BAT SURVEY REPORT

Brady's Pub site on the Old Navan Road, Dublin 15

SEPTEMBER 17, 2019

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1 INTRODUCTION

This report details the findings of a bat survey completed as part of a planning application for the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 sq m) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 sq m) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

This report aims to;

- Identify links between the subject site and the adjacent ecological corridor; the Royal Canal.
- Determine the presence of bats roosting within the site.
- Identify species of bats using the site.
- Examine potential feeding and commuting routes.
- Potential impacts of bats by the proposed development.

The surveys undertaken are in line with recommendations in Chapter 10 of the Bat Conservation Trust 'Good Practice Guidelines, 2nd edition, 2012' (BCT Guidelines 2012) and The Irish Wildlife Manual No. 25' (Kelleher, C. & Marnell, F. 2006). The survey was designed and carried out by John Curtin B.Sc. (Env.). John has over five years' experience of carrying out bat surveys and has completed over 30 surveys during this time. John has also completed the Bat Conservation Ireland, Bat Detector Workshop and Bat Handling Workshop which are the standard training for the carrying out of bat surveys in Ireland. He follows the Bat Conservation Ireland 'Good Practice Guidelines '(Aughney *et al*., 2008)'. In addition, John is an active member of Bat Conservation Ireland, which monitor bat populations in Ireland, and facilitate the education of bat communities to the public.

At height tree surveys were conducted by Rik Pannett B.A., Dip., C&G Arb and overseen by John Curtin. Rik has over ten years' experience working as an arborist and is adapt at climbing trees using ropes. John has found several tree roosts in the past and has taught on a recent Bat Conservation Ireland course on bat roosts in trees. Searches were conducted with the aid of an inspection camera (licence 137/2018).

The site in question contains a public house with associated car park and treelines off the Old Navan Road, Dublin 15

In order to assess the presence and activity of bats within the proposed development grounds, a preliminary daylight site inspection was conducted on the 12th and 13th of September whilst a night time detector survey was also completed at this time.

A thorough examination of the building using ladder, high powered torch, a Seek Reveal XR FF thermal imaging device and an Ridgid CA-300 Inspection Camera (under Licence No: 137/2018) did not reveal any evidence of roosting bats. Similarly a full 'at height' potential roost feature survey showed no evidence of roosting bats. The subject site consists of a single building currently operating as a pub. The building is surrounded by car parking with treelines and sits adjacent to residential areas, parks and lies c. 120m from the Royal Canal.

The night time detector survey showed very low levels of bat activity despite good weather conditions.

2 DESKTOP STUDY

2.1 BATS IN IRELAND – LEGISLATIVE PROTECTION

There are two main pieces of legislation which cover wildlife protection in Ireland – the Wildlife Act and the Habitats Regulations. These are outlined below, with particular reference to the protection afforded to bat species in Ireland.

The Wildlife Acts 1976 and 2000

The primary pieces of national legislation for the protection of wildlife in Ireland are the Wildlife Act (1976) and the Wildlife [Amendment] Act (2000). All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make 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 Habitats Regulations 1997-2005

The EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992) seeks to protect rare and vulnerable species and the habitats in which they are commonly found, and requires that appropriate monitoring of populations be undertaken. All bat species found in Ireland are listed under Annex IV of the Directive, while the lesser horseshoe bat is afforded further protection under Annex II. The Habitats Directive has been transposed into Irish law by the European Communities (Natural Habitats) Regulations 1997. All bat species are listed on the First Schedule and Section 23 of the regulations makes it an offence to:

- Deliberately capture or kill a bat
- Deliberately disturb a bat
- Damage or destroy a breeding site or resting place of a bat

Provision is made in the Regulations for the Environment Minister to grant, in strictly specified circumstances set out in that Regulation, a derogation license permitting any of the above activities "where there is no satisfactory alternative and the derogation is not detrimental to the maintenance

of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range".

2.2 SITE LOCATION

The proposed site lies off the Old Navan Road, Blanchardstown (Grid Ref: E708590 N738304). The site is situated c120m to the north of the Royal Canal (see **Figure 2-1** below).

