SCOTT
CAWLEY

Bat Derogation Licence Application – Supplementary Report

National Concert Hall Redevelopment

prepared for the National Parks and Wildlife Services

on behalf of Office of Public Works

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1 Introduction

1.1 Background

1 This supplementary report accompanies an application to the National Parks and Wildlife Service (NPWS) for a Derogation Licence in respect of the redevelopment of buildings, and the removal of a tree on the campus of the National Concert Hall, as part of the National Concert Hall Redevelopment Works (hereafter referred to as the proposed development) in line with the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

2 This report provides details of surveys undertaken by Scott Cawley Ltd., between July & August 2022 and July 2023 to assess if the buildings, trees and surrounding environment were suitable for use by roosting bats, and any potential implications of the construction and / or operation of the proposed development in respect to bat activity and habitation. This report also details the proposed mitigation strategy for bats, as required. The success of the proposed mitigation strategy will be measured by the avoidance of mortality of any bat species and the minimisation of disturbance to bat roosts, and habitat degradation during the Construction Phase of the proposed development.

3 Scott Cawley Ltd., were engaged by the Office of Public Works (hereafter referred to as OPW) to undertake ecological surveys in support of the Appropriate Assessment Screening Report and Bat Report for the proposed development (see Figure 1). Scott Cawley Ltd., were also the main authors of the AA Screening Report and Bat Report for the National Children's Science centre, and the redevelopment of the Pathology Building, both also located on the National Concert Hall campus.

4 Note, as the proposed development is still within the planning process and has not yet received approval, there is no fixed date for the commencement of the construction works outlined in this document. The date for commencement cannot be confirmed until after approval for the proposed development has been granted by the Planning Authority.

1.2 Overview of Proposed Works

5 The proposed development is located in the 10km grid square O13 at O15999 33012 in Dublin City Centre. The proposed development site is comprised of the existing National Concert Hall (NCH) buildings, bounded by Earlsfort Terrace to the east, office buildings and St. Stephen's Green to the north, Hatch Street Upper to the south, and the Iveagh Gardens to the west.

1 The proposed development will consist of the The conservation, refurbishment and upgrade of the existing National Concert Hall (NCH) buildings including; the former University Building's Butler north-east and south-east wings and the central Butler main entrance block (c.1914); the former Exhibition Hall buildings (c.1865) including the south range, the main auditorium, the John Field and Carolan rooms, the former UCD Medical Library and north range. The total floor area of the existing buildings, subject of this planning application, is 16,560sq m. The development includes a new three storey over basement extension to the west of the existing auditorium, ante space and Carolan Room (3610 sq m.), the insertion of a new floor to both the Studio Space (226 sq m) and the former Medical Library (662sq m.) and a new two storey atrium extension linking the Butler building to the central 1865 block (336 sq m.) and an extension to the basement under the main auditorium (873sq m.).The overall area of the proposed development is 20,869 sq m. (4295 sq m. basement and 16,574 sq m. above ground). The main buildings and boundary walls, the subject of this application are designated Protected Structures within the NCH complex (Ref: RPS 2425). Adjacent protected structures include the Real Tennis Court (Ref: RPS 2426) and Iveagh House (Department of Foreign Affairs) and Iveagh Gardens, including stone garden folly (Ref: RPS 7791).

2 To facilitate the proposed development, the following demolitions are required:

- 1042 sq m. two storey former Anatomy Block (c.1884 with c.1930 modifications) plus 332 sq m. of ancillary extensions.
- 116 sq m. two storey (1981) plant room with associated roof plant to the rear of the main auditorium.

- 65 sq m. two storey (2016) temporary stair block to the rear of the 1865 building.
- 250 sq m. three storey over basement (c.1995) sanitary accommodation extension to the rear of the Butler north-east wing including existing bridge link structure at first floor level.
- Removal of an internal fire stair core (1981) located to the west of the John Field Room.
- Removal of escape stairs (1981) from the auditorium within the south range.
- Removal of existing (c.1960) external fire escape stairs between Butler building and 1865 block.
- Removal of a section of the basement (c.1914) under the existing carpark to the front of the south wings of the Butler building.
- Removal of several internal modern interventions throughout the buildings.

3 The existing limestone façade to Earlsfort terrace will be cleaned and conserved. The existing rendered and partly rendered masonry walls to the elevations of the 1865 former exhibition hall buildings shall be repaired / re-rendered as appropriate. Refurbishment work will include the conservation and repair of existing external windows, doors, roof lights and upgrading / restoration and repair of the existing slate roof and rainwater goods. Proposed removal of existing bitumen roof covering to the auditorium and John Field room roof structures and replacement with metal standing seam roof finish and new rooflights. Any existing original external glazing will be retained where possible and works will include the upgrade of glazing to some areas. The window openings of the main auditorium shall be reopened and a secondary glazing shall be installed externally to the existing windows. The same window treatment is proposed for the NSO rehearsal space (former UCD medical library).

4 The works include the complete replacement of all mechanical and electrical services and the provision of solar panels and heat pumps.

5 This application includes minor modifications to the former Pathology Building, previously permitted development (Reg. Ref 4975/23). The modifications include:

- The provision of a roof light structure in the link structure.
- The re-ordering of the link structure layout to include a “changing places” facility.
- Removal of 1 no. tree (Sycamore *Acer pseudoplatanus*) from the existing landscaped area fronting onto Hatch Street.
- Amendments to the external entrance ramp and steps.

6 The external works will comprise of hard and soft landscaping, including measures to protect the existing trees, lighting, new steps, ramps and gently sloped inclines to facilitate universal access to the proposed new entrance, provision of café terrace areas for outdoor dining, 84 standard bicycle stands (168 bicycles) plus 8 no. cargo bicycle stands, upgrade of existing foul and surface water drainage lines, provision of SUDS features and all associated ancillary drainage, bin storage, screened mechanical plant areas and all associated site works on a site area of circa.1.3 hectares.

7 The proposed development includes the removal of a single tree (Sycamore *Acer pseudoplatanus*) on the eastern boundary of the site. This is to facilitate the renovation of the main entrance gates.

