

**Bat survey of Newbrook House and grounds,
Ballyboden, Co. Dublin**



For Panther Environmental Solutions Ltd.

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1. Introduction

Seán Meehan, Ecologist, was commissioned by Panther Environmental Solutions Ltd to carry out bat surveys at the Newbrook House and grounds site at Taylor's Lane, Ballyboden, Co. Dublin. The surveys were undertaken to determine both the levels of bat activity and numbers of bat species on the site and were carried out in June and July 2021, which is within the optimum seasonal timeframe of year for such surveys.

Seán holds a BSc in Agricultural Science (UCD) and a MSc in Biological Recording (University of Birmingham, UK). He has been an Associate member of CIEEM (Chartered Institute of Ecology and Environmental Management) for five years and a practicing ecologist for eight years. As a self-employed ecologist, Seán undertakes Appropriate Assessment screenings, NIS compilations, EclA reports and general ecological surveys. He is a NPWS licenced bat surveyor (DER/BAT 2021-63) and has carried out numerous bat surveys, building and tree assessments for bat roosts and designing of and implementation of bat roost mitigation measures.

2. Site description

The site is located on the southern side of Taylor's Lane in Ballyboden (centroid point ITM 714010, 727043). The R113 road, also known as Taylor's Lane, is located to the front of the site. Housing estates

are located on all sides of the site with a petrol station to the immediate east. The site is located approximately 1km northwest of Marley Park.

The site contains Newbrook House, a Georgian style former residence and three derelict sheds which were formerly used by a building materials supplier business. The site has been lying idle for a number of years, allowing vegetation and scrub encroachment. Willow, buddleja, bramble, willowherb and white melliot have become abundant with vegetation now covering much of the former building supplies business forecourt area. A mature treeline of willow, sycamore and ash grows along the southern boundary of the site. A mill race stream passes to the rear of Newbrook House, having its origins in the nearby Owendoher River that flows northwards through Edmonstown. The vegetation to the rear of Newbrook House is overgrown with bramble, bindweed and butterbur dominating.

Luxury suites are planned for the site and Newbrook House is to be renovated and incorporated into the new development (Figure 1).

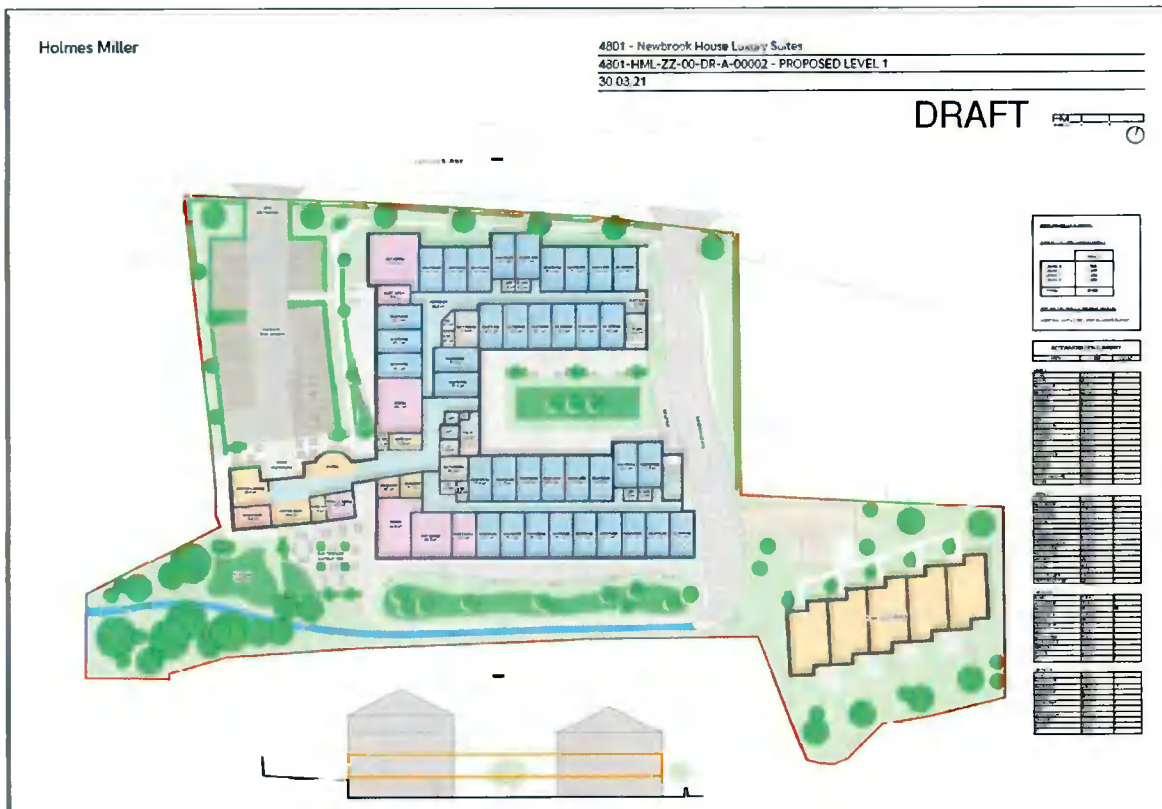


Figure 1. Planned site layout

3. 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)¹ 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 S.I. No. 94 of 1997) 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.