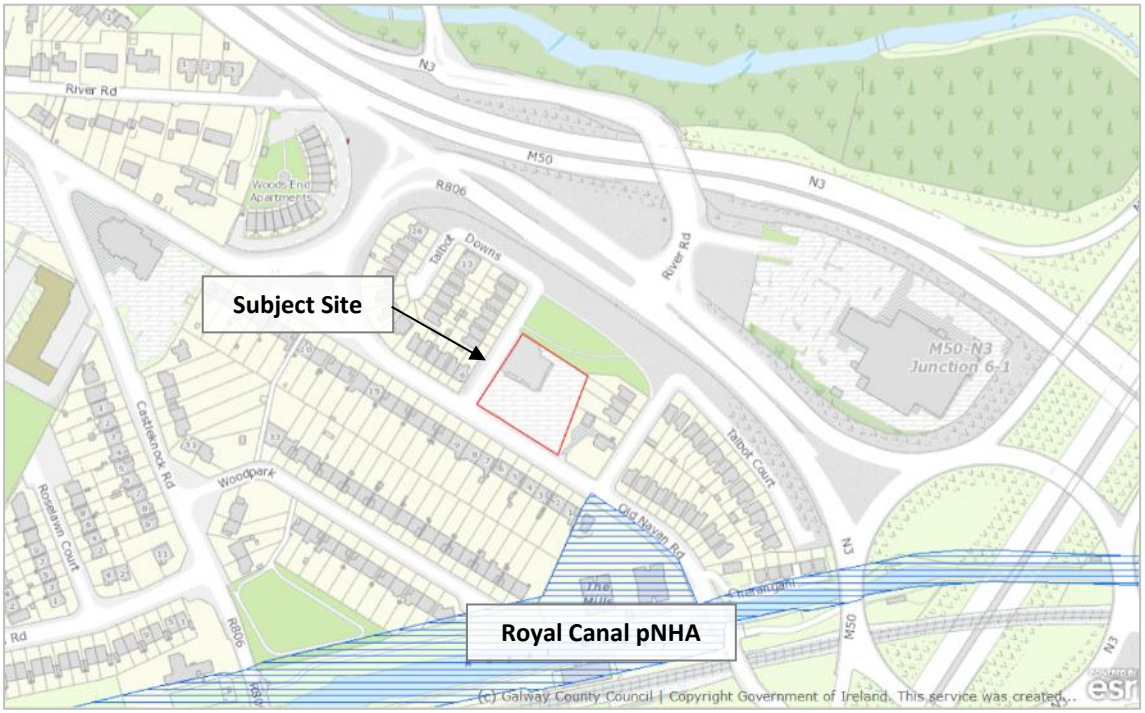


Figure 2-1: Location of proposed development in relation to designated site

Figure 2-2: Location of structures

2.3 Bat Species Recorded in the Surrounding Area

The NBDC database was consulted for details on bat records held for the site and the surroundings. The database was consulted on the 16/09/2019 for details on historical records from the site and the surrounding 2km (O03Z). Results are outlined in **Table 2-2**. Five of the nine confirmed resident bat species known to occur in Ireland have been recorded within the 2km square the subject site resides in, much of these sightings recorded during Daubenton's surveys completed from the nearby Royal canal and the River Tolka.

Table 2-1: Irish bat species recorded in the O03Z 2km grid

Scientific name	Common name	Date of last record	Designation	Distance from subject site
Plecotus auritus	Brown Long-eared Bat	09/10/2007	EU Habitats Directive >> Annex IV || Wildlife Acts	Vague 1km square c. 70m to the north
Myotis daubentonii	Daubenton's Bat	09/10/2007	EU Habitats Directive >> Annex IV || Wildlife Acts	Vague 1km square c. 70m to the north
		31/08/2010		c.690m south-east as part of waterways survey
		24/08/2007		c.1.5km south-west as part of waterways survey
Nyctalus leisleri	Leisler's Bat	09/10/2007	EU Habitats Directive >> Annex IV || Wildlife Acts	Vague 1km square c. 70m to the north
		31/08/2010		c.690m south-east as part of waterways survey
		24/08/2007		c.1.5km south-west as part of waterways survey
Pipistrellus pipistrellus sensu lato	Pipistrelle	09/10/2007	EU Habitats Directive >> Annex IV || Wildlife Acts	Vague 1km square c. 70m to the north
		31/08/2010		c.690m south-east as part of waterways survey
		12/08/2007		c.300m. Several records along canal as part of waterways survey to the south-west
Pipistrellus pygmaeus	Soprano Pipistrelle	09/10/2007	EU Habitats Directive >> Annex IV || Wildlife Acts	Vague 1km square c. 70m to the north
		31/08/2010		c.690m south-east as part of waterways survey
		12/08/2007		c.300m. Several records along canal as part of waterways survey to the south-west

3 SURVEY FINDINGS

3.1 SURVEY METHODOLOGY

A detailed inspection of the building was undertaken during daylight hours on the 12th and 13th of September 2019. A full PRF tree inspection carried out in conjunction with an arborist was also conducted on all trees with bat roost potential within the site on the 12th of September. The aim was to compile information on actual and potential access points and roosting locations. This was done by searching for evidence of bats including live and dead specimens, droppings, feeding remains, urine splashes, fur oil staining and noises.

