

A Bat Assessment of The Former Europa Garage site, Blackrock, County Dublin

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Introduction

Bats are a widespread element of the Irish fauna and constitute approximately one quarter of all Irish mammals. They are known to be present throughout most of the Irish mainland as well as occurring on offshore islands. Bats are known to roost in houses and other buildings as well as trees and caves, rock faces and manmade tunnels and mines. Bats feed on insect and other invertebrate prey most commonly along hedgerow, treelines, rivers, and wetlands but also in gardens and parks. While bats may be present within an area throughout the entire year, the summer is one of the periods when they are most in evidence. Summer is the easiest time to identify the presence of bats due to the often-increased numbers present (females collect together into suitable sites to give birth to the annual young).

In addition to this, the high level of activity (due to increased metabolic demands on females from feeding young and the increased number of bats from the birth of the young) and the milder, drier weather allowing bat signs to accumulate on walls, window ledges etc making surveying more productive. Bats may switch roosts frequently as in the case of tree roosts or may be more established in a roost as in houses or other buildings.

Changes to a site associated with a change of use up to and including demolition, extension to or modification of an existing building may remove or modify bat roosting sites and may also affect their feeding and commuting activity.

Bats are protected by Irish and EU law and to prevent unlawful injury or death, it is essential that a full understanding of the site is available in advance to protect the resident bats from unintentional and to create a pathway by which a legal derogation and exemption may be designed in consultation with the National Parks and Wildlife Service of the Department of Culture, Heritage and the Gaeltacht.

The site is a nearly cleared former garage with one large wall to the rear of the site, a single large tree and a concrete surface with different ground levels. The proposed development would see the removal of the only tree and all of the current ground surfacing. This assessment will address the potential for bat roosting within the site and the level of bat feeding and commuting within the grounds of the former garage. The existing walls would remain intact.

Methodology

The Europa garage site (surfaces and single tree proposed for demolition / removal) was examined on the 18th to 19th August 2020 commencing in daylight and continuing on from a visual inspection, a bat detector survey was conducted from prior to sunset on 18th August 2020. The wall was visually inspected for the presence of bats in daylight and again at night with the aid of a high-powered beam in addition to the bat detector survey.

The bat detector assessment that commenced prior to sunset was undertaken equipped with an EchoMeter3 (EM3) full spectrum receiver with a screen displaying the ultrasonic signals received and recording all ultrasonic signals received to a SD card for later analysis. A second bat detector with time expansion and heterodyne capacity – a Pettersson D240X was used to note all bat activity. The signals were received by a stereo headphone that fed heterodyne signals into one ear and time expanded signals into the other ear of the surveyor.

A Songmeter Mini (Mini) was placed close to the single tree and remained here from prior to sunset to sunrise. The perimeter of the site and internal transects were walked to identify roosting, feeding and commuting bats.

Surveying commenced at 20.30 hours and involved repeated circuits of the site, observing for emerging bats. Sunset was at 20.46 hours. The survey involved a walked transect through the site with the aid of the D240X and an Echo meter 3 broad spectrum detector with a screen displaying sonograms of ultrasonic signals. A Garmin GPS unit was fitted to record position.

Surveying continued for 1.5 hours commencing before sunset (and re-commencing one hour prior to sunrise at hours (sunrise hours)).

Survey Constraints

Weather conditions for the survey were highly suited to bat activity with a temperature of 18 degrees Celsius at sunset (20.46 hours), 70% cloud and dry and still conditions. Bats were present for all of the post-sunset survey period. While conditions were considered ideal for the pre-sunrise period (14 degrees Celsius and dry and calm) there was no bat activity noted in the active survey. However, the passive survey showed that a common pipistrelle was present up to 05.20 hours but not noted during the active (mobile) survey. Given that bats were recorded throughout the post-sunset survey period, it is probable that this is a representative survey of the site given the nature of the site and the availability of habitat suitable for bats within and around the site.

Existing Environment

Species of bat roosting within the site

None

There were no bats within the site and no evidence of former roosting within the wall or tree.

