

# **A Bat Assessment of the Buildings at Hendron's, Broadstone, 36-40 Dominick Street Upper, Dublin 7, Proposed for Development and Implications for Resident and Local Bat Fauna**

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## **Introduction**

Most of Ireland's mammals enjoy protection under the Wildlife Act (1976) and the more recent updating of this legislation (Wildlife (Amendment) Act 2000, S.I. No. 94 of 1997, S.I. No. 378 of 2005, European Communities (Natural Habitats) (Amendment) Regulations, 2005). In conjunction with the enactment of the Habitats Directive into Irish legislation, all native mustelid species and bat species are protected with further protection given to otters and lesser horseshoe bats. Lesser horseshoe bats are not found in County

Dublin. Bats account for nine of Ireland's terrestrial mammal species, approximately one quarter of the species of the Irish land mass. All of the species found to date and indeed all bat species that may remain undetected up to the present are afforded legal protection under Irish and EU legislation and agreements (Wildlife Act (1976), Wildlife (Amendment) Act (2000), S.I. No. 94 of 1997 and S.I. No. 378 OF 2005 implementing the EU Habitats Directive, Bonn Convention (The Convention on the Conservation of Migratory Species of Wild Animal) and the Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats).

A speedy and productive means of determining the bat fauna within a site is to walk the entire site concerned, paying particular attention to all hedgerow, woodland, watercourses, fence lines, paths etc. with the aid of an ultrasonic receiver ("bat detector").

Determining the bat fauna of the surrounding area may involve a much greater level of assessment if the aim of the survey is to catalogue all bats in and around the site but this is too detailed for the aim of creating mitigation for most developments except where the species under consideration are particularly elusive or specialised and leave few signs.

The survey undertaken within the site at Hendron's, Broadstone allows a targeting of mitigation measures to the appropriate or most efficient sites to prevent accidental death or injury in and to assist in providing mitigation for losses brought about in feeding and commuting. The buildings and lands are within Dublin city where bat fauna is more greatly challenged and is therefore less common than throughout the island of Ireland. There is very limited vegetative cover with *Buddleja* making up the greatest herbaceous cover within the site.

Construction and development create numerous changes to a site that usually lead to considerable vegetation loss and a change from a green site to a greater level of concrete and land management. Within the proposed development there would also be a removal of a number of buildings and outbuildings. In many sites, this may alter the elements of the landscape of benefit to bats including roost sites, hedgerow, mature trees and the insects attracted by agricultural practices. However, the site is predominantly a manmade surface with very little vegetation.

## **Methodology**

The site was examined visually for evidence of bat roosts on August 8<sup>th</sup>, 2019 and this was preceded on 7<sup>th</sup> August by a night-time bat detector survey utilising ultrasonic receivers to convert bat signals used in navigation and social interaction to a recordable and measurable pulse. In the field, one piece of equipment (EM3 – see below) provided a screen for instant evaluation while the capacity to record signals allowed for bat identification to be confirmed using sound analysis software (Kaleidoscope). The analysis was carried out by automatic identification and then evaluation of the identifications by the bat specialist.

The entire site was walked before and following sunset. A pre-dawn survey was also carried out to see if any bats returned to the buildings. Two surveyors were present throughout the survey period.

### ***Equipment employed:***

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Echometer3 Real Time Expansion monitor with SD card recording (EM3) x 2

Songmeter2Bat+ monitor for overnight recordings within the site (SM2)

Kaleidoscope sound analysis software

Maps of proposed development, Google Earth and Google Maps

Huawei Smartphone 6 with digital camera

An EM3 was held for the entire survey period and recorded all bat signals detectable by its transducer. A SM2 was placed close to the main gate area of the building and was moved at 21.50 hours to the opposite end of the building. All buildings were examined in daylight for evidence of bats (actual bats, bat droppings, staining).

### **Survey constraints**

Conditions for surveying were suited to bat activity for the entire period after sunset and this would have allowed emergence of Leisler's bats and Common pipistrelles and any other bats. At sunset (21.06 hours) the temperature was 17 degrees Celsius and conditions and temperatures were adequate for bat feeding activity.

### **Bat species noted in 2019 in the proposed site**

Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Leisler's bat	<i>Nyctalus leisleri</i>

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### **Other bats noted in the general area**

Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Daubenton's
bat	<i>Myotis daubentonii</i>	

## **Modifications or Features introduced by the proposed development**

The proposed development comprises demolition of the existing warehouse buildings and no. 36 Dominick Street Upper and retention of the Hendron's Building as part of an overall redevelopment of the site to accommodate a shared living scheme including neighbourhood uses (including café/shop, gym and yoga studios). The scheme will include 280 no. shared living rooms (281. no bedspaces), internal and external amenity space over 5 no. blocks ranging in height from 4 no. storeys to 9 no. storeys, secure bicycle parking, site-wide landscaping, ESB substation and switch-room and site development works all on the 0.3285 hectare site.

