Cross Guns Former Mill Site Bat Assessment To Inform Proposed Development of the Site for Housing

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Introduction

Bats constitute one quarter of the Irish mammal fauna. They are known to occur throughout much of the rural landscape and to a lesser extent, the urban environment even into Dublin city. In towns and cities, they more often occupy buildings and occasionally trees for short or long periods.

Houses, farm buildings 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. In sites such as the proposed development site where there is one large building, there is the potential for roosting within or possibly on the building if appropriate conditions are met to provide safe shelter from the elements and predation.

Changes to a site including demolition may destroy roosts, placing bats at risk during such procedures 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 disturbance, injury or death 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.

Bindford Ltd intend to apply to An Bord Pleanála for permission for a strategic housing development at this site, Cross Guns Bridge, Phibsborough, Dublin 7. The proposal is for a Build to Rent apartments. It will comprise the demolition of all existing buildings on site and the construction of 3 new apartment blocks ranging in height from 3 storeys to 12 storeys, providing 205 no. dwellings and associated residential amenities, basement car parking, surface car parking, cycle parking and vehicular and pedestrian access from the eastern end of the site off Phibsborough Road. Additional pedestrian only accesses to the north off the Royal Canal Way will also be provided. A new café/ retail space will also be provided at the ground floor level of block C adjacent to a new public open space area to the east of the site.

All associated site development works, landscaping, and boundary treatments, including alterations to the boundary Canal wall, bin stores, substation and service provision are included. A full description is set out in the statutory notices.

This assessment will address the potential for bat roosting within the buildings on site and identify the potential for impacts upon bat feeding and commuting within the site and in the wider area based upon a visual assessment of the building and a walkover survey with bat detectors to determine the potential for roost sites within the building.

Surveying in July is a suitable period to look at the peak period of the breeding season when the single annual young are born and when females form the largest roost type (in the Irish context), the maternity roost. The young are flying by this date in some summers while there is also feeding of the young by the females upon milk. These roosts are typically in close proximity or within areas of good feeding. A bat detector assessment at this time can disclose the value of a site for feeding and how bats avail of a site in commuting to and from important sites including feeding sites and roosts.

Methodology

The proposed development site at Cross Guns Quay, Phibsborough, Dublin 7 was examined from prior to sunset on July 16th, 2020 for an hour and a half by three surveyors and again for an hour prior to sunrise on July 17th, 2020 by two surveyors. Sunset was at 21.44 hours on July 16th and sunrise was at 05.19 hours on July 17th, 2020. The surveyors employed the use of a handheld Echometer 3 (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 Songmeter Mini was also placed on the wall of the mill, level with the eastern end of the building and south of the canal. One surveyor was positioned at the north-eastern edge of the site and two surveyors walked around the entire site but paying closest attention to the south-eastern area of the site.

Surveying recommenced at 04.20 hours on 17th July 2020 and two surveyors searched for bat activity within the site and for any evidence of bats returning to the buildings up to 05.20 hours. The buildings were examined internally in daylight and during the night on 16th July 2020.

Survey Constraints

One EM3 developed a technical breakdown and may have had limited functionality. This did not detract from the survey results as three other monitors were in operation and this was more than adequate for the site. Sunset was at 21.44 hours on 16th July 2020 and sunrise was at 05.19 hours on 17th July 2020. The temperature at sunset was 18° C with cloudy skies (90% cloud cover), with dry, calm conditions. Weather conditions were again highly suited to bat activity prior to sunrise. The temperature was 16°C, the skies were relatively clear (20% cloud) and there was no wind (wind speed 19 kmph) and no rain. Conditions were ideal for assessing for bats and the time of year was perfect for assessing bat activity and usage of the site.

Existing Environment

Species of bat roosting within the site

None

Bat activity at emergence time was limited and the early presence of a common pipistrelle close to the entrance gate was the only suggestion of roosting bats. This bat was noted for several seconds flying around the corrugated sheeting above the entrance gate. While it was considered possible that the bat had emerged, subsequent surveying prior to sunrise provided no evidence that bats were present here. No bats were seen to return to any building prior to sunrise and no bats were

seen to emerge from the buildings within the site after sunset. A visual examination of the buildings internally provided a conclusion that there is no evidence of usage of the structure by bats at present or historically.
There were swifts nesting within the tallest section of the Mill buildings.