The exterior of the building was inspected first from ground level, with the aid of binoculars. The search included the ground, accessible windowsills and walls, A systematic search of all accessible interiors was also undertaken. Searches were carried out with the aid of binoculars, torches, an endoscope, thermal imaging device and a ladder and focused on walls, floors, windowsills, lintels, shelves, tops of large equipment and furniture, etc.

3.1.1 Survey constraints

The night time bat survey was undertaken on the 12th of September 2019. Although outside the main bat active season (May - August) the Bat Mitigation Guidelines for Ireland states roost surveys may be acceptable weather dependant (Kelleher, 2006). All surveys were carried out during good weather conditions.

3.1.2 Habitats on site

The boundary treelines consists of semi mature Maple, Ash, Whitebean, Lime and Rowan ranging from young to mature. A small park can be found immediately to the north of the site. The River Tolka with associated woodlands is located some 160m north of the site however the N3/M50 turnoff does provide a probable barrier particularly for low flying woodland species such as Daubenton's and Brown long-eared bats. During the night time survey this area was brightly lit. The Royal Canal can be found c.120m to the south of the site. Treelines by the park lead towards the canal thus the potential for connectivity to this area exists.

Figure 3-1: Aerial displaying network of treelines and small woodlands surrounding subject site

3.2 DAYLIGHT INSPECTION

3.2.1 Buildings

Searches were completed using ladder, high powered torch and endoscope.

The building was found to consist of block walls with plastered finish and metal sheeting roof (See **Plate 3-1 to 3-3**). The rear of the building has a partial layer of outer corrugated sheeting attached to the wall creating small cavities (see **plate 3-4**). A layer of ivy found here did not contain sufficiently thick stem mats to provide room for roosting bats.

To the rear of the building a flat roofed area contains rooftop water tanks and air conditioning units. The corrugated wall sheeting sits above the building creating an unroofed walled in space (**Plate 3-5 and 3-6**). A cavity noted from the wall on the north-west side opened to the floor space here showing no potential for roosting bats.

The north western wall of the building is located opposite a residential street with two street lights casting considerable light on the building during the night. This reduces the potential of features here to host roosts. Parts of the rear, north-eastern wall faces an adjoining park, which is considerably darker. This side also had four up-lights that were not in use during the survey.

The upstairs of the building is divided into two distinct sections. Section 1 (see **Figure 2.2**); a storage area showed no signs of bats and very limited potential for bat access into the space. Section 2; a former restaurant had potential access from a broken window and a section where roof sheeting had

collapsed. Despite a thorough search, no evidence of bats could be found. Similarly no signs of bat usage was found from the lower section of the building, currently used as a public house.

