

Report in support of Derogation Licence
Application

Proposed Regeneron Outbuildings
Refurbishment,
Limerick.

On Behalf
of
PM Group

December 2025



DixonBrosnan

environmental consultants

Project	Report in support of Derogation Licence for Proposed Regeneron Outbuildings Refurbishment, Raheen Industrial Estate, Limerick.	
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1. Introduction

DixonBrosnan were commissioned to undertake bat surveys at the site of a proposed development by Regeneron involving the refurbishment of the Roche Castle outbuildings at its campus in Raheen Industrial Estate, Limerick. This planning application was submitted to Limerick City and County Council in November 2025 (Planning reference 25/61246).

Bat surveys were carried out in 2018 (by Scott Cawley) and 2025 (by DixonBrosnan). The proposed development involved the refurbishment of several outbuildings, a number of which support roosting bats. In line with the relevant guidance detailed below, a derogation licence is sought for the works. This derogation licence application has been compiled by Carl Dixon MSc and Dr. Sorchá Sheehy PhD.

Carl Dixon holds an Honours Degree (BSc) in Ecology and a Masters (MSc) in Ecological Monitoring from UCC. He is a senior ecologist who has over 25 years' experience in ecological assessment. Prior to setting up DixonBrosnan Environmental Consultants in 2000, Carl set up and ran Core Environmental Services which included REPS planning for landowners and ecological assessments. Carl has particular experience in freshwater ecology, including electrofishing fish stock assessments and water quality assessments. He also has considerable experience in habitat mapping and mammal ecology including survey work and reporting in relation to Badgers and bats. Other competencies include surveys for invasive species and bird surveys. Carl has extensive experience with regards to EIAR and NIS mitigation and impact assessment. He has experience in large-scale industrial developments with extensive experience in complex assessments as part of multi-disciplinary teams. Such projects include gas pipelines, incinerators, electrical cable routes, oil refineries and quarries.

Carl Dixon has considerable experience in bat survey and bat mitigation measures/roost design. Carl was the primary coordinator and surveyor for a heritage council-funded project serving all the river bridges in County Waterford for bats. He has designed bat roosts for Lesser horseshoe in conjunction with the NPWS for sites in West Cork. Carl has completed specialized training courses relating to bats in Ireland and the UK and has considerable experience in using a variety of bat survey equipment and subsequent software analysis of data.

Dr. Sorchá Sheehy PhD (Ecology/ornithology) is an ecologist and ornithologist who has worked for 15 years in environmental consultancy. She has worked on Screening/NISs for a range of small and large-scale projects with expertise in assessing impacts on birds. Sorchá's PhD research focused on bird behaviour at airports, where she studied bird avoidance behaviour and collision risk to aircraft. Her research involved field observations, post-mortem analysis and radar surveys. Sorchá has worked on bird collision risk assessments at airports throughout Ireland including Dublin airport, Cork airport, Shannon airport and Kerry airport. During her consultancy work Sorchá carried out field-based surveys and environmental reports including NIS, AA screening and EIARs. Notable projects include the Arklow Bank Wind Park, Indaver Ireland Waste Management Facility at Ringaskiddy, Irving Oil Whitegate Refinery (IOWR), Shannon LNG and Greenlink Interconnector.

2. Background

The Regeneron facility is in Raheen Business Park, adjacent to the M20 motorway on the southern environs of Limerick City (**Figure 1**). The facility manufactures bulk biologics Active Pharmaceutical Ingredients (APIs). Regeneron was granted planning permission in 2014 for conversion of the former Dell EMF3 computer assembly plant into a biopharmaceutical manufacturing installation (Limerick City and County Council planning ref. 13/745).

The facility operates under an Industrial Emissions licence issued by the Environmental Protection Agency (Licence Reg. No. P0991-02) for the following activities:

- The production of pharmaceutical products including intermediates
- Combustion of fuels in installations with a total rated thermal input of 50 MW or more.



Figure 1. Proposed Development Site Location | Source PM Group

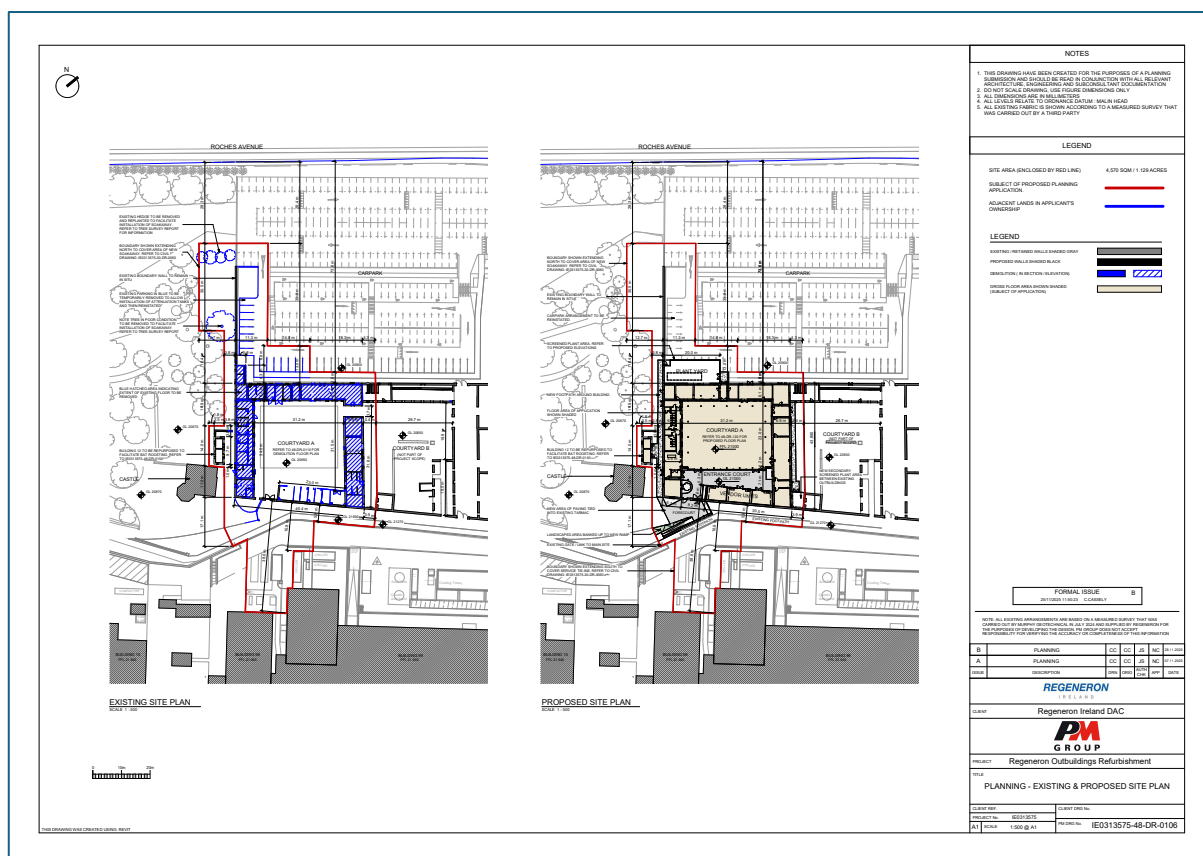


Figure 2. Proposed Site Layout | Source PM Group

Regeneron have submitted the following planning application to Limerick City and County Council in November 2025 (Planning reference 25/61246).