Bat activity within and around the site

Common pipistrelle (*Pipistrellus pipistrellus)*
Leisler's bat (*Nyctalus leisleri)*

Bat activity was very low within the site during the period of active survey. The main activity was of common pipistrelle which was noted during both active survey periods and up to approximately 1.38 am by the passive survey.
Leisler's bats were noted on four occasions throughout the entire survey (and the two earliest signal sequences were relatively faint, indicating that this species was in the general area but was not within the survey site. Two recordings were probably the same bat pass (22.25 hours) and hence there were possibly only three Leisler's bat call sequences throughout the night.

A species of bat that would be expected given the presence of the Royal Canal is the Daubenton's bat. However, this is rarely encountered along the Canal beyond the Cabra / Glasnevin area. Feeding may not be sufficiently advantageous to merit flying from roosts from beyond this area (there are very suitable roost trees for this species in the Ashtown area).

A species that is known from the area is soprano pipistrelle and its absence is surprising, given that it has a greater attraction to water for feeding on flies, beetles, and moths than common pipistrelles. The low number of bats overall would favour the presence of the more ubiquitous common pipistrelle as it has a wider tolerance of habitats (from high quality to marginal, including urban areas).

In summary, it would be considered that bat activity was lower than would be expected given the availability of roost options within the building, the presence of vegetation and the Royal Canal.

Potential Impacts

Loss of roost through demolition of buildings

There will be a removal of a large volume of buildings within the site. This could potentially remove roosting opportunities.

Increased light levels within the area

Housing requires lighting for access and safety and for convenience and display and this development would see the introduction of street lighting, house lighting and a reduction in the dark areas wherein most bat activity occurs typically.

Impacts of changes to the site on resident and local bats

Increased lighting will have a long-term to permanent slight negative impact on the bat population of the region.

Proposed Mitigation

Re-evaluation of buildings prior to demolition

A bat detector assessment shall be undertaken prior to demolition to ensure that no bats are present at the time of demolition. If the building is demolished in winter, it will require that a bat specialist be available when area with greater potential as roosts are being removed (e.g. the corrugated sheets above the main gate).

Bat and swift boxes

Three bat and swift nest boxes are proposed for the buildings to provide alternative nest sites for displaced swifts and roost sites for bats. The Schwegler 1MF Bat and Swift Nest Box with slope is proposed to allow the boxes to be incorporated into the building once rendered / plastered (or other finish). In the eventuality that these boxes are unavailable, the following boxes are proposed; Woodstone Build-in Swift Nest Box Deep x 3 and Schwegler 2FR bat boxes x 3 or equivalent.

Schwegler 1MF Bat and Swift Nest Box and Slope

Woodstone Build-in Swift Nest Box Deep

Schwegler 2FR bat box

Planting of vegetation

Wherever 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), in addition to other species such as dog rose with an encouragement of species such as *Clematis* and other species attractive to moths. Where there is limited space, flower boxes or hanging baskets may provide some suitable habitat for insects.