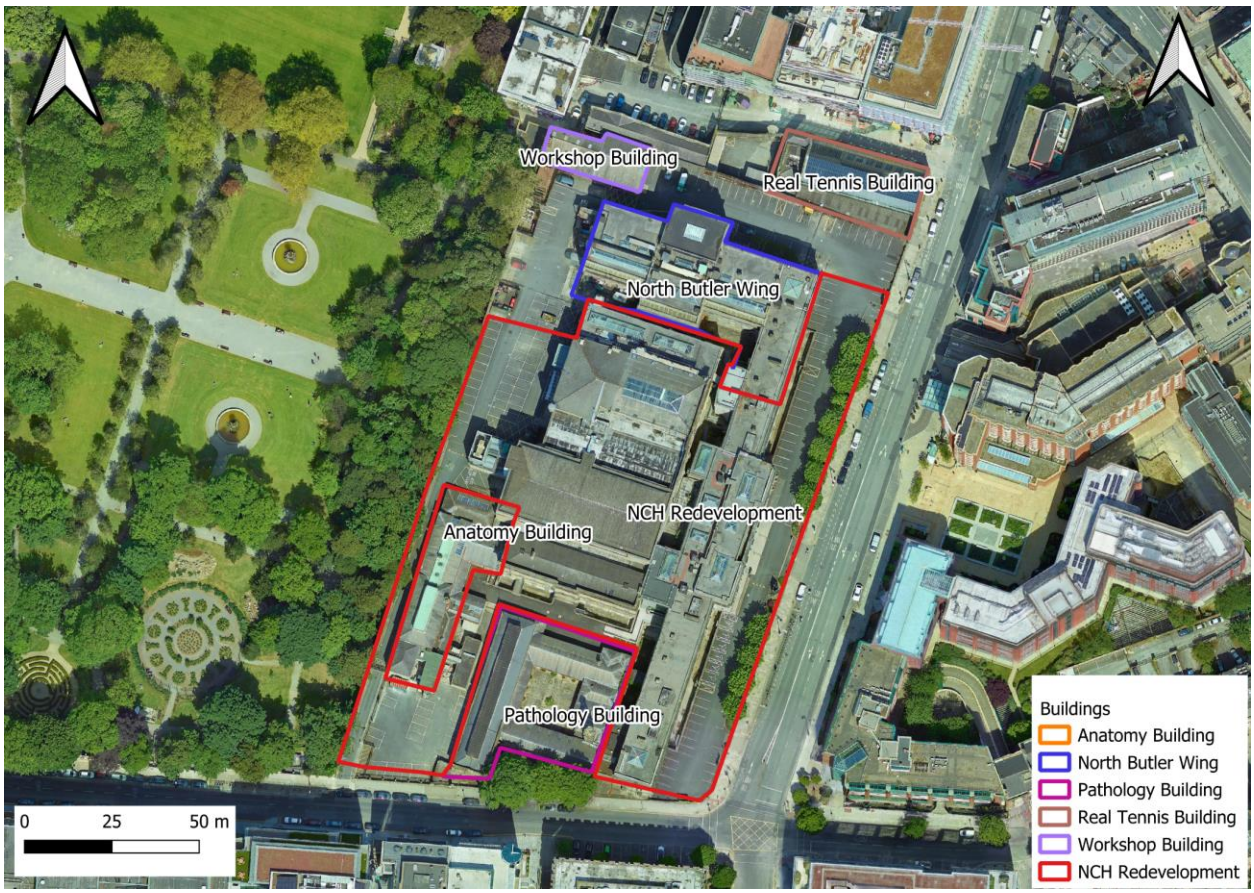
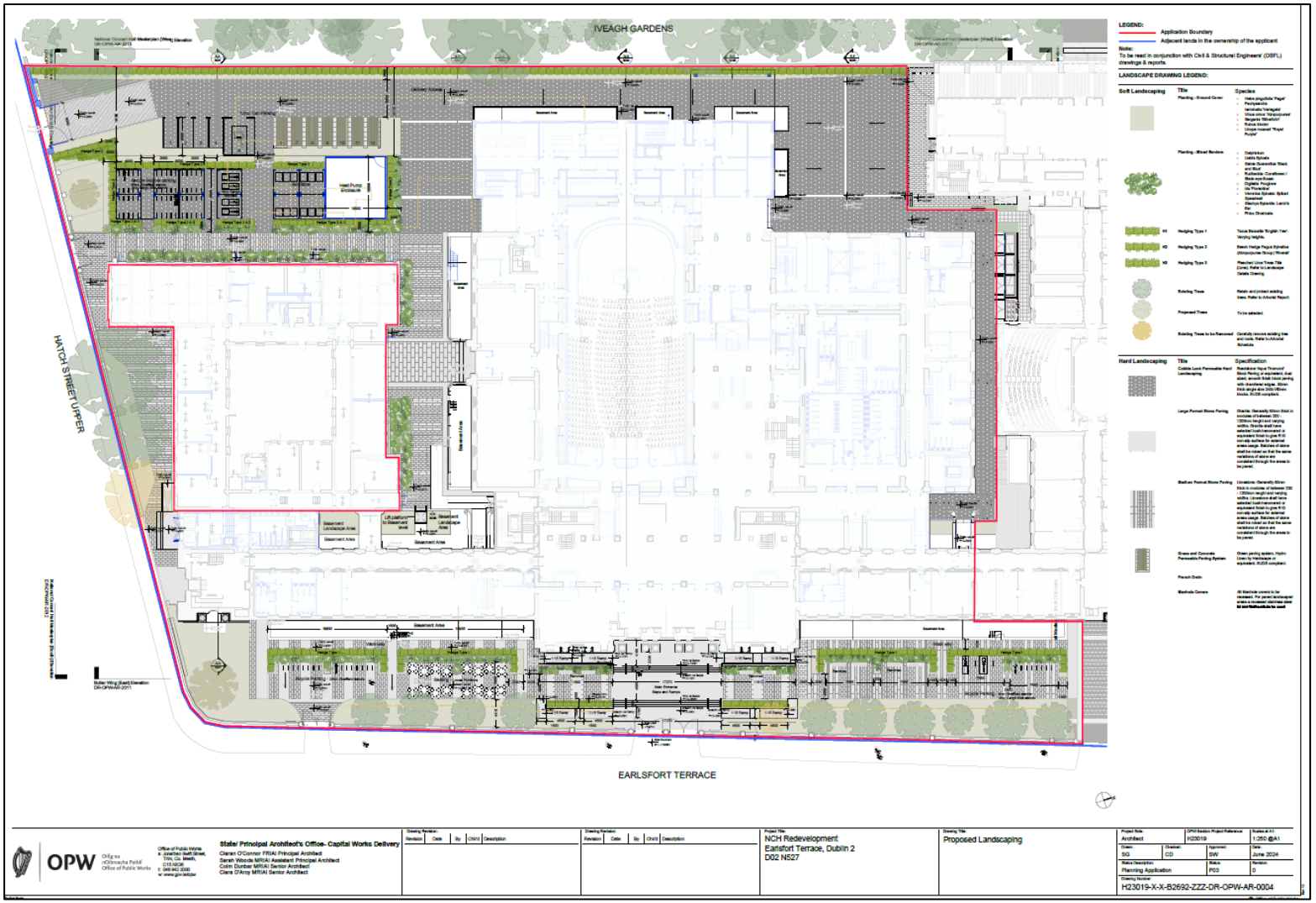