The development will consist of refurbishment and extension of existing outbuildings and construction of an Event Center building within the associated courtyard, located on the campus of the existing production facility. The development is for the purpose of providing a company Event Centre building of approximately 1,460.0 square meters floor area and maximum height of 7.7 meters to include a conference/event/training space, meetings rooms, vendor units, stores, plant rooms, and welfare areas. The proposed Event Centre will include ancillary open areas comprising; an Entrance Courtyard area; a landscaped Forecourt area; and 2 no. open plant yards. Proposed drainage works will include 2 no. underground surface water soakaway attenuation tanks to direct rooftop and other surface water from the development to ground infiltration, and no surface water from the proposed building will discharge to the Loughmore Canal. Refurbishment and conservation works are also proposed to the existing single storey building of approximately 22.0 square meters floor area, identified as Building 12, adjacent to Roche Castle. Other associated developments will comprise footpaths, service provisions, landscaping, and all associated site works.

The proposed development site is within the curtilage of Roche Castle, a protected structure (Record of Protect Structures register number 1671). The proposed development layout is shown in **Figure 2**.

The proposed development site comprises of a number of existing buildings within a courtyard area. These buildings were surveyed in 2018 by Scott Cawley. As noted above, these buildings are in the curtilage of Roche Castle and are protected structures.

Subsequently works were carried out to the outbuildings and stables in 2024, which included removal and replacement of the roofs and repointing of the walls on the stable buildings. The applicant notes the following *“Works were carried out for safety reasons including collapsing roofs and presence of asbestos and due to Regeneron’s obligation to conserve buildings which had fallen into disrepair prior to Regeneron’s ownership”*.

The layout of the proposed development site buildings is shown in **Figure 3**. The timeline of these construction works was as follows (as supplied by Regeneron).

- **Buildings 1-5:** End of Aug – Nov 2024
- **Building 7:** Feb - Apr 2024
- **Buildings 8-10** Jan 2025 – Feb 2025
- **Building 12** September - October 2025

DixonBrosnan carried out bat surveys at the site in 2025 as part of the planning application for the proposed development (Planning reference 25/61246).

3. Ecological survey and site assessment

3.1.1 2018 bat surveys

As part of an application to carry out works to the main Roche Castle building, bat activity surveys were carried out by Scott Cawley Ltd over a two-day period on 4th and 5th of September 2018 (See **Figure 3** for building numbers/location).

Two separate dusk surveys were undertaken on 4th of September 2018 by two ecologists; a dusk emergence survey at Roche Castle and a dusk activity transect survey covering the entire Regeneron site. Surveys were carried out using direct observation and handheld ultrasound detectors (Elekon BatLogger M). The dusk surveys were carried out from 15 minutes prior to sunset to 2 hours after sunset (20:00 to 22:15, sunset at 20:15). Echolocation recordings were analysed using BatExplorer software. Weather conditions were optimal for the survey; temperature ranged between 14°C and 16°C, wind speed was low and there was no rain during the survey.

Two separate pre-dawn roost re-entry surveys were undertaken on 5th September 2018 by two ecologists using the above methodology: one covering the southern courtyard and stables and the other covering the northern courtyard, stable and barns. The pre-dawn surveys were carried out from 2 hours before sunrise to sunrise (04:51 to 06:51, sunrise at 06:51). Temperature ranged between 10°C and 13°C, wind speed was low and there was no rain during the survey.

An infrared camera was set up during the dusk and dawn surveys on the 4th and 5th of September 2018 in the southern courtyard directed towards the southwestern corner stable

with the aim of monitoring any bat emergence or re-entrance into the loft where bat droppings were found during the internal building inspection.

Bat droppings were recorded in a number of the buildings adjacent to Roche Castle which indicated use by bats but, for the most part, the droppings were scattered and present in low numbers (indicating bats foraging, rather than roosting, in the buildings). The loft of the southernmost stable buildings (Building 1), however, had a more substantial amount of droppings which had the characteristics of the Brown long-eared bat, along with insect remains (moth wings) which is also characteristic of sites used by Brown long-eared bats. This building is likely to be used by Brown long-eared bats as a feeding site or possibly as a night roost. No bats were observed or recorded roosting here at the time of the survey.

During the dawn surveys three Brown long-eared bats were confirmed roosting in a deep crevice in the internal stone wall of one of the outbuildings (Building 8).

Although the roost site was not visually confirmed, it's likely that a single Common pipistrelle bat went to roost at dawn in the most northerly of the stable buildings (Building 6). During activity surveys four bat species were recorded during the bat activity surveys carried out in 2018: Leisler's bat, Common pipistrelle bat, Soprano pipistrelle bat and Brown long-eared bat (See **Figure 4**). A number of calls were recorded in the woodland to the west of Roche Castle which had the characteristics of Myotis bats but could not be identified to species level. These results are consistent with the records of bats from the local area from the NBDC database.

Bat activity was concentrated in the west of the Roche Castle and associated with the building complex of Roche Castle, the adjacent stables, outbuildings and sheds, and the woodland area to the south-west (**Figure 4**). Soprano pipistrelle bats were recorded in the woodland. Common pipistrelle and Brown long-eared bats were recorded in the woodland and around the complex of stables, outbuildings and sheds. Common and Soprano pipistrelle bats were also recorded along to the south of Roche Castle. The remainder of the site surveyed is largely buildings/bare ground, devoid of vegetation and brightly lit with streetlights, and no bats were recorded in those areas.

