

Dolphin House Regeneration

Bat Survey 2020



Final Report

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SECTION 1

1.1. Introduction

Dublin City Council proposes to demolish three blocks of buildings (the Dolphin Park Senior Citizen Development) at Dolphin House – see **Figure 1** below. As is best practice a bat survey was conducted in advance of any works to detect any evidence of these protected species, to assess the proposed project's impact on wildlife and to demonstrate that any such impact will be minimised. Faith Wilson, ecological consultant and licensed bat specialist, was requested by Dublin City Council to conduct a bat survey of the property.

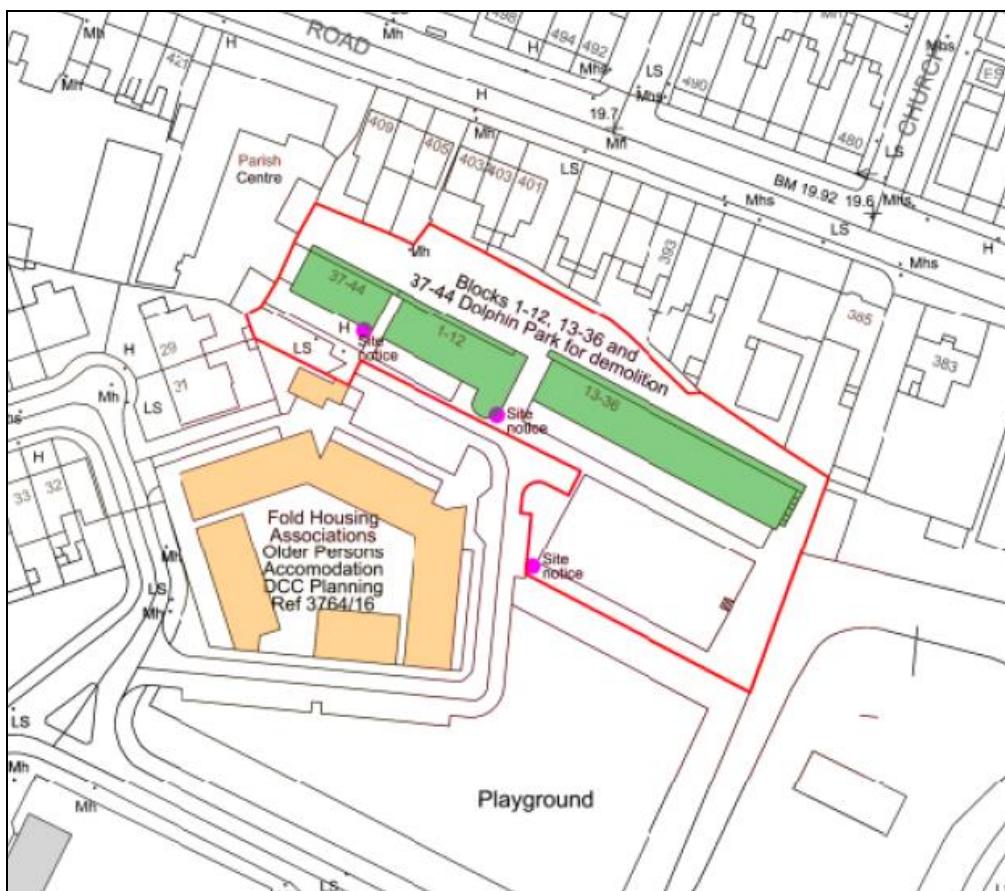


Figure 1. Overview of the Dolphin Park Senior Citizen Development buildings scheduled for demolition shown in green.

This report presents the results of a site visit by Faith Wilson on 15th October 2020. Any bat fauna observed on site are described and the likely impacts of the proposed works on the bat fauna are discussed with recommendations for appropriate mitigation measures.

1.2. Methodology

1.2.1 Desktop Research

The Bat Conservation Ireland (BCI) database was queried to determine records of bats from the general area (within 10km).

1.2.2 Structure Survey

The Dolphin Park Senior Citizen Development buildings at Dolphin House due for demolition were examined externally and internally on 15th October 2020 for signs of potential roosting spaces by bats. Each attic space was inspected and examined for roosting bats. The presence of bats is indicated principally by their signs, such as staining, lack of spider webs, feeding signs or droppings - though direct observations are also occasionally made. The nature and type of habitats present are also indicative of the species likely to be present.

