or disturbance of bat roosts. The guidelines do provides a scale of impact with respect to minor hibernation roosts. Based on these guidelines and the scale of impacts described therein the destruction or isolation caused by fragmentation of the hibernation roost at the former school building will represent an impact of high significance; the partial destruction or modification of the hibernation roost or any post-development interference will represent an impact of medium significance. Temporary disturbance to the hibernation roost outside the hibernation season and/or temporary destruction and then reinstatement outside the hibernation season will represent a low impact.

The destruction of a mating site, as observed in the former school building will represent an impact of moderate significance, whilst other activities such as modified management, temporary disturbance, post-development interference of a mating site will represent an impact of low significance.

6.0 MITIGATION MEASURES

6.1 HIBERNATION ROOST

Figure 20 of the Marnell et al. (2022) guidelines set out mitigation measures required for impacts to structures that function as a “hibernation site for small no. of common/rarer species”. The mitigation measures for such impacts set out the following requirement:

“Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred”.

In order to satisfy this recommendation, the following measures will be implemented for any works proposed for the former school building:

Works will be completed at the existing basement during the winter of 2025. Works will commence on site during January 2025. The works to be completed between January and mi-February will be the

establishment of the new hibernaculum at the northeast of the site and roof works to the former school. No works will be undertaken at the former school basement until the new hibernaculum is in place and completed. Works at the basement are scheduled to commence from late-January/mid-February 2025, after the new hibernaculum is in place.

It will not be possible to provide roosting opportunities to the main basement area that will contain the plenum as no external access can be provided as part of its use as a plenum. In order to provide a suitable opportunity for hibernation roosting in the vicinity of the existing basement, in addition to the new hibernaculum to be provided as described in Section 6.1.1 below, access to the water tank room will be provided. The location of the water tank room is shown in green colour on Figure 6.1 below. Lesser horseshoe bat flight access to the water tank room will be maintained through the provision of a 300mm wide by 200mm high, situated a minimum height of 1.4m above ground. Where feasible the ceiling of the water tank room will be cladded in original ceiling material to be taken from the existing basement hibernaculum. Otherwise rough timber sarking will be provided for the ceiling as a substrate from which bats can roost. The water tank room will be a sealed unlit room that will provide a suitable dark environment for hibernating bats. The access point to the water tank room will be kept free of night time lighting.

During the operation phase of the buildings access to the water tank room shall be restricted during the hibernating season encompassing the months of October to end of March. Access to the water tank room during these months will only be permitted on an emergency basis and in consultation with the local NPWS ranger.

No alterations to the water tank room shall be made post refurbishment works in the absence of a derogation licence permitting such works,