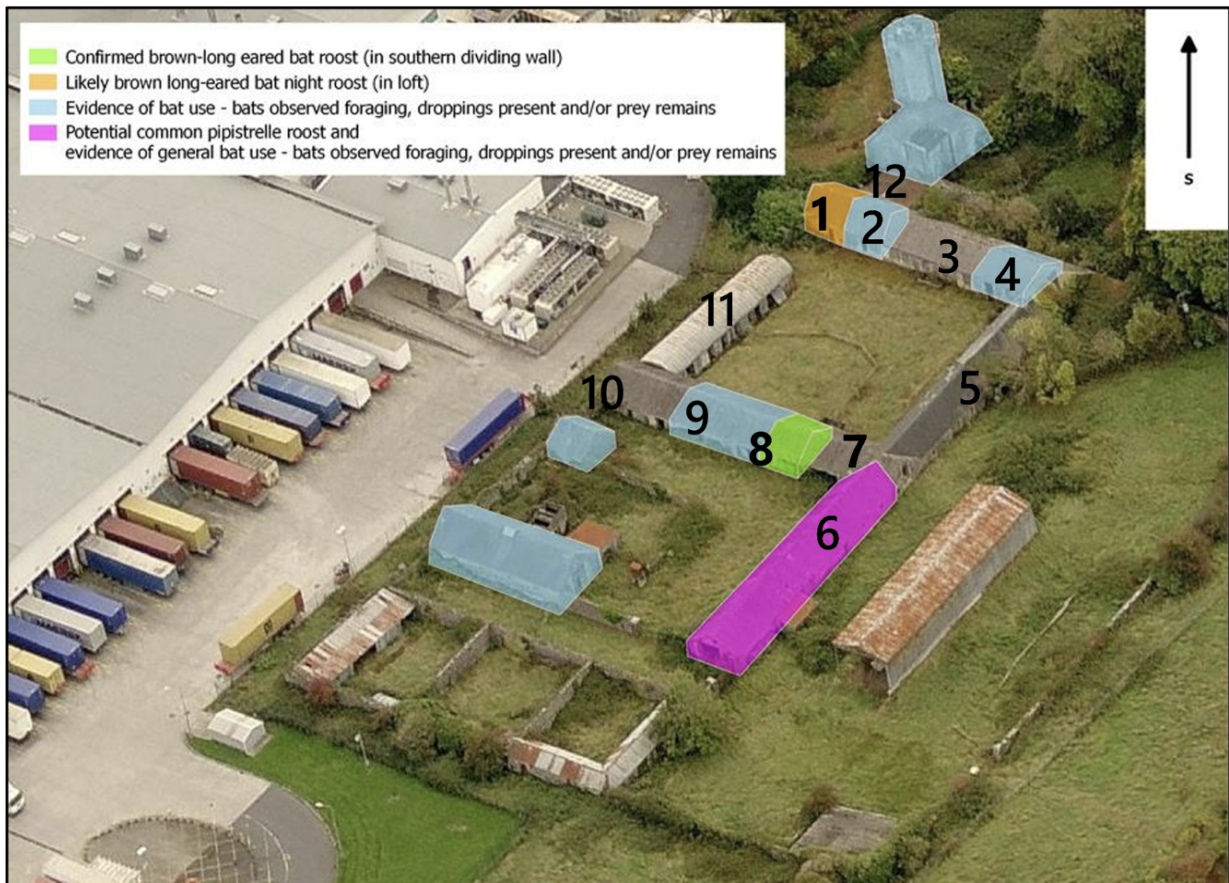


Figure 3. Scott Cawley survey results from 2018



Figure 4. Scott Cawley Bat Activity results 2018

3.1.2 2025 surveys

Bat Background Data

A desktop study was carried out to identify features of ecological value occurring within the proposed development site and in close proximity to it. A desktop review also allows the key ecological issues to be identified early in the appraisal process and facilitates the planning of surveys. The National Biodiversity Data Centre's (NBDC) online database provides data on the distribution of species within 10km grid squares (hectads). The site of the proposed development lies within 10km square R55 of Ordnance Survey Ireland's National Grid System.

In Ireland, nine species of bat are currently known to be resident. These are classified into two Families: the *Rhinolophidae* (Horseshoe bats) and the *Vespertilionidae* (Common bats). The

Lesser Horseshoe Bat *Rhinolophus hipposideros* is the only representative of the former Family in Ireland. All the other Irish bat species are of the latter Family and these include three pipistrelle species: Common *Pipistrellus pipistrellus*, Soprano *Pipistrellus pygmaeus* and Nathusius' *Pipistrellus nathusii*, four *Myotis*: Natterer's *Myotis nattereri*, Daubenton's *Myotis daubentonii*, Whiskered *Myotis mystacinus*, Brandt's *Myotis brandtii*, the Brown Long-eared *Plecotus auritus* and Leisler's *Nyctalus leisleri* bats.

Whiskered and Natterer's bats are listed as '*Threatened in Ireland*', while the other species are listed as 'Internationally Important' in the Irish Red Data Book 2: Vertebrates (Whilde, 1993). The population status of both Whiskered and Natterer's bats was considered '*indeterminate*' because of the small numbers known of each, a few hundred and approximately a thousand respectively. Ireland is considered to be an international stronghold for Leisler's bat, whose global status is described as being at '*low risk, near threatened*' (LR; nt) by the IUCN (Hutson *et al.*, 2001).

Near threatened status is applied to those taxa that are close to being listed as vulnerable (facing a high risk of extinction in the wild in the medium-term future on the basis of a range of criteria defined by the IUCN). The Irish population of the Lesser Horseshoe Bat is estimated at 14,000 individuals and is considered of International Importance because it has declined dramatically and become extinct in many other parts of Europe. Data collected shows that the species increased significantly between from the early 1990's to present.

A review of existing bat records within R55 shows that seven Irish bat species recorded within this hectad (**Table 1**). It is noted that other species which have not been included within this database could potentially occur.

Table 1. Presence of Irish bat species within grid squares R55.

Common name	Scientific name	Present/Absent
Lesser Noctule	<i>Nyctalus leisleri</i>	Present
Pipistrelle	<i>Pipistrellus pipistrellus sensu lato</i>	Present
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Present
Daubenton's Bat	<i>Myotis daubentonii</i>	Present
Natterer's Bat	<i>Myotis nattereri</i>	Absent
Brown Long-eared Bat	<i>Plecotus auritus</i>	Present
Whiskered Bat	<i>Myotis mystacinus</i>	Absent
Lesser Horseshoe	<i>Rhinolophus hipposideros</i>	Present
Nathusius's Pipistrelle	<i>Pipistrellus nathusii</i>	Present

NBDC 04/11/25

Lesser Horseshoe Bat is the only species of bat listed on Annex II of the Habitats Directive (Directive 92/43/EEC). The closest recorded records for Lesser horseshoe bat is approximately 8km southeast of the proposed development site (NBDC records). While the

remaining Irish bat species; Nathusius' pipistrelle, Natterer's Bat and Brandt's bats have not been recorded in the local area to date, Natterer's Bat could potentially occur. Nathusius' pipistrelle and Brandt's bat are rarer Irish species, which are less likely to occur.

A review of the NBDC database note that two bat roosts, Soprano pipistrelle and Common pipistrelle, have been recorded in the 1km grid square which overlaps with the proposed development site. Both roosts were recorded by Scott Cawley in 2014. The exact location of these roosts has not been identified.

A study by Lundy *et al.* (2011) examined the relative importance of landscape and habitat associations across Ireland. Maximum Entropy Models (MEM) were constructed for each bat species using records from the National Bat Database from 2000-2009. This method allows species' records that have not been collected in a systematic survey to be analysed. The results help explain patterns of species' occurrence and predict where species might occur. Landcover (CORINE), topography, climate, soil pH, riparian habitat and human bias factors were incorporated into the models. The analyses provide a picture of the broad scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species. This also provides a 'habitat suitability' index. The index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats.

The habitat indices for all Irish bats for the landscape at Raheen is shown in **Table 2**. This suggest that they are of moderate suitability for Soprano pipistrelle, Brown long-eared, Common pipistrelle, Leisler's and to a lesser extent Daubenton's and Natterer's bat.

Table 2. Model Predicted Habitat suitability indices for All Irish bat species

Bat species	Common Name	Habitat indices
All Bats		37.11
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	50
<i>Plecotus auritus</i>	Brown long-eared bat	58
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	52
<i>Rhinolophus hipposideros</i>	Lesser horseshoe	21
<i>Nyctalus leisleri</i>	Leisler's bat	53
<i>Myotis mystacinus</i>	Whiskered bat	16
<i>Myotis daubentonii</i>	Daubenton's bat	37
<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	10
<i>Myotis nattereri</i>	Natterer's bat	37

Source: NBDC 04/11/25

Habitat Assessment

The proposed development site is located within an industrial setting, surrounded by modern pharmaceutical buildings and parking areas. Lands to the north, east and west are urban/industrial. A small area of woodland (classified as WD5 Scattered trees and parkland

(Fossitt 2000)) is located to the west of the proposed development site. This area includes several mature and semi-mature trees including Beech and Ash as well as immature Elder and Oak. There are a number of bat boxes installed on these mature trees.

