ENVIRONMENTAL CONSULTANTS

Derogation License Application Supporting documents

Moore Street Development, Kilrush, Co. Clare

August 2025

ID Environmental Consultants

Table of Contents

1 Introduction

The objective of the proposed works is the demolition of the existing buildings, which are in a deteriorated and unsafe condition, and the subsequent redevelopment of the site to provide 16 new residential units. The works are required both to address public health and safety concerns associated with the defective structure and to deliver high-quality, energy-efficient housing that supports local and national housing policy objectives.

a. Objective of the proposed works (for example, as part of the construction of a national road, repair of roofing, undertaking surveys, etc.)

1.1 Statement of Authority

This survey was completed by Ian Douglas (MSc, BSc, H Cert.Ag) of ID Environmental Consultants. Ian is an Ecologist and Environmental consultant with over ten years' experience in appropriate assessment, ecological impact assessment, habitats assessment, soil science, GIS mapping and regenerative agriculture. Ian has worked on projects including large road developments, power infrastructure projects, planning applications, planning and design of nature trails, constructed wetland creation, and on-farm habitat development. Ian previously worked in Ecology and Agriculture in England and Australia before taking a position with Flynn, Furney Environmental Consultants in 2018. With whom he retains a position as Associate Director. Ian formed ID Environmental Consultants in 2021.

Tommy Szlaga also aided the completion of this project. Tommy is a graduate of Munster Technological University, where he completed a BSc (Hons) in Wildlife Biology (Level 8). Throughout his degree, Tommy developed strong practical skills in habitat and species surveying, with a particular focus on bat ecology, having completed his undergraduate thesis on bat species and their conservation. He has also gained experience using GIS software and completed modules in Species Identification, Habitat Studies, and Ecology, providing him with the necessary context for assessing habitats and interpreting ecological survey results. Tommy also completed a 6-month internship with ID Environmental Consultants, where he gained ample experience in both ecological surveying and compiling environmental reports.

b. Name, qualifications and relevant experience of scientific staff, including trainees (e.g. ecologists) involved in the preparation of the application and those responsible for carrying out the proposed activity.

c. If this application is for the carrying out of surveys that may cause disturbance, qualifications of all involved must be provided, and trainees must be identified.

1.2 Site Background

The proposed activity will take place on Moore Street, Kilrush, Co. Clare. The centre of the site is ITM 499698 655109 and occupies an area of circa 1.5 hectares. The building is in a state of advanced disrepair, with structural defects that pose risks to health and safety. Planning permission has been granted for the redevelopment of the site to provide 16 residential units, consistent with the site zoning in the Clare County Development Plan 2023-2029 and in line with local and national housing policy. The proposed development responds to a critical need for housing in the area, providing secure and energy-efficient homes to support sustainable community growth.

Figure 1. Development site of Moore Street Development and the present building locations

2) Background to proposed activity, including location, ownership, type of and need for the proposed activity, planning history, policy context, zoning in relevant Development plan (or equivalent), etc.

1.3 Development Description

This social housing residential development has been procured by Clare County Council. The site is located on the juncture of Moore Street and Malthouse Lane, in Kilrush, Co. Clare. It is located in an Architectural Conservation Area as stipulated by the Local Authority. The Development will consist of the demolition/partial demolition of buildings on Moore Street and the construction of 16 No—residential Units comprising of 4 Blocks varying between 2 and 3 storeys. Block A will comprise of 6 No. Units, Block B: 3 No. Units, Block C: 3 No. Units and Block D will be a converted and restored existing building facing Moore Street comprising of 4 Units. The development will also consist of 10 No. parking spaces, landscaping and associated site works.

General works associated with the proposed development include:

- The removal of soil and overburden material
- Connection to services including water, wastewater, stormwater, electricity and broadband, where applicable
- The construction of 16 residential units and all associated works
- Landscaping, paving and the creation of parking spaces; and
- All other associated site works.

SuDS measures will consist of permeable paving in the car park. The piped drainage network will discharge to ground via an infiltration tank (Stormtech or similar). All surface water will pass through a Class 1 Bypass separator prior to entering the infiltration tank. In addition to a number of tree pits around the site.

Figure 2: Proposed site layout plan

3) Full details of proposed activity to be covered by the derogation (including a site plan). The site may be inspected by an NPWS representative, so the details given should clearly reflect the extent of the project. This information will be used to compare site conditions with the Method Statement.

1.4 Ecological Survey and Site Assessment

2.4.1. Pre-existing information on species at location and environs

A bat survey carried out in June 2023 confirmed the presence of two common pipistrelles roosting in the roof structure of building C.

2.4.2. Status of the species in the local/regional area

The common pipistrelle (*Pipistrellus pipistrellus*) is widespread and abundant across Ireland and is considered to be of Least Concern at both national and European levels. It is frequently recorded in urban and semi-urban areas, including the wider locality of the site.

2.4.3. Objective(s) of survey

The survey aimed to assess the presence or absence of roosting bats within the target building prior to demolition, in order to inform the derogation licence application and ensure compliance with national and European legislation.

2.4.4. Description of survey area

The survey area comprised the building proposed for demolition, including the roof void, internal structures,

and external features with potential to support bat roosts, as well as the immediate surrounding environment.