Figure 1 - Overview of Proposed Development and adjacent buildings

Figure 2 - Site layout of proposed redevelopment works (Note: no proposed changes to area at northeast of site (outside plan shown in figure))



1.3 Author Statement

8 Scott Cawley Ltd., staff abide by the Code of Professional Conduct/Code of Practice for the Chartered Institute of Ecology and Environmental Management (CIEEM). The Company holds an annual licence under issued under Sections 23 and 34 of the Wildlife Acts 1976-2018 (C29/2024), enabling staff members to capture and handle bats, and an annual derogation licence under the *European Communities (Birds and Natural Habitats) Regulations 2011* (as amended) (DER/BAT 2024-53), enabling staff members to enter roosts and undertake surveys with endoscope. This report has been prepared by Jamie Dempsey and Síofra Quigley of Scott Cawley Ltd., and has been reviewed for quality assurance purposes by Eoin Cussen and Tim Ryle of Scott Cawley Ltd.

9 Jamie Dempsey is a consultant ecologist with Scott Cawley Ltd., and is a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He obtained a Master's degree in Applied Environmental Science from University College Dublin. Since joining Scott Cawley Ltd., he has carried out field surveys on major road schemes for protected species including bat, wintering bird, marsh fritillary butterfly, and smooth newt, and has conducted habitat and invasive plant species surveys. Jamie has authored AA Screening and Ecological Due Diligence reports, and has contributed to Ecological Impact Assessment and Environmental Impact Assessment reports.

10 Siofra Quigley is a Senior Ecologist as Scott Cawley. She has a Bachelor of Science degree in Zoology from the National University of Ireland, Galway, and a Masters in Wildlife Biology and Conservation from Edinburgh Napier University. Síofra has six years' experience working as an ecologist in Ireland and Scotland. She has extensive bat survey experience, and has undergone training in bat handling and trapping techniques while at Scott Cawley. Síofra has prepared multiple derogation licence applications and has discharged licence obligations on a range of projects in Ireland. Síofra provided direction and oversight to Jamie Dempsey in the preparation of this document.

11 Eoin Cussen holds an Honours BSc in Zoology from University College Cork and an Honours MSc in Ecological Assessment from the same institution. Eoin has over 6 years' professional postgraduate experience in ecological consultancy including planning related casework for state and non-governmental organisations within Ireland and the UK, input to and preparation of Appropriate Assessment (AA) screenings, Natura Impact Statements, Preliminary Ecological Assessments and Ecological Impact Assessments, and a wide range of experience of ecological surveys for protected habitats and species including otters, bats, birds. Eoin received bat survey, handling and identification training from Connor Kelleher during his MSc degree, as well as undertaking internal company training, including internal and external building roost inspection, tree roost identification and inspection training and endoscope training throughout the course of his career within Ireland (EcoEireann & Scott Cawley) and the UK (EcoNorth). Eoin now has over 6 years of bat survey experience, including roost inspection and assessment. Eoin has received bat handling training from Neil Midleton of Batability Ltd. as well as internal trainings as part of his CPD with Scott Cawley Ltd. Eoin is licensed in Ireland for bat handling and roost disturbance and inspection.

12 Tim Ryle is a Principle Ecologist with Scott Cawley Ltd., with over 23 years' experience. He has covered an extensive range of projects and surveys including terrestrial surveys (Flora and Fauna, and Invasive Alien Plant Species) on all key Irish habitats; faunal surveys – badger, otters, bats as well as having undertaken/led monitoring projects for national surveys of Annex I habitats in coastal and upland habitats. He has considerable experience in designing, undertaking and managing a wide range of ecological surveys, assessing impact and designing mitigation measures and biodiversity enhancements, in particular for protected species including badgers, otters, bats, birds, amphibians as well as habitats of conservation importance. Tim's experience includes a considerable number of small and large infrastructural projects where he was actively involved in surveys to inform Impact Assessment for planning purposes. An important part of Tim's role is to provide technical advice on matters relating to protected species and habitats both to company ecologists and to client, and to act (as part of Scott Cawley's quality assurance process) as an internal reviewer for reports.

1.4 Proposed Personnel for Inclusion on Derogation Licence

13 Outlined below are the personnel who will administer and implement the derogation licence that is being applied for, ensuring its full implementation including having full responsibility for compliance with the mitigation strategy and/or conditions of the derogation licence as issued. The OPW will have overall responsibility for the management of the licence. Scott Cawley Ltd., will act as the scientific agent identified on the derogation licence and will oversee the works associated with the NCH redevelopment as described in Section 1.2. As such, should the derogation licence be granted by the NPWS, there may be the need for an update/change to the personnel listed/associated with this derogation licence during its lifetime. Any changes in personnel associated with this derogation licence will be notified by the OPW in writing to the NPWS for amendment.

14 The persons identified below, as employees of Scott Cawley Ltd., abide by the Code of Professional Conduct/Code of Practice of CIEEM. Scott Cawley Ltd., operate under an annual NPWS issued licence to handle and disturb bats (all bat species with the exception of the Lesser Horseshoe Bat) in support of surveys. The 2024 licence number is C29/2024 Amended 21/03/2024.

1.4.1 Proposed Lead Bat Ecologist – Síofra Quigley

15 Síofra will lead the Scott Cawley Ltd., bat monitoring program for the duration of the licence. She will be assisted by the qualified and experienced personnel listed below who are named on Scott Cawley's annual derogation licences for disturbance of bats and their roosts:

- Colm Clarke
- Andrew Speer
- Eoin Cussen
- Shane Brien
- Cathal O'Brien
- Tim Ryle
- Wayne Daly
- Sorcha Shanley

The following personnel will be named on the licence as trainees who may assist Síofra and/or her colleagues named above under their supervision include:

- Jamie Dempsey
- Simon O'Carroll
- Cian O'Flaherty
- Alison Bourke
- Jared Bennett
- Bea Jackson
- Gregor Wood
- Clíona O'Flaherty
- Barbara Kasl

2 Legal Protection and Conservation of Bats in Ireland

16 There are nine species of bat known to breed in Ireland, while two other species have been recorded on a single occasion (Table 1). All of Ireland's nine resident bat species are listed as "*Least Concern*" in the *Ireland Red List No. 12: Terrestrial Mammals*[1].