The proposed development site is located within a courtyard of buildings (former stable buildings and outhouses) associated within Roche Castle. The proposed development site is dominated by buildings and artificial surfaces. Roche Castle and its stables/outbuildings are visible of the 1st edition historical mapping 1829-1834. The courtyard buildings have recently been refurbished. Roche Castle and its outbuildings are listed in the National Inventory of Architectural Heritage (NIAH) Register (Reg. No. 21901309). It is noted that as part of the mitigation measures for the proposed development, a disused building will be used as a permanent bat house.



Plate 1. Scattered trees and parkland



Plate 2. Mature trees within parkland



Plate 3. Existing Courtyard buildings

Bat activity surveys

DixonBrosnan carried out static bat activity surveys from 17th to 28th of October 2025 as part of planning application reference 25/61246.

Surveys were carried out using Elekon BatLogger and SongMeter pro-4. The survey followed the guidelines set out in '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn)*' (Collins, 2023). All data collected during bat activity surveys (transects, and automated surveys) was downloaded and analysed using Kaleidascope and Analook software.

Static detectors were placed at five locations within the site buildings. The location of these detectors were chosen based on the results of the 2018 activity surveys (and the 2025 bat buildings surveys (preliminary roost surveys)) in confirmed, probable or possible bat roost locations. It is noted that the bat surveys were conducted outside the period used for identifying bat roosts however due to suitable weather conditions bat were active during the survey.

A bat building inspection was carried out on the 17th of October 2025. A visual examination of the interior and exterior of all buildings within the proposed development stie was carried out during daylight hours to search for the presence of bats and identify potential roost sites. Bat activity is usually detected by the following signs:

- Bat droppings (these will accumulate under an established roost or under access points);
- Insect remains (under feeding perches);
- Oil (from fur) and urine stains;
- Scratch marks;
- Pupae of bat parasites such as *Nycteribia kolenatii*; and,
- Bat corpses.

Any crevices, in so far as they could be safely accessed, were examined using a strong narrow-beamed torch and where necessary, an endoscope. Binoculars were used to examine potential bat roost features that could not be reached from the ground.

The results of the building and static surveys are included in **Table 3**. Building numbers/locations are shown in **Figure 3** (following Scott Cawley naming convention).

Table 3. Bat logger locations and results from October 2025 surveys

Bat logger	Location	Photograph	Results
X1	Building 1		One distinct call was recorded on October 20 th at 20.15 and was identified as social calls for Brown long-eared bat. Similar calls were recorded at 2.29 on October 19 th , 2.45 on October 19 th . Although additional calls were recorded throughout the survey period, the signals were indistinct with no distinct sonograms generated. The signals recorded were generally in the range indicative of either Brown long-eared or Leisler's bat as they were at the lower frequency range. It may be indicative of bats foraging externally or of artificial interference affecting the accuracy of the recording equipment.
BL8	Building 2		Four signals for Common pipistrelle at 20.34, 20.37, 20.45 and 20.47 on 20 th October. One indistinct probable Pipistrelle at 20.21 on 18 th October 20.38 on 20 th October and 3.38 x 2 on 23 rd October. Faint signals. Probably foraging outside
BL5	Building 4		Sporadic signals were recorded on the 18 th and 19 th of October with small numbers of Common pipistrelle. It is noted that activity can be sporadic later in the season and fluctuate with moisture and with temperature. Activity levels were moderate from 19.46 to 23.37 on October 20 th . On October 21 st activity was dominated by Common pipistrelle (activity with approximately 200 signals for this species). Possible but brief signals for Brown long-eared bat was recorded on October 21 st at

Bat logger	Location	Photograph	Results
			19.13 and at 4.43 on the 23 rd October 2025.
Y1	Building 8		Relatively high levels of bat activity were recorded over the survey period with Common pipistrelle the most prevalent species. Myotis species, most probably Natterer's Bat was also recorded along with signals for Brown long-eared bat. Relatively high numbers for both the Myotis and Brown long-eared bat were recorded, although signals were sporadically distributed throughout the survey period.
BL2	Building 9		In general there was moderate levels of activity which was generally sporadic over the survey period. The most common species recorded was Common pipistrelle which was recorded on the each date from October 17th to 24th. Levels of activity varied, probably due primarily to fluctuation in weather conditions late in the survey season. Two other species were noted with occasional signals for Brown long-eared bat at 21.49 on October 17th and 20.33 on October 20th. More extensive records for a myotis bat (most probably Natterer's Bat) were recorded throughout the survey period with approximately 40 signals recorded over the survey period. Occasional signals for Leisler's bat recorded which may indicate foraging. Whilst some of these signals were recorded during the possible emergence window, the signals were sporadic and roosting behaviour could not be ascertained. The evidence is indicative of use as a night roost as a minimum however for all of the species detected.

3.1.3 Comparison of 2018 and 2025 data

Table 4 compares the results of the bat surveys from 2018 and 2025. In general the 2025 surveys indicate that Common pipistrelle, Soprano pipistrelle, Brown long-eared and Leisler's bats are active within the overall site. It is noted that the survey was carried out late in the

survey period in October 2025. In the late autumn bat activity includes significant behavioural changes as bats swarm at potential hibernation sites. This is where bats gather and fly in and out of buildings with high numbers of social calls which may be complex in nature. Mating also occurs with females storing sperm until the following spring. In general there is a change from reproductive behaviour to complex social interactions and preparation for hibernation. Foraging activity during the late Autumn months is general lower due to lower temperatures and reduced prey availability.

In this context accurate identification of roosts is problematic. The high numbers of social calls, cluttered internal environment in which calls were recorded and the changes in social behaviour makes accurate identification of species and potential roosting sites problematic at this time of year. Therefore surveys in October focused on activity and the conclusions in relation to roosting are tentative.

The data from 2025 indicates that levels of activity remain relatively high within the overall complex of buildings with activity by Myotis bat (not recorded in 2018) also detected. Within Building 8 (and Building 9) static bat detectors were left *in situ* on both sides of a dividing wall which was previously identified as supporting a small roost of Brown long-eared bats. Although the roof of these building(s) has been replaced, the wall has not been significantly modified and high levels of bat activity, including Brown long-eared, was detected on both sides of this dividing wall in October 2025. The evidence indicates that this building continues to be used as a night roost by a number of species and in the absence of significant direct impacts on the roosting habitat, it is probable that Brown long-eared are continuing to use this wall as a summer day roost. It is also noted that a myotis bat, most probably Natterer's bat, was recorded at this location and could be potentially roosting (possible roost).

A probable Brown long-eared roost was previously identified in Building 1 in 2018. Results from a static bat detector placed in this building were inconclusive, although some probable Brown long-eared bat social calls were detected. The roof area of Building 1, which was identified as a potential Brown long-eared roost in 2018, has been replaced. The status of this bat roost remains uncertain.