Lighting

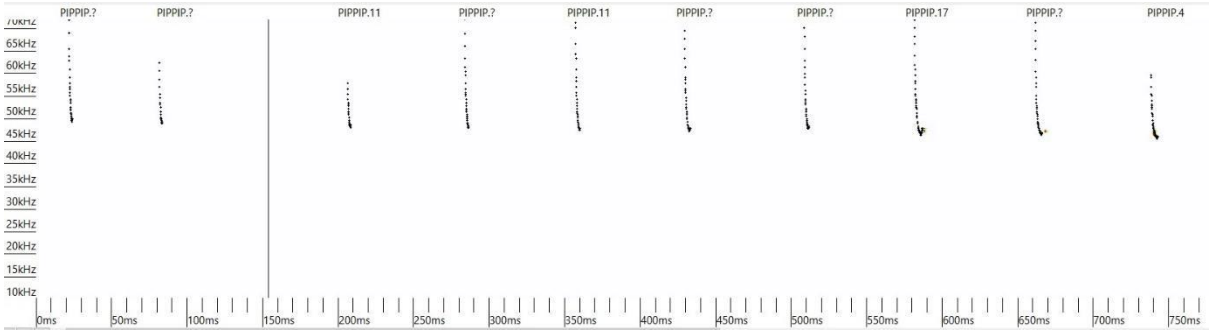
Lighting should be controlled to avoid light pollution of green areas and should be targeted to areas of human activity and for priority security areas. Motion-activated sensor lighting is preferable to reduce light pollution. None of the remaining mature trees or trees proposed for planting shall be illuminated.

- 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) 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

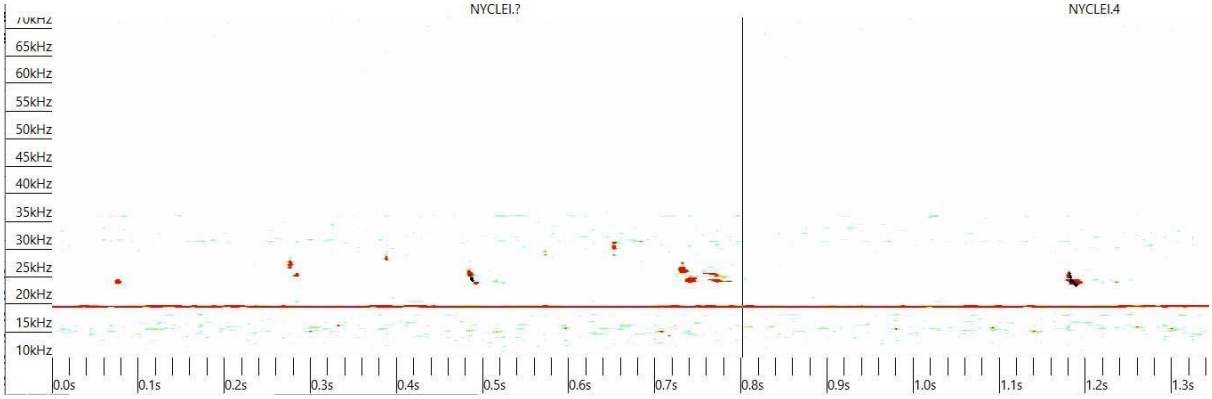
Impacts Upon Bats Following Mitigation

It is predicted that there will be no impact upon bats within the area.

APPENDICES

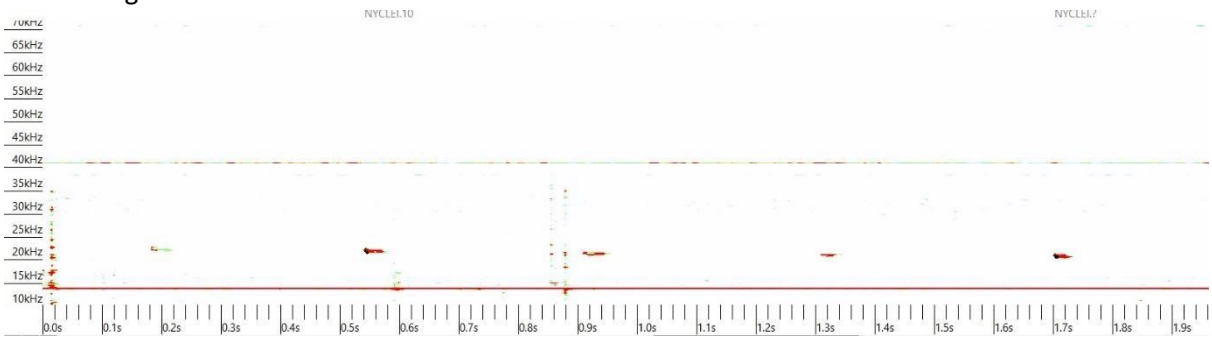


Common pipistrelle at 22.16 hours over the entrance gate to the site 16th July 2020