### **Building demolition**

All warehouses and outbuildings within the site will be demolished. In many situations, this would be considered a potential risk to bats as buildings are very commonly used as roost sites by bats. However, there is no evidence of bats within the building elements despite extensive searching of the building.

### **Vegetation alterations**

There will be a requirement to remove all of the vegetation from the site to facilitate the project. At present, there is very limited vegetation within the site.

### **Lighting**

There will be an increased level of lighting as there will be an introduction of housing to a relatively undisturbed site. There will be increased lighting for the construction and operation of the new buildings. This would lead to the disturbance of light intolerant or shy species while the more urban-adapted species will be affected to a lesser extent.

Common pipistrelles and Leisler's bats are less affected by light than all other species, but Common pipistrelles will avoid light where possible. Leisler's bats may be attracted to lighting later into the night-time to feed on moths that themselves are attracted or disorientated by the lights. Species such as brown long-eared bat typically avoid light and *Myotis* species are also typically intolerant of light. None of the latter species were present.

## **Impacts of The Proposed Development**

### **Potential roost loss**

Building demolition creates a risk of roost loss. This could lead to injury or death to a species protected under the Wildlife Act and Habitats Directive (if a roost were present and not identified) and would therefore constitute a breach of the Irish and EU legislation. There is no evidence that the building within the site is in use as a bat roost from the survey of August 2019. Bats move in and out of roosts on a regular basis and individuals may be present at times other than a specific survey without any evidence. There is no evidence in any of the buildings (elements of the same building) and it is very improbable that this building has recently or ever served as a roost. This impact is likely to be moderate and long-term if there is roost loss and no obvious equivalent replacement for the roost loss. From available evidence, this is not an impact in this project.

## **Disturbance from lighting**

Lighting will be utilised for two different functions:

1. Access and safety and 2) Security and policing. The former is to allow ease of use at night. The latter is to ensure a perceived higher security level. This may affect lightintolerant bat species during foraging and if directed at emergence points would affect all bat species, even those that will feed in illuminated areas.

Species such as Leisler's bat and Common pipistrelles are less affected than almost all other Irish bat species and this would not be a significant impact. At worst, it would be a permanent moderately negative impact.

## **Reduced Feeding**

Reduced vegetation including the removal of any of the scrub within the site may lead to reduced insect abundance. On the night of survey, two species were noted, only one of which was repeatedly in evidence. This will be a permanent slight negative impact.

## **Proposed Mitigation**

### ***Survey of all buildings for the presence of bats prior to demolition***

A bat specialist shall examine all buildings within the site prior to the commencement of demolition. Should bats be noted, a derogation shall be required from NPWS with suitable mitigation of the loss of roost and appropriate measures to exclude bats safely from the building(s) concerned.

***Incorporation of 2 bat boxes*** (Build-in WoodStone Bat Box) is proposed into the site to provide bat roost opportunities. All bat boxes must be *unlit* and should be at least 2.5 metres above ground height and preferably 3 metres or higher.



### Plate 1: Build-in WoodStone Bat Boxes proposed for incorporation into buildings

The bat boxes shall be installed in buildings away from lighting.

### *Planting of vegetation*

Where there is an opportunity to provide vegetative cover, native and local plant species should be employed including typical plants such as hawthorn, blackthorn, dog rose with an encouragement of species such as *Clematis* and other species attractive to moths. Planting proposed includes the following: *Tilia*, *Crataegus*, *Sorbus*, *Prunus*, *Pyrus calleryana* (exotic), *Betula pendula*, *Fagus sylvatica* (hedge), *Hebe*, *Lavandula*, *Potentilla fruticosa*, *Hedera helix*, *Helleborus* etc.