Building 6, which will not be affected by the proposed development, was identified as a potential Common pipistrelle bat roost for one bat. This site was not surveyed via static detectors in 2025 (as it is located outside the proposed development site boundary). Evidence of usage by Brown long-eared bat was recorded (prey remains). Therefore it has been concluded that this building is used as a night roost by Brown long-eared but given that the roof has been replaced it is not possible to reach a definitive conclusion as to whether this building is still in use as a probable Common pipistrelle roost.

Overall the survey does not indicate that usage of the overall site has not changed significantly following re-roofing works and one additional myotis species was detected. The wall supporting a confirmed Brown long-eared bat roost within Building 8 has not been directly affected and it is probable that this species continues to roost here. The status of the roost in Building 1 (Brown long-eared) and Building 6 (Pipistrelle) is inconclusive. It is noted that bat boxes have been placed in the parkland at the west of the site which may provide some additional roosting habitat for pipistrelle species in particular and previous inspections indicate these are being utilised (2018).

Table 4. Comparison of 2018 and 2025 survey data.

Building	September 2018	October 2025	Photo 2025	Conclusion
Building 1 X1	Likely Brown long-eared roost	Poor quality data. Some evidence of usage by Brown Long-eared (social calls).		Survey data inconclusive. Previous survey was inconclusive in relation to Brown long-eared roost. Impact inconclusive.
Building 2 BL8	Evidence of bats - bats observed foraging, dropping present and/or prey remains	No evidence of usage. Some occasional faint signals for Pipistrelle bats probably indicative of bats foraging outside the building.		Building is currently sealed with few potential access points. Doors, windows sealed and new roof. No significant evidence that this building is being utilised. Bats no longer using this building for foraging.
Building 3	No evidence noted	No detector used.		Some older droppings noted. No signs of recent usage.

Building	September 2018	October 2025	Photo 2025	Conclusion
Building 4 BL5	Evidence of bats - bats observed foraging, dropping present and/or prey remains	Moderate levels of Common pipistrelle activity recorded. Possible brief signals for Brown Long-eared bat but inconclusive		Continued usage by Common Pipistrelle. Possible limited usage by Brown long-eared.
Building 5	No evidence noted	No evidence noted		No evidence noted. Generally well-sealed with few access points.
Building 6 (outside proposed development site boundary)	Potential Common pipistrelle roost and evidence of general bat usage- bats foraging, dropping present and/or prey remains	Evidence of usage by Brown long-eared bat with butterfly wings recorded at the southern gable wall		Usage by Brown Long Eared bat as a night roost identified. Common pipistrelle no longer present.

Building	September 2018	October 2025	Photo 2025	Conclusion
Building 7	No evidence noted	No evidence noted		Low potential for roosting bats
Building 8 Y1	Confirmed Brown long-eared roost in southern dividing wall	Common pipistrelle the most prevalent species. Myotis species, most probably Natterers Bat was also recorded along with signals for Brown Long-eared Bat.		Usage by Common Pipistrelle, Myotis and Brown Long-eared bat as night roost as a minimum. A Brown long-eared bat roost (3 bats) was identified in 2018 in a wall. This wall has not been affected and it is probable that Brown long-eared roost is still present.

Building	September 2018	October 2025	Photo 2025	Conclusion
Building 9 BL2	Evidence of bats - bats observed foraging, dropping present and/or prey remains	Common pipistrelle activity relatively high. occasional signals for Brown Long-eared bat. More extensive records for a myotis bat most probably Natterer's Bat.		On the other side of the dividing wall from building 8 and similar data obtained.
Building 10	No Evidence of bats	Some older dropping recorded		Not separated internally from building 9
Building 11	No data in previous survey	No evidence of usage noted		Habitat of low potential value for roosting bats.
Building 12	No data in previous survey	Evidence of Brown Long Eared with butterfly wings in fireplace		Usage of a night roost by Brown long eared as a minimum Note as part of the mitigation measures for the proposed development, this will be used as a permanent bat house (see Section 5.2 for details)

Building	September 2018	October 2025	Photo 2025	Conclusion
Other building	No data in previous survey	To the north of building 5, there is a partially collapsed building. This has no roof and partial walls. This building is earmarked for demolition		Negligible value for roosting bats.

4. Proposed development and details of works requiring derogation

4.1 Planning history

Regeneron has been operating at the Raheen Business Park since 2014 where the former Dell EMF3 computer assembly facility was converted into a bio-pharmaceutical manufacturing plant under LCCC Ref. 13/745. Since 2014, the site has seen a series of incremental developments and modifications, reflecting the evolving operational needs of Regeneron. These include an extension to manufacturing facilities (Ref. 17/1170), a multi-storey car park and administration building (Ref. 18/1098), and smaller additions like a canteen extension (Ref. 21/1002), and new signage (Ref. 24/401). More recent grants of permission include Ref. 24/159 & ABP-320083 for a temporary Marquee, and Ref. 24/220 & ACP 320261 to provide a palisade fence on the southern boundary of the facility.

Regeneron has two current live planning applications. Ref. 25/60480 seeks permission for modification to the previously permitted temporary construction compound is under to An Coimisiún Pleanála (ACP-323638). And Ref. 25/60995 seeks permission for a modification to an existing warehouse is subject to a further information request.

In addition to the above planning applications Regeneron submitted a request for a declaration under Section 57 of the Planning and development Act 2000 (as amended) for conservation and restoration works to Roche Castle and associated structures in October 2018. The proposed works were determined to be exempt under Limerick City & County Council Registration No. DR18/35 (dated 14 August 2019). A derogation licence (No. DER/BAT 2019-22) for the proposed works was granted by the National Parks and Wildlife Service under Regulation 54 of the Habitats Regulations (S.I. No. 477/2011) in respect of bat species on 2 April 2019.

The planning history demonstrates a consistent pattern of phased development, with each application building upon the original permission to support the site's continued growth and operational efficiency.

4.2 Proposed works requiring derogation

The proposed development includes the refurbishment and extension of the existing stables and outbuildings within the associated courtyard (See **Figure 2**). As outlined above, roosting

sites for bats are located within the stable buildings/outbuildings around Courtyard A (Buildings 1 and Building 8 **Figure 3**). Building 12 is proposed for use as a dedicated bat house.

Bat surveys carried in 2018 recorded bat roosts within in a number of the site buildings. Surveys in 2025 indicate a potential night-roost for Brown long-eared and potential Natterer's roost in Building 8 (adjoining Building 9) and an unconfirmed Brown long-eared roost in Building 1.

As illustrated in **Figure 2**, the proposed development will involve refurbishment works to Building 1 and Building 8 which will prevent future use of the buildings by bats.

The provision of Building 12 as a bat house will potentially increase the roosting opportunities for Leisler's Bat, Brown-long eared, Common and Soprano Pipistrelle, Natterer's bat and Whiskered bats. Building 12 currently supports a possible Brown long-eared night roost.

This application for derogation applies to Buildings 1, 8 and 12.

5. Evidence of derogation tests

Article 16 of the Habitats Directive sets out three pre-conditions, all of which must be met before a derogation from the requirements of Article 12 or Article 13 of the Directive can be granted. These preconditions are also set out in Regulation 54 of the Regulations. The preconditions are as follows:

1. A reason (s) listed in Regulation 54 (a)-(e) applies
2. No satisfactory alternatives exist
3. Derogation would not be detrimental to the maintenance of population(s) at a favourable conservation status. It is believed that the pre-conditions for granting a derogation licence have been met, as follows.