Plate 3-1: View of eastern side of building

Plate 3-2 Southern view of shed

Plate 3-3: Western side of building

Plate 3-4: Northern view

Plate 3-5 Upper flat roofed section

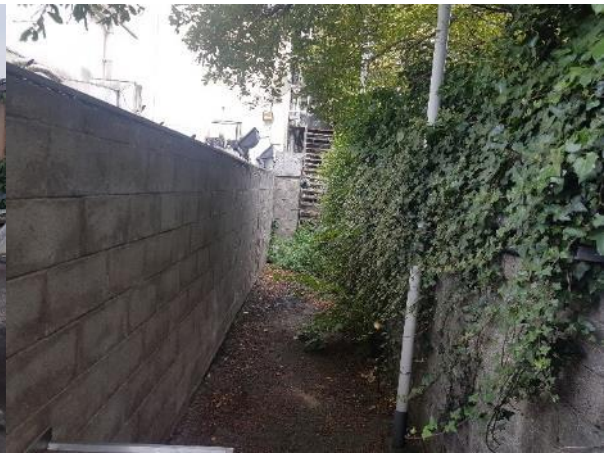


Plate 3-6: Alley leading to rear entrance

Plate 3-7: Upper floor section 1

Plate 3-8: Windows showed no signs of previous bat presence

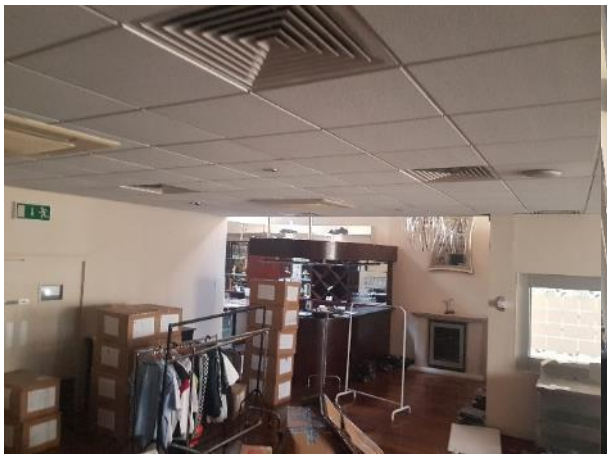


Plate 3-9: Upper floor section 2

Plate 3-10: Broken window

Plate 3-11: Broken roof section

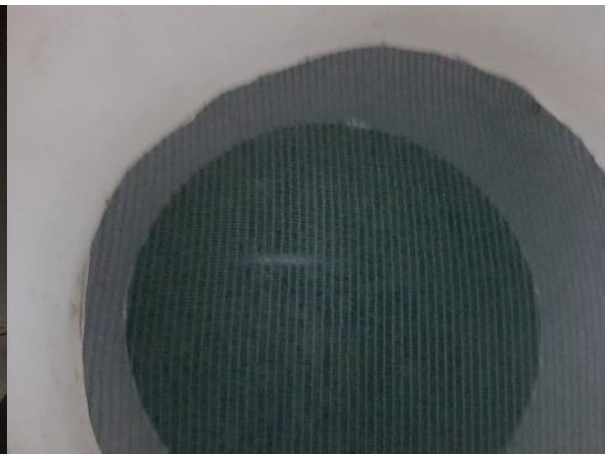


Plate 3-12: Vent pipes had mesh preventing access.

3.2.2 Trees

Several mature and semi-mature trees were found on the periphery of the site. Given the potential for trees to host bat roosts and the prominence of a mature ash tree located in the car park a full 'at height' potential roost feature (prf) survey was completed on the trees within the site.

A daytime visual assessment of trees within the proposed development site was undertaken on the 12th of September 2019 following adapted guidelines from the following sources;

- Andrews H. (2018) *"Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals" - Bat Tree Habitat Key.* Pelagic Publishing
- Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London
- Andrews H. *Surveying Trees for Bat Roosts: Encounter Probability v. Survey Effort* 2015
- Andrews H et al. 2013. *Bat Tree Habitat Key*. AEcol, Bridgwater
- Hundt L. (2012) *Bat Surveys: Good Practice Guidelines*, 2nd edition, 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.
- National Roads Authority (2005), *Guidelines for the Treatments of Bats Prior to the Construction of National Road Schemes*.

Conditions were dry and sunny. All trees were assessed from ground level using binoculars and by use of telescopic ladders up to 5m in height. Where trees showed some roosting potential a full prf survey was conducted with an arborist climbing the tree. The arborist then conducted full searches of each potential prf feature. Where ivy was present a Seek RevealXR Fastframe thermal imaging device was used. Thermal imaging cameras are designed to detect heat (infrared radiation) emitted from objects within a defined field of view. The metabolic heat produced by bats and other animals produces a distinct thermal image against a cooler background. In particular circumstances it will produce a thermal plume that escapes from cavities and cracks.

The ability to detect the heat emitted from an object has several advantages as a survey technique. It is not invasive and does not require artificial illumination. It is particularly advantageous when surveying trees with thick ivy cover which traditionally is difficult to impossible to survey.