2.4.5. Survey methodology

Surveys were carried out in accordance with Bat Conservation Ireland and Bat Conservation Trust guidelines, including dusk emergence surveys, internal inspections, and the use of bat detectors (full-spectrum). Survey work was undertaken during appropriate seasonal conditions, under suitable weather, to maximise detection probability.

2.4.6. Survey results

The June 2023 survey confirmed the presence of two common pipistrelles roosting in the roof structure. A repeat survey in July 2025 found no evidence of bats roosting or emerging, and no droppings, feeding remains, or other signs of bat presence.

2.4.7. Population size class assessment

The roost recorded in 2023 was a small day roost of two individuals, representing a negligible proportion of the local or regional common pipistrelle population. No evidence of roosting was recorded in 2025.

Further survey detail provided in Appendix 1 (2025 survey) and Appendix 2 (2023 survey)

4) Ecological Survey and site assessment (Not required for applications to carry out surveys)

- *a. Pre-existing information on species at location and environs.*
- *b. Status of the species in the local/regional area (relevant to the consideration of the impact on the population at the appropriate geographic scale (Test 3))*
- *c. Objective(s) of survey*
- *d. Description of Surveys Area*
- *e. Survey methodology (including evidence as to how the methodology represents best practice and is appropriate to the Objective). Methodology should include survey maps, details of timing, climate, equipment used and identify any uncertainties or difficulties encountered.*
- *f. Survey results including raw data, any processed or aggregated data, and negative results as appropriate. Photographs and maps must be provided where site-specific features are referred to.*
- *g. Population size class assessment.*

2 Evidence to support the Derogation Tests

Although no bats were recorded emerging from the target buildings during the most recent survey, and no bat evidence was found within any of the buildings in question, this survey only shows a snapshot in time. It does not mean that bats cannot be found roosting in the target buildings at a future date. Therefore, the demolition works have the potential to cause damage or destroy a breeding or resting place of such an animal (Regulation 51); therefore, a Derogation licence is required. Two main tests are performed to determine whether a derogation licence is required. These include Test 1: Reason for the Derogation and Test 2: Absence of Alternative solutions, which are detailed below.

2.1 Test 1: Reason for the Derogation

The reason for seeking this derogation falls under Regulation 54(2)(c), in the interests of public health and safety and for imperative reasons of overriding public interest. A bat survey undertaken in June 2023

confirmed the presence of two common pipistrelles roosting within the roof structure of the building. However, a follow-up survey in July 2025 recorded no evidence of bats or active roosting within the target buildings. Despite this, the deteriorating structural condition of the building presents clear health and safety risks to occupants and visitors. In addition, the proposed redevelopment of the site will deliver 16 new residential units, directly addressing local housing demand, supporting national housing policy objectives, and providing secure, energy-efficient homes of significant social benefit. On this basis, the derogation is sought to balance the strict protection of bats with imperative public interest, ensuring that potential conservation impacts are minimised. In contrast, essential public safety and housing needs are met.

2.2 Test 2: Absence of Alternative Solutions

The option of leaving the building in its current condition has been considered but is unsatisfactory, as the structure is already in an advanced state of disrepair with significant safety risks, and it would continue to deteriorate over time. This approach would also fail to address the acute local housing shortage or contribute to national housing policy objectives. Retention and renovation of the existing building was also examined; however, the extensive works required to bring the structure up to modern safety and energy-efficiency standards would likely result in disturbance equivalent to demolition, while offering no certainty that any bat roosting features could be safely retained. In addition, the constraints of the current building footprint would prevent delivery of the proposed 16 housing units, thereby undermining the site's capacity to address the identified housing need. A further alternative of delaying works to allow additional bat monitoring was also considered, but this would unnecessarily prolong the safety hazards posed by the deteriorating structure and delay the provision of urgently needed housing. Given that two seasons of survey data have already been collected, including the absence of bat use in 2025, additional delay would be disproportionate to the low conservation value of the site. Mitigation, in the form of integrated bat roost features within the new development, will ensure that the conservation status of local bat populations is safeguarded while enabling the delivery of essential housing.

h. Test 1 - Reason for Derogation:
  i. There should be a clear explanation as to why a specific reason(s) has been selected in the application form.
  ii. Applicants are advised to read the guidance published by the NPWS 'Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants" with specific reference to Section 3.1.

i. Test 2 - Absence of Alternative Solutions
  i. Applicants must list the alternatives to the proposed activity that have been considered, including the do-nothing alternatives in a clear and objective manner. A basic requirement is that these alternatives should be compared in terms of their impact on the species subject to strict protection. It should be clear to NPWS officials as to why the chosen approach has been selected.
  ii. Applicants are advised to read the guidance published by 'Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants" with specific reference to Section 3.2.

j. Test 3 - Impact of a derogation on Conservation Status
  i. Applicants should include details of the population at the appropriate geographic scale and an evaluation of how the proposed activity will affect the conservation status both before and after mitigation measures have been applied.
  ii. Full and detailed descriptions of proposed mitigation measures that are relevant to the potential impact on the target species. Evidence that such mitigation has been successful elsewhere should be provided, where available.

iii. *Applicants are advised to read the guidance published 'Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants" with specific reference to Section 3.3.*

2.3 Monitoring the impacts of the derogations

Should any bats or signs of roosting be encountered during works, all activity should cease, and a suitably qualified ecologist should be consulted.