5.1 Test 1 - Reasons for Seeking Derogation

Regulation 54(2) (a)–(e) states that a derogation licence may be granted for any of the reasons listed (a) to (e).

We are of the opinion that the following reason applies:

(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.

Regeneron proposes to repurpose the subject outbuildings and courtyard as a flexible Event Centre to support operations at its Raheen Business Park bio-pharmaceutical facility.

The site has operated since 2014, undertaking manufacturing, process sciences, quality control, and supply chain activities, supported by administration and procurement functions. The campus spans approximately 64,000 m² and employs around 1,400 staff, exporting medicines globally.

As a high-tech, knowledge-based enterprise, effective communication is critical. Regeneron identified the need for an on-site, multi-functional Event Centre for meetings, training, conferences, and company assemblies. The facility will include meeting rooms, informal spaces, and a large conference area, supported by welfare, administration, hospitality, and plant/equipment spaces.

5.2 Test 2 - There is no satisfactory alternative

Several options were assessed before selecting the proposed use of the outbuildings and courtyard:

Do-Nothing – No In-Person Meetings

Rejected as it conflicts with company strategy and would negatively impact communication.

Off-Site Solution

Hiring external venues or constructing a facility off-campus was deemed inefficient and costly, requiring additional parking, security, and services. An on-campus solution ensures accessibility, security, and integration with existing infrastructure.

Alternative On-Site Locations

Other campus sites were considered but found unsuitable due to:

- Regulatory and safety restrictions near production areas.
- Need to preserve space for future manufacturing expansion.
- Limited space for extensions to administration buildings.
- Loss of essential car parking or impact on amenity woodland, which would conflict with planning policy and biodiversity protection.

5.3 Test 3. - Impact of a derogation on Conservation Status

a) Brown long-eared bat

Surveys indicate that a small night roost for Brown long-eared bat is present within Building 8. The data for Building 1 is inconclusive, but this building could potentially support a night roost for Brown long-eared bats. Building 12 also appears to be used as a night roost for Brown long-eared bats.

Brown long-eared bat is an Annex IV bat species under the EU Habitats Directive. The status of this bat species is listed as Least Concern (Favourable). Although they are probably quite common in Ireland, it is difficult to see long-eared bats in flight because they prefer to forage in woodland flying amongst the foliage, picking moths and other insects off leaves. These bats emit their quiet echolocation sounds through their nose. Larger prey items such as noctuid moths are taken to a feeding perch, often in a porch or outhouse. These perches are recognisable by the piles of insect remains, such as moth wings, which collect under them. The long-eared bat roosts in buildings such as houses with large attic spaces, churches, outbuildings and in tree holes.

According to Roche *et al.* 2024, there is a Brown long-eared bat population of approximately 65,000-102,000 individuals in the Republic of Ireland. Modelled population trend indicates that the species has increased annually by 1.5% since the inception of the Brown Long-eared Bat Roost Monitoring Scheme in 2007, although this increase has not been significant.

According to the criteria outlined in Marnell *et. al.* (2022) the conservation significance of the roosts in Buildings 1, 8 and 12 is “*Small numbers of rarer species. Not a maternity roost*”. The Conservation Significance according to Marnell *et. al.* (2022) results determines the bat mitigation measures required. In relation to this species of bat, the mitigation recommended is “*Provision of new roosting facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species requirements. Minimum timing constraints or monitoring requirements*”.

Therefore it is considered that the loss of a roost will not impact on the favourable conservation status in their natural range and will not have a detrimental effect on the local bat population of Brown long-eared bat. The provision of the new roosting facilities in Building 12 follows the guidelines (Marnell *et. al.* (2022)). There will be potential habitat creation with the mitigation measures proposed (see **Section 6.2**).

b) Natterer's bat

Surveys indicated that Natterer's bat is potentially roosting in Building 8. *Myotis* species, most probably Natterer's Bat was recorded during static surveys within Building 8, although signals were sporadically distributed throughout the survey period.

Natterer's bat is an Annex IV bat species under the EU Habitats Directive. The status of this bat species is listed as Least Concern. The national Natterer's bat population is currently unknown (Aughney *et al.*, 2022). This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddis-flies and spiders. Known roosts are usually in old stone buildings but they have been found in bridges, underground sites, trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland.

The modelled Core Area for Natterer's bat is a relatively large area that covers much of the island of Ireland (52,864km²). The Bat Conservation Ireland Irish Landscape Model indicated that the Natterer's bat selects areas with broadleaf woodland, riparian habitats and mixed woodland (Roche *et al.*, 2014).

According to the criteria outlined in Marnell *et. al.* (2022) the conservation significance of the roost in Building 8 is “*Small numbers of rarer species. Not a maternity roost*”. The Conservation Significance according to Marnell *et. al.* (2022) results determines the bat mitigation measures required. In relation to this species of bat, the mitigation recommended is “*Provision of new roosting facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species requirements. Minimum timing constraints or monitoring requirements*”.

Therefore it is considered that the loss of a roost will not impact on the favourable conservation status in their natural range and will not have a detrimental effect on the local bat population of Natterer's bat. The provision of new roosting facilities follows the guidelines (Marnell *et. al.*

(2022). There will be potential habitat creation with the mitigation measures in Building 12 (see **Section 6.2**).

c) Common pipistrelle

As outlined in **Table 4**, there is common pipistrelle activity within building 8. Although no signs of emergence were recorded, as a precaution, the potential of removal of this building on Common pipistrelle is assessed.

Common pipistrelle is an Annex IV bat species under the EU Habitats Directive. The status of this bat species is listed as Least Concern. The national common pipistrelle population is considered to be significantly increasing (Aughney *et al.*, 2021).

Roche *et al.* (2024), suggests that there is a Common pipistrelle population of approximately 1.9-4.2 million in the Republic of Ireland. An additional figure of 2,331,400 is derived from the average number of bats detected per km of roadside surveys and estimates of the total length of hedgerows in Ireland.

The modelled Core Area for common pipistrelle is a relatively large area that covers much of the island of Ireland (56,485km²). The Bat Conservation Ireland Irish Landscape Model indicated that the common pipistrelle selects areas with broadleaf woodland, riparian habitats and low density urbanization (<30%) (Roche *et al.*, 2014).

According to the criteria outlined in Marnell *et al.* (2022) the conservation significance of the roost in Building 8 is “*Small numbers of rarer species. Not a maternity roost*”. The Conservation Significance according to Marnell *et al.* (2022) results determines the bat mitigation measures required. In relation to this species of bat, the mitigation recommended is “*Provision of new roosting facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species requirements. Minimum timing constraints or monitoring requirements*”.

Therefore it is considered that the loss of a roost will not impact on the favourable conservation status in their natural range and will not have a detrimental effect on the local bat population of Common pipistrelle. The provision of new roosting facilities follows the guidelines (Marnell *et al.* (2022). There will be potential habitat creation with the mitigation measures in Building 12 (see **Section 6.2**).

6. Mitigation measures

6.1 Building Refurbishment works

The proposed development will involve refurbishment works to Building 1 and Building 8 will prevent future use of the buildings by bats. Modifications to Building 12 will convert it into a dedicated bat roost.

