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Our Ref: 11192 17 November 2021

Downey Planning & Architecture

Muldowney's Pub, Rathcoole

Bat Survey

Introduction

Downey Planning & Architecture is proposing to develop no. 23 apartment units on a 0.57ha site to the rear of Muldowney's Public House, in Rathcoole, Co. Dublin (refer to Figure 1 below). The apartments will be comprised of No. 10 one bed apartments, No. 3 two bed apartments (three persons) and No. 10 two bed apartments (four persons). Surface car parking (No. 32 in total) will also be added to accommodate for the proposed apartment blocks and the existing public house. Existing outbuildings belonging to the Muldowney Pub will require demolition and relocation into the existing footprint of the pub. The proposed demolition plan is shown on Figure 2 below.

TOBIN Consulting Engineers (TOBIN) was commissioned to undertake a bat survey at the site of the proposed development as part of the ecological assessment of the site. The objective of the survey was to assess roosting potential, to search for evidence of roosting bats and observe any bat activity within the area. This report presents the results of a desk study and field survey. The bat survey was undertaken by TOBIN ecologists, Áine Sands (B.Sc.). and Ria Aherne (B.Sc.).

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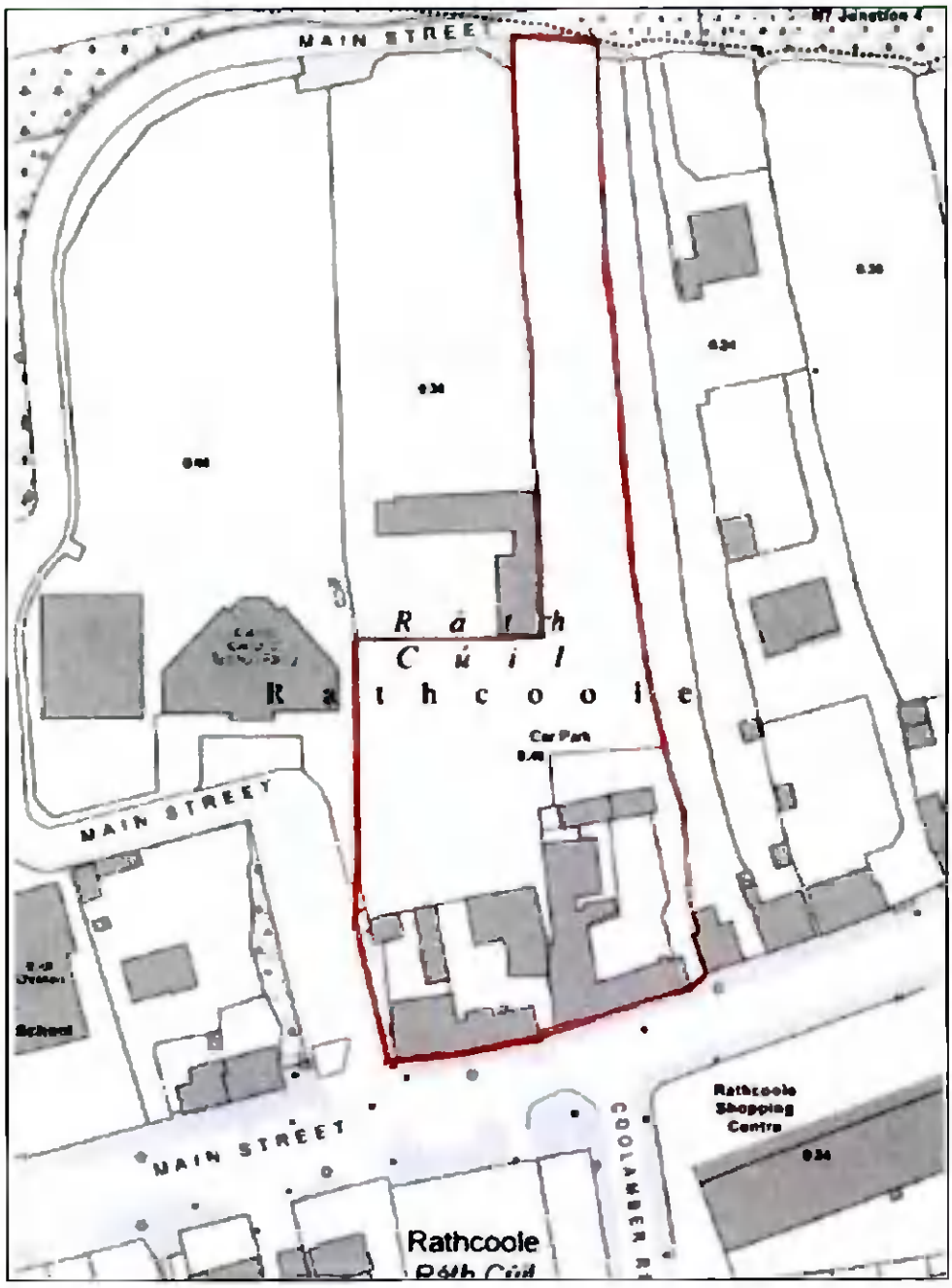
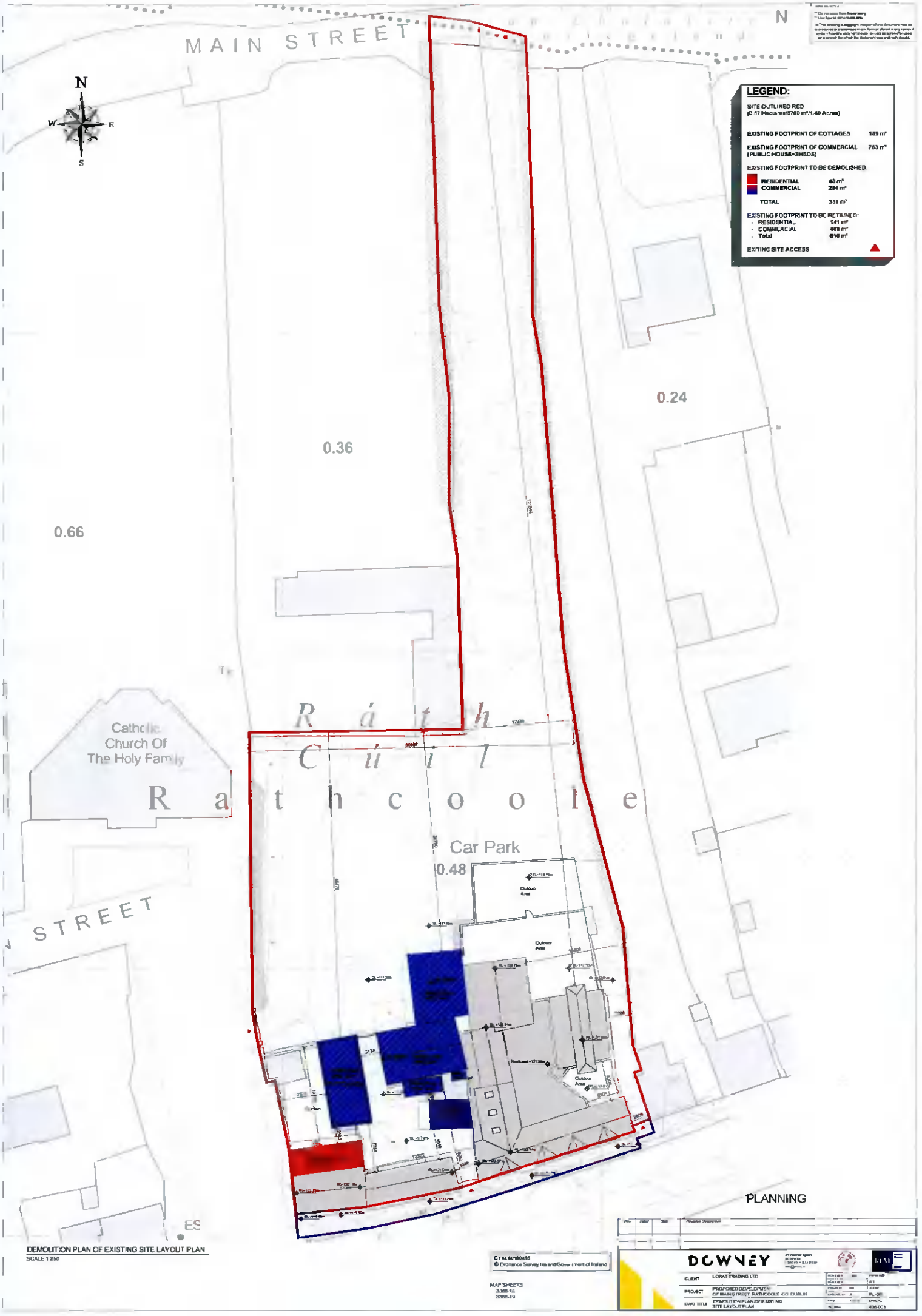
Figure 1: Proposed Development Site Location