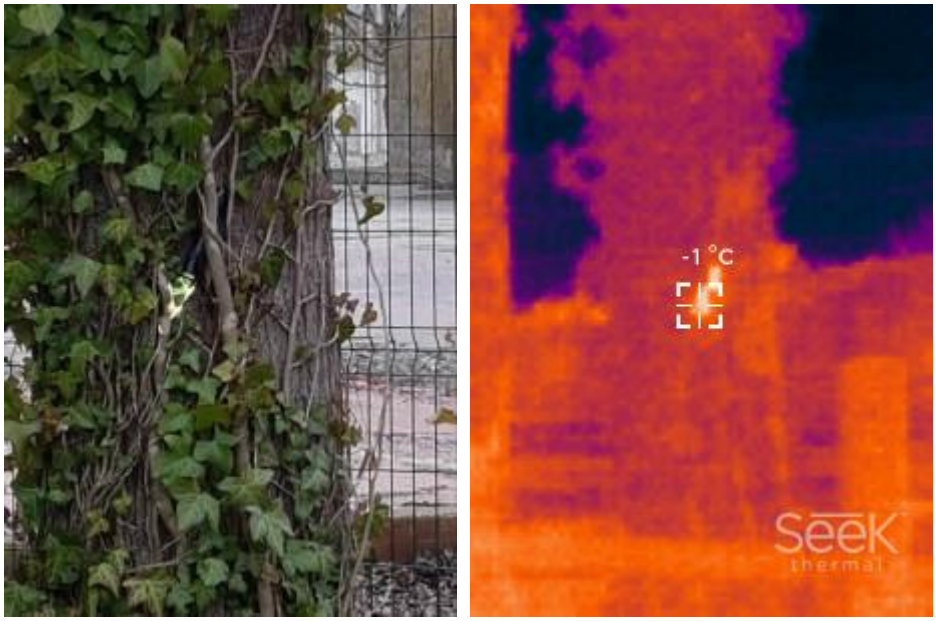


Plate 3-13 & Plate 3-14: Image of led torch placed on tree within site; standard and infrared

Evidence of bat usage sought during the surveys include:

- 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; and
- Bat corpses.

Examples of crevice features include:
- Natural holes;
- Cracks/splits in major limbs;
- Loose bark; and
- Hollows/cavities.

The accompanying arborists report details 35 trees found within and adjacent to the development. Much of these trees had low potential for hosting bat roosts being immature and lacking roost potential features. Appendix B details the findings from this survey. Each tree was initially categorised according to Hundt et al, 2012 ranking from 1 (highest potential) to 4 (no potential).

All category 1, 2 or 3 trees were searched at height after which it was re-categorised taking on board the close up examination of each prf.

In summary one mature ash showed definite bat potential but supporting features suitable for use by singleton bats thus was initially ranked 2. Chainsaw cuts, tear outs were visible alongside considerable ivy cover. A branch cut shows lifted bark whilst several pruning cuts were visible. After the full survey the tree was downgraded to 3 due a lack of good prf features.

Several other trees were examined at height however all these trees were reduced to category 4 after the survey.

Plate 3-15: 1. Ash being searched

Plate 3-16: 2. Cherry

Plate 3-17: Potential prf

Plate 3-18: Potential prf

Plate 3-19: Front of property

Plate 3-20: Western street

Plate 3-21: Tree located to rear of property

3.3 BAT DETECTOR SURVEYS

A dusk-dawn mobile detector survey was carried out completing looped transects of the site during the dusk and dawn periods to survey for commuting, feeding and potential roost sites. During the dusk and dawn periods the surveyor focused attention by the dwelling in order to identify emerging bats. Surveys commenced at 19:19; half an hour before sunset and continued for three hours. The survey then recommenced two hours before sunrise at 03:35 and continued until sunrise. Each contact with a bat was recorded. Where possible, a positive identification to species level was made. Information on the behavior was also recorded where available.

The bat detectors used during the walked surveys were a Wildlife Acoustics Inc. (Massachusetts, USA) Echo Meter Touch Pro2 and an EM3 bat detector which both triggered to record when a bat call is emitted louder than 18dB for 1sec. This detectors use full spectrum sampling; detecting all frequencies simultaneously, meaning that multiple bat calls can be recorded at the same time.

A contact as shown below describes a bat observed by the surveyor. This contact can range from a commuter passing quickly to a foraging bat circling a feature lasting for several minutes. Some observations contain multiple bats. When several bats of the same species are encountered together they are recorded under the one contact. A separate contact is recorded for each species. A contact finishes when the recorder assumes the bat is no longer present. It is likely that the same bat is recorded in several contacts throughout the night. This survey type cannot estimate abundance of bats, rather activity; the amount of use bats make of an area / feature. The survey followed the guidelines as set out in bat conservation Ireland's 'Bat Survey Guidelines'.

Sunset on the 12th of September occurred at 19:59 and sunrise on the 13th was at 06:55. A westerly wind of 0.2 to 1.4 m/s was recorded from the start and finish of the dusk survey with 0.9 to 0 wind value at the start and finish of the dawn survey. Cloud cover ranged from 40% in the evening of the 12th to 0% at 22:35 while 30% cloud cover was recorded at sunrise. The air temperature varied during the night of the survey between 17.1 degrees at 19:17 to 12.3 degrees Celsius at 22:35. Temperatures during the dawn survey ranged from 7.3 degrees at 04:55 to 8.1 degrees at 06:58. Overall, these conditions were good for bat survey work.