The following mitigation is proposed:

- It is noted that the timing of the works are dependent on the timeline for the grant of planning permission and the derogation licence. Works will take place to interior of buildings 1 and 8 (where signs of roosting bats were detected) and thus a derogation licence is required. It is also noted that works cannot proceed until a derogation licence has been received.

- In general building refurbishment works will take place outside the bat breeding season (i.e. 1st October-31st March) on buildings for which roosting or potentially roosting bats were identified. However as bats are active during October, works will not commence unless it has been certified by the supervising ecologist that bats are no longer present.
- If works within the roosting area are incomplete by March 31st, then steps will be taken to prevent accessing the existing roosting areas. To prevent bats re-entering these buildings, bubble wrap or other material may be necessary to block potential entrance points. This will be carried out under ecological supervision.
- The modifications to Building 12 to convert it into a dedicated bat roost must be completed outside the bat breeding season (i.e. 1st October-31st March) and will be programmed early in the construction programme (prior to refurbishment of other buildings).
- No bat usage was recorded from a number of buildings within the proposed development area. Works on these areas can be carried out throughout the year if it is certified by the supervising ecologist that bats are not present. The supervising ecologist will examine the buildings and if necessary, will specify how potential access points will be blocked to prevent bats using the buildings prior to the commencement of works or during works.
- Any crevices proposed to be pointed within the Building 8 (and Building 9) wall will be inspected prior to infilling using a high powered torch and endoscope to ensure that it is bat free.
- Care must be taken when dismantling or working within the building interiors/exterior to ensure that bats are no longer present. Structures will be examined immediately prior to the commencement of construction works by the supervising ecologist to ensure there are no signs of bat activity.
- If bats are discovered during the works process then they will be safely removed by the qualified bat expert and the NPWS will be informed.
- Prior to the commencement of construction works a repeat survey will be carried out to obtain up to date information on the bat roosting within the site

6.2 Building 12 – Bat house

Bat surveys were carried out late in the survey season in 2025. Species that were recorded and that could be potentially roosting within the site include Brown long-eared bat, Common and Soprano pipistrelle, Leisler's and an unidentified Myotis bat most probably Natterer's bat. Whilst not all of these species have been identified as roosting within the proposed development site it is proposed alternative roosting habitat will be provided for all of these bat species within the proposed development site boundary as a mitigation/enhancement measure.

It is proposed to focus on Building 12 as an alternative bat roost. This building currently appears to provide a potential night roost and feeding area for Brown long-eared bat, but has the potential to provide alternative roosting habitat for other bat species. Building 12 has the following characteristics of note:

- This is a period buildings of similar age to the stable buildings being affected within the proposed development site.
- It has suitable structural elements including a stone structure and existing slate roof.
- There is evidence that it is already being used by Brown long-eared bat as prey remains were recorded within the existing fireplace. No evidence of day roosting noted.
- It is currently unused but in good condition and can be readily modified to provide roosting habitat for a range of bat species.
- It is adjoining the existing parkland area which is likely to provide significant foraging habitat for bats
- Building 12 is not located within the main development area and is located within an area which has relatively low light levels.

The following measures are proposed for Building 12:

Measure 1. Prevent risks associated with breathable membrane

The roof of Building 12 is currently lined with breathable membrane. This material has been identified as a problem for bats due to entanglement and its potential to create changes in the microclimate. It is therefore proposed that bitumen felt will be retrospectively used on the interior to prevent these issues from occurring.

Measure 2. Improving/building microclimate and access

The building is characterised by open windows and doors. This creates draughty, cold conditions which are unfavourable to bats. It is therefore proposed to proposed to seal up windows and doors whilst leaving suitable access points for bats via gaps and structures such as specialised access tiles and slates. Access will be provided via 3-4 bat access structures such as bat bricks, bat slates, bat tiles, gaps under fascia etc. (See **Figure 5** (PMG Drawing IE0313575-48-DR-0150)). One bat access point is currently shown. However, the supervising ecologist will work with the building contractor to ensure that there are 3-4 dedicated access points to facilitate entry by bats into the building and to ensure that light spillage on to these entry points is minimised.

Combination locks will be provided which provide easy access for the supervising ecologist and NPWS staff etc as required. These works will provide a better micro-climate and minimise potential disturbance.

Measure 3. Minimise Lighting

The building is located with a relatively dark part of the site complex adjoining parkland. Lighting in proximity to the proposed bat house has been minimised and access points for bats will be located so as to minimise light spillage on bat entry/exit points.

Measure 4. Roosting habitats

The objective is to provide potential roosting habitats for several bat species. Therefore it is proposed that a range of bat roosting structures will be provided both internally and externally

to maximise potential usage. The following (or similar depending on availability) will be installed under ecological supervision:

Maternity Roost Box - suitable for Common and Soprano Pipistrelle
(<https://www.wildcare.co.uk/roost-maternity-bat-box-10558.html>)



The Wildcare Roost Maternity Bat Box is designed for those bat species which would naturally roost in crevices and internally has three crevices for the bats to roost within. This crevice batbox is especially suitable for both Common Pipistrelles and Soprano Pipistrelles.

Four boxes mounted on interior walls, two be mounted on exterior walls.

Improved cavity bat box - suitable for Brown Long Eared and Myotis species
(<https://www.wildcare.co.uk/black-bat-box.html>)



This bat box is designed so that you can accommodate bat species that naturally roost in cavities such as Brown Long Eared and myotis species.

Four boxes mounted on interior walls, two be mounted on exterior walls.

Vincent Pro Bat Box - can be used by a range of species i.e. Leisler's, Common pipistrelle, Soprano pipistrelle, Brown long-eared, Natterer's and Whiskered bat
<https://www.wildcare.co.uk/vincent-pro-bat-box-10651.html>



Four boxes mounted on interior walls, two be mounted on exterior walls.

Measure 5. Preserving cracks and crevices

Bats can use a diverse mixture of habitats for roosting including cracks and crevices in stonework. Therefore unless absolutely necessary health and safety reasons or to maintain the structural integrity of the building, repair of cracks and crevices etc will be avoided. Any such works or other substantive works will be agreed with the supervising ecologist and may require consultation with relevant statutory authorities.

Measure 6. Timing of works

Works which could potentially impact directly on bats will be carried out during the winter period 1st October-31st March inclusive. Any works outside this period can only be carried out if the supervising ecologist has determined that there is no risk to bats and meets the provisions of the bat derogation licence.

The enhancement measures for Building 12 will be implemented prior to commencement of refurbishment works on other buildings which potentially support bats within the redline boundary.

Measure 7 - Bat Loft for Brown Long Eared maternity colony

Although Brown long-eared bat roost inside crevices, they use an internal void to fly. Whilst the Building 12 currently provide a large internal void, an internal loft space will provide an additional potential roosting with a different micro-climate. The presence of prey remains within Building 12 indicates some usage, most likely as a night roost. However a longer term objective is to create a maternity roost. This structure may also be used by other bat species.

Ideally, the void height (floor to ridge) should be at least 2m and preferably exceed 2.5m (Razgour *et al.* 2013), with a length and width of at least 4m (preferably 5m) as detailed in English Nature's Bat Mitigation Guidelines (Mitchell-Jones 2004). The structure will be constructed of untreated wood with a rough or roughened surfaces. Access will be provided

via bat access structures such as bat bricks, bat slates, bat tiles etc (See **Figure 5** (PMG Drawing IE0313575-48-DR-0150)). Human access will be provided to allow inspection.