Under existing legislation, the destruction, alteration or evacuation of a known bat roost must be notified in advance to NPWS, and a derogation licence is required before works can commence on or adjacent to a known bat roost.

4. Methodology

4.1 Desk study

A search of bat records held on the NBDC's (National Biodiversity Datacentre) online portal² for the 2km area (tetrad O12N) in which the site is located, was requested. Such information can identify bat species which 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 surrounding area.

4.2 Field study – bat surveys

A building emergence watch, two dusk surveys and a dawn survey were carried out between the 30th of June and 14th July 2021. Table 1 provides the details of these surveys.

¹ Wildlife Act 1976 and Wildlife [Amendment] Act 2000. Government of Ireland.

² <https://maps.biodiversityireland.ie/Map/Terrestrial/Dataset/128> Accessed June 29th, 2021

Table 1. Bat survey details

Date	Survey type	Surveyors	Start	Finish	Weather conditions
30/06/2021	Building emergence watch	S. Meehan A. Murphy	21.26	22.45	Dry, calm, temperature of + 15°C / +16°C
	Dusk	S. Meehan	22.45	23.30	
13/07/2021	Dusk	S. Meehan	21.17	23.17	Dry, calm, temperature of + 16°C / +18°C
14/07/2021	Dawn	S. Meehan	04.00	05.34	Dry, calm, temperature of + 10°C / +11°C

A building emergence watch of Newbrook House was undertaken on the 30th of June. Seán Meehan was assisted by ecologist Aidan Murphy, with Seán positioned to the rear of the house and Aidan to the front. Access inside the house was not permitted due to the interior being structurally unsafe. Both surveyors ensured that they had a maximum view of their sides of the house and focussed on features that bats could potentially use to access / egress the building, such as broken windows, splits in the masonry and broken or missing roof slates. Each surveyor had a handheld +EM3 bat detector. The emergence watch commenced at 21.26 (30 minutes before sunset) and lasted until 22.56 (90 minutes in duration). Following the emergence watch, a dusk survey of the site was carried out until 23.30.

A second dusk site survey (2 hours duration) was carried out by Seán Meehan on the evening of the 13th of July, followed by a third survey at dawn (90 minutes duration) on the 14th of July.

5. Results

5.1 Desk study results

The NBDC database search returned the following bat records for tetrad O12N, Table 2.

Table 2. Bat records for O21N

Tetrad (2km ²)	Grid Reference	Date	Survey title / dataset	Surveyor	Species
O12N	O145267	21/10/2014	NBDI	F. Wilson	<ul style="list-style-type: none"> Soprano pipistrelle Pipistrelle (<i>sensu lato</i>) Leisler's bat
O12N	O145274	09/09/2010	NBDI - EIA survey		<ul style="list-style-type: none"> Leisler's bat
O12N	O1526	28/07/1999 – 22/06/2005 (20 records)	NBDI - Dublin bat group recording - EIS surveys	C. Kelleher B. Keeley C. Kelleher	<ul style="list-style-type: none"> Pipistrelle (<i>sensu lato</i>) Soprano pipistrelle Daubenton's bat Leisler's bat Whiskered bat

In addition, Bat Conservation Ireland's habitat suitability index³, available to view on the NBDC online mapping portal, classifies the landscape, within which the site is located, as having a moderately good habitat suitability for bats, with a score of 25.44 for the area within which the site is located. Although bat activity on the site was low, Grange Golf Club and Marley Park to the east and southeast and St. Enda's Park to the northwest provide good habitat for bats and have a number of known bat roosts. There is also an extensive area of woodland and gardens / parkland in a property approximately 200 metres west of Newbrook House, at the junction of the R113 and R116 roads.

5.2 Bat surveys - results

Bat activity on the site was low despite the surveys being carried out within the optimum period in the season and during suitable weather conditions. Only two bats were detected on the site during the three surveys; a soprano pipistrelle was detected flying along the front of the derelict sheds during the June 30th dusk survey and a single Leisler's bat was observed flying over the site in a westward direction during the July 13th dusk survey. No bat activity was detected during the dawn survey on the 14th of July.

No bats were observed emerging from Newbrook House. The building is considered as having a low potential for bat roosts however the solid masonry structure may provide suitable winter hibernation roost conditions. No bats were observed emerging or re-entering the derelict sheds and they are all considered to have negligible potential for bat roosts.

6. Discussion

The main part of the Newbrook House is flat roofed (the wing building has a low-pitched slated roof) and has no wooden fascias or soffit boards. With the exception of a split in the masonry at the front and broken windows to the rear, there were few other obvious access / egress points into the building that bats could potentially use.