Table 1 Bat species in Ireland: status and distribution

Species	Status	Distribution
Common pipistrelle *Pipistrellus pipistrellus*	Resident	Widespread
Soprano pipistrelle *Pipistrellus pygmaeus*	Resident	Widespread
Nathusius' pipistrelle *Pipistrellus nathusii*	Resident	Widespread
Leisler's bat *Nyctalus leisleri*	Resident	Widespread
Brown long-eared bat *Plecotus auritus*	Resident	Widespread
Whiskered bat *Myotis mystacinus*	Resident	Widespread
Natterer's bat *Myotis nattereri*	Resident	Widespread
Daubenton's bat *Myotis daubentonii*	Resident	Widespread
Lesser horseshoe bat *Rhinolophus hipposideros*	Resident	Restricted to the western seaboard
Brandt's bat *Myotis brandtii*	Vagrant	Single confirmed record from Co. Wicklow
Greater horseshoe bat *Rhinolophus ferrumequinum*	Vagrant	Single confirmed record from Co. Wexford

17 All bat species and their roost sites are strictly protected under both European and Irish legislation including:

- Wildlife Act 1976 and Wildlife (Amendment) Act, 2000;
- *European Communities (Birds and Natural Habitats) Regulations, 2011*; and
- *Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna 1992 (Council Directive 92/43/EEC)*.

18 It is an offence under Section 23 of the *Wildlife Act 1976 (as amended)* and under Section 51 of the *European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)* to kill a bat, to interfere with, damage or destroy the breeding or resting place of a bat species, or to deliberately disturb bats, particularly during their periods of breeding, rearing, hibernation and migration. Under the Regulations it is not necessary for damage or destruction of bats' breeding sites or resting places to be

[1] Marnell, F., Looney, D. & Lawton, C. (2019). *Ireland Red List No. 12: Terrestrial Mammals*. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

deliberate for an offence to occur. Given that unintentional damage or destruction of bats' breeding sites or resting places gives rise to an offence under the legislation, there is an onus of due diligence on property owners and anyone proposing to carry out works, to avoid any such damage or destruction.

19 As a signatory to the EUROBATS Agreement (Agreement on the Conservation of Populations of European Bats, 1994)[2], Ireland is required to protect their habitats and important feeding areas from damage or disturbance. All Irish bat species are listed in Appendix B of the Bern Convention (1979), as species requiring protection.

3 Guidance and Approach

20 The guidance that has been referred to during the preparation of the application for the derogation licence has included:

- Guidelines for Ecological Impact Assessment in the UK and Ireland version 1.2 (CIEEM 2022)
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. (National Roads Authority (NRA) 2006);
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA 2008a);
- Environmental Impact Assessment of National Road Schemes – A Practical Guide. National Roads Authority (NRA 2008b);
- Guidelines for Assessment of Ecological Impacts of National Roads Schemes (NRA 2009);
- Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (Collins, 2016);
- The Bat Workers' Manual. 3rd Edition. (Mitchell-Jones and McLeish 2004);
- Bat Mitigation Guidelines for Ireland V2. Irish Wildlife Manuals No. 134 (Marnell et al., 2022);The Irish Bat Monitoring Programme 2015 – 2017. Irish Wildlife Manuals 103. (Aughney *et al*., 2018);
- Circular Letter NPWS 2 / 07 Guidance on compliance with Regulation 23 of the Habitats Regulations 1997 – strict protection of certain species / applications for derogation licences (NPWS 2007a);
- Circular Letter PD 2/07 and NPWS 1/07 Compliance Conditions in respect of Developments requiring (1) Environmental Impact Assessment (EIA); or (2) having potential impacts on Natura 2000 sites (NPWS 2007b);
- The Habitats Directive; S.I. No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011, as amended (hereafter referred to as the Birds and Habitats Regulations);
- The EIA Directive;
- Wildlife Acts 1976 (as amended);
- National Biodiversity Plan 2023-2030. Department of Housing, Local Government and Heritage (2024).

[2] https://www.eurobats.org/about_eurobats/introduction_to_agreement accessed June 2024

4 Need for the Derogation Licence

21 Scott Cawley Ltd., are submitting this application under Regulation 54 of the European Communities (Birds and Habitats) Regulations 2011 (S.I. 477 of 2011) for a derogation licence from complying with the requirements of the provisions of Regulations 51, 52 and 53 of the same Regulations.

4.1 Test 1 – Reason for seeking derogation

22 The derogation is being sought on the basis that the proposed development site contains a bat roost, and the proposed works will likely result in the loss of the roost site, and have the potential to result in the mortality and/or disturbance of bats or their roosts, which would be in contravention of the *European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)* if undertaken in the absence of a derogation licence.

23 A derogation is being sought under Regulation 54(2) (c):

> *"In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment."*

24 One building which forms part of the proposed development has previously held a confirmed bat roost. Though this roost was not identified during the most recent survey season.

25 A derogation licence is also being sought on the basis that the proposed works have the potential to result in the disturbance of bats or their roosts due to works involving trees within the proposed development site. The majority of treelines within and on the periphery of the proposed development site will be retained. The removal of one tree is planned as part of the proposed development. Despite there being no tree roosts found, the derogation licence is being sought on a precautionary basis to ensure avoidance and minimisation of any potential disturbance effects that may impact bats in trees.

4.2 Test 2 – There is no Satisfactory Alternative

26 The demolition of the Anatomy building is required to facilitate the wider redevelopment of the NCH campus. In the absence of intervention, there would likely be a deterioration in the condition of the building. The proposed development is required in order to upgrade public facilities and address accessibility issues within the NCH, and includes works necessary to properly maintain and conserve a number of Protected Structures within the NCH campus.

4.3 Test 3 – Favourable Conservation status

27 The application relates to specific impacts on the local population of bats and/or their roosts arising from proposed works at the National Concert Hall, Dublin 2. The strategy outlined in this report includes measures to avoid and minimise disturbance to bats. In light of the size of the roost identified in an adjacent building on the NCH campus, the nature and setting of the proposed development, the mitigation strategy proposed (see Section 7) and the fact that the bat species are well established in the locality, together with the current status of bats as 'Least Concern', it can be concluded that following the implementation of the proposed mitigation measures, the Proposed development will not be detrimental to the maintenance of the local bat population and thus the national population, at a favourable conservation status in their natural range.