3.3.1 Results of dusk survey

During the survey, one bat species was identified to species level; Leisler's Bat (*Nyctalus leisleri*).

During the emergence period the surveyor positioned himself to the rear of the building waiting for entering bats. An EM3 bat detector was also placed at this time in the upstairs restaurant section from sunset for two hours as this room had potential access for bats.

No emerging bats were found during this period. The only bat recorded during the survey was noted at 20:25, some 26 minutes after sunset when a brief unseen Leisler's bat was recorded to the rear of the building by the park. A review of the EM3 detector showed no bat activity from within the building during this time. The survey continued in good weather conditions for three hours without any further bat activity.

After the survey was completed the surveyor searched along the royal canal some 120m to the south of the site. Although no Daubenton's bats were noted both Common and Soprano Pipistrelle were observed hunting by the canal and associated treelines.

3.3.2 Results of dawn survey

No bat activity was recorded during the dawn survey. The surveyor positioned himself to the front of the building towards dawn however no activity was noted.

4 DISCUSSION

One species of bat was positively identified during the various bat surveys: Leisler's bat (*Nyctalus leisleri*). Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*) were also recorded outside the site after the dusk watch was completed.

Leisler's Bat utilise a very low qCF call loudest at 23kHz that travels further than any other Irish bat. This is because Leisler's hunt in the open, typically at heights of 20m and need to search large areas for prey. This results in a somewhat over representation of recorded Leisler's Bat calls from detectors.

No evidence of roosting bats was found despite a thorough search of the building and an at height examination of all trees with potential to host bat roosts. Street lighting was found to the front and side of the property reducing the suitability of the site for feeding bats.

Plate 4-1: Western street

Plate 4-2: Southern street

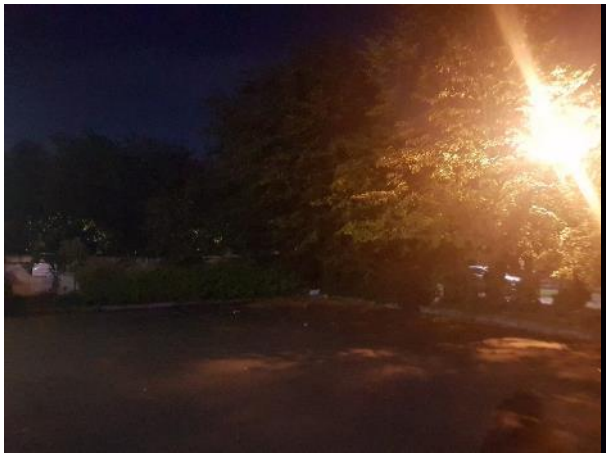


Plate 4-3: Lighting within carpark

Plate 4-4: To rear of building

5 IMPACT ASSESSMENT

The survey above provides a survey of Brady's pub on the Old Navan Road. No evidence of roosting bats was found within the building or trees and the night time survey revealed a very low level of onsite bat activity with a single bat recorded.

- Disturbance

  Works associated with development or building work are likely to lead to an increase in human presence at the site, extra noise and changes in the site layout and local environment.

- Loss of potential Roosts

  Given the lack of quality roost features in trees found onsite and within the building in conjunction with the low level of bat activity during the night time survey it is unlikely bats will utilise this site for roosting purposes in the future. After the completion of the at height prf survey all trees were graded as category 4 baring an ash with a score of grade3. As no trees correspond to grade 1 or 2 no further work is required with regard to bats.

  As such it is the surveyors' opinion that the redevelopment of this site **will not affect** the roosting potential of the local bat population.