Leisler's bat signal close to northeastern edge of site 16th July 2020

This faint signal was noted at 22.25 hours



The only bat signal recorded on the third EM3 was a Leisler's bat at 22.07 hours

BCIreland data: search results 10 Aug 2020

Bat Conservation Ireland data Roosts Transects Ad-hoc observation sites with observations of all bats within 1000m of O1489936314.					
Roosts					
Name	Grid reference	Address	Species observed		
Mc Kee Barracks	O1335	Phoenix Park	Myotis mystacinus		
St Marys	O1335	Phoenix Park; Dublin	Nyctalus leisleri		
Transects					
Name	Grid reference start	Species			
Violet Hill Drive Transect; Spot 2	O1460835550				
Survey	Grid reference	Date	Species		
Bat Surveys - Tina Aughney	O1466735387	23/06/2018	Nyctalus leisleri; Pipistrellus pipistrellus, Pipistrellus pygmaeus		

Bats in Dublin's Parks and Waterways	O152355	22/05/2000	Nyctalus leisleri; Pipistrellus pipistrellus

Bat activity recorded on an EM3 during the active survey 16th to 17th July 2020 Cross Guns

Date	*Time*	*Auto Id**	*Pulses*	*Manual Id*
16/07/2020	*22:17:11*	*Common Pipistrelle*	*41*	*Common Pipistrelle*
16/07/2020	*22:17:32*	*Common Pipistrelle*	*35*	*Common Pipistrelle*
16/07/2020	*22:16:51*	*Common Pipistrelle*	*24*	*Common Pipistrelle*
16/07/2020	*22:17:01*	*Common Pipistrelle*	*18*	*Common Pipistrelle*
16/07/2020	*22:16:31*	*Common Pipistrelle*	*16*	*Common Pipistrelle*
16/07/2020	*22:17:42*	*Common Pipistrelle*	*16*	*Common Pipistrelle*
16/07/2020	*22:17:53*	*Common Pipistrelle*	*15*	*Common Pipistrelle*
16/07/2020	*22:17:21*	*Common Pipistrelle*	*11*	*Common Pipistrelle*
16/07/2020	*22:18:03*	*Common Pipistrelle*	*7*	*Common Pipistrelle*
16/07/2020	*22:41:05*	*Common Pipistrelle*	*6*	*Common Pipistrelle*
17/07/2020	*04:25:54*	*Common Pipistrelle*	*4*	*Common Pipistrelle*

Bat activity recorded on second EM3 during active survey

Date	*Time*	*Auto Id**	*Pulses*	*Manual Id*
16/07/2020	*22:25:11*	*Leisler's Bat*	*2*	*Leisler's Bat*
15/07/2020	*22:35:14*	*Pipnat*	*8*	*Pip*
16/07/2020	*22:18:09*	*Common Pipistrelle*	*83*	*Common Pipistrelle*
16/07/2020	*22:18:24*	*Common Pipistrelle*	*20*	*Common Pipistrelle*
16/07/2020	*22:00:46*	*Common Pipistrelle*	*14*	*Common Pipistrelle*
17/07/2020	*04:25:50*	*Common Pipistrelle*	*8*	*Common Pipistrelle*