Species of bat feeding within the site

(see Tables 1, 2 and 3 and Figure 1)

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

Bat Conservation Ireland notes the following about common pipistrelles (noted within the site) and soprano pipistrelles (very widespread in Ireland but surprisingly missing from the site): common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*). Ireland's two smallest bat species and the commonest, the common and soprano pipistrelles are the bats most likely to be seen flying around soon after dusk in both urban and rural areas. Both have a rapid, twisting flight as they pursue tiny prey of midges, mosquitoes, and small moths. A single pipistrelle (weighing no more than 5-6g, the weight of a 1 Euro coin) may consume as many as 3,000 of these insects in one night. Pipistrelles are frequently found roosting in houses, although they also roost in other locations such as tree holes.

In houses they prefer to occupy confined spaces such as behind hanging tiles and soffit boards or between roofing felt and roof tiles, rather than the main attic space. The two are called common and soprano because the latter echolocates at a higher frequency peaking at 55kHz,

compared with the former which echolocates at a peak frequency of 46kHz. The soprano pipistrelle tends to form nursery (or maternity) roosts with larger numbers of individuals (up to 1,500) compared with the common pipistrelle which would typically have a much smaller nursery roost size.

Trends in these species are monitored annually using the Bat Conservation Ireland Car-based Bat Monitoring Scheme. These results are incorporated into the NPWS Article 17 reporting for the Habitats Directive.

Results from this scheme indicate that since 2003 the soprano pipistrelle has increased significantly while the common pipistrelle has also increased, albeit more slowly. The reasons for these increases are poorly understood but both species may be recovering from past declines or responding to increased woodland cover and/or climate change.

The first pipistrelle noted was brief and to the rear of the building at 21.19 hours. This is late and indicates that the bat was not roosting within the site. Prior to sunrise, a pipistrelle was heard briefly towards the stream passing the site at 05.42 hours.

No recordings of soprano pipistrelle were made within the site. This species has been recorded by the author in Blackrock (see Table 1) and neighbouring areas and is widespread and common.

Another species encountered in the survey was the Leisler's bat (*Nyctalus leisleri*). This bat was noted 10 minutes after sunset close to the main entrance. The signal was very faint, and it is probable that this bat was either at a distant or high above the site and was not emerging from the building. The bat was heard one minute later closer to the site and was heard again at 20.40 hours.

Bat Conservation Ireland reports the following for this species. This is the biggest Irish bat, and it is often found roosting in buildings although 13% of its roosts recorded in Ireland have been in trees. The Leisler's bat has distinctive level flight at greater heights than the other Irish species, from which it dives down after dung flies and beetles. It can be seen soon after sunset flying over open spaces such as parks and fields. The Leisler's bat is rare in Britain and the rest of Europe, but it is relatively common here.

For this reason, the Irish population of Leisler's bats is considered of International Importance. Leisler's bat is monitored by the Car-based Bat Monitoring Scheme and its annual trend has shown significant increases since 2003. The reasons for the increase are poorly understood but it may be recovering from past declines or responding to increased woodland cover and/or climate change. Leisler's bats are less tolerant of cold weather and are often absent in survey periods during which temperatures drop towards 6°C while pipistrelles will invariably be present in similar conditions. These species are relatively secure in their populations. Leisler's bat roosts are prone to exclusion from domestic structures as the bat may be noisy if close to bedroom walls or ceilings.

All bat species and their roosts are protected, and bat roosts may only be degraded or destroyed subject to the issue of a derogation provided by NPWS from protection under the Wildlife Act and Habitats Directive. NPWS must be satisfied in such circumstances that the favourable conservation status of the species or population of the species within the State is not negatively affected. It is an offence to kill or injure a bat species and no measures that will consciously allow this are lawful.

Modifications or Features introduced by the proposed development

- **Re-pointing of wall**

The wall will be repaired and re-pointed. This presents the potential for a long-term slight to moderate negative impact if a roost were destroyed without any mitigation. It would constitute a breach of the Wildlife Act 1976 and 2000 and the Habitats Directive and associated statutory instruments. There is no evidence of any bat usage from the inspection of the wall and the bat activity survey.