MAIN STREET
N
LEGEND:
SITE OUTLINED RED
(0.57 Hectares/5700 m²/1.40 Acres)
EXISTING FOOTPRINT OF COTTAGES 189 m²
EXISTING FOOTPRINT OF COMMERCIAL (PUBLIC HOUSE+SHEDS) 763 m²
EXISTING FOOTPRINT TO BE DEMOLISHED.
RESIDENTIAL 48 m²
COMMERCIAL 284 m²
TOTAL 332 m²
EXISTING FOOTPRINT TO BE RETAINED:
- RESIDENTIAL 141 m²
- COMMERCIAL 469 m²
- Total 610 m²
EXITING SITE ACCESS
0.24
0.36
0.66
0.48
Cathdic Church Of The Holy Family
R á t h C ú i l
R a t h c o o l e
Car Park
STREET
ES
Outdoor Area
PLANNING
DEMOLITION PLAN OF EXISTING SITE LAYOUT PLAN
SCALE 1:250
© Ordnance Survey Ireland/Government of Ireland
MAP SHEETS
3388-18
3388-19
DOWNEY
CLIENT LORAT TRADING LTD
PROJECT PROPOSED DEVELOPMENT OF MAIN STREET, RATHCOOLE, CO. DUBLIN
DWG TITLE DEMOLITION PLAN OF EXISTING SITE LAYOUT PLAN
A1
PL-001
436-003

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Policy and Legislation

All Irish bats are protected under European legislation, namely the Habitats Directive (92/43/EEC). All Irish species are listed under Annex IV of the Directive, requiring strict protection for individuals, their breeding sites and resting places. The Lesser Horseshoe bat (*Rhinolophus hipposideros*) is further listed under Annex II of the Directive, requiring the designation of conservation areas for the species[1]. Under this Directive, Ireland is obliged to maintain the favourable conservation status of Annex-listed species. This Directive has been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011.

In addition, Irish bat species are further protected by national legislation (Wildlife Acts 1976-2017). Under this legislation, it is an offence to intentionally disturb, injure or kill a bat or disturb its roost. Any work at a roost site must be carried out with the agreement of the National Parks and Wildlife Service (NPWS) and a derogation licence must be granted before works commence.

Methodology

Desktop Assessment

The desktop assessment included a review of the proposed development site and surrounding area through the evaluation of relevant literature. Ordnance survey maps (OSI 1:5,000 and 1: 50,000), aerial imagery (ortho-based maps) and the Bat Landscapes feature on Biodiversity Maps[2] were reviewed to identify any habitats and features likely to be used by bats. Maps and images of the site and general landscape were examined for suitable foraging, commuting or roosting habitats such as woodlands and forestry, hedgerows, treelines and watercourses.

Bats utilise woodland areas, treelines and hedgerows as commuting and foraging grounds. Bats also use buildings, walls and trees as potential roost sites throughout the year. Developments may therefore affect bat roost locations and provide obstacles for regular bat commuting and foraging. Alterations on sites can also affect prey species as a result of changes in lighting.

Therefore, it is vital to develop a full understanding of bat activity at development sites to identify any zones of conflict and minimize impacts on protected species through mitigation.

Field Surveys

1 NPWS, 2019: The Status of EU Protected Habitats and Species in Ireland. Species Assessments. Volume 3. Version 1.0. Unpublished report National Parks and Wildlife Service. Department of the Arts, Heritage and the Gaeltacht, Dublin.