5 Methodology

5.1 Desk Study

28 A desk study was undertaken to compile records of bat species within 2km of the proposed development site, using the National Biodiversity Data Centre (NBDC) database[3] and the Bat Conservation Ireland database. The results of surveys conducted by Scott Cawley Ltd., for previous developments on the same campus were also reviewed for records of bat species on the proposed development site.

5.2 Field Surveys

5.2.1 Habitat and Tree Surveys

29 Habitat suitability for foraging/commuting/roosting bats was assessed during a survey of the proposed development site on 4th July 2023. During this survey trees were assessed for the suitability for roosting and/or foraging bats, based on advice contained within *Bat Surveys for Professional Ecologists: Good Practice Guidelines*[4], which has been reproduced in Table 2.

5.2.2 Building Inspections

30 A ground-level assessment and roof check of buildings and ground level assessment of trees within the proposed development site, to examine their suitability to support roosting bats and potential to act as important landscape features for commuting/foraging bats, was based on guidelines (see Table 2) in *Bat Surveys for Professional Ecologists: Good Practice Guidelines*[4] and included inspections of buildings and structures for potential roost features (PRFs), and for evidence of bats such as:

- Bat droppings (these will accumulate under an established roost or under access points);
- Insect remains (under feeding perches);
- Oil (from fur) and urine stains;
- Scratch marks;
- Pupae of bat parasites such as *Nycteribia kolenatii*; and;
- Bat corpses.

31 An endoscope (Ridgid Micro CA-350) was used to inspect any crevices, or similar features that were accessible from ground level. Inaccessible features were examined from ground level with the use of binoculars. This was undertaken on 28th July 2022, by Scott Cawley Ltd., and accompanied by OPW personnel.

[3] National Biodiversity Data Centre Database of records. Available online at www.biodiversityireland.ie

[4] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

Table 2 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement. (from Collins (2023)[4])

Suitability	Description	
	Roosting habitats in structures	**Potential flight-paths and foraging habitats**
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (*i.e.* unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape which is likely to be used regularly by foraging bats; such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts.

5.2.3 Roost Presence/Absence Surveys

32 Dusk emergence surveys were undertaken with the objective of determining whether bats were using the existing buildings or trees on the site as a roost, and if applicable, to count the number of bats seen emerging from any roosts. A total of five dusk emergence surveys were conducted on separate visits (Table 3). Each bat emergence survey was completed by four no. surveyors. Bat surveys were conducted using direct observation, with the aid of a handheld ultrasound bat detector (Batlogger M1 and M2) to record the calls of echolocating bats. An infrared camera (Canon XA40) was also used on specific areas of the buildings that were difficult to survey by sight, due to the height of the building or lack of light. Echolocation recordings were analysed using Elekon BatExplorer software.

Table 3 Details of bat surveys undertaken at proposed development site

Date	Survey Type	Survey Times (Sunset/Sunrise)	Weather	Temperature (°C)
28th July 2022	Dusk Emergence Survey	21:00 – 23:00 (21:27)	30% Cloud cover, dry with slight easterly breeze	17°C
11th August 2022	Dusk Emergence Survey	20:40 – 22:30 (21:01)	0% Cloud, no rain, no breeze	19-20°C
25th August 2022	Dawn Re-entry Survey	04:50 – 06:20 (06:22)	0% Cloud, gusty wind toward end of survey, no rain	12°C
6th July 2023	Dusk Emergence Survey	21:30 – 23:20 (21:53)	20% cloud cover, dry, slight breeze	20-21°C
19th July 2023	Dusk Emergence Survey	21:20 – 23:05 (21:41)	60% cloud cover, dry, slight breeze	15-18°C

5.3 Limitations

33 Bat surveys were carried out in July and August which falls within the optimal survey season (generally regarded as May-August). Weather on all survey dates was suitable for conducting bat surveys, with temperatures well above 10°C and there were no access issues.

34 All areas of the buildings were not fully accessible during the roost inspection surveys, however this was offset by the completion of bat presence/absence surveys which were sufficiently resourced to provide full coverage of the buildings.

35 There were no other limitations associated with surveys undertaken.

5.4 Habitat Description

36 The site is urban in nature, comprised of hard standing, buildings and artificial surfaces. The surrounding habitat of South Dublin City is largely similar to the proposed development site, with residential buildings, retail units, hotels, and transport infrastructure in the immediate environs. The exception being the public green space of Iveagh Gardens, which borders the proposed development to the west, but is not included within the boundaries of the proposed development site.

37 The main habitat within the proposed development site is characterised, as per the Heritage Council Guidance[5] as Buildings and Artificial Surfaces (BL3) including roads, buildings, carparking areas and footpaths. The western treeline is part of Iveagh gardens and shares a border with the proposed development site, and consists of London plane *Platanus × hispanica,* ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. The eastern treeline consists of a row of planted sycamore trees in the car park of the National Concert Hall, and along the southern boundary three mature lime *Tilia sp.* trees.

38 The baseline environment description has been supplemented with desktop data and the earlier survey findings presented in support of the conservation and refurbishment of the existing pathology building on the National Concert Hall campus (Dublin City Council planning reference 4975/23).

6 Results

6.1 Desk study

39 The NBDC holds records of the following species within approximately 2km of the proposed development:

- Common Pipistrelle *Pipistrellus pipistrellus* - seven records from the National Bat Database of Ireland. The most recent record from the O1632 grid square, immediately southeast of the proposed development, recorded in 2009.
- Soprano Pipistrelle *Pipistrellus pygmaeus* – eleven records from the National Bat Database of Ireland. The most recent record from the O1632 grid square, immediately southeast of the proposed development, recorded in 2009.
- Nathusius' Pipistrelle *Pipistrellus nathusii* – one record from the National Bat Database of Ireland, recorded in the O1632 grid square, immediately southeast of the proposed development, in 2009.
- Leisler's bat *Nyctalus leisleri* – six records from the National Bat Database of Ireland. The most recent record from 450m southwest of the proposed development, record in 2016.
- Daubenton's bat *Myotis daubentonii* – one record from the National Bat Database of Ireland, recorded approximately 600m southwest of the proposed development in 2015.

40 The closest bat roost to the site was in the Pathology building of the NCH, with a maximum count of six Soprano Pipistrelle bats recorded at the roost in the summer of 2009[6].

6.2 Building Inspection Survey

41 All buildings within the proposed development boundary were inspected internally where possible, and externally, for evidence of bats (Figure 1). The attic space of the Anatomy building was not accessible, but roof access was provided where possible. Due to the lack of potential roost features, urban nature of the site, with light spill from the surrounding environment, the majority of the other buildings within the proposed development were considered to be of low bat roosting potential. All of these buildings are over 100 years old but have undergone some level of upkeep and maintenance in the last 50 years. The Anatomy block is considered to have moderate potential for roosting bats, due to the reasons described below.