Additionally, the precautionary measures, mitigation recommendations, and compensation strategies outlined in the 2023 report (Appendix 2) should also be adhered to, including sensitive lighting design, and ecological enhancement through integrated bat boxes and habitat improvements.

k. *Applicants must include details of how they propose to verify whether the derogations have been implemented correctly and whether they achieved their objective, using scientifically based evidence, and, if necessary, how the applicant will take corrective measures where required.*
l. *Applicants should provide details of proposed reports to be submitted to the NPWS including the results of monitoring.*
m. *Applicants are advised to read the guidance published by the European Commission "Guidance document on the strict protection of animal species of Community interest under the Habitats Directive" with specific reference to Section 3.4.*

3 Appendix 1: July 2025 Pre-Construction Bat Survey Report

ENVIRONMENTAL CONSULTANTS

Pre-Construction Bat Survey Report

Moore Street Development, Kilrush, Co. Clare

July 2025

ID Environmental Consultants

4 Introduction

A bat survey at the site was undertaken by Ecologists Ian Douglas (MSc, BSc, H Cert.Ag) and Tommy Szlaga BSc. Hons. of ID Environmental Consultants on the 15th July 2025. This bat survey was conducted to inform proposed demolition works at a the Moore Street Development, Kilrush, Co. Clare, where a bat roost had previously been identified. A previous survey carried out in June 2023 by Aidan Murphy MSc. (Appendix 2) recorded evidence of a common pipistrelle day roost within Building C of the subject buildings.

The aims of the bat surveys were to gather information pertaining to use of the site by bats by carrying out the following:

- Bat activity surveys to identify the baseline use by bats in the habitats determined to be suitable for foraging/commuting bats, including recording species present and activity levels;
- Presence/ absence of bat roosts or potential roosts and status of roosts if present;
- To ensure any animals using the structures are safeguarded during planned works

5 Methodologies

5.1 Dusk emergence surveys

Dusk emergence surveys of the buildings were undertaken by Ian Douglas and Tommy Szlaga on 15th July 2025 in order to watch and listen for bats exiting bat roosts to determine the presence or absence of bats at the time of survey. The dusk emergence surveys commenced from sunset and ended approx. 90 minutes after sunset. Weather conditions were optimum for bat activity during the surveys with calm, dry and mild conditions with air temperatures optimal for bat surveying.

Echolocation recordings were conducted using a handheld Echo Touch Meter Pro 2. Recordings were stored for later analysis. Bat sonograms were manually analysed and identified to species level using specialist software, Wildlife Acoustics Kaleidoscope Viewer Pro. Activity analysis of recorded bat echolocation was defined as registrations/contacts per species within a 15 second (maximum) file. Multiple passes/calls/pulses of the same species within a (maximum) 15 s file count as a single registration.

Table 1: Details relating to bat surveys conducted on site in July 2025

Date	Survey Type	Survey Times	Weather	Temperature (°C)
15th July 2025 (Sunset 21:49)	Dusk Emergence	21:30 – 23:40	25% cloud, no rain, no wind	16°C

6 Results

No bats were observed/ recorded emerging from the subject building on site during 15th July 2025 dusk emergence survey. Common pipistrelle, Soprano pipistrelle and Leisler's were recorded during this survey. This represents three of the nine resident bat species known to Ireland; they are common and widespread throughout Ireland. Results are summarised in Table 6 below. All bat species recorded during surveys are Annex IV species under the EU Habitats Directive and all have a 'Favourable' Status in Ireland. It should be noted that the number of bat passes do not equate to the number of bats flying past the surveyor during emergence watches/ activity surveys.

Table 2: Total counts of bat registrations from dusk emergence surveys

Date	Common pipistrelle	Soprano pipistrelle	Leisler's bat	Brown long-eared bat	Natter's bat	Total
15th June 2025	21	27	1	0	0	**49**

Table 3: Summary of bat activity from emergence surveys

Date	Activity Summary
16th June 2025	A faint common pipistrelle call was recorded at 21:51 (seen not heard). At 22:05, a single common pipistrelle was recorded flying from the scrub and greenfield east of the subject buildings, passing over the wall north of building A and B, and foraging around the courtyard between the subject buildings over the next 10 minutes, returning towards the east at 22:15 At 22:29, a soprano pipistrelle was recorded flying from the south, above the entrance gate into the courtyard and proceeded to forage above the courtyard and the adjacent greenfield site. This continued until 22:54 A single, faint Leisler's bat pass was recorded (heard not seen) at 22:47 **No bats were recorded emerging from the subject buildings.**

7 Pre-Construction Survey Conclusion

No evidence of a bat roost was recorded within the subject buildings during the emergence survey carried out on 15th July 2025. Although three bat species; common pipistrelle, soprano pipistrelle, and Leisler's bat were detected foraging and commuting in the vicinity of the site, no bats were observed emerging from the buildings, and no signs of roosting were identified. These findings suggest that the previously identified common pipistrelle day roost within Building A (recorded in 2023) is no longer active. Nevertheless, all bat species in Ireland are protected under the Wildlife Act (1976, as amended) and the EU Habitats Directive, and the potential for transient

or future use of the buildings by bats cannot be entirely ruled out. Therefore a derogation licence application shall be conducted.