### *Lighting*

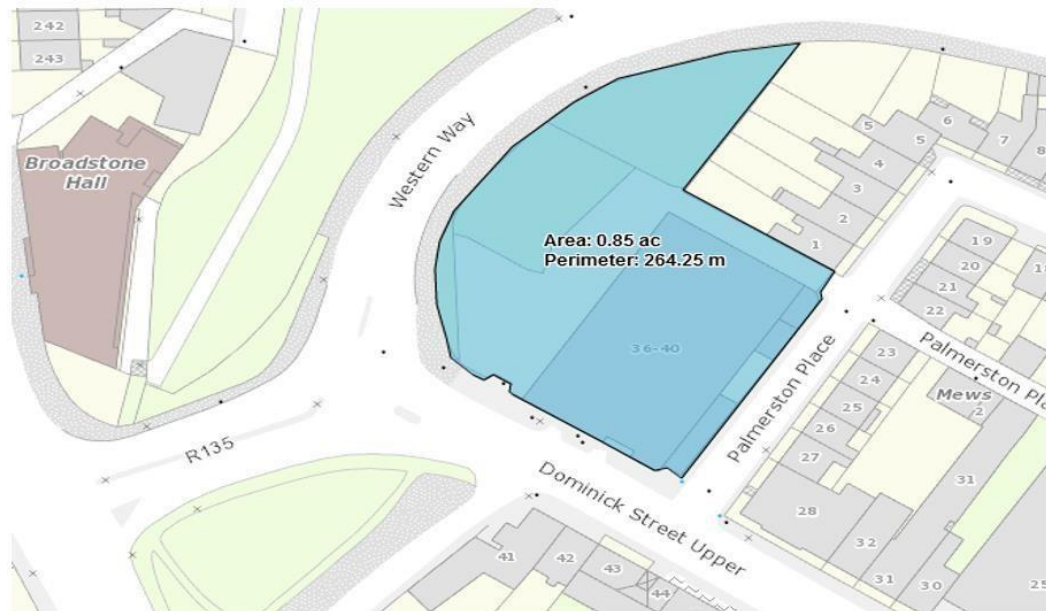
Lighting should be controlled to avoid light pollution of green areas and should be targeted to areas of human activity and for priority security areas. Motion-activated sensor lighting is preferable to reduce light pollution.

- None of the remaining mature trees shall be illuminated.
- Dark corridor for movement of bats along the grounds of the site. Lighting should be directed downwards away from the treetops.

- All luminaires shall lack UV elements when manufactured and shall be LED
- A warm white spectrum (ideally <2700 Kelvin but as low as the Council limitations allow) shall be adopted to reduce blue light component
- Luminaires shall feature peak wavelengths higher than 550 nm
- Tree crowns shall remain unilluminated
- Planting shall provide areas of darkness suitable for bats to feed and commute through the site.

## Impacts After Mitigation

There will be no impacts upon bats following the proposed mitigation. Should bat boxes be used by bats, this would potentially represent an enhancement for bats as there is no evidence of bat usage of the existing buildings.



**Area surveyed at Broadstone Dublin**





### Bat activity at Broadstone site

The green arrows indicate major feeding and commuting areas for common pipistrelles.

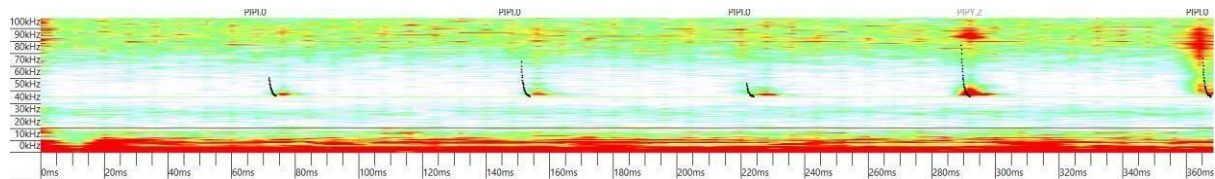
Monitor position from sunset to 22.30 hours

### Common pipistrelle signal

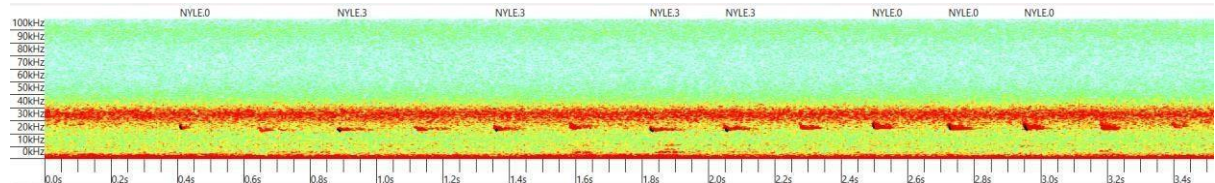


Monitor position overnight

Common pipistrelle and Leisler's bat were recorded at both static positions



### Common pipistrelle = the main bat signal within the site



### Leisler's bat signal at 22.07 hours







**Hendron's at Broadstone. The buildings provided no evidence of bats**





**The lane within which most bat activity was noted**

The ground floor section of the building is shown in the bottom right and leads to the lane