1.2.3 Tree Survey

Bats often use both trees and buildings to roost in. Trees within/adjoining the site were assessed using the following standard criteria, which were created by bat specialists from Bat Conservation Ireland for use in the assessments of tree roosts on large infrastructural projects and are summarised in NRA (2006):

- Presence or absence of bat droppings (these can be hard to find amongst leaf litter or may be washed away following periods of wet weather),
- Bat droppings may also be seen as a black streak beneath holes, cracks, branches, etc.,
- Presence or absence of smooth edges with dark marks at potential entrances to roosts,
- Presence or absence of urine stains at potential entrances to roosts,
- Presence of natural cracks and rot holes in the trunk or boughs of the tree,
- Hollow trees,
- Presence or absence of creepers such as ivy or honeysuckle on trees (ivy clad trees are often used by bat species such as pipistrelles as roosts),
- Presence or absence of loose bark such as that of sycamore, or flaky bark on coniferous species such as cedars, cypress and Scot's pine,
- Presence or absence of bracket fungi which may indicate a rotten or potentially hollow centre to the tree,
- Known bat roosts previously identified,
- Trees with storm or machinery damage or broken boughs,

- Clutter level - where the branches and trunk are easily accessible, this is considered a better tree for bat roosts,
- Adjoining habitat - if there are a variety of feeding opportunities for bats, this increases the potential of a tree as a bat roost,
- Adjoining potential roosts / known roosts. This raises the likelihood of a tree being of benefit as bats may move roosts if the roost becomes too hot or cold during roosting and a nearby alternative roost is highly desirable.

1.2.4 Detector Survey

A bat detector survey was carried out at dusk on the 15th October 2020 using two types of bat detectors - a Batbox Duet Heterodyne/Frequency Division detector and a Pettersson D100 Heterodyne detector.

The emergence of any bats from potential roosting locations at dusk was monitored and a walkover survey of the grounds of the property was also conducted.

Bat activity is predominantly bi-modal, with bats taking advantage of increased insect numbers on the wing during the periods after dusk and before dawn, (there is usually a lull in activity in the middle of the night). While this holds true for 'hawking' species (bats that capture prey in the open air), 'gleaning' species such as brown long-eared (*Plecotus auritus*), Natterer's (*Myotis nattereri*) and Whiskered/Brandt's bats (*Myotis mystacinus/brandtii*) remain active throughout the night, as prey is available on foliage for longer periods.

1.2.5 Survey Constraints

There were no seasonal constraints to the detector survey which was conducted towards the end of the active bat season. Weather was suitable at the time of survey with initial temperatures of 10°C falling to 9°C, clear skies with 3/8 cloud cover, dry and calm conditions.

SECTION 2 RESULTS

2.1 Description of the Plan or Project

Dublin City Council is proposing to demolish three buildings (the Dolphin Park Senior Citizen Development) at Dolphin House as illustrated on **Figure 1** above. The buildings proposed for demolition are mostly vacated with only a very small number remaining in use as residences.

2.1.1 Description of the Receiving Environment at Dolphin House

The lands at Dolphin House are already developed and in use as described above. To the front of the Dolphin Park Senior Citizen Development buildings is a small area of grassland with some ornamental planting and some scattered shrubs and trees. The rear consists of a tarmacadam yard with occasional garden planters. There is little in the way of natural habitats or elements of interest to biodiversity in general in the grounds of the Dolphin House complex beyond areas of mown grassland surrounding the buildings and near the Grand Canal. A treeline of sycamore is found adjoining the towpath of the Grand Canal which lies to the south.



Plate 1. Developed nature of the property at Dolphin House.



Plate 2. Developed nature of the property at Dolphin House with planters at the rear yard.



Plate 3. The small formal garden area to the front of the property has some potential for bat activity as it is relatively dark with some semi-mature trees.

The main interest in the site is therefore potentially for bats, which may roost in the Dolphin Park Senior Citizen Development buildings on site and the area is well used by urban foxes.

The adjoining canal and its tow paths are a proposed Natural Heritage Area and act as an important wildlife corridor through the city. They have been recognised as part of the city green infrastructure by Dublin City Council.

2.1.2 Bat Survey

Desktop Review

Consultation with Bat Conservation Ireland has identified that several species of bats have been recorded within the 10km square in which the proposed development is located. These include Leisler's bat (*Nyctalus leisleri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Natusius's pipistrelle (*Pipistrellus nathusii*) and an unidentified pipistrelle species (*Pipistrellus* sp. and probably one of the above three). These records include both detector records and records of known roosts.

The closest area of known interest to bats is the Grand Canal which adjoins the Dolphin House property to the south.

