

**A Bat Assessment of Sally Park Nursing Home,
Knocklyon, South Dublin Over Two Seasons and an
Evaluation for Potential Impacts of
The Proposed Modifications on the Bat Fauna**

Brian Keeley B.Sc. (Hons) in Zool. MCIEEM

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Introduction

Bats are a widespread element of the Irish fauna. They are known to occur from much of the rural landscape, but they are also present within the urban environment and here they occupy buildings and occasionally trees for short or long periods. Houses and other buildings are a vital element of the annual cycle of all Irish bat species and at no time more so than the period May to August, but many bats may also avail of buildings as hibernation sites. Summer is the easiest time to identify the presence of bats due to the often-increased numbers present, the high level of activity and the milder, drier weather allowing bat signs to accumulate. The presence of bats in winter may be impossible to determine in many buildings unless there is adequate access to confirm either signs of bat usage or the presence of the bats themselves. Signs may still be available to confirm this at a later stage in the year if the roost area is accessible to a trained observer.

Changes to a site including extension to or modification of an existing building may reduce the options available to bats as a roosting site 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 at Sally Park, Knocklyon will undergo a modification of the existing buildings through construction and extension. There will be new sections of the building on approximately one third of the existing site. There will very limited diverse and well-developed vegetation clearance and the subsequent construction of a new wing to the existing building. This will change the nature of this site by an increase in buildings but there is no proposal to remove existing very mature trees from the site. This assessment will address the potential for bat roosting within the nursing home and the level of bat feeding and commuting within the site and around the surrounding vegetation within which the project is proposed.

The grounds are surrounded by housing and lie close to the Carmelite Monastery and River Dodder and several green spaces in addition to many housing schemes. With the grounds are the nursing home and several sheds and storerooms.

Prior to the alteration of extensive historic buildings with considerable undisturbed attics, it may be necessary to ensure that there will be no impact upon protected species (such as all of Ireland's bats) that would affect their conservation status or intentionally or recklessly place individuals of protected species at risk. Bats may be present within a building unbeknownst to owners and even residents and there is a requirement to undertake a survey by suitably qualified ecologists with the appropriate equipment to determine if bats are present. Should bats be present, the identity of the species concerned and the potential consequences of the modifications of the site can assist in identifying measures to alleviate the negative effects of these changes.

Surveying for bats in October is towards the end of the suitable time period to address the usage of buildings and the grounds of a site and is beyond the breeding season. Maternity roosts have typically split into smaller numbers and roost sites may even be entirely empty of bats. Surveying in this period gives a snapshot of bat activity and bat distribution after the breeding season as it deals with the early phase of independent flight by the young and the mating season. Activity at any time of year may be interrupted occasionally by very wet nights but overall there is a strong likelihood of bat activity (even sporadic) in between showers.

Surveying in May should provide a very good picture of bat activity leading up to the breeding season. Bats have left hibernation and mating has occurred in species like the brown long-eared bat while pregnancy commences in all species. The young have not been born in most years and weather conditions are normally highly conducive to bat activity.

Based on Bat Conservation Ireland data, Knocklyon has been noted to have a bat fauna including common and soprano pipistrelle, Leisler's bat, Daubenton's bat and brown long-eared bat and most of these species have been noted within 1 km of this site. Other species along the River Dodder include Nathusius' pipistrelle and whiskered bat. The River Dodder is an important corridor for wildlife in Dublin city and lies within 250 metres of the site.

Following observations from the Environment and Public Realm Management Section of South Dublin County Council, the site has been re-evaluated to meet the issues addressed and to ensure that a Seasonally Appropriate Bat Survey has been provided:

- The bat survey was conducted outside of the bat season - the bat season is from April to September, the bat survey for the above site was conducted in October 2018.

- Although the bat survey hasn't found any roosts on site (note survey conducted outside of bat season), the applicant should follow all recommendations by the ecologist and take into account the following;

- As per; Bat Conservation Trust and Institution of Lighting Professionals guidance document – 'Bats and Artificial Lighting in the UK' (2018)

- Appropriate luminaire specifications Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following shall be considered when choosing luminaires.
- All luminaires shall lack UV elements when manufactured. Metal halide, fluorescent sources shall not be used.
- LED luminaires shall be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) shall be adopted to reduce blue light component.
- Luminaires shall feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.

- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use shall only be as directed by the lighting professional. • Column heights shall be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control shall be used – See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires shall always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting shall be set on motion-sensors and short (1min) timers.

As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

Methodology

The proposed building site at Sally Park was examined on 9th October 2018 in daylight and again by means of a bat detector survey from prior to sunset (18.41 hours) for one and a half hours approximately (from 18.00 hours) and again prior to dawn on 11th October for one hour (from 06.45 hours to 07.45 hours, sunrise at 07.44 hours). The site was visually inspected for the presence of bats with the aid of a high-powered beam, a GoScope Premium fibrescope by examination of all accessible areas of the existing buildings. All walls and windows and doors were fully examined for evidence of bat occupancy or previous usage indicated by the presence of bat droppings or staining. There were a number of accessible attics within the nursing home that were checked for evidence of bats (by means of droppings or staining or carcasses). The staff at the home were questioned regarding any encounters with bats within the nursing home in recent years. The single storey section which is the proposed site for the extension was examined during the night and prior to dawn internally and externally both for bat activity and for any evidence of previous occupancy by way of droppings or staining or corpses.

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 also recording all ultrasonic signals received to a SD card for later analysis. A second EM3 detector was used by the surveyor in static mode. The surveyor observed the buildings while walking around the perimeter of all buildings. A third detector, a Songmeter2BAT+ (SM2) was positioned to the side of the nursing home and then moved to the rear at 20.10 hours remaining here to sunrise.

The site was re-surveyed on 3rd May 2019 to identify any roosting bats at a time when maternity roosts are forming and when bat activity is normally sustained.

The attic areas were re-examined for evidence of bats and a walked transect and static monitor were employed as in October 2018. A SM2 was placed within the treeline to south-west of the existing building to identify any significance to the vegetation as commuting routes or feeding corridors for bats. An EM3 was held during the walked transect that included the front and rear of the building and the grounds of the existing nursing home. A second EM3 was placed at the front of the nursing home and remained here overnight.

Hence, there were two static monitors and a hand-held monitor that was used during the active survey (from 20.00 hours to 22.30 hours and 04.30 hours to 05.45 hours on the morning of 4th May 2019).

Survey Constraints

Weather conditions in October 2018 were mixed and some nights were very wet. However, on the night of survey, weather conditions were well suited to bat activity and there was little wind but some rain. Morning temperatures were cooler but again would typically be adequate for bat activity to occur. Bat activity was noted at different periods of the night up to close to sunrise. This is a representative survey of the site in October.

Weather conditions in May 2019 were atypical of the season with cooler night temperatures than would be expected. The start and end temperature for the night of survey was 8° Celsius. This is high enough to allow bat and insect flight and activity but may suppress insect abundance.

It is considered that overall, this is a representative survey of the site given the size of the site and the availability of habitat suitable for bats within and around the site.

Existing Environment



Results of bat assessment October 2018

Species of bat roosting in Sally Park Nursing Home

None

Species of bat feeding within the site

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

No bats were seen to emerge or return to any of the buildings within the site. The single storey section of the building showed no evidence of bats. An examination of all accessible areas of the attics revealed no evidence of bats; either current or historic. Staff within the nursing home for over 10 years had never encountered a bat within the building nor had heard anecdotes to this effect. This is clearly not an area of high bat significance (or probably has no significance for bats) as there were no bats roosting in the nursing home at the time of survey or previously based on this examination.

Bat activity was principally made up of common pipistrelle based on the two surveys. In October 2018, there were a small number of soprano pipistrelle passes based on the active survey and the passive survey results (see Tables 1 and 2 and Figure 1(a)). In addition to the pipistrelles in October 2018, Leisler's bat activity was noted occasionally over the site and the first bat noted was a Leisler's bat at 19.10 hours. This was approximately an hour half after sunset and relatively late for the first Leisler's bat activity. No Leisler's bat activity was noted in 2019. Leisler's bat activity was noted within the same week 2.3 km from the site during similar weather conditions (8°C, slight breeze).

Bat activity within the site in May 2019 was low and was probably slightly suppressed by the low temperatures of this particular year (see Figure 1(b). There was no bat activity prior to dawn in May 2019. Bat records within 1 km of the site are shown in Table 3.