**Bat signals recorded on a static monitor throughout the 7<sup>th</sup> August up to dawn 8<sup>th</sup> August 2019**

Date	Time	Auto Id	Manual Id
07/08/2019	21:39:30	Common pipistrelle	Common pipistrelle
07/08/2019	21:41:30	Common pipistrelle	Common pipistrelle
07/08/2019	22:04:08	Common pipistrelle	Common pipistrelle
07/08/2019	22:04:38	Common pipistrelle	Common pipistrelle
07/08/2019	22:07:38	Leisler's Bat	Leisler's Bat
07/08/2019	22:17:38	Common pipistrelle	Common pipistrelle
07/08/2019	22:33:00	Common pipistrelle	Common pipistrelle
07/08/2019	22:37:00	Common pipistrelle	Common pipistrelle
07/08/2019	22:42:00	Leisler's Bat	Leisler's Bat
07/08/2019	22:44:00	Leisler's Bat	Leisler's Bat
07/08/2019	22:48:00	Leisler's Bat	Leisler's Bat
07/08/2019	22:49:00	Leisler's Bat	Leisler's Bat
07/08/2019	22:51:30	Common pipistrelle	Common pipistrelle Leisler's Bat
07/08/2019	23:01:00	Common pipistrelle	Common pipistrelle
07/08/2019	23:01:30	Common pipistrelle	Common pipistrelle
07/08/2019	23:02:30	Common pipistrelle	Common pipistrelle
07/08/2019	23:15:00	Leisler's Bat	Leisler's Bat
07/08/2019	23:15:30	Common pipistrelle	Common pipistrelle
07/08/2019	23:18:38	Common pipistrelle	Common pipistrelle
07/08/2019	23:20:38	Common pipistrelle	Common pipistrelle
07/08/2019	23:24:08	Leisler's Bat	Leisler's Bat
07/08/2019	23:30:08	Common pipistrelle	Common pipistrelle
07/08/2019	23:30:38	Pina	Common pipistrelle
07/08/2019	23:34:08	Common pipistrelle	Common pipistrelle
07/08/2019	23:35:38	Leisler's Bat	Leisler's Bat
07/08/2019	23:36:38	Leisler's Bat	Leisler's Bat
07/08/2019	23:55:30	Common pipistrelle	Common pipistrelle
07/08/2019	23:56:00	Common pipistrelle	Common pipistrelle
08/08/2019	00:05:30	Leisler's Bat	Leisler's Bat
08/08/2019	00:12:00	Leisler's Bat	Leisler's Bat
08/08/2019	00:13:30	Leisler's Bat	Leisler's Bat
08/08/2019	00:14:00	Leisler's Bat	Leisler's Bat
08/08/2019	00:22:00	Leisler's Bat	Leisler's Bat
08/08/2019	00:24:00	Common pipistrelle	Common pipistrelle
08/08/2019	00:28:38	Common pipistrelle	Common pipistrelle
08/08/2019	00:56:30	Leisler's Bat	Leisler's Bat
08/08/2019	00:58:30	Leisler's Bat	Leisler's Bat
08/08/2019	01:16:00	Leisler's Bat	Leisler's Bat

08/08/2019	01:25:30	Noid	Common pipistrelle
08/08/2019	01:30:30	Common pipistrelle	Common pipistrelle
08/08/2019	01:36:30	Leisler's Bat	Common pipistrelle
08/08/2019	01:49:30	Common pipistrelle	Common pipistrelle
08/08/2019	01:51:00	Leisler's Bat	Leisler's Bat
08/08/2019	02:01:30	Leisler's Bat	Common pipistrelle
08/08/2019	02:02:00	Leisler's Bat	Common pipistrelle
08/08/2019	02:14:30	Leisler's Bat	Leisler's Bat
08/08/2019	02:35:30	Common pipistrelle	Common pipistrelle
08/08/2019	02:36:00	Common pipistrelle	Common pipistrelle
08/08/2019	02:41:00	Leisler's Bat	Common pipistrelle Leisler's Bat
08/08/2019	02:41:30	Leisler's Bat	Leisler's Bat
08/08/2019	02:43:30	Common pipistrelle	Common pipistrelle
08/08/2019	02:55:30	Leisler's Bat	Leisler's Bat
08/08/2019	03:36:00	Common pipistrelle	Common pipistrelle
08/08/2019	03:47:00	Common pipistrelle	Common pipistrelle
08/08/2019	03:59:30	Leisler's Bat	Leisler's Bat
08/08/2019	04:08:00	Leisler's Bat	Leisler's Bat
08/08/2019	04:12:00	Leisler's Bat	Leisler's Bat
08/08/2019	04:22:00	Leisler's Bat	Leisler's Bat
08/08/2019	04:26:00	Leisler's Bat	Leisler's Bat
08/08/2019	04:28:30	Common pipistrelle	Common pipistrelle
08/08/2019	04:29:30	Common pipistrelle	Common pipistrelle
08/08/2019	04:36:00	Leisler's Bat	Leisler's Bat
08/08/2019	04:42:00	Common pipistrelle	Common pipistrelle
08/08/2019	05:02:08	Common pipistrelle	Common pipistrelle
08/08/2019	05:07:38	Common pipistrelle	Common pipistrelle