Bat activity recorded by the static Songmeter Mini throughout the night

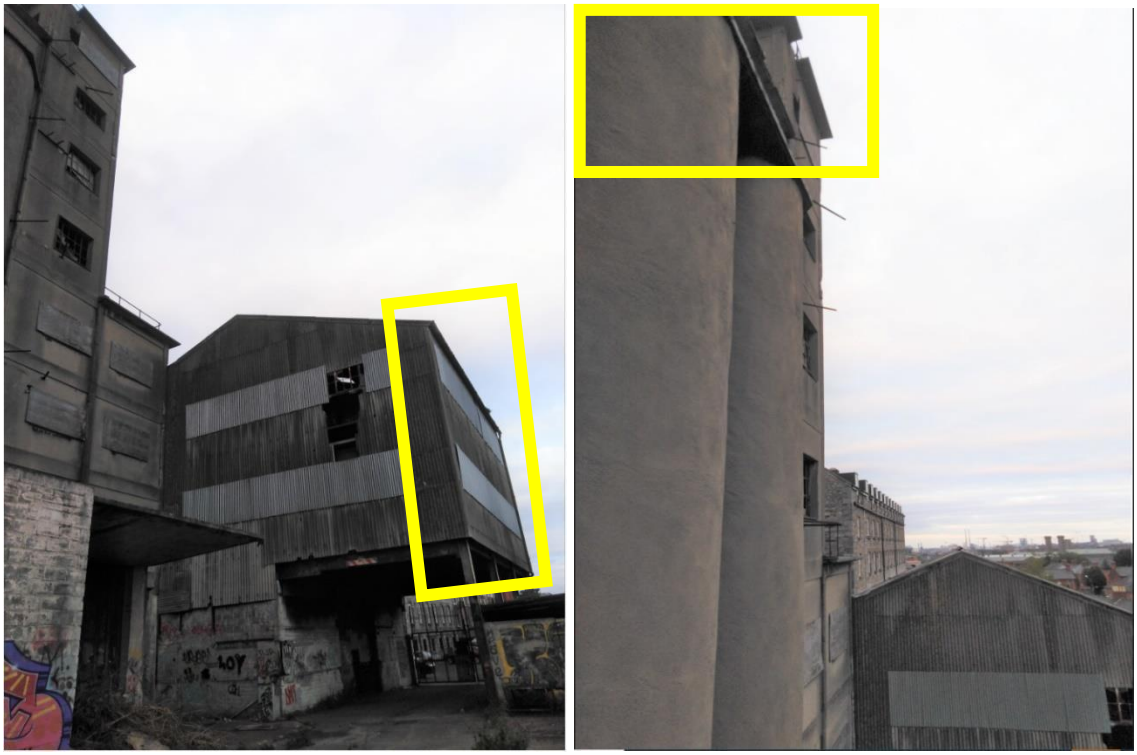
Bat signals noted by the monitor ceased at 01.38 hours, but the monitor was recording up to sunrise

Date	**Time**	**Auto Id***	**Pulses**	**Manual Id**
16/07/2020	*22:00:25*	*Common Pipistrelle*	*22*	
16/07/2020	*22:17:45*	*Common Pipistrelle*	*72*	*Common Pipistrelle*
16/07/2020	*22:24:35*	*Leisler's Bat*	*28*	*Leisler's Bat*
16/07/2020	*22:36:38*	*Leisler's Bat*	*6*	*Leisler's Bat*
16/07/2020	*23:00:10*	*Common Pipistrelle*	*93*	*Common Pipistrelle*

16/07/2020	*23:12:32*	*Common Pipistrelle*	*82*	*Common Pipistrelle*
16/07/2020	*23:12:48*	*Common Pipistrelle*	*80*	*Common Pipistrelle*
16/07/2020	*23:13:03*	*Common Pipistrelle*	*83*	*Common Pipistrelle*
16/07/2020	*23:13:18*	*Common Pipistrelle*	*23*	
16/07/2020	*23:14:39*	*Common Pipistrelle*	*137*	*Common Pipistrelle*
16/07/2020	*23:14:55*	*Common Pipistrelle*	*65*	*Common Pipistrelle*
16/07/2020	*23:15:12*	*Common Pipistrelle*	*12*	
16/07/2020	*23:15:37*	*Common Pipistrelle*	*37*	*Common Pipistrelle*
16/07/2020	*23:19:00*	*Common Pipistrelle*	*59*	*Common Pipistrelle*
16/07/2020	*23:24:52*	*Common Pipistrelle*	*74*	*Common Pipistrelle*
16/07/2020	*23:25:08*	*Common Pipistrelle*	*9*	
16/07/2020	*23:25:19*	*Common Pipistrelle*	*7*	
16/07/2020	*23:25:45*	*Common Pipistrelle*	*18*	
16/07/2020	*23:26:00*	*Common Pipistrelle*	*15*	
16/07/2020	*23:26:29*	*Common Pipistrelle*	*5*	*Common Pipistrelle*
16/07/2020	*23:26:40*	*Common Pipistrelle*	*12*	