Bat surveys conducted for the Grand Canal cycle route from Portobello Bridge to the Grand Canal Basin at Ringsend in 2009 recorded several species of bat from the area (Wilson & Keeley (2009)). These included common pipistrelles along the Grand Canal from Portobello to Baggot Street, soprano pipistrelle activity at Grand Canal Quay on the Grand Canal Basin and Natusius' pipistrelle which was recorded in the stretch of Grand Canal between Baggot Street Bridge and Warrington Place. Leisler's bat was heard in the stretch of the Grand Canal between Portobello and Charlemont Street. Leisler's bats have also been recorded from along the Grand Canal near to Leeson Street.

Daubenton's bats are relatively rarely recorded in the Dublin city centre area albeit that there are two canals within Dublin City and other watercourses such as the Dodder, Liffey, Camac, Tolka etc. Daubenton's bats have been observed by Enda Mullen (NPWS DCO) at the Grand Canal Basin.

Common pipistrelle, soprano pipistrelle and Leisler's bat were also recorded along this stretch of the canal during bat surveys conducted for the Grand Canal Cycle Premium Route from Portobello Bridge to Blackhorse Bridge in 2012 (Wilson & Keeley (2012)).

Tree Survey

There are no trees on or near the site that offer roosting potential for bats. The sycamore trees at the front of the buildings are too immature and do not

contain any crevices/cavities which would offer bats a roosting opportunity but they do provide shelter, support insects and may act as an important corridor for foraging and commuting bats.



Plate 4. Trees adjoining the buildings proposed for demolition (Google street view).

Building Inspection

There are numerous opportunities for bats to roost in the buildings as they have a large number of individual attic spaces, many of which were upgraded recently in terms of energy retention measures with insulation and fire stopping.



Plate 5. Attic space.

The buildings are roofed with tiles, underlain with felt on the roof battens. The fascia's of the buildings are constructed of solid concrete and hence do not offer any roosting potential. The majority of the flats have been vacated and are secured. There was no evidence of use by bats of any of the buildings in Dolphin House which were examined and are scheduled for demolition.



Plate 6. Concrete fascia.



Plate 7. Concrete fascia at gable end of building.

Detector Survey

No bats were recorded emerging from any of the buildings proposed for demolition at Dolphin House during the detector survey.

A single Leisler's bat was recorded flying east over the Dolphin House site just shortly after dusk.

There have been good levels of bat activity recorded from the wider area of Dolphin House on other surveys conducted in previous years.

Species recorded commuting and foraging along the Grand Canal in 2019 included common and soprano pipistrelle.

The lighting associated with the newly rebuilt blocks has been sensitively designed for wildlife and light spill from these lamp standards does not illuminate adjoining the canal, which provides a dark corridor for foraging bats and other fauna.

Conclusion

A bat derogation licence is not required for the proposed demolition of these buildings as part of planning permission.

However bats may avail of the roof spaces in which to roost in the intervening period between now and when the buildings are demolished. Mitigation measures to ensure the protection of bat during these works are set out below.

The future use of the site is currently in discussions with the residents so plans are not currently that advanced.

Recommendations for improving biodiversity within the site for both bats and other fauna are presented in **Section 3**.

SECTION 3 CONCLUSIONS & RECOMMENDATIONS

A bat derogation licence is not required for these works.

3.1 Bat Mitigation Measures

A series of mitigation measures are recommended below as per best practice.

Measure 1: Rechecking Buildings for Bats

If greater than 6 months has passed between this survey and the works commencing the buildings should be resurveyed for bats, which may have taken up residence in the intervening period.

Measure 2: Awareness and Care during Demolition

Any demolition works should be done carefully as there is a low possibility that individual bats may be found for example in the attics, between the tiles and felt, in vents, between window frames and walls, etc.

This essentially requires the removal of such features by hand, checking for the presence of bats behind/under these structures. If discovered, the animals shall be retained in a box until dusk and released on site. Please inform a bat specialist and ask for further advice.

Health and Safety Issues:

Workers in the building should be informed that bats are a protected species under both Irish and European legislation. Ideally bats should only be handled by a licensed bat specialist. If a grounded bat is encountered (typically a young bat) it should only be handled wearing gloves and lifted up in a piece of cloth (such as a tea towel) before being returned to the roost. As with all wild animals bats can carry diseases and hence protective measures to ensure that one is not bitten by a bat should be taken.

3.2 Biodiversity Measures

General recommendations for improving biodiversity within the site are presented below:

1. Lighting within Dolphin House should be designed and installed with controlled targeting a priority:

The buildings and surrounds of Dolphin House are already generally well lit. It is recommended that any lighting proposed for the southern environs of the new buildings near the existing trees should be directional to ensure that it is restricted to the grounds of the buildings and does not overspill onto these adjoining trees. This can be achieved in a number of ways including low mounting position, cowls, low intensity, direction of light, etc.