**Handheld monitor data from Hendron's site- 7<sup>th</sup> July 2019**

Date	Time	Auto Id
07/08/2019	21:40:33	Common Pipistrelle
07/08/2019	21:44:30	Common Pipistrelle
07/08/2019	21:48:24	Common Pipistrelle
07/08/2019	21:48:46	Common Pipistrelle
07/08/2019	21:49:49	Common Pipistrelle
07/08/2019	21:50:10	Common Pipistrelle
07/08/2019	21:50:51	Common Pipistrelle
07/08/2019	21:51:13	Common Pipistrelle
07/08/2019	21:51:35	Common Pipistrelle
07/08/2019	21:52:41	Common Pipistrelle
07/08/2019	21:57:32	Common Pipistrelle
07/08/2019	21:58:34	Common Pipistrelle
07/08/2019	21:58:54	Common Pipistrelle
07/08/2019	21:59:15	Common Pipistrelle
07/08/2019	21:59:35	Common Pipistrelle
07/08/2019	21:59:56	Common Pipistrelle
07/08/2019	22:00:16	Common Pipistrelle
07/08/2019	22:00:37	Common Pipistrelle
07/08/2019	22:00:57	Common Pipistrelle
07/08/2019	22:01:18	Common Pipistrelle
07/08/2019	22:01:38	Common Pipistrelle
07/08/2019	22:01:59	Common Pipistrelle
07/08/2019	22:02:20	Common Pipistrelle
07/08/2019	22:02:40	Common Pipistrelle
07/08/2019	22:03:01	Common Pipistrelle
07/08/2019	22:03:21	Common Pipistrelle
07/08/2019	22:03:42	Common Pipistrelle
07/08/2019	22:04:02	Common Pipistrelle
07/08/2019	22:04:23	Common Pipistrelle
07/08/2019	22:04:44	Common Pipistrelle
07/08/2019	22:05:04	Common Pipistrelle
07/08/2019	22:05:25	Common Pipistrelle
07/08/2019	22:05:45	Common Pipistrelle
07/08/2019	22:06:06	Common Pipistrelle
07/08/2019	22:06:26	Common Pipistrelle
07/08/2019	22:06:47	Common Pipistrelle
07/08/2019	22:07:08	Common Pipistrelle
07/08/2019	22:07:28	Common Pipistrelle

07/08/2019	22:07:49	Common Pipistrelle
07/08/2019	22:08:09	Common Pipistrelle
07/08/2019	22:08:30	Common Pipistrelle
07/08/2019	22:08:50	Common Pipistrelle
07/08/2019	22:09:11	Common Pipistrelle
07/08/2019	22:09:31	Common Pipistrelle
07/08/2019	22:09:52	Common Pipistrelle
07/08/2019	22:10:12	Common Pipistrelle
07/08/2019	22:11:14	Common Pipistrelle
07/08/2019	22:11:35	Common Pipistrelle
07/08/2019	22:11:55	Common Pipistrelle
07/08/2019	22:12:16	Common Pipistrelle
07/08/2019	22:12:37	Common Pipistrelle
07/08/2019	22:12:57	Common Pipistrelle
07/08/2019	22:13:18	Common Pipistrelle
07/08/2019	22:13:38	Common Pipistrelle
07/08/2019	22:13:59	Common Pipistrelle
07/08/2019	22:14:19	Common Pipistrelle
07/08/2019	22:14:40	Common Pipistrelle
07/08/2019	22:15:00	Common Pipistrelle
07/08/2019	22:15:22	Common Pipistrelle
07/08/2019	22:15:44	Common Pipistrelle
07/08/2019	22:16:47	Common Pipistrelle
07/08/2019	22:17:08	Common Pipistrelle
07/08/2019	22:17:29	Common Pipistrelle
07/08/2019	22:17:49	Common Pipistrelle
07/08/2019	22:24:09	Common Pipistrelle
07/08/2019	22:24:29	Common Pipistrelle
07/08/2019	22:30:45	Common Pipistrelle