Plate 2: Vegetation within the site showing from east to west with the entrance gate to the left

Modifications or Features introduced by the proposed development

✦ Demolition of some of the existing buildings

There will be a need to demolish some of the existing structures on site to facilitate construction. This will lead to the removal of the single storey buildings to the west of the historical building and alterations to the roof level of the older building. Neither of these buildings are bat roosts from available information and these surveys.

✦ Vegetation alterations

There will be a requirement to remove some of the vegetation from the site to facilitate the project. This will be very minor given that there is mainly shrubbery and a small number of mature trees within the site.

✦ Lighting

There will be an increased level of lighting as there will be increased density of living quarters. 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 only over a short-term period.

As there are no bats roosting within the site, the impacts are very limited from these changes. Equally, there are no light-intolerant species feeding around the nursing home.

Pipistrelles and Leisler's bats are less affected by light than all other species, but 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.

Impacts of The Proposed Development

Potential roost loss

Demolition and renovation create a risk of roost loss especially where buildings have lain idle over a period and bat usage may have ensued. However, there is no evidence of bat usage of any of the buildings on site and currently roost loss is not envisaged for this site. No roost will be removed by this proposal but there is at least one attic with roost potential in the nursing home.

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. However, there are no roosts on site and therefore illumination would only affect commuting and possibly feeding rather than roosting.

Species such as Leisler's bat and common pipistrelle 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 slightly negative impact.

Reduced Feeding

Reduced vegetation including the removal of any of the trees within the site may lead to reduced insect abundance. This is unlikely to be very significant in terms of bat fauna within

this site as it would appear that individual bats feed here rather than clusters of bats. This will be a permanent slight or negligible negative impact.

Proposed Mitigation

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 oak (the greatest value for most wildlife), hawthorn, blackthorn, elder, gorse, bramble, in addition to other species such as dog rose with an encouragement of species such as *Clematis* and other species attractive to moths.

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 or trees proposed for planting shall be illuminated.

The observations made by South Dublin County Council based upon Guidance Note 08/18 Bats and artificial lighting in the UK” Bats and the Built Environment series “are valid concerns where bats are feeding, commuting or roosting. The current feeding site is minor in its significance as bat activity is low overall and the site is very small. It is proposed that the following considerations are observed:

- Dark corridor for movement of bats along the grounds of the site External security lighting to the south of the existing building shall be set on motion-sensors and short (1min) timers. The sensors should be located close to the ground (i.e. no higher than 3 metres) to ensure that they are triggered by people rather than bats, birds or other animals. Lighting should be directed downwards away from the treetops.

The area proposed for such lighting is shown in Figure 1.

- All luminaires shall lack UV elements when manufactured and shall be LED
- A warm white spectrum (ideally <2700Kelvin) shall be adopted to reduce blue light component
- Luminaires shall feature peak wavelengths higher than 550nm
- Tree crowns shall remain unilluminated

- Planting shall provide areas of darkness suitable for bats to feed and commute through the site. A combination of lighting control and vegetation planting shall ensure a dark corridor to the east of the existing building running south and connecting with the southern side of the new building and running northwest towards the existing western side of the older building where there will be a new extension. This will allow bats to feed and commute through the site.

IMPACTS OF THE DEVELOPMENT AFTER MITIGATION

It is predicted that this development will have no direct impact upon the conservation status of bats.

Appendices

Figures depicting bat activity in October 2018 and May 2019

Figure highlighting the area of darkness to allow bat movement through the site

Tables of bat activity in 2018 and 2019

Spectrograms of bat signals recorded in October 2018

Bat Conservation Ireland data from the surrounding area

Table of bat activity May 2019

Spectrograms of bat signals recorded in May 2019

Plates depicting the existing buildings and attics of the site



Figure 1: (a, above) Bat activity after sunset Sally Park Nursing Home 10th October 2018 (b) Bat activity after sunset on 3rd May 2019

Legend

Green paddle Common pipistrelle

Yellow paddle

Leisler's bat

Blue paddle Soprano pipistrelle

Purple line

Transect walked



Table 1: Bat activity on 10th October 2018 on active (1st half) and passive (2nd half) EM3