- Loss of landscape features

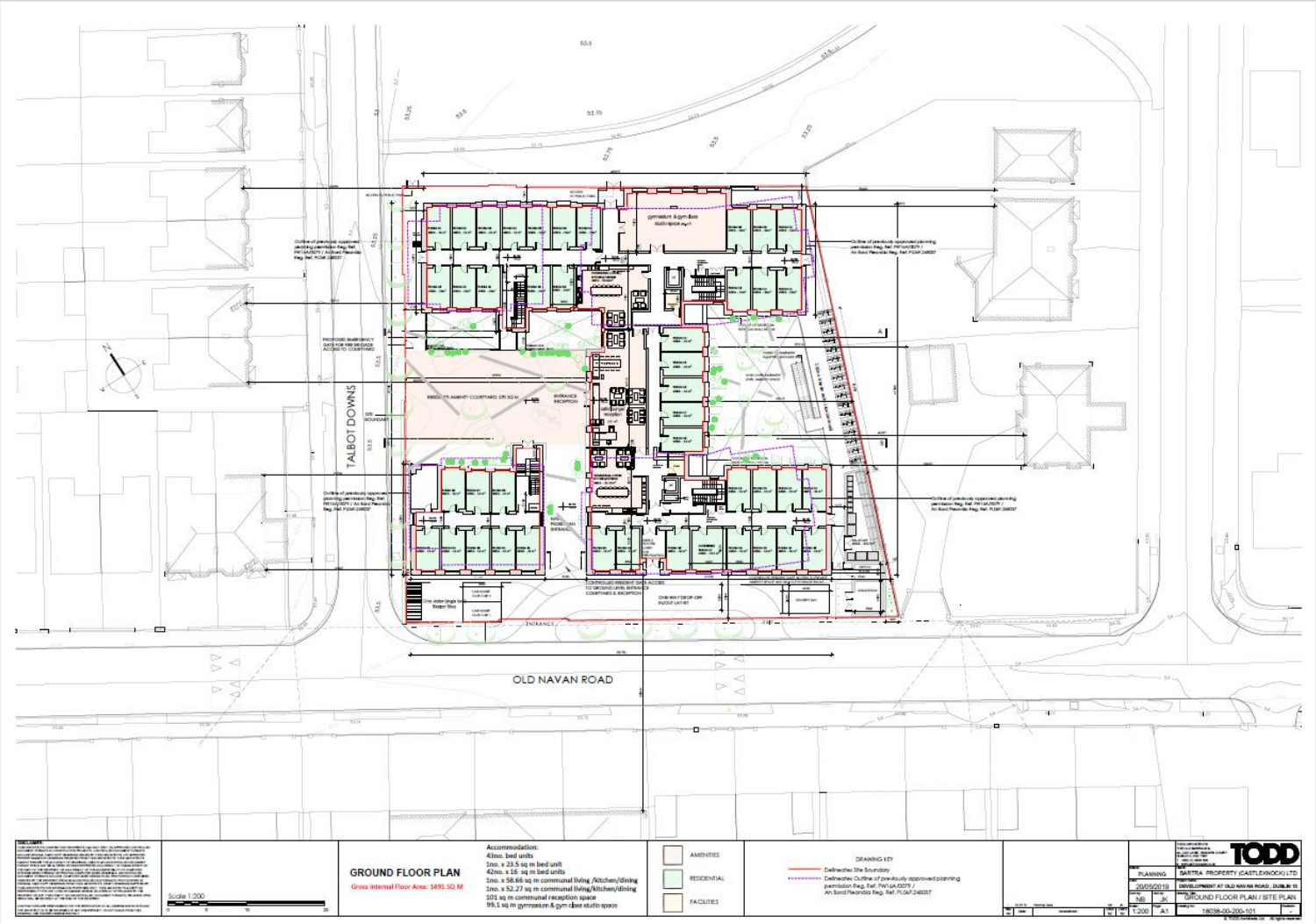
  Bats regularly use treelines as navigational aids when commuting and feeding. Trees marked 1 to 29 and 31 in the accompanying Arborists report will be removed as part of the development. The surveyor found no evidence of bats using these treelines during the night

time survey. Much of the trees to be removed were located to the front and side of the property adjoin roads with street lighting likely to negatively impact on bat activity. The treeline to the rear of the property located within the park did not suffer from lighting exposure to the same extent. These trees (30 and 32 to 35) having highest potential for bat usage will be retained.

6 CONCLUSION

The survey above provides a study of bat usage of a property off the Old Navan Road, Dublin 15. Given the lack of roosting potential within the building and trees and the lack of activity during the night time survey it is the surveyor's opinion the redevelopment of this site will not have any negative effects on the local bat population.

Appendix A – Site Layout



Appendix B – Tree Assessment

Table 6-1 defines how each tree within the site was categorised according to Bat Conservation Trust 2 ed. (Hundt et al, 2012). Refer to accompanying Arborist tree impact assessment drawing for location of trees with corresponding tag number. Any category 1 or 2 trees require an at height survey. After this survey each tree is re-categorised taking on board the close up examination of each prf.

Table 6-1 Category description

Tree Category	Description
1	Trees with multiple, highly suitable features capable of supporting larger roosts
2	Trees with definite bat potential but supporting features suitable for use by singleton bats;
3	Trees have no obvious potential although the tree is of a size and age that elevated surveys may result in cracks or crevices being found or the tree supports some features which may have limited potential to support bats;
4	Trees have no potential.