2 https://maps.biodiversityireland.ie/

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TOBIN undertook the survey on 29th of July 2021. The survey comprised a bat roost inspection of existing structures and vegetation, an emergency survey and a dusk, activity survey. The objective of the survey was to assess roosting potential, to search for evidence of roosting bats and to assess bat activity around the proposed development site.

Potential roosting areas were assessed during daylight hours. The presence of roosts is often shown by grease staining at the entrance, droppings, uneaten remains of prey such as moth or butterfly wings and occasionally dead bats. Where a potential roost feature was identified, the feature was further investigated using an inspection bat endoscope (Model 8003AL) (Under License: 21/2021).

An emergence survey and dusk activity survey were carried out at features identified as having bat roost potential. In addition, dusk activity survey was carried out along a walked transect around the perimeter of the proposed development site. All bat activity observed, was recorded using a handheld bat detector (Magenta Bat5) and an Echo Meter Touch 2 Pro. The Echo Meter Touch 2 Pro allows for real time visualisation of bat activity in the vicinity of the surveyor. Bat activity in the area was recorded both by ultrasonic calls and flight. The bat survey was conducted in optimal weather conditions.

Guidelines followed during onsite surveys include:

- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists. Good Practise Guidelines (3rd edn). The Bat Conservation trust, London.
- Kelleher, C. & Marnell, F. (2006) Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.
- CIEEM (2013) *Competencies for Species Surveys: Bats.* Chartered Institute of Ecology and Environmental Management, Winchester.
- National Roads Authority (2006) *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes.* National Roads Authority, Dublin Ireland.

The guidelines recommend roosting preferences, survey types and timings and foraging habitat preferences as well as species specific considerations. Each survey method has its own specific merit in observing and identifying bat species, their level of activity and their use of the landscape. Bat activity surveys ideally need to be conducted during the spring and summer months, when bats are most active. Hibernation occurs during the winter months. The survey was carried out in July 2021, which is when bats are generally present within summer roosts and may be in the process of raising young. It is possible to assess the site for roosting and foraging suitability throughout the year. Roosting sites and commuting or foraging habitats can be divided into four categories, depending on their suitability (Table 1).

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Table 1: Guidelines for Assessing the Potential Suitability of Proposed Project Sites for Bats, Based on the Presence of Habitat Features within the Landscape, to be Applied using Professional Judgement

Suitability	Description	
	Roosting Habitats	Commuting and Foraging Habitats
Negligible	Negligible habitat features on-site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by another habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts.

Note:
Source of information: Collins 2016
[a] For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

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Results

Bat roost Inspection

All building/structures and vegetation proposed to be demolished/removed or within the zone of influence of the proposed development were inspected during the bat roost inspection. All buildings/structures proposed to be removed are shown in Figure 2 above. The results of the bat roost inspection are outlined hereunder.

1) Building Storage Shed

An internal and external inspection of the storage building, located to the south-west of the proposed development site was undertaken. The shed will be demolished to facilitate the proposed development. The building consists of concrete walls with a slatted roof and drain gullies present (refer to Figure 3 below). During the external inspection, a suitable roost feature was identified on the structure. A small gap occurs between the concrete wall and the roof tiles. The feature was further investigated using a bat endoscope (under License: 21/2021). No bats or evidence of same was recorded within the feature. During the internal inspection no entry points were identified within the structure. Similarly, no evidence of bat activity such as droppings, staining, feeding remains or dead bats were recorded within the building.

Due to the presence of a potential roost feature on the external southern boundary of the building the structure was assessed as having 'Moderate' bat roost potential as per Collins (2016)[3]. Despite the presence of roost features, there is no connectivity to any linear features and there is existing artificial lighting spill on the structure.

A mature leyland cypress *(Cuppressocyparis leylandii)* occurs immediately adjacent to the shed. The tree has no roost features present and was assessed as having 'Negligible' bat roost potential as per Collins (2016)[3].