Time	Auto Id	Manual Id
19:10:27	Leisler's Bat	Leisler's Bat
19:10:57	Leisler's Bat	Leisler's Bat
19:11:00	Leisler's Bat	Leisler's Bat
19:16:01	Leisler's Bat	Leisler's Bat
19:21:02	Soprano Pipistrelle	Soprano Pipistrelle
20:11:22	Common Pipistrelle	Common Pipistrelle
Time	Auto Id	Manual Id
19:10:37	Leisler's Bat	Leisler's Bat
19:10:58	Leisler's Bat	Leisler's Bat
19:11:18	Common Pipistrelle	Common Pipistrelle
19:16:22	Leisler's Bat	Leisler's Bat
20:02:36	Common Pipistrelle	Common Pipistrelle
20:03:16	Leisler's Bat	Leisler's Bat

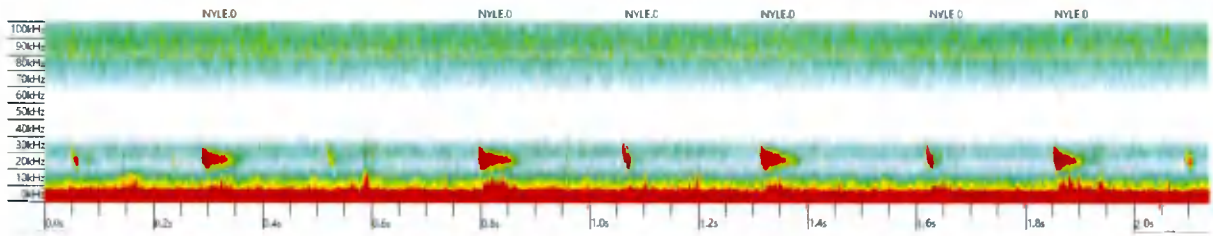
Table 2: Bat activity recorded by SM2 at Sally Park 10th October 2018

Time	Auto Id	Manual Id
19:10:30	Leisler's Bat	Leisler's Bat
19:11:00	Leisler's Bat	Leisler's Bat
20:11:14	Common Pipistrelle	Common Pipistrelle
20:16:55	Brown Long-Eared Bat	Common Pipistrelle
20:27:55	Noid	Common Pipistrelle
20:46:55	Common Pipistrelle	Common Pipistrelle
20:55:55	Leisler's Bat	Leisler's Bat
20:57:55	Common Pipistrelle	Common Pipistrelle
21:35:38	Common Pipistrelle	Common Pipistrelle
21:41:38	Common Pipistrelle	Common Pipistrelle
21:46:08	Common Pipistrelle	Common Pipistrelle
21:49:50	Common Pipistrelle	Common Pipistrelle
21:50:50	Common Pipistrelle	Common Pipistrelle
21:57:20	Common Pipistrelle	Common Pipistrelle
22:19:00	Soprano Pipistrelle	Soprano Pipistrelle
22:22:30	Common Pipistrelle	Common Pipistrelle
22:26:30	Brown Long-Eared Bat	Common Pipistrelle
22:30:00	Common Pipistrelle	Common Pipistrelle
22:31:00	Noid	Common Pipistrelle
22:32:00	Common Pipistrelle	Common Pipistrelle
22:34:30	Common Pipistrelle	Common Pipistrelle
22:39:30	Common Pipistrelle	Common Pipistrelle
22:40:30	Common Pipistrelle	Common Pipistrelle
22:41:00	Common Pipistrelle	Common Pipistrelle
00:08:30	Common Pipistrelle	Common Pipistrelle
00:09:00	Common Pipistrelle	Common Pipistrelle
04:05:00	Common Pipistrelle	Common Pipistrelle
04:06:30	Common Pipistrelle	Common Pipistrelle
06:40:44	Soprano Pipistrelle	Soprano Pipistrelle