8 References

BCT (2023) Institute of Lighting Professionals Guidance Note GN08/23 Bats and Artificial Lighting At Night.
BTHK. 2018. Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals. Pelagic Publishing, Exeter UK

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.

EPA (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports

Gunnell, K., Grant, G. and Williams, C. 2012. Landscape and urban design for bats and biodiversity. Bat Conservation Trust Lundy,
M.G., Aughney, T., Montgomery, W.I., & Roche, N. (2011) *Landscape conservation for Irish bats and specific roosting characteristics*. Bat Conservation Ireland. Accessed June 30th, 2023.

Jones, G., Rydell, J. (1994). Foraging strategy and predation risk as factors influencing emergence time in echolocating bats. Philos. T. R. Soc. B. 346, 445–455. https://maps.biodiversityireland.ie/Map. Accessed May 15th, 2024

Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland
NRA (2006a) Best practice guidelines for the conservation of bats in the planning of national road schemes. National Roads Authority, Dublin, Ireland

Roche, N., Aughney, T., Marnell, F., and Lundy, M. (2014). *Irish Bats in the 21st Century*. Bat Conservation Ireland, Ulex House, Drumheel, Lisduff, Virginia, Co. Cavan, Ireland. ISBN 978-0-9930672-0-4

Stone, E.L., Jones, G., Harris, S. (2009). *Street lighting disturbs commuting bats*. Curr. Biol. 19, 1123-1127.

Stone, E.L., Harris, S., Jones, G. (2015). Impacts of artificial lighting on bats: A review of challenges and solutions. Mammal. Biol. 80, 213-219.

9 Appendix 2: June 2023 Moore Street Bat Survey Report

Bat Survey Report

Moore Street Development,
Kilrush, Co. Clare

June 2023

Aidan Murphy BSc (Hons) MSc QCIEEM
Ecologist

Contents

1. Introduction

A bat survey of the site was undertaken by Ecologist Aidan Murphy MSc. QCIEEM, on behalf of ID Environmental Consultants, on the 3rd, 5th & 6th June 2023. The survey involved an external and internal search of the Moore Street Site buildings to determine if bats are or were present, followed by dusk emergence and dawn re-entry surveys. The aim of the bat surveys was to inform any ecological constraints to the proposed demolition of 4no. buildings

Aidan holds a BSc (Hons) in Wildlife Biology and an MSc in Ecological Assessment (UCC). He is a Qualifying Member of CIEEM (Chartered Institute of Ecology and Environmental Management), the chief professional body for Ecologists in Ireland and as such is bound by their professional code of conduct. Aidan has worked for seven years as a freelance ecologist with survey experience including bats, birds, freshwater & terrestrial invertebrates, and botanical surveys.

2. Legislation and bats

All bat species are protected by law in Ireland at a national and European level. Nationally, the Wildlife Act 1976 (amended 2000) makes it an offence to wilfully interfere with, or destroy, the resting or breeding place for bats. All species of Irish bats are listed under Schedule 5 of the Wildlife Act (1976) making it an offence to:

- Intentionally kill, injure, or take a bat

  Possess or control any live or dead specimen or anything derived from a bat
- Wilfully interfere with any structure or place used for breeding or resting by a bat
- Wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose.

The EU 'Habitats' Directive (92/43/EC; transposed into Irish law by EC Birds and Natural Habitats Regulations (S.I 477 of 2011) provides legal protection for bats and their roosts at a European Union level. In addition, the Irish government are signatories of the 1979 Bonn 'Convention on the Conservation of Migratory Species of Wild Animals' and the 1982 Convention on the 'Conservation of European Wildlife and Natural Habitats'. Ireland must also fulfil commitments under the 1991 'Eurobats Agreement' for the conservation of bats in Europe. Under the EU Habitats Directive, lesser horseshoe bats are listed as an Annex II species (afforded special protection). All other Irish bat species are listed in Annex IV (general protection) of this directive.

Regulation 51(2) of the 2011 Regulations provides – (*"(2) Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a licence granted by the Minister under Regulation 54, a person who in respect of the species referred to in Part 1 of the First Schedule— (a) deliberately captures or kills any specimen of these species in the wild, (b) deliberately disturbs*

these species particularly during the period of breeding, rearing, hibernation and migration,
(c) deliberately takes or destroys eggs of those species from the wild,
(d) damages or destroys a breeding site or resting place of such an animal, or
(e) keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive, shall be guilty of an offence."

The grant of planning permission does not permit the commission of any of the above acts or render the requirement for a derogation licence unnecessary.

3. Site Location and Description

The site is located on Moore Street, Kilrush, Co. Clare. The centre of the site is ITM 499698 655109 and occupies an area of circa 1.5 hectares. The site is bounded to the south by Moore Street, Malthouse Lane to the east and Burton Street lies 35m to the north. The nearest open watercourse is The Wood Stream, 0.16 km south of the site - (EPA code: 27W01) which flows westwards to Kilrush Marina.

The site is surrounded by housing and roads mixed with small green areas. The town is surrounded by agricultural fields and Kilrush Forest lies 300 m east of the site. The buildings proposed for demolition comprise 4no. houses fronting onto Moore Street, running to 40 m west from the corner of Moore Street and Malthouse Lane. A warehouse extension to one of the houses extends north into a large area of waste ground. The buildings are in some cases in a state of dereliction.