The derelict sheds provide few, if any, suitable features that bats could potentially use. The sheds are in a poor structural condition with one shed without a roof and the two others having rotting timber and corrugated iron sheeting roofs with large gaps, resulting in the buildings being exposed to the elements. Illumination from lighting in the adjacent petrol station also reduces the suitability of these sheds as roost sites.

The front section of the site, including the frontage of Newbrook House is impacted by streetlight illumination originating from the R113 road. This is a likely contributing factor to the low levels of bat activity recorded on the site. A petrol station to the immediate east also creates light overspill, particularly along the eastern section of the site.

³Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N. (2011) *Landscape conservation for Irish bats and specific roosting characteristics*. Bat Conservation Ireland. Accessed June 29th, 2021.

The scrub and trees to the rear of Newbrook House provide a small area of darkness and suitable foraging area however bats were not detected in this area during the three site surveys. None of the trees have features that could potentially be used as bat roosts. It is likely that bats in the area are concentrated in locations such as Marley Park to the east and St. Enda's to the northwest, which provide superior feeding grounds and suitable buildings and trees for roosting.

7. Mitigation measures

Impacts on bats can arise from activities that may result in:

- Physical disturbance of bat roosts e.g. destruction or renovation of buildings
- Noise disturbance e.g. increase human presence, use of machinery etc.
- Lighting disturbance
- Loss of roosts e.g. destruction or renovation of buildings
- Modifications of commuting or foraging habitats
- Severance or fragmentation of commuting routes
- Loss of foraging habitats.

Bat activity levels on the site are low and the planned development is not expected to create more than short term minor impacts on the local bat population. The destruction of the derelict sheds and the renovations to Newbrook House is not expected to result in impacts on bats due to their non-suitability for bat roosts.

7.1 Lighting disturbance

Many species of bats and other mammals are sensitive to lighting and will avoid areas which are illuminated⁴. Bats are amongst the most sensitive receptors in relation to light pollution originating from development. Although bat activity on the site is low and the site is not considered important for the local bat population, consideration should be given to ensuring that the development's lighting plan does not further reduce the site's suitability for bats or disrupts their flight paths across the site as they move between habitats in the surrounding areas. It is recommended that an ecologist is consulted for input into the lighting plan at the design stage.

Luminaire design is extremely important to achieve an appropriate lighting regime. The following should be considered when choosing luminaires. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018)⁵.

- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.

⁴ Kelleher, C. & Marnell, F. (2006). Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

⁵ [Artificial Lighting Guidance - Buildings, planning and development - Bat Conservation Trust \(bats.org.uk\)](https://www.bats.org.uk/artificial-lighting-guidance-buildings-planning-and-development/)

- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible. Ballard lighting should be considered for pedestrian and greenway areas, if deemed necessary.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers. The intensity of external lighting should be limited to ensure that skyglow does not occur in order to reduce light pollution.
- As a last resort, accessories such as baffles, hoods or louvres should be used to reduce light spill and direct it only to where it is needed.
- Temporary lighting used during the construction phase of the development should also be installed appropriately to ensure no illumination of these treelines and scrub area.

7.2 Loss of foraging habitat

Based on the results of the three site surveys and the building assessments, the site does not appear to be important for the local bat population. However, the trees along the southern boundary provide foraging areas and also provide some connectivity in the local area by serving as a linear feature. The existing trees should be retained and supplemented with the planting of native species, in keeping with what grows locally in the area.

7.3 Enhancement measures

To enhance the new development for bats, and help to conserve local biodiversity, consideration should be given to incorporating purpose-built bat boxes into the building design. Figures 2 & 3 shows examples of bat roost types that could be used, with these being easy to build into the exterior walls at appropriate locations. An ecologist can provide advice on choosing the model type and also when selecting locations for these boxes. Further information can be found on:

<https://www.ibstockbrick.co.uk/kevington/eco-products//>.

7.4 Further actions

If renovation works on Newbrook House have not commenced by November 1st, 2021, a winter roost survey of the interior is recommended (the provision of safe access into the house will be required). If works have not commenced by May 1st, 2022, then fresh bat surveys of the house are required. This is to ensure that bats have not taken up residence in the property in the period following these current surveys.



A

Figure 2. Type A allows bat to create a natural home within the cavity of the building.



B

Figure 3. Type B confines the bats within the bat box and is maintenance free with entrance at the base.

8. Plates



Plate 1. View of the front of Newbrook House



Plate 2. Rear view of Newbrook House



Plate 3. View of the front of the site, looking westwards. The R113 road is to the right.



Plate 4. Derelict shed with no roof. Negligible bat roost potential.



Plate 5. Second derelict shed on site with large gaps in the roof and rotting timberwork. Unsuitable for roosting bats.



Plate 6. Interior of shed. Unsuitable for roosting bats.



Plate 7. The third derelict shed. Unsuitable for roosting bats.



Plate 8. Overgrown area to the rear of Newbrook House.