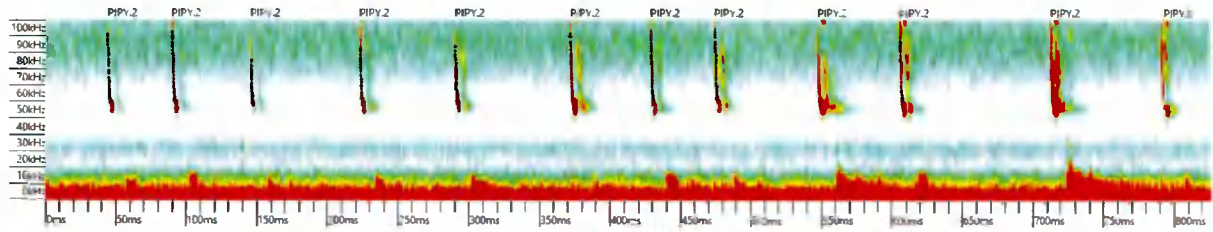


Figure 2: Lighting control in the area indicated by the black and yellow band to allow bat movement through the site

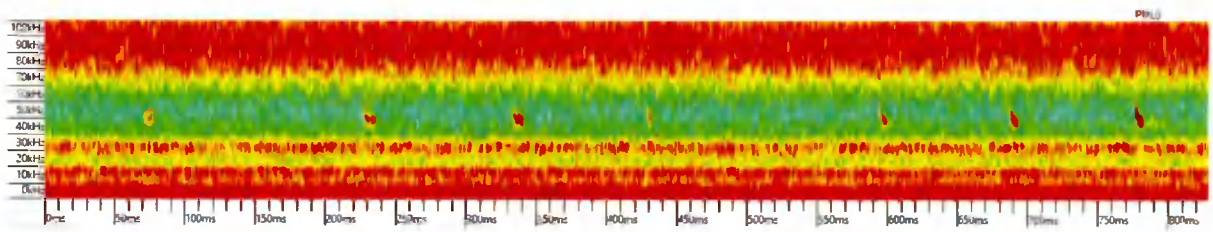
This area must only be illuminated by motion-activation lighting that should be directed downwards away from



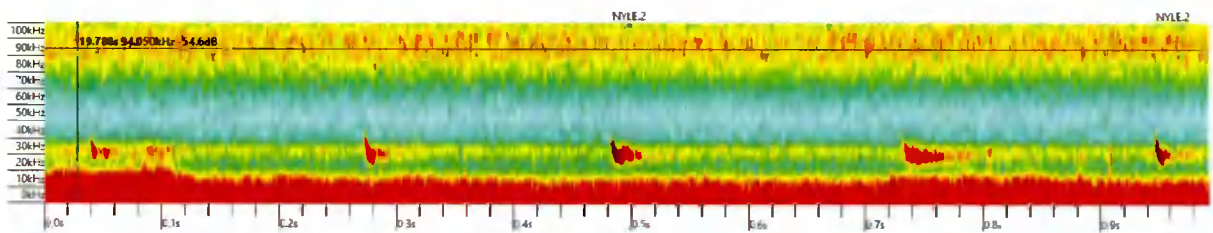
First bat: a Leisler's bat at 1910 hours on 10th October 2018 at Sally Park Nursing Home



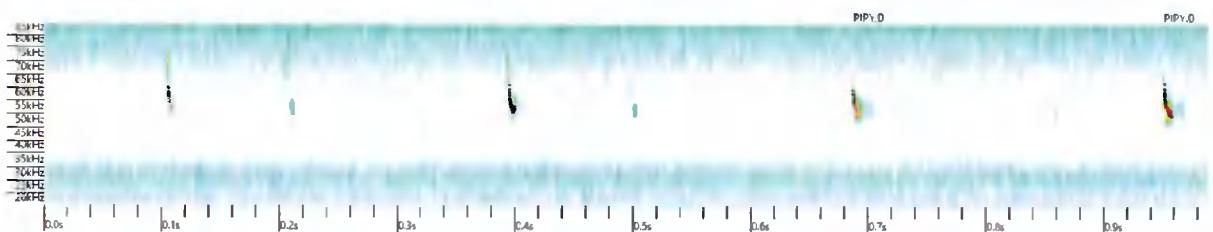
Soprano Pipistrelle at 19.21 hours on 10th October 2018 at Sally Park Nursing Home