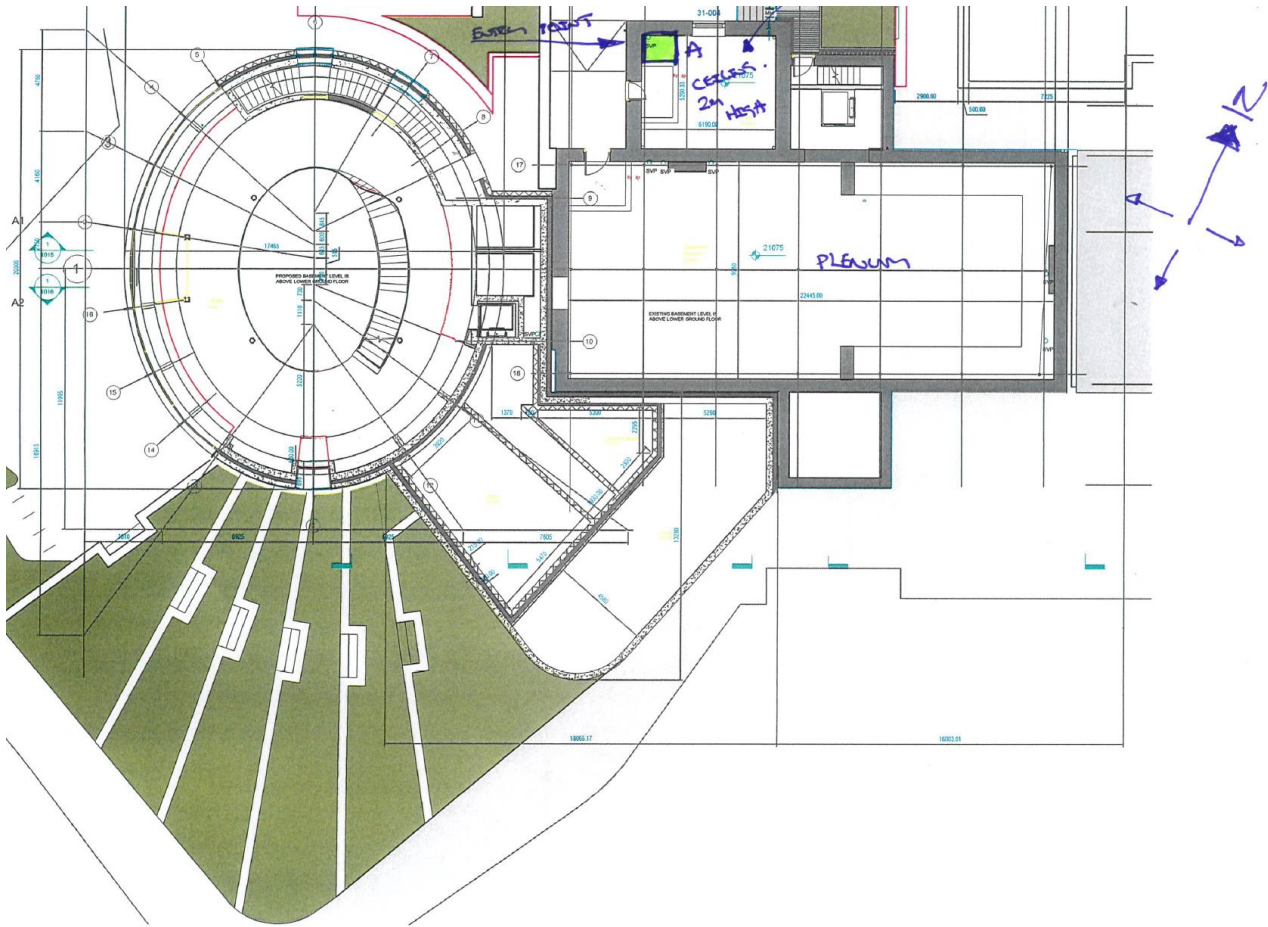


Figure 6.1: View of Water Tank Room Location (in Green) and Access Point (Labelled)

6.1.1 New Hibernaculum

In addition to the above provisions for the basement, as referenced above a new hibernaculum will be provided within the site. The hibernaculum will be located at the northwest of the site, an indicative location is shown on Figure 6.2, with the final location to be agreed on site between Mayo County Council and local NPWS staff. At the indicative location and immediate surrounding area ground levels slope from northeast to southwest. The design of the new bat house will follow the design of the Flahive lesser horseshoe bat hibernaculum installed by the NPWS at Glengarriff, Co. Cork. Plate 6.1 to 6.3 provide images of the Flahive hibernaculum (source: Schofield et al., 2022).