Figure 3: External view of the shed

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

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2) Cold Dry Storage Facilities and Outdoor Pub Area

The cold dry storage facilities which are located at the southern-western boundary of the site, will be removed and relocated to facilitate the proposed development. Internal and external inspections of the cold dry storage structures were undertaken. The two structures consist of galvanised metal sheets (refer to Figure 4). No potential roost features were identified during the internal or external inspections. Similarly, no evidence of bat activity was recorded during the survey. The structures were assessed as having 'Negligible' bat roost potential as per Collins (2016)[3].

The outdoor smoking area of the pub will also be removed to facilitate the proposed works. The outdoor area consists of artificial surfacing and is bordered by timber fencing. The area was assessed as having 'Negligible' bat roost potential due to the lack of any suitable roost features identified during the inspections. No evidence of bat activity was recorded. The outdoor area is largely lit up by external lighting making it sub-optimal roosting habitat for bats.

Figure 4: Cold Dry Storage Facilities

3) Cottages and Office

Surveys were undertaken of small residential cottage located at the south-western boundary of the proposed development site and also of a small office building located at the south-eastern corner of the proposed development site.

An external visual inspection of the residential cottage was carried out. An internal inspection could not be undertaken within the building as the cottage was occupied at the time of the survey. Following the external inspection the cottage

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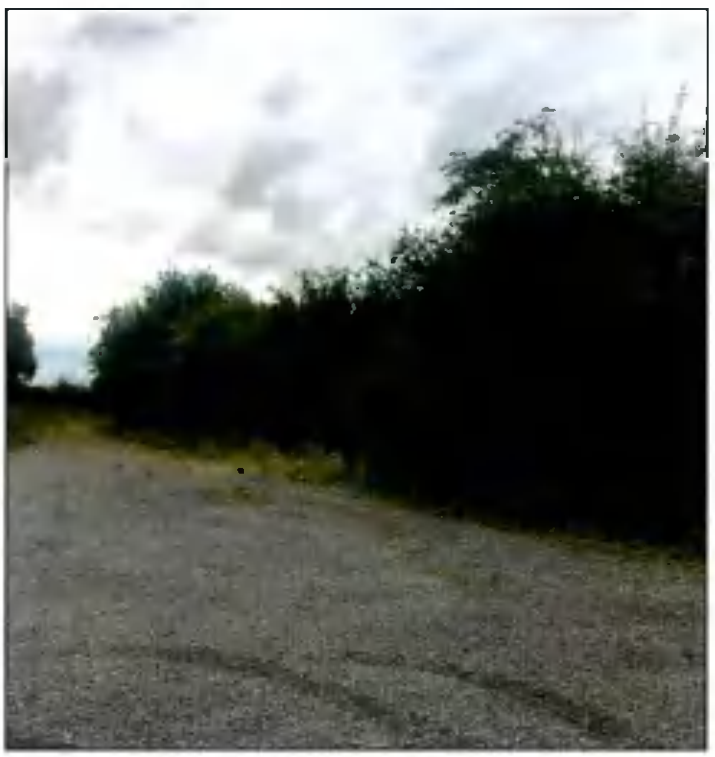
was assessed as having 'Negligible' bat roost potential as per Collins (2016)[3] due to the lack of any suitable roost features. The building was largely illuminated by surrounding lighting.

Internal and external inspections were also undertaken of the small office building. No potential roost features were identified on the internal or external of the building. In addition, no evidence of bat activity was recorded. The building was assessed as having 'Negligible' bat roost potential as per Collins (2016)[3].

4) Treelines

Two treelines occur towards the northern boundary of the site. The treelines comprise hawthorn *(Crataegus monogyna)*, blackthorn *(Prunus spinosa)*, ash *(Fraxinus excelsior)*, elder *(Sambucus nigra)*, sycamore *(Acer pseudoplatanus)* and bramble *(Rubus fruticosus)* (refer to Figure 5). All trees were inspected for potential roost features. The trees are relatively immature with thick foliage present. Sections of the treelines were also partially illuminated by lighting from the adjacent car park and neighbouring buildings. All trees were assessed as having 'Negligible' bat roost potential due to the lack of any suitable roost features.