Table 6-2 Tree Roost Assessment

Date: 11th Sept 2019			Survey Title: Bradys Pub	
Surveyor: John Curtin, Rik Pannett			Grid Ref: E708590 N738304	
Species / tag No.	Works Required	Comments on Bat Potential	Recommendations	Category
1 ash	Removal	**Prior to 'at height' survey** Mature tree with several potential features. Chains cuts, tear outs and ivy. A branch cut shows lifted bark whilst several pruning cuts were visible.	Conduct full prf survey.	2
		After 'at height' survey • Branch stump cavity was not deep. • A small rot feature at base of tree does not form cavity. • A search of a broken branch showed no cavity. • Multiple pruning cuts were examined however no cavities were found. • Ivy was thoroughly examined with the aid of thermal imaging however no bats were found. Much of the ivy, although thick formed porous mats that were quite damp.	Cut tree prior to bird breeding season.	Downgraded to 3 after inspection.
2 Birch	Removal	Young tree with no prf's.	Cut tree prior to bird breeding season.	4

3 Cherry	Removal	**Prior to 'at height' survey** Mature tree with some features including pealing bark. One branch has a hazard beam prf.	Cut tree prior to bird breeding season.	2
		After 'at height' survey • Hazard beam prf showed very limited potential as cavity had not developed upwards yet. • Lifting bark found on a damaged branch did not show sufficient depth to host a bat roost. A search of the upper sections showed a distinct lack of features with most damage occurring on lower branches.	Cut tree prior to bird breeding season.	Downgraded to 4 after inspection.
4 Lime	Removal	**Prior to 'at height' survey** Semi-mature tree which has had several chainsaw cuts. Considerable ivy cover	Cut tree prior to bird breeding season.	3
		After 'at height' survey No cavities found. Ivy did not form decent dry root mats sufficient for roosting bats		Downgraded to 4 after inspection.
5 Rowan	Removal	No potential	Cut tree prior to bird breeding season.	4
6 Lime	Removal	No potential	Cut tree prior to bird breeding season.	4
7 Rowan	Removal	Dead tree covered in ivy. Searched using thermal imaging however no evidence found	Cut tree prior to bird breeding season.	4
8 maple	Removal	No potential	Cut tree prior to bird breeding season.	4
9 - 18	Removal	Trees with no potential features	Cut trees prior to bird breeding season.	4
19 Maple	Removal	**Prior to 'at height' survey** By residential street. One tear out visible.	Cut tree prior to bird breeding season.	2
		After 'at height' survey No cavities found		Downgraded to 4 after inspection.
20 Maple	Removal	**Prior to 'at height' survey** Four chain saw cuts visible	Cut tree prior to bird breeding season.	2
		After 'at height' survey No cavities formed		Downgraded to 4 after inspection.
21 Maple	Removal	**Prior to 'at height' survey** Double leader and chainsaw cuts	Cut tree prior to bird breeding season.	2
		After 'at height' survey No cavities formed		Downgraded to 4 after inspection.

22 Maple	Removal	Chainsaw cuts on branch however these are visible from the ground and no rot areas or potential cavities exist.	Cut tree prior to bird breeding season.	4
23 Maple	Removal	**Prior to 'at height' survey** Tear out visible where branch ripped off trunk. Cavities can form into the remaining wood as a result.	Cut tree prior to bird breeding season.	2
		After 'at height' survey No cavity present		Downgraded to 4 after inspection.
24 – 28 Maple	Maple	Trees with no potential features.	Cut tree prior to bird breeding season.	4
29 Maple	Removal	At corner to park. Some ivy growth not thick enough.	Cut tree prior to bird breeding season.	4
30 Lime	Retention	No potential features	Cut tree prior to bird breeding season.	4
31 Willow	Removal	No potential features	Cut tree prior to bird breeding season.	4
32 Lime	Retention	**Prior to 'at height' survey** Early mature tree with multiple branching that may result in double leader / compression fork cavites.	Cut tree prior to bird breeding season.	3
		After 'at height' survey No cavities found		4
33 Lime	Retention	No potential features	Cut tree prior to bird breeding season.	4
34 Lime	Retention	No potential features	Cut tree prior to bird breeding season.	4
35 Lime	Retention	No potential features	Cut tree prior to bird breeding season.	4
SG1 Laurel	Removal	Scrubby with no potential features	Cut tree prior to bird breeding season.	4