- **Lighting**

There will be an increased level of lighting as there will be a number of buildings and apartments. 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. There is no current evidence of light sensitive species within the immediate area.

- **Removal of vegetation**

The existing vegetation (which is mainly scrub growing through the ground cover and a single semi mature tree) will be removed. This would remove the insect substrate and feeding areas for bats.

Impacts of The Proposed Development

Roost loss

There would be a loss of potential roost sites (tree and wall). However, there is very low roost potential and no evidence of current or historic use. This could hypothetically 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 and a loss of roosts.

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 light-intolerant bat species during foraging and if directed at emergence points would affect all bat species, even those that will feed in illuminated areas. There are no roosts within the site. Lighting could potentially affect roosts outside of the site (for example, if bats were roosting in a neighbouring house). At worst, it would be a permanent moderately negative impact.

Proposed Mitigation

Inspection of the wall prior to re-pointing and repair

Any wall crevices shall be examined for the presence of bats prior to repair by a bat specialist. This shall be undertaken with a fibrescope. Should bats be noted, NPWS shall be contacted immediately and all appropriate measures to protect the bat and provide further suitable mitigation for any impacts upon the roost site (under a derogation from NPWS with a suitable conservation programme).

Planting of vegetation within the landscaping

There shall be an encouragement of species such as *Clematis* and other species attractive to a variety of insects including moths. There are a variety of trees proposed including *Malus sylvestris*, *Betula pendula*, *Gleditsia triacanthos* (Honey locust), *Magnolia* 'Kobus' (a tree pollinated by beetles), *Corylus colurna* (Turkish hazel) and a large specimen Plane tree.

The planting for the courtyard will be a pollinator friendly mix with both native and non-native species.

Incorporation of three bat boxes (Schwegler types 2F with double panel) 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.



2F



Double front panel

Plate 1: Schwegler Bat Boxes

The bat boxes shall be installed to the western section of the site on buildings or poles (towards Newtown Villas).

Lighting

Lighting shall be controlled to avoid light pollution of external areas and should be targeted to areas of human activity and for priority security areas.

IMPACTS OF THE DEVELOPMENT AFTER MITIGATION

There will be no significant impact on bats following mitigation. With proper implementation of the mitigation, there will be no impact upon bats.

Appendices

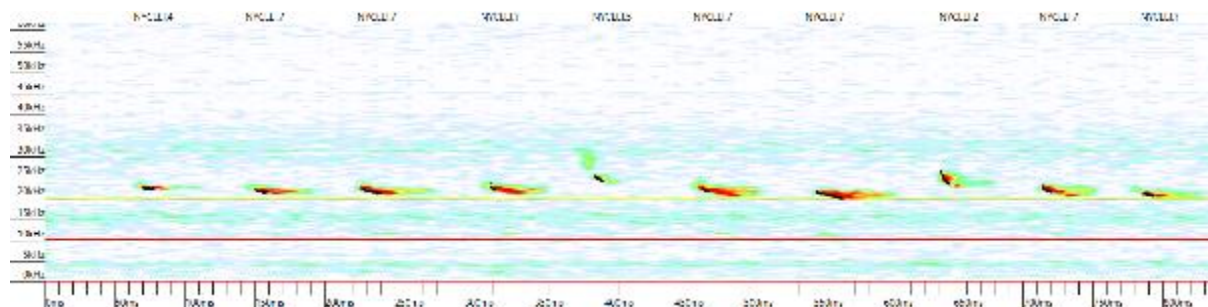
Map of bat activity, Bat sonograms, Bat activity data