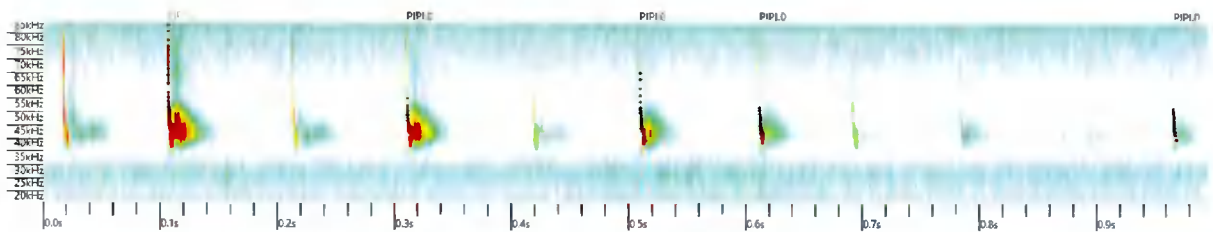
Common Pipistrelle at 20.11 hours on 10th October 2018 at Sally Park Nursing Home



Second Leisler's bat activity at 1916 hours on 10th October 2018 at Sally Park Nursing Home



Soprano Pipistrelle at 06.40 hours on 11th October 2018



Common Pipistrelle at 07.06 hours

Table 3: Bat Conservation Ireland data: search results 13 th May 2019			
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all bats within 1000m of O1122727444.			
Roosts			
Name	Grid reference	Address	Species observed
60 Cremore	O1227	Templeogue; Dublin 16; County Dublin	Unidentified bat
Transects			
Name	Grid reference start	Species	
Newbridge Firhouse Transect	O1146127746	Myotis daubentonii; Unidentified bat	
Newbridge Firhouse Transect; Spot 1	O1146127746	Pipistrellus pygmaeus	
Newbridge Transect; Spot 10	O1056127168	Myotis daubentonii; Unidentified bat	
Newbridge Transect; Spot 2	O1132327735	Myotis daubentonii; Pipistrellus pygmaeus; Pipistrellus spp. (45kHz/55kHz)	
Newbridge Transect; Spot 3	O1122227724	Myotis daubentonii; Myotis spp.; Nyctalus leisleri; Pipistrellus pipistrellus; Pipistrellus pygmaeus; Pipistrellus spp. (45kHz/55kHz)	
Newbridge Transect; Spot 4	O1110527716	Myotis daubentonii; Pipistrellus pygmaeus	
Newbridge Transect; Spot 5	O1097027703	Pipistrellus spp. (45kHz/55kHz)	
Newbridge Firhouse Transect; Spot 6	O1088427600	Pipistrellus pygmaeus; Pipistrellus spp. Unidentified bat	
Newbridge Transect; Spot 7	O1081127498	Myotis daubentonii; Myotis spp.; Pipistrellus pipistrellus; Pipistrellus pygmaeus; Pipistrellus spp; Unidentified bat	
Newbridge Transect; Spot 8	O1074227345	Myotis spp.	
Newbridge Transect; Spot 9	O1065527272	Myotis daubentonii; Myotis spp.; Unidentified bat	
Ad-hoc observations			
Survey	Grid reference	Date	Species
Paul Scott (Scott Cawley)	O105269	24/08/2012	Myotis daubentonii; Nyctalus leisleri; Pipistrellus pipistrellus; Pipistrellus pygmaeus
- Conor Kelleher	O1100027000	22/06/2005	Myotis daubentonii; Pipistrellus pygmaeus

Table 4: Bat activity on 3rd May 2019 recorded on walked transect and on static monitors

Time	Auto Id	Manual Id
22:12:27	Common Pipistrelle	Common Pipistrelle
22:13:28	Noid	Common Pipistrelle
22:26:04	Common Pipistrelle	Common Pipistrelle
22:26:34	Common Pipistrelle	Common Pipistrelle