Figure 1. Development site of Moore Street Development and building locations

4. Methodology

4.1. Desktop study

Records from the National Biodiversity Data Centre (NBDC) for the site and surroundings were extracted and reviewed for bat records. Such information can identify bat species that may occur within a proposed development site or in the surrounding areas. It should be noted that an absence of records is likely to reflect an absence of survey data and cannot be taken as confirmation that a particular species is not present in the site or the surrounding area

4.2. Field study

4.2.1. Building Inspections

An assessment of the Moore Street site buildings was carried out on 3rd & 5th June 2023. The external assessment was conducted during daylight hours from ground level. Binoculars were used for wall sections and roofs over 2 m in height. Internal inspections of the structure were carried out on the same days. The surveys identified any potential roost features or evidence of use by bats. Evidence for bats sought are dead and live animals, droppings, discarded insect remains, urine stains, and greasy marks at entrances to structural crevices and gaps where bats

may possibly roost. General bird activity and signs of nesting birds were also noted during these surveys. The bat survey methodology for buildings had regard for *Bat Surveys: Good Practice Guidelines, 3rd edition, Bat Conservation Trust* (Collins, 2016).

Table 1. Criteria for Assessing the Potential Suitability of the Site for Bats, Collins (2016)

Tree Category	Description / Roosting habitats
Negligible	Negligible habitat features on-site likely to be used by roosting bats
Low	A structure with potential roosts used by individual bats opportunistically. Not
	enough space/shelter for larger numbers of bats for hibernation and roosting
	A tree of sufficient size and age to contain PRFs but none seen from the ground
Medium	Structure or tree with one or more potential roost sites that could be used by bats
	due to their size and shelter, but unlikely to support a roost of high conservation status
High	Structure or tree with one or more potential roost sites that are obviously suitable
	for use by large numbers of bats on a more regular basis and potentially for
	longer periods of time due to their size, protection and surrounding habitat

4.2.2. Dusk/ dawn surveys

Dusk and dawn surveys were undertaken using a Batbox Duet bat detector and an Anabat Scout, full spectrum bat detector. Weather conditions were optimum for bat activity during the surveys with calm, dry and mild conditions with air temperatures optimal for bat surveying.

The surveys were undertaken on 3rd, 5th & 6th June 2023. with dusk surveys beginning 30 minutes before sunset and finishing 90 minutes after sunset. The dusk survey began 120 minutes before sunrise.

Table 2. Details relating to bat surveys conducted on site in June 2023

Date	**Survey Type**	**Survey Times (Sunset/ Sunrise)**	**Weather**	**Temperature (°C)**
3rd June 2023	Dusk Emergence Survey	21:30 – 23:30 (21:53)	0% cloud, no rain, no wind	16°C
5th June 2023	Dusk Emergence Survey	21:30 – 23:30 (21:55)	0% cloud, no rain, no wind	16°C
6th June 2023	Dawn Re-entry Survey	03:10 – 05:30 (05:14)	0% cloud, no rain, no wind	12°C

4.2.3. Automated Passive Detector Monitoring

Automated passive recordings of acoustic bat activity was carried out from the Moore Street side of the buildings on 3rd June (emergence only) and 5th & 6th June 2023 (dusk until dawn). The passive detectors operated from half an hour before sunset to half an hour after sunrise. Bat activity was recorded using Wildllife Acoustics Song Meter Mini Bat detectors. Bat recordings (sonograms) were manually analysed and identified to species level using specialist software, Wildlife Acoustics Kaleidoscope. The detectors were positioned on Moore Street to investigate any bats exiting buildings south or commuting through the street. They were positioned on 1st floor windowsills on Buildings B and C.

10 5. Results

10.1 5.1. Desktop study results

Records from the National Biodiversity Data Centre (NBDC) (https://maps.biodiversityireland.ie/) for the local area where the site is located were extracted and reviewed (accessed on 27/6/2023). The nearest records for bats are from a location 7 km east of the site at Knockerra Lake Upper with five species of bats recorded: Leisler's bat (*Nyctalus leisleri)*, soprano pipistrelle (*Pipistrellus pygmaeus)*, common pipistrelle (*Pipistrellus pipistrellus sensu lato),* Brown Long-eared Bat *(Plecotus auritus)* and Daubenton's Bat *(Myotis daubentonii).* See Table 3.

Table 3. Nearest bat records from a location at Knockerra lake Upper.

Grid reference/ distance from site	Species	Recorder	Date of last record	Database
R064574 7 km east of site	Common pipistrelle Leisler's bat Soprano Pipistrelle Daubenton's Bat Brown Long-eared Bat	Ruth Carden	11/10/2009	National Bat Database of Ireland

In addition, Bat Conservation Ireland's habitat suitability index[1], available to view on the NBDC online mapping portal, classifies the landscape within which the site is located, as having a medium to high suitability for bats, with a score of 33.11

5.2. Field study results

5.2.1. Visual Survey Results

Building A: This is a two-storey, end of terrace house with a two-storey extension to the rear, both have pitched slate roofs. It is in derelict condition with water ingress through east facing dormer windows on the eastern side which are open to the elements and rainwater has caused wet rot to the wooden floors. The slate roofs are in good condition.