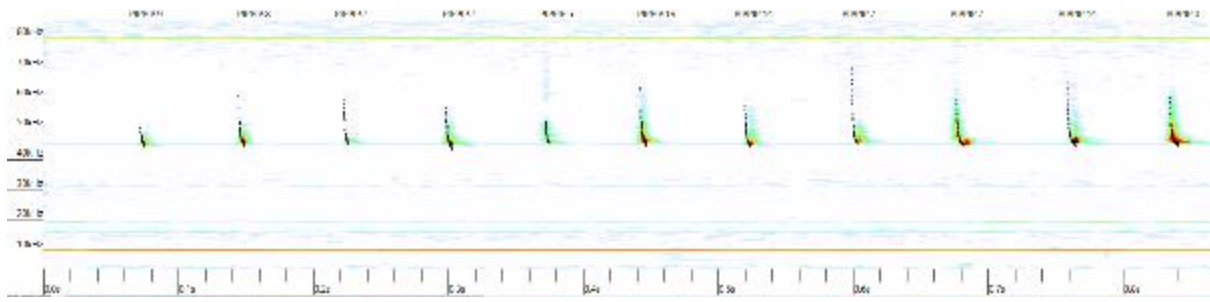
Figure 1: Bat activity at former Europa site, Blackrock 18th to 19th August 2020

Legend

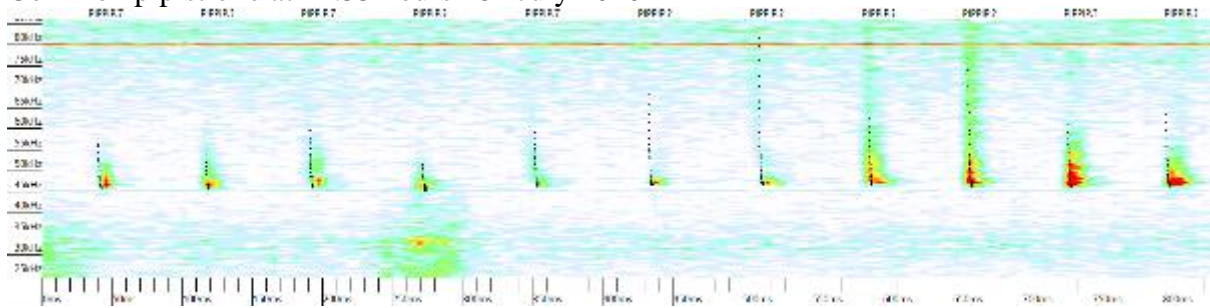
<i>Green paddle</i>	<i>Common pipistrelle</i>	<i>Yellow paddle</i>	<i>Leisler's bat</i>
<i>White box</i>	<i>Location of Song Meter Mini</i>	<i>Line</i>	<i>Transect covered for the survey</i>



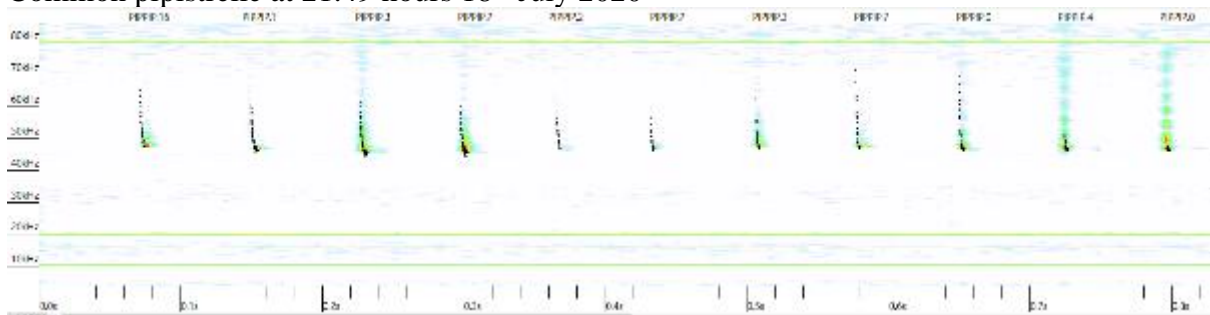
Leisler's bat at 21.12 hours 18th July 2020



Common pipistrelle at 21.33 hours 18th July 2020



Common pipistrelle at 21.49 hours 18th July 2020



Common pipistrelle at 22.06 hours 18th July 2020

Figure 2: Examples of bat sonograms from the study area

Table 1: BC Ireland data: search results 3 Sep 2020

Search parameters: Roosts Transects Ad-hoc observation sites with observations of all bats within 1000m of O2197029163.