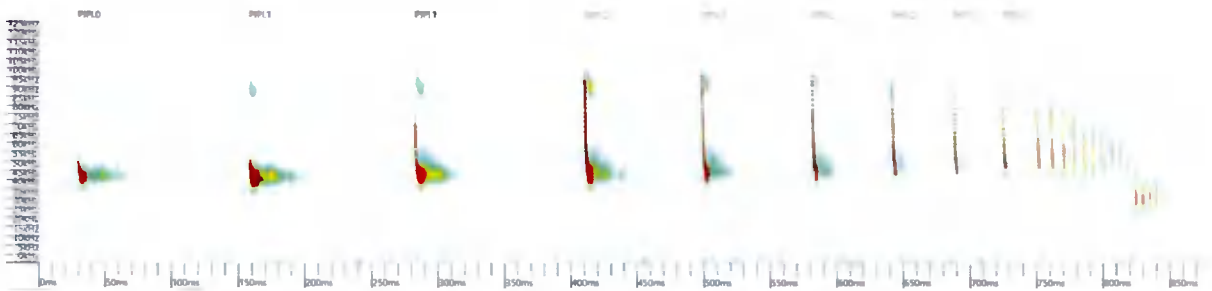
Handheld Em3

Time	Auto Id	Manual Id
22:26:18	Common Pipistrelle	Common Pipistrelle
22:26:28	Common Pipistrelle	Common Pipistrelle

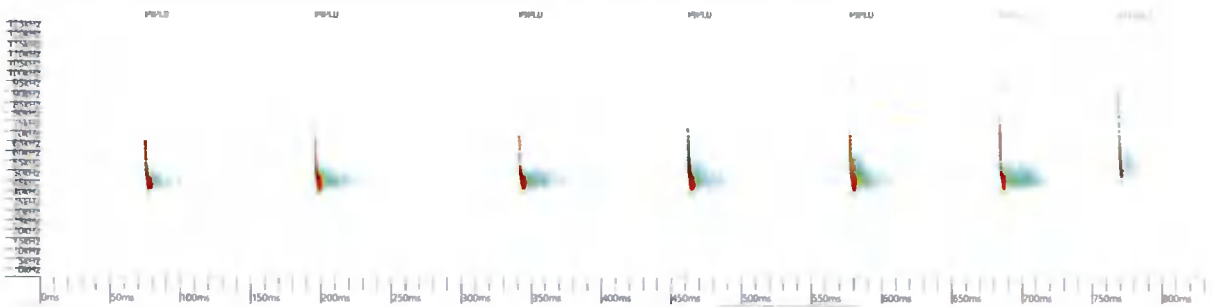
Doorway Em3

Time	Auto Id	Manual Id
21:17:42	Common Pipistrelle	Common Pipistrelle (see below)
21:18:12	Common Pipistrelle	Common Pipistrelle
21:53:35	Common Pipistrelle	Common Pipistrelle (see below)
22:37:40	Soprano Pipistrelle	Soprano Pipistrelle (see below)

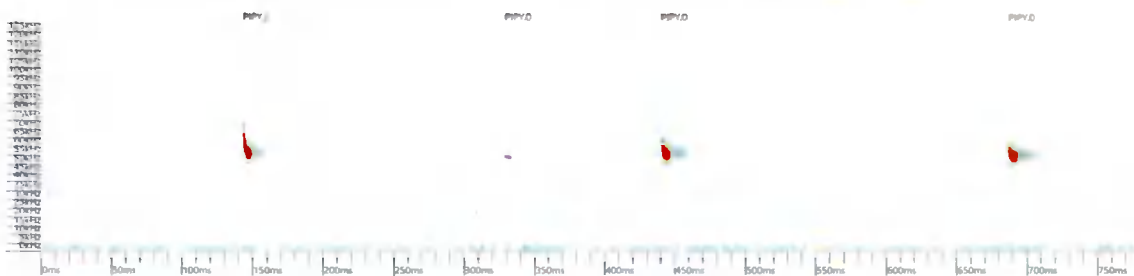
Trees to the southwest of the building



Common pipistrelle 21.17 hours SM2 along treeline 3rd May 2019



Common pipistrelle 21.53 hours SM2 along treeline 3rd May 2019



Soprano pipistrelle along treeline 22.37 hours 3rd May 2019



Plate 1: Sally Park buildings

Attic nearest the proposed extension (internal and external – top)

Floor of attic (left middle) and building for demolition (right middle)

Attic of building for demolition (left bottom) and vegetation within the site (right bottom)



Plate 2: Sally Park buildings – roof area and surrounding housing with monastery to the rear

Sally Park Nursing home, Sally Park, Tallaght, Co. Dublin.

Conservation Statement:



Sally Park,
Tallaght,
Co. Dublin.

3 Ardeevin,
St. Lukes,
Cork, Ireland

Mob + 353 86 275 4929
Tel + 353 21 450 6239
Email - info@designforum.ie

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