2. Planting of Native Species:

The development should include new landscaping proposals including the planting of trees and shrubs. This should include the use of native and local plant species such as hawthorn, blackthorn, hazel, mountain ash, alder, willows, oak, ash, broom, elder and gorse. Species used should be native and of local origin. It is important that not just single trees are planted but also native hedgerows that can improve structure and opportunity for breeding birds, invertebrates and other fauna.

3. Pollinator Friendly Planting and Habitat Management

Any planting used should be pollinator friendly. Excellent information is available from <https://pollinators.ie/councils/> and <https://pollinators.ie/communities/>. The current grassland management should also be reviewed.

4. Provision of roosting and nesting opportunities:

Nesting and roosting opportunities should be provided for both bats and birds (swifts, house sparrow, starling and swallow) within the new buildings within the site. These can include nest boxes, bat boxes and the incorporation of specialised bricks/pre-constructed opportunities in the walls of the new buildings. These should be specified by an ecologist at detailed design stage.

5. Integration of Green Roofs into new building design:

Green roofs offer many benefits within a urban environment. These include:

Reduction of Urban Heat Island – Research in Tyndale Centre for climate change suggests that a 10% increase in green space in UK cities is needed to combat climate change. This is particularly relevant to the reduction in the Urban Heat Island [UHIE]. Green roofs are recognized to have a positive effect on reducing the UHIE

Biodiversity – Green roofs can provide important refuges for wildlife in urban areas. Research in Switzerland and the UK has demonstrated that green roofs can provide important refuges for rare invertebrate populations.

Water – Green roofs can significantly reduce the surface run off volumes and rates of rainfall leaving roofs. As a source control mechanism in the Sustainable Urban Drainage System green roofs can help reduce flash floods as a consequence of intense rainfall events. This will become increasingly important as a consequence of climate change.

Green roofs also improve the quality of water and although the amount of water is reduced it is possible to rainfall harvest from roofs that have been greened.

Thermal Performance – Green roofs cannot be given a U-value at present. However they have been shown to significantly reduce the need for air conditioning in summer and can provide a degree of insulation in winter.

Sound Insulation – The combination of soil, plants and trapped layers of air within green roof systems can act as a sound insulation barrier. Sound waves are absorbed, reflected or deflected. The growing medium tends to block lower sound frequencies whilst the plants block higher frequencies.

Protection of Waterproofing – The original green roofs in Germany stem from covering wet bitumen with 6cm of sand, which became vegetated. This covering was to protect the wet bitumen from fire. Green roofs have now been shown to double if not triple the life of waterproofing membranes beneath the green roof.

Air Quality – airborne particles and pollutants are filtered from the atmosphere by the substrates and vegetation on a green roof.

Amenity Space – in dense urban environments there is often a lack of green space for residents. Roof Gardens and roof top parks provide important green spaces to improve the quality of life for urban residents.

Urban Agriculture – Urban Rooftop Food Growing – roofs, where strong enough provide a space for urban food growing. Although many large flat roofs may not have the loading capabilities to hold food growing some roofs will and the many balconies in urban areas are ideal.

Appendix 1. Tree Protection Measures

Trees being retained on the site as shown on **Figure 2** below should be protected from unnecessary damage during the construction process by effective construction-proof barriers that will define the limits for machinery drivers and other construction staff. Ground protected by the fencing will be known as the Construction Exclusion Zone (CEZ).

Sturdy protective fencing should be erected outside the drip line of the canopy of the trees prior to any soil disturbance and excavation work starting; this is essential to prevent any root or branch damage to the retained trees. The British Standard BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* specifies appropriate fencing; see below.



For pedestrian movements within the Root Protection Area the installation of ground protection in the form of scaffold boards may be acceptable.

When the fencing has been erected, the construction work can commence.

All weather notices should be erected on the fence with words such as: "Construction Exclusion Zone – Keep Out".

The fencing should be inspected on a regular basis during the duration of the construction process and shall remain in place until heavy building has finished and its removal is authorised by a qualified arborist/ecologist.

Trench digging or other excavation works for services etc should not be permitted in the CEZ unless approved and supervised by a qualified arborist

using methods outlined in BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.



Figure 2. Trees to be retained and protected during the works (red line) (Google maps).

In addition the following should be addressed or avoided:

- Care will be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.
 - Materials, which can contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, will not be discharged within 10 m of a tree stem.
 - Fires will not be lit in a position where their flames can extend to within 5 m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.
 - Notice boards, wires and such like will not be attached to any trees.
 - Site offices, materials storage and contractor parking will all be outside the CEZ. A suitable area for same is indicated in blue on **Figure 2** above.