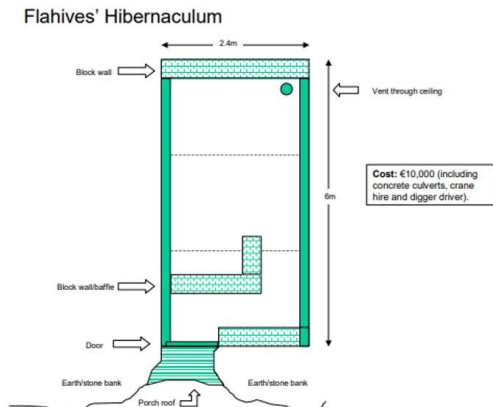


Plate 6.1: Plan view of Flahive Hibernaculum



Plate 6.2: View of Flahive Hibernaculum under construction

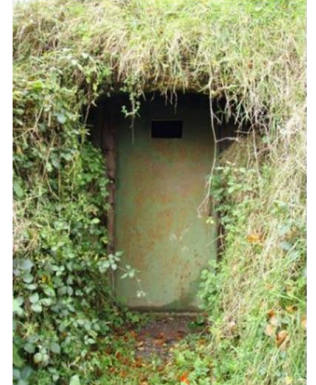
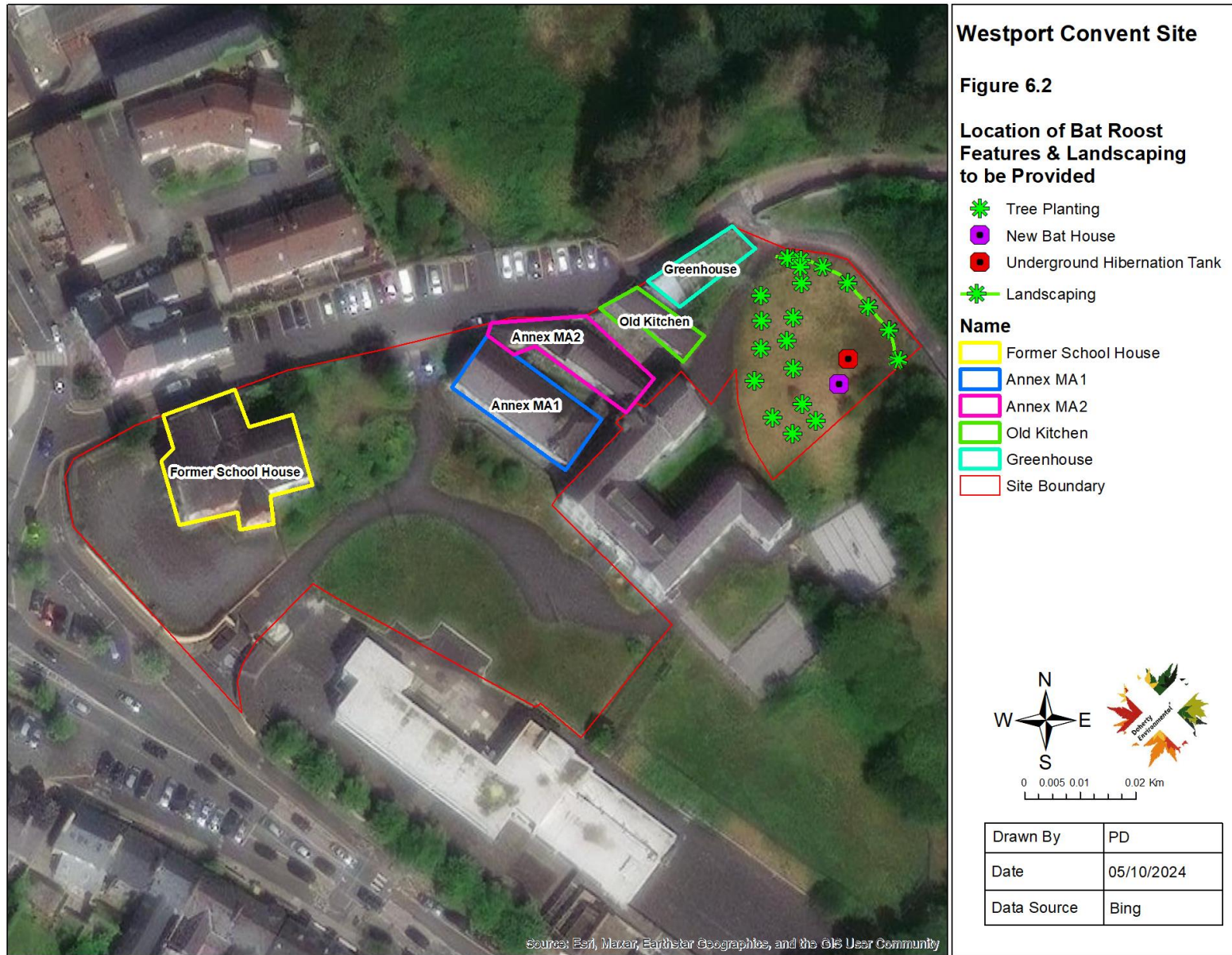


Plate 6.3: View of Finished Door Entrance to Flahive Hibernaculum

The new hibernaculum design will consist of a buried, pre-cast concrete septic tank. Figure 6.3 below provided a sketch diagram of the new hibernaculum at the northeast area of the site.

Timber floor joists and floor-boards removed as part of the school stripping out works will be used to clad the underside of the tank lid so that a suitable substrate is provided to support roosting lesser horseshoe bats. Minimal internal dimensions of the hibernaculum will be min. 2.5m high x 2.5m wide x 2m deep. Opening shall be 300 x 200mm and will be positioned at a minimum height of 1.4m above exterior ground level. The entrance opening will be screened with baffles on the interior to maintain dark condition within the hibernaculum. Exclusion zone to be erected around the box with an 868 mesh fence. The indicative location of the new hibernaculum as shown on Figure 6.1 will be kept free from any new artificial night time lighting.