42 The Anatomy building is an older building with good roosting features such as loose tiles, gaps between stonework, loose felt/flashing, and attic spaces. This building has not had any renovations in recent years and has been allowed to decline and decay, increasing its potential for roosting bats (See Plates 1 and 2) .

43 The Pathology building, which is adjacent to the Anatomy building, and not within the Proposed Development footprint, is of a similar stature to the Anatomy building. The the Pathology building roof

[5] Fossitt, J.A. (2000). *A Guide to Habitats in Ireland.* The Heritage Council

[6] Bat Survey Report, National Concert Hall, Earlsfort Terrace, Dublin 2. Scott Cawley, 2009.

(where the bat roost was identified previously in 2009) has been renovated, and this section is no longer suitable for bats. However, the remainder of this building has not been renovated and is suitable for roosting bats, due to multiple areas with lifted flashing, loose roof tiles, and attic spaces. However no evidence of bats was observed.

Plates 1&2 - The Anatomy Block (left) illustrating the location of a previously identified roost (red circle) on the northern end of the roof, and another section of the Anatomy building with loose flashing showing potential roost features (right)

44 The 1865 Block which contains the Auditorium, and the Former Medical Library Block, which are well maintained, and approximately 30m in height. The height of the building made it difficult to see any small roosting features that may be present, however overall, the building is very well sealed and maintained, with little evidence of cracks/crevices (See Plates 3 & 4). Roof access was permitted on the flat sections of the roof, which allowed close inspection of the any potential roost features that may be present. In general the sloped sections were very well sealed, having recently been renovated and improved (Plate 3). The lack of an attic space in some sections also limits its roosting potential for roosting bats, in particular for maternity colonies who frequently roost in high numbers (depending on the species), in loft/attic spaces. Whilst flat roofs can offer some opportunities in small voids/cracks under felting that heat up quickly in the sun and retain warmth, this would only be suitable for pipistrelle bats, which utilise a wide variety of roost spaces. Felting was not observed on the roof of this building, and overall, there were very few opportunities for roosting bats. No evidence of bats was observed.

Plates 3 & 4. The roof of the former Medical Library Block, and a well-sealed section of the 1865 Block

6.3 Bat Activity Surveys

6.3.1 2022

45 A total of seven recordings of bat activity were made over the course of the three bat activity surveys undertaken in 2022. During the first emergence survey on the 28th July, Soprano pipistrelle was the only species detected, with four calls recorded by one bat commuting alongside the Iveagh Garden treeline around 22:47. A surveyor was also positioned by the Pathology and Anatomy buildings, where two bats were observed emerging from the roof of the Anatomy building at 22:27 and 22:35, the latter of which was recorded on the IR camera positioned on this building (See Figure 3). Neither of these bats were recorded echolocating whilst emerging so no species determination could be made. No other bats were seen or heard during this survey.

46 During the second emergence survey on the 11th August, four bat calls were identified, three from Leisler's bat, and one from Soprano pipistrelle. The Leisler's calls were heard by three surveyors in the carpark west of the proposed development and adjacent to Iveagh Gardens, and was considered likely one bat foraging/commuting over the area as the calls were all around 21:30. The soprano pipistrelle was identified by the Anatomy building, however it is possible that the soprano pipistrelle heard had emerged from the previously identified roost there.

47 During the re-entry survey on the 25th August, no bats were seen or heard by any surveyors.

6.3.2 2023

48 A total of 24 recordings of bat activity were made over the course of the two bat activity surveys undertaken in 2023. During the first emergence survey on the 7th July, soprano pipistrelle, common pipistrelle, and Leisler's bat were detected. Leisler's bat was the first species heard flying over the site at 22:21. The first common pipistrelle call was heard at 22:52, likely commuting between its roost site (outside of the proposed development) and foraging grounds. One soprano pipistrelle call was heard at 22:31. No

other bats were seen or heard during this survey, and no bats were roosting within the proposed development or surrounding buildings.

49 During the second emergence survey on the 19th July, common pipistrelle was again the most frequently heard during the survey. Soprano pipistrelle was the only other species heard throughout the survey, first recorded at 22:01 flying over the auditorium. A number of common pipistrelle calls were recorded in the courtyard of the Pathology Building, this was just one individual bat; foraging around the courtyard between 22:43 and 22:53. No other bats were heard or seen during this survey, and no bats were seen emerging from any of the buildings.

6.4 Ground Level Tree Inspections

50 No PRFs were identified within the redline boundary during the ground level tree assessments. The eastern treeline consists of a row of ten immature Sycamore *Acer pseudoplatanus* trees, which are deemed to be of Negligible suitability for bats (Table 2), due to the absence of PRFs and the lack of suitability to be used for flight paths or foraging. No PRFs were identified in the three lime *Tilia sp.* trees located on the southern boundary of the campus, though the height of these trees and presence of foliage may have impeded identification of any PRFs. These trees are deemed to be of Low suitability for bats due to the absence of PRFs, and their minimal connectivity to other suitable habitat in the local area.

6.5 Evaluation of Results

51 The results of the surveys undertaken confirm that the National Concert Hall, i.e. the proposed development, is not currently being used by bats for roosting purposes, but a roost has been identified here previously, in the Anatomy Building, (see Plate 1). No bats were observed emerging from any other building within the proposed development site. Three species of bats were found to use the site for foraging and commuting purposes; common pipistrelle, soprano pipistrelle, and Leisler's bat. Common pipistrelle bats accounted for most of the activity on site, likely flying to/from foraging grounds in the adjacent Iveagh Gardens, while Leisler's bats were observed flying over the site at height. Soprano pipistrelle were heard on only 4 occasions, flying along the treeline of the Iveagh Gardens and over the Auditorium.

52 Inspection of ground-level roost features recorded no evidence of bats, however the nature of the ground level assessment means that potential roost features high in the trees could not be properly investigated. Due to the nature of the local urban environment, it is considered that it is unlikely that these trees are bat roosts, however a precautionary principle has still been applied in this mitigation strategy.

53 Iveagh Gardens provides ideal commuting, foraging, and likely roosting opportunities for a range of bat species, despite being in a city centre location. The proposed development is also very close to St. Stephen's Green (*c.* 100m north), which is also highly suitable habitat for local bat species. A roost was identified in the Anatomy building in 2022. The 2023 surveys did not record any activity in and around the roost in 2023. This transient roost will be impacted by the construction works within the proposed development, as the Anatomy building is due for demolition.