Ad-hoc observations					
Survey	Grid reference	Grid ref easting	Grid ref northing	Date	Species
EIA survey- Paul Scott (Scott Cawley)	o2132329446	321323	229446	17/05/2016	
EIS surveys - Brian Keeley	O2110029800	321100	229800	01/07/2004	Nyctalus leisleri; Pipistrellus pipistrellus (45kHz); Pipistrellus pygmaeus

Table 2: Bat activity data from static monitor (Songmeter Mini 18th to 19th August 2020)

Date	Time	Auto Id*	Pulses	Manual Id
18/08/2020	20:59:44	Leisler's Bat	5	Leisler's Bat
18/08/2020	21:00:15	Leisler's Bat	8	Leisler's Bat
18/08/2020	21:01:49	Leisler's Bat	27	Leisler's Bat
18/08/2020	21:04:38	Leisler's Bat	37	Leisler's Bat
18/08/2020	21:10:36	Leisler's Bat	15	Leisler's Bat
18/08/2020	21:11:51	Leisler's Bat	35	Leisler's Bat
18/08/2020	21:15:18	Leisler's Bat	16	Leisler's Bat
18/08/2020	21:16:10	Leisler's Bat	4	Leisler's Bat
18/08/2020	21:16:17	Leisler's Bat	2	Leisler's Bat
18/08/2020	21:33:25	Common Pipistrelle	66	
18/08/2020	21:36:29	Common Pipistrelle	127	
18/08/2020	21:36:54	Common Pipistrelle	10	Common Pipistrelle
18/08/2020	21:39:47	Pipnat	40	Common Pipistrelle
18/08/2020	21:41:18	Noid	6	Common Pipistrelle
18/08/2020	22:17:40	Common Pipistrelle	12	Common Pipistrelle
18/08/2020	22:28:36	Common Pipistrelle	26	
18/08/2020	22:47:54	Common Pipistrelle	11	Common Pipistrelle
18/08/2020	23:11:59	Leisler's Bat	2	Leisler's Bat
18/08/2020	23:16:12	Leisler's Bat	12	Leisler's Bat
18/08/2020	23:28:58	Leisler's Bat	5	Leisler's Bat
18/08/2020	23:29:07	Leisler's Bat	5	Leisler's Bat
18/08/2020	23:36:02	Common Pipistrelle	18	Common Pipistrelle
18/08/2020	23:39:33	Leisler's Bat	3	Leisler's Bat
18/08/2020	23:39:38	Leisler's Bat	13	Leisler's Bat
18/08/2020	23:43:02	Leisler's Bat	19	Leisler's Bat
18/08/2020	23:43:19	Common Pipistrelle	29	
18/08/2020	23:45:52	Leisler's Bat	3	Leisler's Bat
18/08/2020	23:47:45	Leisler's Bat	9	Leisler's Bat
18/08/2020	23:47:59	Leisler's Bat	9	Leisler's Bat
18/08/2020	23:53:05	Leisler's Bat	16	Leisler's Bat
18/08/2020	23:54:42	Common Pipistrelle	24	
18/08/2020	23:59:49	Leisler's Bat	6	Leisler's Bat
19/08/2020	00:09:30	Common Pipistrelle	39	
19/08/2020	00:18:57	Leisler's Bat	13	Leisler's Bat
19/08/2020	00:22:57	Leisler's Bat	12	Leisler's Bat
19/08/2020	00:28:48	Leisler's Bat	4	Leisler's Bat
19/08/2020	00:34:56	Leisler's Bat	4	Leisler's Bat
19/08/2020	00:43:37	Leisler's Bat	12	Leisler's Bat
19/08/2020	00:45:55	Noid	2	Leisler's Bat
19/08/2020	00:46:05	Leisler's Bat	10	Leisler's Bat
19/08/2020	00:47:00	Leisler's Bat	2	Leisler's Bat
19/08/2020	00:49:48	Leisler's Bat	23	Leisler's Bat
19/08/2020	00:50:21	Common Pipistrelle	25	
19/08/2020	00:57:33	Leisler's Bat	17	Leisler's Bat
19/08/2020	01:04:59	Leisler's Bat	2	Leisler's Bat
19/08/2020	01:07:49	Leisler's Bat	16	Leisler's Bat
19/08/2020	01:36:21	Common Pipistrelle	46	
19/08/2020	01:40:57	Leisler's Bat	12	Leisler's Bat
19/08/2020	01:41:48	Leisler's Bat	15	Leisler's Bat
19/08/2020	01:42:10	Leisler's Bat	3	Leisler's Bat
19/08/2020	01:47:20	Common Pipistrelle	43	
19/08/2020	01:48:01	Noid	2	Leisler's Bat
19/08/2020	01:50:09	Leisler's Bat	7	Leisler's Bat
19/08/2020	01:50:29	Leisler's Bat	12	Leisler's Bat
19/08/2020	02:11:16	Common Pipistrelle	19	
19/08/2020	03:23:50	Common Pipistrelle	12	Common Pipistrelle
19/08/2020	03:39:51	Common Pipistrelle	30	
19/08/2020	04:33:34	Common Pipistrelle	66	
19/08/2020	05:19:55	Common Pipistrelle	17	Common Pipistrelle