Figure 5: Treeline



Emergence Survey

An emergence survey was undertaken at the storage shed building as the building was assessed as having 'Moderate' bat roost potential. The dusk emergence survey commenced 15 minutes before sunset (21:10) until 1.5 hours

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after sunset (22:55), with the ecologist maintaining visual contact with the roost features. No bats were recorded emerging from the features.

Dusk Activity Survey

A manual, dusk, activity survey was undertaken at the proposed development site. Weather during the survey was dry and calm with the temperature ranging between 12 and 15 degrees Celsius. The survey commenced at 21:10 (15 minutes prior to sunset) and ended at 23:25 (two hours post sunset). A transect route was walked along the perimeter of the proposed development site focusing around linear features and structures proposed to be removed. The results of the survey are listed in Table 1.

Table 1: Bat Activity Survey Results

Time	Species	Location and Activity
21:46	Common pipistrelle	Recorded commuting along the treeline located at the north-western boundary of the site.
22:25	Lesser Noctule	Recorded commuting over the treeline located at the north-western boundary of the site.
22:45	Leisler	Recorded commuting over the sheds located at the southern boundary of the proposed development site.
22:51	Common pipistrelle	Recorded commuting over the treeline located at the north-eastern boundary of the site.
22:57	Leisler	Recorded commuting over the existing carpark.
22:59	Common pipistrelle	Recorded commuting over the existing carpark.

Records of bat activity within the proposed development site were considered relatively low. Only six bat activity events were recorded. The low levels of activity are likely due to the existing illumination within the site and limited linear features. The site is largely illuminated by street lighting, lighting from surrounding buildings and lighting from the existing car park. Activity along the treeline and hedgerow at the northern boundary of the proposed development site suggests that the linear features provide some foraging and commuting routes for bats; however, it is not used by a great variety of species or in abundance of numbers. The proposed development site does not provide an important foraging/commuting route for bats.

Conclusion and Recommendations

The proposed development site does not provide an important habitat for bats. No active bat roosts were identified and only a few potential roosting sites were recorded within existing structures. In addition, very little bat activity was recorded and no important foraging or commuting routes were identified within the site. The demolition of the building and removal of vegetation will not result in significant negative effects on the local bat population.

It is recommended that a pre-construction bat survey of the shed located to the south of the development site is undertaken as a potential bat roost feature was identified on the structure. The pre-construction survey should be undertaken by a suitably qualified and experienced ecologist. The pre-construction survey should be undertaken

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immediately prior to the demolition works and with regard to the NRA Guidelines (2005)[4]. In the event that an active roost is identified a derogation license must be sought from NPWS in order to demolish the building and appropriate mitigation measures implemented.

In addition, all temporary lighting associated with the construction works must be placed strategically by the appointed Contractor following consultation with a suitably qualified ecologist. This will ensure that illumination beyond the works area is controlled. Lighting will be cowled and directional to reduce significant light splay. In addition, the column height of the temporary lights will be carefully considered to minimise light spill.

It is considered that the development of this site for residential housing will have negligible effect on the local bat populations, but it is advised that the landscaping plan provides for the planting of trees and native shrub species within and around the site to provide sheltered foraging areas for bats[5,6] and that the existing trees should be retained where possible. It is also recommended that the proposed external lighting is designed not to focus on areas outside the site itself and comprises modern, low light spillage lamps[7]. All external lighting should be designed in line with the Bat Conservation Lighting Guidance (2010)[8].

4 NRA (2005) Guidelines for the Treatment of Bats During the Construction of National Road Scheme.

5 Entwistle, A. C., Harris, S., Hutson, A. M., Racey, P. A., Walsh, A., Gibson, S. D., Hepburn, I. & Johnston, J (2001). Habitat management for bats: A guide for land managers, landowners and their advisors. Joint Nature Conservation Committee. Available at http://jncc.defra.gov.uk/pdf/Habitat_Management_for_bats.pdf. Accessed: October 2019.

6 Kelleher, C. & Marnell, F. (2006) Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland

7 Stone, E. L., Jones, G. & Harris, S (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. Global Change Biology. 18(8) 2458-2465

8 Bat Conservation Ireland (2010) Bats & Lighting. Guidance Notes for: Planners, engineers, architects and developers. December 2021