The front and east (right hand side) elevations suffer significant light pollution from street lighting, see Plate 1. Many species of bats and other mammals are sensitive to lighting and will avoid areas which are illuminated. Bats are amongst are the most sensitive receptors in relation to light pollution originating from development[2]. The strong street lights will cause disturbance to bats of roosting and foraging opportunities. Lighting impacts are considered significant on all building frontages onto Moore Street. A thorough search of the ground floor rooms and 1st floor front room did not reveal any signs of bats

[1] Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N. (2011) *Landscape conservation for Irish bats and specific roosting characteristics*. Bat Conservation Ireland. Accessed 30th June 2023.

[2] Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat Mitigation Guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland

The 1st floor back room and front attic were given limited visual searches as the floors/ timbers are dangerous to walk on due to wet rot. All other rooms were searched and no area of the building revealed any signs of bats. Although the open dormers in the rear extension roof offer potential entry to bats, the room itself has no roost features to exploit and the roof sections and framework of the dormers are considered too exposed to damp and light to be considered suitable for bat roosts. The building as a whole is considered to have low to medium bat roost potential.

Plate 1. Building A front and side elevations: building suffers from significant light pollution deterring bat activity

Plate 2. Building A, side elevation with extension (right of photo). Dormers set into roof allow bats easy entry but internal conditions are damp and draughty

Plate 3. Building A. Ground floor ceiling with rotten timbers and collapsed plaster

Plate 4. Building A. Internal view of dormers (red arrows). Attic (blue arrow) was not accessible and is limited in height to approx. 1 metre

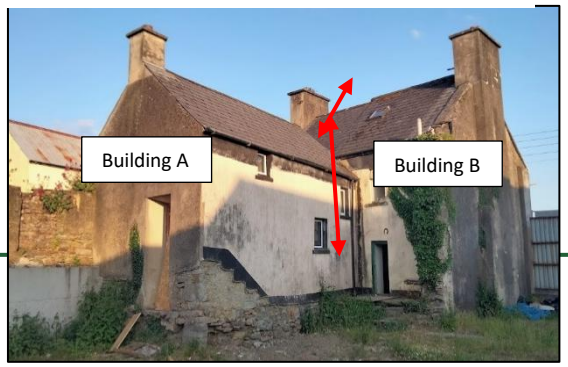

Plate 5. Building A. Front attic

Plate 6. Buildings A and B. Rear view of building photo taken from the centre of the site

Building B: This is a two-storey house, adjoining Building A with little sign of the derelict condition of Building A with which it shares a party wall. It has a pitched slate roof, similar to Building A. The attic has been converted and a Velux window allows views of the slate roof and surrounding roofs. The attic space has an access door for inspection of the water tank and its surrounds. No sign of bats was observed within the building. Holes in the blockwork on the north-western corner of the wall and parapet (Plate 10) are exposed to the elements and an examination by ladder and with the use of an endoscope, no sign of bat roosting was observed. The building has a rendered gable wall and chimneystack between which cracks in the render have developed. The holes and cracks in the exterior walls are considered too shallow and exposed to damp and light to be used by roosting bats.

Plate 7. (left) Building B. Attic room with water tank and Velux window overlooking the development site.
Plate 8. (right) Building B. Ground floor room with back entrance

Plate 9. Building B. Rear view of building, parapet with hole (red arrow) and cracks in the wall render (yellow arrow)

Plate 10. Building B. Rear view of building parapet with hole (red arrow)

Building C: This is a two-storey building with a pitched slate roof. It has a warehouse extension to the rear which has a combination of a double pitched slate roof and a flat roof with corrugated metal sheets. A small shed with a concrete roof is located at the rear of the extension. The front 'house' part of the building is for the most part in good condition. The attic was given a limited visual search as the attic joists appeared unsound. No signs of past or present use by bats was found in the building.

Plate 11. Building C. (above left) front fascade
Plate 12. Building C. (above right) First floor, front room
Plate 13. Building C. (left) Attic

The double-pitched roof on the extension to the rear of Building C is in overall good condition. The gable wall of the main building and eastern wall of the extension are rendered and painted, the roof appears sound and no gaps or holes were observed which have bat roost potential, see Plate 14. However, the western wall is an old stone wall with numerous cracks and crevices noted and also missing fascia boards leaving the ends of rafters exposed, see Plate 15. Bat roost potential in the roof is considered high along this section of the extension. The many crevices in the stonework and blockwork were considered not sufficiently deep, dark and sheltered to provide suitable roosting crevices to bats. Roosting potential in the walls was therefore considered low. A thorough visual search at the base of the walls did not find any bat droppings or any other roosting signs. The flat roof part of the extension building is covered with modern metal sheeting, the same material is used on the eastern aspect (wall). Owing to the box profile of the metal sheeting, the building here has numerous potential entry points for bats. However, the building has a decreased probability of bats roosting, as such structures when prefabricated with steel and sheet materials, are less favoured by bats (Marnell *et al*., 2022). The interior spaces in the first floor were generally filled with daylight (e.g. Plate 20), and daytime roosting potential was considered low overall. There were no signs of bats roosting in the ground floor or first floor rooms of Building C and Its extension, however, the east facing

pitched roof of the extension has medium bat roost potential due to open rafters and sheltered dark spaces available.