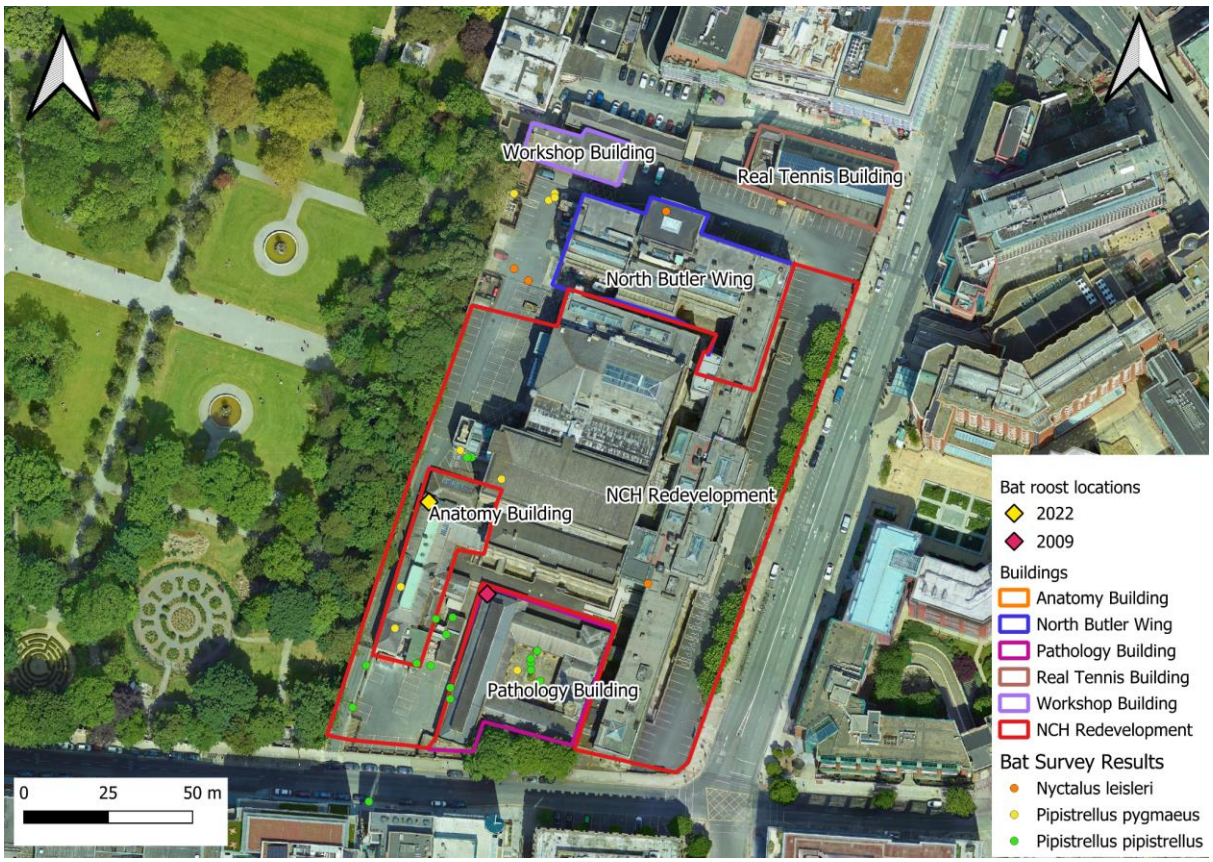


Figure 3 - Locations of previously identified bat roosts and bats detected during activity surveys

7 Works Which Could Potentially Affect Bats or Their Roosts

54 Any works that take place in the Anatomy building have the potential to result in disturbance of bats and their roosts, or in a worst case scenario, the mortality of bats roosting in the building. The proposed works include the demolition of the Anatomy building and therefore, in the absence of mitigation there is inherent potential to affect bats when carrying out any activities during the demolition process, should bats be present at the time of the works.

55 The proposed development will result in the loss of one tree, that is deemed of Negligible suitability for use by bats. It should be noted that it is extremely difficult to determine the likely absence of bats from PRFs by traditional roost emergence or inspection surveys, and therefore it is appropriate to adopt the precautionary principal and assume bats could use those features at some stage. Therefore, in the absence of mitigation, there is potential for the felling, pruning, or cutting, of the trees to result in direct harm and pose a mortality risk to bats, should bats be present in the trees at the time of felling.

56 The responsibility is on the body carrying out the works to ensure that bats are not present during such works. It is not a defence to maintain that there was no knowledge of bats being present and therefore 'accidental' disturbance of bats is not considered an adequate excuse.

8 Measures to Avoid, Reduce and Offset any Negative Effects on Bats and Their Roosts

57 Mitigation measures have been proposed with reference to practices outlined in *Bat Mitigation Guidelines for Ireland*[7] and *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition)[4]. The aims of the mitigation strategy are to avoid disturbance in as far as is practical and and/or ensure no mortality of roosting bats during the proposed works.

8.1 Supervision of Proposed Works

58 A suitably qualified / licenced bat specialist will give a toolbox talk to key personnel involved in works outlining the importance of the buildings and trees as potential roost sites, the legal protection afforded to bat species, and the measures prescribed in this supplementary report to avoid disturbance or mortality of bats and what to do in the event of any unforeseen discovery of roosts during construction works. The OPW and/or its appointed contractor will be obliged to read and agree to the mitigation conditions and or conditions that may be required as a part of the Derogation licence process.

59 As a bat roost was identified on site, a derogation licence is required from the National Parks & Wildlife Service (NPWS). Mitigation will focus on preventing accidental harm to bats during construction. The following mitigation measures are proposed to this effect:

1. Whilst no roosts were identified within the proposed development during the surveys conducted in 2023, a bat roost was identified in the Anatomy block in 2022, and in the Pathology Block, which has moderate roosting potential, in 2009. As such, a bat emergence/re-entry survey of the Anatomy building, which is to be demolished, will be carried out. The proposed survey will be an all-night survey undertaken during suitable weather conditions to determine if bats enter the building during the night or early morning. If bats are present, then they will require exclusion from the property over several nights or if possible, bats present will be physically removed by hand by a licensed bat specialist and placed in a bat box and then released in the evening after capture. If demolitions are proposed during the period of May to August and a bat roost is confirmed to be present, the proposed demolition will not be permitted at this time, with it to be postponed to a suitable period outside the main bat breeding period.
2. Once structures containing roosts are deemed to be clear of bats, the bat specialist will be on site to supervise the demolition procedure until the structure is no longer deemed able to support a bat roost. Bats may re-enter a partially demolished structure overnight so the bat specialist will be required to be present during demolition works until they are completed.
3. Buildings confirmed as bat roosts proposed for demolition will be marked on the ground with agreed paint marking to permit identification by Contractors.
4. In the event that roosting bats are found on the site during works, the works will immediately cease in that area and the local NPWS Conservation Ranger will be contacted. A further derogation licence application will then be made to the NPWS to permit actions affecting bats or their roosts which would normally be prohibited by law. Subject to the approval of a derogation licence, the bats will then be removed by hand by a suitably qualified and licenced bat surveyor, as per the conditions listed in the licence from the NPWS.
5. The proposed development is already very well illuminated from the streetlights adjacent and security lighting around the buildings themselves. A bat ecologist with experience in lighting appraisal and review will be consulted at the detailed lighting design phase to ensure that operational phase lighting along the Iveagh Gardens entrance considers impacts on bats and avoids and minimises any impacts. Lighting of the site during construction will be designed in accordance with the following guidance:

[7] Marnell, F., Kelleher, C. and Mullen, C. (2022) Bat Mitigation Guidelines for Ireland – V2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland

- *Guidance Notes for the Reduction of Obtrusive Light GN01* (Institute of Lighting Professionals, 2021)
- *Bats & Lighting - Guidance Notes for Planners, Engineers, Architects and Developers* (Bat Conservation Ireland, December 2010)
- Guidance Note 08/23: Bats and artificial lighting in the UK (Bat Conservation Trust and Institution of Lighting Professionals (2023)*)*

60 During construction, any external lighting to be installed, including facilitating night-time working or security lighting, on the site shall be sensitive to the presence of bats in the area, downlighting, and time limited. Lighting of sensitive wildlife areas and primary ecological corridors (e.g. along the boundary of the site that adjoins Iveagh Gardens) and any additional light pollution in general will be avoided.

8.2 Installation of Bat Boxes

61 In addition to mitigation strategy and other features that may arise as result of the pre-construction survey (e.g., emergence surveys and confirmation of roost), it is proposed to install generalist / self-cleaning bat boxes for the single PRF tree that has been confirmed to be removed (identified as part of the original surveys in support of the application) or additional PRFs identified during the pre-construction survey) that are to be removed.

62 Given the nature of the Proposed Development Site, it is proposed to install with, OPW approval the bat boxes in trees within Iveagh Gardens along the NCH perimeter wall:

- Standard Schwegler 1FFH (2 number) and 3FF boxes (1 number) for all PRF trees to be removed;
- The boxes will be installed three months in advance of felling of any PRF tree and in public spaces managed by the local authority as close as possible to areas of the PRF tree to be felled and which overlap with areas of bat activity confirmed during activity surveys undertaken as part of the EIAR;
- The boxes will be installed on the tree at a height of 3m to 5m and firmly fixed to the tree trunk;
- Where practicable, the bat boxes will be installed in an east, south and west orientation and protected from undue disturbance by selective placement away from light spill and at a height more than 3.5m;
- There will be a minimum of a 1m clearance (e.g., no overhanging branches or ivy encroachment near the installed box) around each bat box opening; and
- Installed bat boxes will be labelled and data (reference number, GPS location and photographic record) will be supplied to Bat Conservation Ireland, the local authority Biodiversity Officer and the NPWS.

8.3 Installation of Bat Bricks

63 In order to compensate for the loss of what is deemed a transient night roost in the roof of the Anatomy building, it is proposed to install generalist / self-cleaning bat bricks on a retained building within the NCH campus:

- 2 no. Schwegler 2FE bricks;
- The bricks will be installed three months in advance of the commencement of demolition works to the Anatomy building, on a retained building on the NCH campus, as close as possible to the location of the existing roost;

- Where practicable, the bat boxes will be installed in an east, south, or west facing orientation and protected from undue disturbance by selective placement away from light spill and at a height of more than 3.5m above ground; and
- Installed bat boxes will be labelled and data (reference number, GPS location and photographic record) will be supplied to Bat Conservation Ireland, the local authority Biodiversity Officer and the NPWS.

8.4 Reporting to the NPWS

64 A report documenting adherence to measures within Section 8 of this report will be produced by the licensed ecologist and forwarded to the NPWS within three months of completion of demolition works. The success of the proposed strategy will be measured by the avoidance of mortality of any bats during construction, and the provision of alternative roosting sites in the lands during and after construction.

9 Post-Construction Monitoring

65 While the success of the proposed strategy will not be measured by occupancy of roosts by bats, it is considered to be best practice and appropriate to implement a monitoring plan to gather information and assess whether the bat population has responded favourably to mitigation measures[7]. It is proposed to monitor the site annually for a period of two years (or as conditioned by the derogation licence) post construction, to confirm no likely change in use or distribution by bats other than natural pattens of movement, that cannot be explained by influences outside the control of the proposed development.

Post-Construction Monitoring of Bat Boxes

66 In this instance, post-construction monitoring will include the alternative roosts (bat boxes) to be deployed in the proposed development site. A two-year post-construction monitoring programme will be undertaken of the Schwegler 1FF bat boxes. Where bat boxes are installed as part of the Construction Phase of the Proposed Development, monitoring is required under best practice guidance (e.g., Marnell *et al*., 2022 – Bat Mitigation Guidelines for Ireland). The boxes will be checked for presence of bats or signs of bats between August and September for 2 years post-construction by an appropriately licensed and qualified ecologist. Where no occupancy is noted in year one, the boxes will be relocated to another mature tree and details communicated with the BCI, the local authority Biodiversity Officer and the NPWS. The results of these monitoring surveys will be tabulated and shared with the local authority and the NPWS.

10 Conclusions

67 This application relates to specific impacts on bats and/or their roosts arising from the proposed development at the National Concert Hall, Earlsfort Terrace, Dublin 2. Measures have been provided in Section 8 to reduce potential impacts on bats as far as possible during work, which are based on industry standard guidance with respect to bat mitigation strategy. Considering the size of the roost identified in the wider NCH campus, the current conservation status of bat species in Ireland as 'Least Concern'[8], and their widespread distribution and stable population in Ireland, it can be concluded that following the implementation of measures outlined in Section 8 of this report; it is considered that the proposed development will not be detrimental to the maintenance of the local bat population at a favourable conservation status in their natural range.

[8] IUCN defines a taxon as 'Least Concern' when it has been evaluated against the Red List criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. IUCN (2001) IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK. IUCN (2003) Guidelines for Application of IUCN Red List Criteria at Regional Levels: Version 3.0. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.