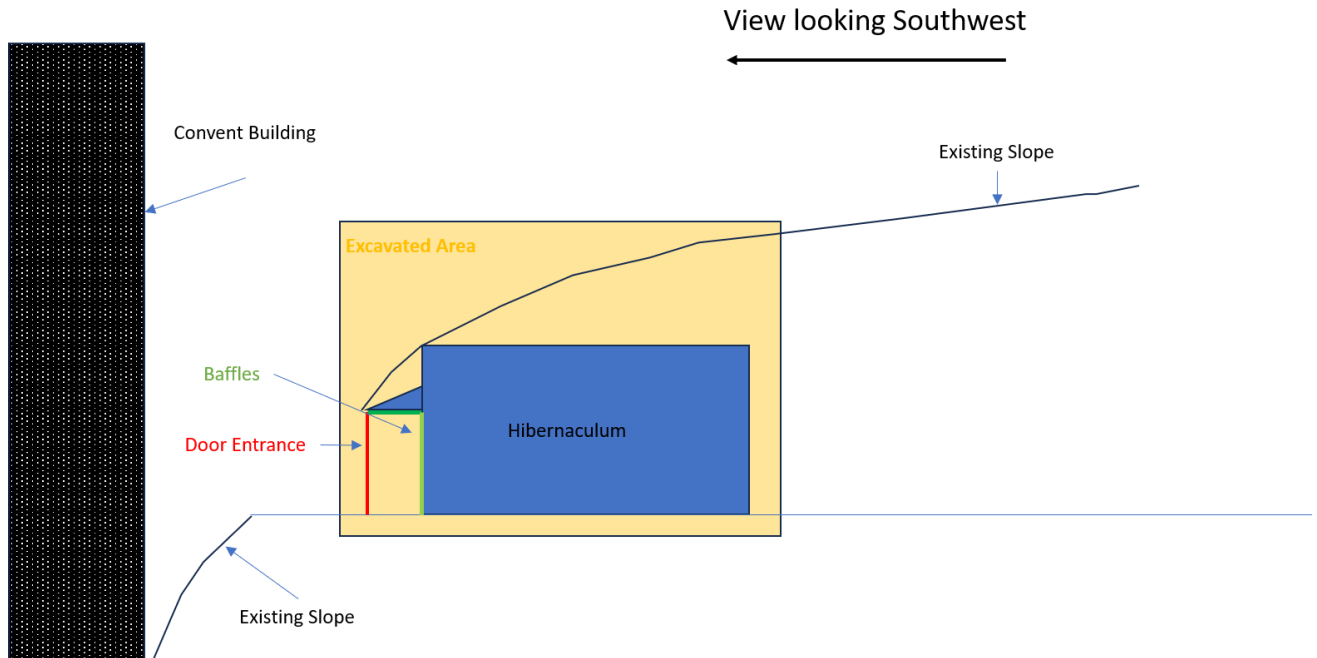


Figure 6.2: Sketch diagram of the new hibernaculum at the northeast of the site to the northeast of the main convent building

6.1.2 Pre-Works Survey & Translocation

Prior to the commencement of works at the site in January 2025 a survey of the basement will be completed. The survey will be completed by NPWS rangers and will record the number of lesser horseshoe bats present at the basement. The survey will be completed during December 2024.

An additional survey of the basement will be completed during the first half of February 2025, prior to the commencement of basement works in mid-February 2025, and subsequent to the completion of the new hibernaculum at the northwest of the site. This survey will again be completed by NPWS, in conjunction with Mayo County Council and DEC Ltd. In the event that hibernating bats are present, they will be translocated, under licence to the new hibernaculum. Bats will be captured in a mist net bag, transferred to a ventilated, light-proof container and immediately moved to the new hibernaculum.

6.2 MATERNITY/MATING ROOST

Figure 20 of the Marnell et al. (2022) guidelines does not provide a specific list of mitigation measures for the mating sites. It is further noted that given lesser horseshoe bats social and mating activity was observed within the ground floor class rooms of the former school building, in the context of the proposed development it will not be possible to retain this indoor space for such lesser horseshoe bats within the building.