Plate 14. Building C. Gable wall and east facing wall of extension with pitched roof. Bat roost potential is low here

Plate 15. Building C. East facing wall of extension with pitched roof. Building D on right, note holes in stonework and exposed end rafters. Bat roost potential considered medium

Plate 16. Building C Extension. Overview of site, photo taken from roof of Building B showing eastern aspect with combination of pitched roofs and flat roof on the extension

Plate 17. Building C Extension. Eastern and northern aspects of extension with inset photo of small shed interior. Photo facing south

Plate 18. Building C Extension. Western and northern aspects of extension. Building D on right of photo

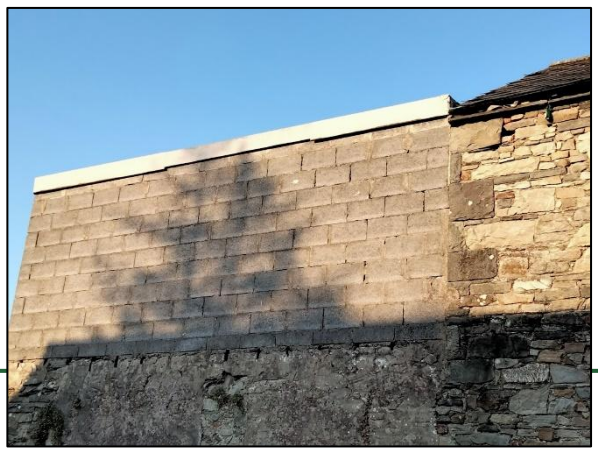

Plate 19. Building C Extension. Western aspect of flat roofed section of extension

Plate 20. Building C Extension. First floor room in flat ro section, note box profile on roof sheeting (red arrov providing numerous holes. Daytime roosting potenti was considered low with skylights flooding room wit daylight

Plate 21. Building C Extension. Ground floor room which is normally in darkness, bats have no access to the ground floor

Building D: This is a two-storey building with a pitched slate roof and a flat roofed extension. It is in good structural condition throughout. The attic and all rooms were thoroughly searched and no sign of bat roosting or signs of bat roost potential were observed in the interior and the exterior. The building as a whole is considered to have low bat roost potential.

Plate 22. Building D. Front elevation, similar to all the buildings surveyed, the building suffers from significant light pollution deterring bat activity

Plate 23. Building D. Rear elevation with mini flat roof extension

Plate 24. Building D. First floor room

Plate 25. Building D. Attic

Plate 26. Building D. Photo left**.** Upper floor, flat roof extension interior
Plate 27. Building D. Photo above. Ground floor, back room

5.2.2. Dusk/ dawn surveys

Three species of bat were recorded during dusk and dawn surveys on the development site: common pipistrelle, soprano pipistrelle and Leisler's bat. Common pipistrelle was dominant overall followed by Leisler's bat and soprano pipistrelle.

During the first emergence survey on the 3rd June, 2no. common pipistrelle bats were observed emerging from the western side of the extension roof of Building C. Subsequently, common pipistrelles were sporadically visiting the site on the western and northern sections for foraging, with one soprano pipistrelle detected with a faint recording. No bats were observed commuting through this section of the site.
During the second emergence survey on the 5th June, the survey concentrated on the eastern part of the site and no bats were observed emerging from any of the buildings. Common pipistrelle bats were observed foraging with bats commuting across the site in an east-west axis. Soprano pipistrelles were not recorded and Leisler's bat calls were frequent but very faint, their calls coming from high over the site. No other bats were seen emerging from any of the buildings under consideration on either of the dusk surveys.
No bats were observed entering any of the buildings during the dawn survey. A summary of the results and locations of all bats detected are presented in Table 4. It should be noted that these detections are bat passes and are indicative of levels of activity, rather than an actual count of bats.

Plate 28. Building C. Extension roof with location of common pipistrelle roost (red arrow). Building D on right.

Table 4. Bat activity recorded during dusk/ dawn surveys: June 2023

Time	Location	Species	Comments
Dusk survey 3/06/2023. Sunset: 21:53			
22:15	West of Building C	Common pipistrelle	Faint detection - not seen
22:17	West of Building C	Common pipistrelle	Faint detection - not seen
22:19	West of Building C	Common pipistrelle	Emerged from extension roof. 2 bats
22:21	West of Building C	Soprano pipistrelle	Faint detection - not seen
22:22	West of Building C	Common pipistrelle	Commuting east to west. 1 bat
22:25	West of Building C	Common pipistrelle	Faint detection - 3 passes
22:34	West of Building C	Common pipistrelle	Faint detection - 4 passes
22:38	West of Building C	Common pipistrelle	Faint detection - 2 passes
Dusk survey 5/06/2023. Sunset: 21:55			
22:00	East section of site	Leisler's bat	Faint detection - not seen
22:08	East section of site	Common pipistrelle	Faint detection - not seen
22:08	East section of site	Common pipistrelle	Foraging.
22:09-22:13	East section of site	Leisler's bat	Faint detection - not seen. 7 passes
22:12-22:54	East section of site	Common pipistrelle	Foraging. 12 passes
22:15-22:16	East section of site	Leisler's bat	Faint detection - not seen. 2 passes
22:18-22:58	East section of site	Common pipistrelle	Commuting through site. 3 passes
Dawn survey 6/06/2023. Sunrise: 05:14			
04:02	East section of site	Common pipistrelle	Faint detection - not seen
04:03	East section of site	Soprano pipistrelle	Faint detection - not seen

04:08	East section of site	Common pipistrelle	Faint detection - not seen

5.2.3. Passive detector surveys on Moore Street

No bat activity was recorded outside the Moore Street buildings (A-D) on the Passive bat detectors.