Plate 4. Location for bat loft inside southeastern gable.

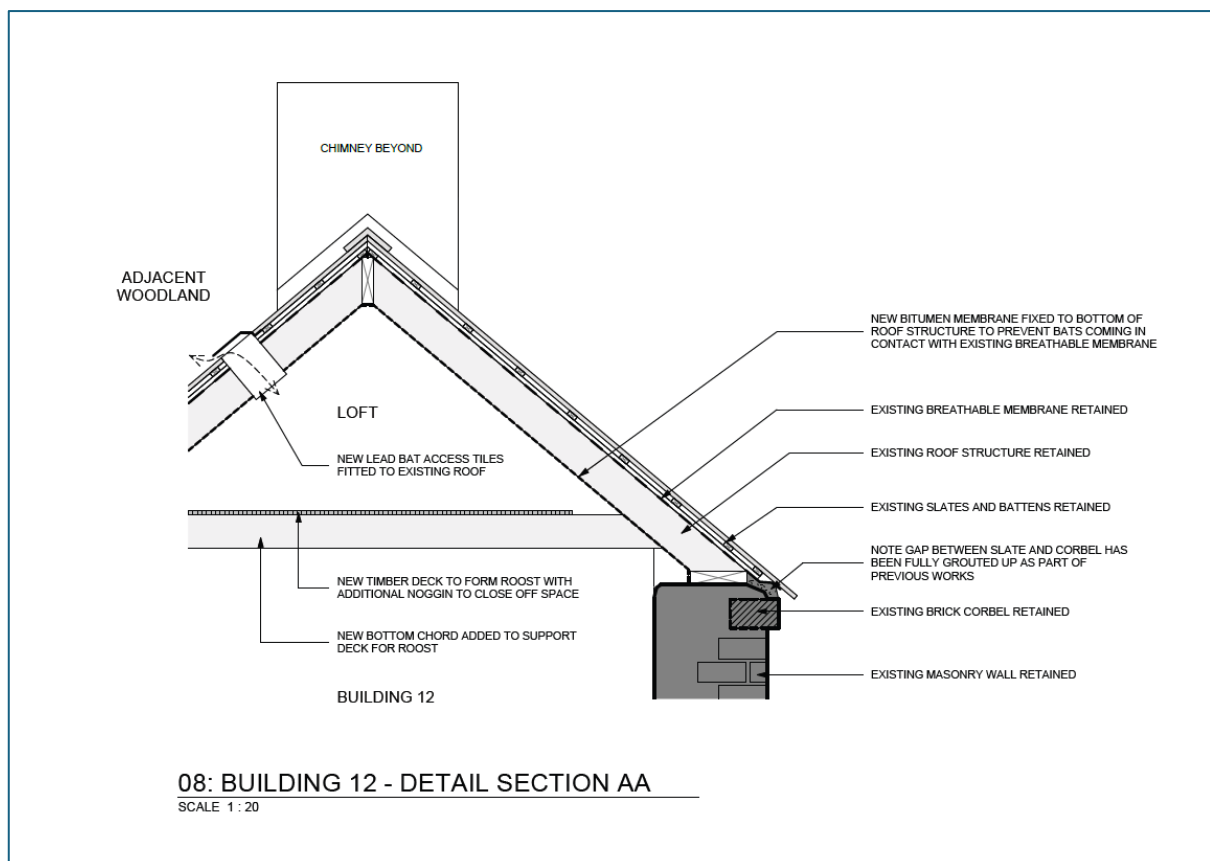


Figure 5. Building 12 detail PMG Drawing IE0313575-48-DR-0150.

Mitigation measure 8

Batons of untreated wood will be placed on the ceilings within Building 12 . The batons will be untreated wood with a rough or roughened surfaces. This facilitates usage by bats. Locations will be specified by the supervising ecologist.

Measure 9 Supervision and mitigation

The works will be carried out in line with all relevant licences and planning conditions and under the supervision of an experienced ecologist. The ecologist will work with the building contractor to ensure that works are carried out appropriately. The supervising ecologist will supervise the works for two years post construction to determine the success of the measures and to adjust the specified mitigation if required.



Plate 5. Exterior of building 12



Plate 6. Exterior of building 12

As outlined above, Carl Dixon has considerable experience in bat survey and bat mitigation measures/roost design. Carl was the primary coordinator and surveyor for a heritage council-funded project serving all the river bridges in County Waterford for bats. He has designed bat roosts for Lesser horseshoe in conjunction with the NPWS for sites in West Cork. Carl has completed specialized training courses relating to bats in Ireland and the UK and has considerable experience in using a variety of bat survey equipment and subsequent software analysis of data.

6.3 Lighting

6.3.1 Lighting During Construction

Implementation of the following measures to ensure that light spill is minimised:

- (i) Lighting will be provided as necessary at the development site. The intensity of lighting will be kept to the minimum level required for safety and security.
- (ii) Consideration of best practice and guidance in relation to lighting and wildlife impact such as Bats & Lighting Guidance Notes for Planners, Engineers, Architects and Developers (Bat conservation Ireland, December 2010).
- (iii) All lighting will be directional with appropriate cowling installed to minimise light spillage from the site
- (iv) The height of lamp posts will be restricted (e.g. <8m where possible) to reduce the amount of light spillage to where it is not needed.
- (v) The lights will be positioned facing away from the woodland to the west, where possible, to minimize impact on bats that may use this area as a commuting route as well as other
- (vi) Where possible all light fittings will be LED, have asymmetrical projection i.e. directional, and with the south-west of the proposed development with colour temperature of 2700K (warm spectrum preferred by bats). The radiation will be above 500nm to potential ecological impacts avoid the blue or UV light, most disturbing to bats.
- (vii) On the occasions where the provision of portable lighting will be required, such as evening work during later winter/early spring, works on roadways and power floating floors, where possible and without jeopardising site safety, lights will be pointed down at a 45-degree angle and away from sensitive receptors.
- (viii) Lighting will be controlled by occupancy/motion sensors so that it will remain at a low output unless activated.
- (ix) Construction lighting will be designed to minimise the broadcast of light to surrounding areas including sensitive receptors.

6.3.2 Lighting during operation

A lighting plan has been submitted with the planning application (including dark sky compliant ground type LED uplighters and LED bollards). Light levels will increase within the proposed development site boundary. However, there are no lights proposed in close proximity to

Building 12 or around the retained parkland habitat. It is noted that some of the access points to Building 12 will be provided on the dark side of the building i.e. western gable.

The following detail is noted from the PM Group lighting plan:

1. All external luminaires are positioned to be dark sky compliant
2. All external LEDs will be 2,700k warm light conducive to nocturnal animal/insect life
3. Luminaires have been chosen to minimize light spillage onto the bat house.

7. Monitoring

Monitoring will be carried out post-construction works. This monitoring should involve the following

In relation to the bat house, monitoring is required for a total of 2 years. A temperature data logger will be installed and maintained for a total of 2 years. Monitoring will involve a summer survey to determine the level of bat usage of the Bat House.

Reference

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