In order to provide suitable space for such activity as well as enhancing the potential for the former school house to function as a mating roost site for lesser horseshoe bats, it is proposed to provide a loft space within the building that will provide suitable roost habitat for lesser horseshoe bats during the maternity season and well as the mating season. The loft space will be provided at the south facing aspect of the library building. The loft space shall have a void height of 2.8m and a void length and width of 5m. An insulated hot box will be provided within the loft space under the south facing roof. Access to the loft shall be provided by a dormer access point in the roof approximately 30cm wide by 20cm high.

In addition to the provision of the loft roost the following roosting habitat shall also be provided as part of the site refurbishment works:

- Erection of wall mounted bat boxes for crevice dwelling bats.
- Tree mounted bat boxes.
- Erection of a free-standing bat house using existing timbers and slate roofing material. Timbers can be reused floor joists taken from the extant building for example. This will be designed as per the specifications for a Cathedine Night Roost published by the Vincent Wildlife Trust (available at <https://www.vincentwildlife.ie/wp-content/uploads/2016/01/lesser-horseshoe-night-roost-design.pdf>). The Cathedine Night Roost will be placed in the northeast corner of the site, where it will be sheltered by boundary vegetation to be provided as part of the site landscaping. The indicative location of where the new bat house will be provided is shown on Figure 6.2. This is to be situated at a location of the site where no new artificial lighting will be provided and at a location where new landscaping will be provided to tie in with existing woodland habitat at the northeastern boundary of the site. As such the position will be located

adjacent to an existing vegetated corridor and at a location where lesser horseshoe bats were observed during field surveys in flight, moving east from this area.

- Maintenance of the new bat house will be managed by Mayo County Council. Maintenance works to the new bat house will only be undertaken during the winter months between December and February inclusive.
- As an additional requirement to this design baffles will be placed on the four no. square posts below the floor of the roost. The baffles will be provided to prevent predators accessing the roost.
- Incorporation of bat tubes into external leaf of cavity wall.
- Formation of crevices in existing stone walls where remedial work is planned i.e. lean-to wall.

6.3 LIGHTING & LANDSCAPING

All public lighting will be designed in accordance with the Institute of Lighting Professionals guidance document Bats and Artificial Lighting at Night Guidance Note 08/23.

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.

Landscaping will be provided at the northwest of the site that will aim to provide lighting screening from public lighting to be provided as part of the site renovation and also to provide screening from the existing lighting along the greenway to the east. Figure 6.1 shows the proposed landscaping to be provided. It is also recommended that remedial cowling of the luminaires along the greenway to the east of the site is undertaken to minimise lighting spill from these luminaires into the site and surrounding area.

6.4 DEROGATION LICENCE & REQUIRED MEASURES

Given that former school building has been confirmed to function as hibernation site for lesser horseshoe bats and a mating site for lesser horseshoe bats any works to be undertaken at this

building can only be progressed under a Derogation Licence issued under Regulation 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended.

7.0 CONCLUSION

The former school building has been identified as hibernation site for a small number of lesser horseshoe bats. The Annex 1, Annex 2 and the old kitchen have not been identified as a bat roost.

The conservation significance of hibernation roost is Moderate as per Marnell et al. (2022).

Any refurbishment of the basement will have the potential to result in the loss of the roost and disturbance to a small number of lesser horseshoe bats.

Mitigation measures have been set out to avoid the loss of the roost and with the implementation of these measures the hibernation roost will continue to be provided.

Any works to be completed at the former school building will be required to be done so under a Derogation Licence issued under Regulation 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended. This report and the mitigation measures set out therein are provided to demonstrate that proposed refurbishment of the basement will not be detrimental to the maintenance of the local lesser horseshoe bat population at favourable conservation status. It is intended that this report will be provided in support of an application to the Minister for a derogation licence under Regulation 54 of the *European Communities (Birds and Natural Habitats) Regulations 2011* as amended.

REFERENCE

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 (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.

Schofield , H., Alagaili, A., Dubourg Savage, M.-J, Kervyn, T., Marnell, F., Rodrigues, L.
(2022). A review of purpose-built roosts for European Bats. Eurobats.

APPENDIX 1 :PLATES



Plate 1: View of former school building from the northeast



Plate 2: View of north facing gable of convent, Annex 2 and old kitchen from left to right on image



Plate 3: View of bright street lighting along greenway to north of convent site



Plate 4: View of sloping ground to the north of the convent building



Plate 5: View of west to old kitchen and delapidated glass house



Plate 6: Internal view of upper floor of former school house with bat detector installed. High daytime light levels