6. Discussion

2no. common pipistrelle bats were observed emerging from the extension roof of Building C. This roost can be categorised as a Day Roost (generally March-November). These roosts are used during the day to rest in. Males of most Irish species spend the summer roosting alone or in small groups with other males in such roosts. Bats may regularly use a number of day roosts, switching between them on a daily basis, though conversely they may occupy the same roosting site for several weeks.

The present surveys carried out in June 2023 are a 'snapshot' in time and the absence of a species, or evidence of their presence, does not preclude their presence at a later date. Adopting the precautionary approach there remains the possibility that the buildings could have bat roosts in the future and therefore disturbance impacts cannot be ruled out. The buildings should be resurveyed for bats prior to any proposed demolition works as some time may have elapsed between the present survey and these works. Should a bat roost be present then a derogation licence will be required from NPWS for removal of a bat roost. In accordance with the Bat Mitigation Guidelines for Ireland, the optimum time for undertaking works to a building (demolition) supporting a summer roost (not a proven maternity site) is between 1st September and 1st May.

The development will result primarily in the loss of an area of poorly developed scrub habitat and some buildings of low to medium bat roost potential. The habitat loss is expected to result in a low short-term impact on the local bat population.

7. Mitigation Measures

7.1. Preconstruction Surveys

Prior to construction commencing and in advance of demolition of the building on site, bat emergence/dawn return surveys should be carried out to check the buildings for roosting bats. Should a bat roost be present then a derogation licence will be required from NPWS for removal of a bat roost. Demolition of the buildings should take place outside the bird breeding season which occurs March 1st to August 31st.

7.2. Lighting Design

The lighting design should be bat friendly. The main features of sensitive lighting design for bat species are:

• Minimise lighting to that strictly required for health and safety purposes and review existing lighting to ensure that that any additional lighting does not result is cumulative lighting impacts, increased sky glow or for the area to be over lit.

• Avoid lighting on key habitat features. Features important for bats such as hedgerows, treelines, watercourses and riparian areas are all important ecological corridors and these

features should be maintained in darkness or near darkness. Buildings and sheds particularly older buildings may contain bat roosts and these should not be lit up.
• All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
• LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
• A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
• Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
• Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
• Column heights should be carefully considered to minimise light spill.
• Only luminaires with an upward light ratio of 0% and with good optical control should be used.
• Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
• As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.
• Dimming or part night lighting should be considered. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

7.3. Compensation & Enhancement

7.3.1. *Landscape and Planting*

The landscape plan should include provision for linear habitats i.e. native hedgerows and treelines preferably with connectivity to the wider landscape to enhance the site as commuting and foraging habitat for bat species. Landscape planting should include a range of shrubs, grasses and herbaceous plants to encourage a diversity of insects throughout the year.
It is recommended that the design should also incorporate:
• Nature based solutions for management of drainage such as swales and rain gardens
• Living or green walls using climbing plants.
These features will also attract insects to the site and enhance the site for bat species and other Wildlife.

7.3.2. Integrated Bat Boxes

Consideration should be given to the inclusion of purpose-built bat roosting opportunities within the proposed buildings on the site. It is recommended that integrated bat boxes are built into the external walls of the proposed buildings to compensate for the loss of potential roosting opportunities in the buildings demolished. An ecologist should be consulted during the design phase of the proposed development with regard to the choice and siting of integrated bat boxes within the building walls. Integrated bat boxes tend to be more permanent and less subject to disturbance than externally sites boxes (Gunnell *et al*., 2012). One supplier is Schwegler available with various designs at https://www.schwegler-natur.de/fledermaus/?lang=en. (. (e.g Schwegler bat tube 1FR; Bat wall system 3FE))

8. Conclusion

The site is evaluated as low local importance for bat species, although a common pipistrelle roost was confirmed. No bats or evidence of bat presence was noted in any of the other buildings surveyed and the bat activity detected on site was considered low. Based on the results of present bat surveys and provided the pre-demolition surveys and mitigation measures outlined above are implemented, the development is considered to have no more than a temporary low impact on the local bat population. The compensation and enhancement measures recommended above are likely to enhance the site for bat species in general.

9. References

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Gunnell, K., Grant, G. and Williams, C. 2012. Landscape and urban design for bats and biodiversity. Bat Conservation Trust Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N. (2011) *Landscape conservation for Irish bats and specific roosting characteristics*. Bat Conservation Ireland. Accessed June 30th, 2023.

https://maps.biodiversityireland.ie/Map. Accessed June 30th, 2023

Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland

NRA (2006a) Best practice guidelines for the conservation of bats in the planning of national road schemes. National Roads Authority, Dublin, Ireland