16/07/2020	*23:29:45*	*Common Pipistrelle*	*6*	
16/07/2020	*23:29:54*	*Common Pipistrelle*	*4*	*Common Pipistrelle*
16/07/2020	*23:30:02*	*Common Pipistrelle*	*4*	*Common Pipistrelle*
16/07/2020	*23:30:26*	*Common Pipistrelle*	*4*	*Common Pipistrelle*
16/07/2020	*23:30:45*	*Common Pipistrelle*	*6*	
16/07/2020	*23:30:56*	*Common Pipistrelle*	*109*	*Common Pipistrelle*
16/07/2020	*23:31:11*	*Common Pipistrelle*	*29*	
16/07/2020	*23:31:26*	*Common Pipistrelle*	*10*	
16/07/2020	*23:31:34*	*Common Pipistrelle*	*44*	*Common Pipistrelle*
16/07/2020	*23:31:50*	*Common Pipistrelle*	*56*	*Common Pipistrelle*

16/07/2020	*23:32:05*	*Common Pipistrelle*	*38*	*Common Pipistrelle*
16/07/2020	*23:32:17*	*Common Pipistrelle*	*9*	
16/07/2020	*23:33:16*	*Common Pipistrelle*	*70*	*Common Pipistrelle*
16/07/2020	*23:33:59*	*Common Pipistrelle*	*89*	*Common Pipistrelle*
16/07/2020	*23:35:33*	*Common Pipistrelle*	*66*	*Common Pipistrelle*
16/07/2020	*23:35:48*	*Common Pipistrelle*	*16*	
16/07/2020	*23:41:11*	*Common Pipistrelle*	*20*	
16/07/2020	*23:45:38*	*Common Pipistrelle*	*80*	*Common Pipistrelle*
16/07/2020	*23:45:54*	*Common Pipistrelle*	*22*	
16/07/2020	*23:46:28*	*Common Pipistrelle*	*26*	
16/07/2020	*23:46:41*	*Common Pipistrelle*	*26*	
16/07/2020	*23:46:59*	*Common Pipistrelle*	*11*	
16/07/2020	*23:47:12*	*Common Pipistrelle*	*35*	*Common Pipistrelle*
16/07/2020	*23:47:22*	*Common Pipistrelle*	*97*	*Common Pipistrelle*
16/07/2020	*23:47:44*	*Common Pipistrelle*	*11*	
16/07/2020	*23:47:56*	*Common Pipistrelle*	*20*	
16/07/2020	*23:48:14*	*Common Pipistrelle*	*19*	
16/07/2020	*23:48:34*	*Common Pipistrelle*	*59*	*Common Pipistrelle*
16/07/2020	*23:49:02*	*Common Pipistrelle*	*24*	
17/07/2020	*00:01:35*	*Common Pipistrelle*	*37*	*Common Pipistrelle*
17/07/2020	*00:37:45*	*Common Pipistrelle*	*52*	*Common Pipistrelle*
17/07/2020	*00:48:11*	*Common Pipistrelle*	*50*	*Common Pipistrelle*
17/07/2020	*01:30:00*	*Common Pipistrelle*	*9*	
17/07/2020	*01:38:40*	*Common Pipistrelle*	*6*	*Common Pipistrelle*



(left) Area where common pipistrelle was noted early in the survey (right) Swift nesting location

at the Cross Guns site July 2020

Legend

Green paddle *Common pipistrelle* *Yellow paddle* *Leisler's bat*

Blue box *Location of Songmeter Mini*

Bat activity

Green circle	*Common pipistrelle recorded by Mini*
Yellow circle	*Leisler's bat recorded by Mini*