Table 3: Bat activity recorded after sunset on 18th July 2020 (EM3)

Date	Time	Auto Id*	Pulses	Manual Id
18/08/2020	21:04:51	Leisler's Bat	6	Leisler's Bat
18/08/2020	21:10:58	Leisler's Bat	3	Leisler's Bat
18/08/2020	21:11:59	Leisler's Bat	11	Leisler's Bat
18/08/2020	21:33:34	Common Pipistrelle	34	Common Pipistrelle
18/08/2020	21:42:21	Common Pipistrelle	16	Common Pipistrelle
18/08/2020	21:49:06	Common Pipistrelle	12	Common Pipistrelle
18/08/2020	21:49:21	Common Pipistrelle	16	Common Pipistrelle
18/08/2020	21:49:27	Common Pipistrelle	60	Common Pipistrelle
18/08/2020	21:49:42	Common Pipistrelle	24	Common Pipistrelle
18/08/2020	21:49:47	Common Pipistrelle	23	Common Pipistrelle
18/08/2020	21:50:07	Common Pipistrelle	33	Common Pipistrelle
18/08/2020	21:51:08	Common Pipistrelle	41	Common Pipistrelle
18/08/2020	21:51:23	Common Pipistrelle	26	Common Pipistrelle
18/08/2020	21:51:28	Common Pipistrelle	10	Common Pipistrelle
18/08/2020	21:52:04	Common Pipistrelle	21	Common Pipistrelle
18/08/2020	21:52:09	Common Pipistrelle	52	Common Pipistrelle
18/08/2020	21:52:24	Common Pipistrelle	12	Common Pipistrelle
18/08/2020	21:52:29	Common Pipistrelle	3	Common Pipistrelle
18/08/2020	21:52:49	Common Pipistrelle	49	Common Pipistrelle
18/08/2020	21:53:04	Common Pipistrelle	9	Common Pipistrelle
18/08/2020	21:53:09	Common Pipistrelle	25	Common Pipistrelle
18/08/2020	21:53:24	Common Pipistrelle	3	Common Pipistrelle
18/08/2020	21:53:30	Common Pipistrelle	41	Common Pipistrelle
18/08/2020	21:53:50	Common Pipistrelle	48	Common Pipistrelle
18/08/2020	21:56:53	Common Pipistrelle	25	Common Pipistrelle
18/08/2020	22:06:41	Common Pipistrelle	25	Common Pipistrelle