BAT DEROGATION LICENCE APPLICATION SUPPLEMENTARY REPORT

Prepared for Michael Guiney for works under the Community Monument Fund 2025

Kilgobbin Castle, Stepaside, Co Dublin

MEC ltd

11th July 2025

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This report has been prepared by Minogue & Associates (MEC Ltd) with all reasonable skill, care and diligence. Information report herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is prepared for Michael Guiney and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

1.1 Objective of the proposed works

Minogue Environmental Consulting (MEC) Ltd were commissioned by Lotts Architecture and Urbanism to undertake a bat survey as part of conservation works to the towerhouse at Kilgobbin, Stepaside, County Dublin on behalf of the owner Michael Guiney.

The objective of the proposed works are to fulfil the scope of works as submitted to the Community Monuments Fund 2025. Consolidation and masonry repairs to Kilgobbin Castle are required to prevent further collapse or loss of historic features. The long-term plan for proposed works to Kilgobbin Castle to be agreed with the owner, Dún Laoghaire-Rathdown County Council and the Department of Housing, Local Government and Heritage. The works may need to be phased based on available funds. The main objectives of any conservation work to Kilgobbin Castle should be to:

1. Consolidate the surviving structure preventing further deterioration or loss of historic fabric and features.
2. Contribute to the better understanding of the building and its evolution.
3. Access to the site is through private lands. The owners of the castle are engaged and committed to the care of the castle. Public access may be facilitated by appointment or for arranged days such as Heritage Week.

MEC Ltd. is submitting this application under Regulation 54 of the European Communities (Birds and Habitats) Regulations 2011 (S.I. 477 of 2011) for a derogation licence to permit activities that would otherwise contravene the protections outlined in Regulations 51, 52, and 53 of the same Regulations. This application specifically relates to a bat derogation licence to facilitate the proposed works while ensuring compliance with all relevant legislative and conservation requirements.

1.2 Name, qualifications and relevant experience of scientific staff,

1.2.1 Minogue Environmental Consulting Ltd

Ruth Minogue MCIEEM has 25 years' experience in environmental and ecological assessments. Ruth led the survey effort accompanied by Eleanor Chapman, a graduate environmental scientist with four years' experience in bat activity surveys.

Ruth has been undertaking bat surveys primarily for the past 13 years and continues to completed CDP in bat survey and ecology via the Institute of Ecology and Environmental Management and Bat Conservation Ireland. She primarily undertakes activity season surveys from May to September and this has included roost potential surveys of buildings and trees, emergent and re entry surveys of buildings and structures, transect surveys and deployment of static surveys over the activity season. Ruth has the following qualifications:

BSocSci (Hons) Social Anthropology, University of Manchester, 1996. MA (Econ) Environment and Development, University of Manchester, 1998. Diploma in Field Ecology, University College Cork, 2003. FETAC Qualification in Agriculture and Food Production 2007. Advanced Diploma in Environmental and Planning Law, Kings Inn, 2017.

Ongoing CPD through professional institutes such as Lighting and Bats (CIEEM 2020), Rewilding (CIEEM), and Nature Based Solutions course Cranfield University (completed in 2024)

MPhil in Environmental History, TCD, ongoing

Ruth as director of MEC Ltd has led and prepared Ecological Impact Assessments including bat surveys across a range of large and small scale proposals, including EcIAs, for residential and mixed use development across 9 tiles at Cherrywood Planning Scheme. Other bat survey works undertaken at historic buildings include the following and included Derogation License applications as necessary.

- Lehaunstown House, Cherrywood 2023. Private client.
- Vandeleur Stables and Gardens, Kilrush, Co. Clare, Clare County Council: 2022 -ongoing.
- Tinerana Stables, renovation and extension, Ogonnolloe, County Clare 2023 -ongoing
- Kilneenenan More, County Galway (medieval church), 2023
- Kilcreevanty, County Galway (medieval church),2023
- Kiltormer Church, County Galway (18th c), 2023
- Toberdaly folly, Rhode, County Offaly, 2023
- Borris in Ossary Courthouse, County Laois, 2023
- Cassidy Mills, Monasterevin ,County Kildare 2023
- Laurel Lodge, Limerick City, 2023
- Rockvalley House, Puckane, Co, Tipperary, 2023
- Bohemian Rugby Club, Annacotty, Co Limerick ,2023-2024
- Kilbuoniae early Christian complex, Co. Kerry (2022)
- Ballyadams Castle, County Laois (2022)
- Clonreher Castle (Towerhouse), County Laois (2022)

1.2.2 Lotts Architecture and Urbanism

Are responsible for the overall conservation management plan and will manage and appoint the contractors to do the conservation works under supervision. Lotts Architecture was formed in 2002 and is registered as a practice with the Royal Institute of the Architects of Ireland. The aim of the practice is to provide high quality modern and environmentally compatible design solutions for built heritage, new build, urban design and landscape architecture projects.

The lead architects Lotts Architecture and Urbanism with the land owner Michael Guiney, will have overall responsibility for managing the licence. MEC Ltd. will act as the scientific agent identified on the derogation licence and will oversee the works associated with the proposed development. 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.

1.2.2.1 If this application is for the carrying out of surveys that may cause *disturbance, qualifications of all involved must be provided and trainees must be clearly identified.- not applicable*

2 Background to proposed activity including location, ownership

Kilgobbin Castle is located in private land as part of the garden of Mr Michael Guiney who lives in a house on the same lands. The location is in Stepaside, Co Dublin (53.259659682267575, -6.212725289226657). See Figure 2.1 for site location over aerial imagery and map. The site footprint is confined to the castle only and no other works are proposed outside this boundary. The castle is currently fenced with heras fencing due to its poor structural condition.

Figure 2-1 Aerial imagery of lands

Figure 2-2 Location map showing Castle

2.1.1 Need for works and Approach to works funded under the CMF 2025

The activity proposed as part of the works are to conserve and stabilise the surviving castle structure. The possibility of further loss of masonry presents a threat to the significance of the castle ruin. The loss of mortar and presence of ivy roots may cause displacement of masonry resulting in the further collapse and loss of historic features.

The upper levels of the castle are somewhat concealed by vegetation and further investigation is required to achieve a thorough understanding of the condition of the remains. This is the primary activity that could result in disturbance to bat species.

The main objectives of the conservation work are as follows:

1. Consolidate the surviving structure preventing further deterioration or loss of historic fabric and features.
2. Contribute to the better understanding of the building and its evolution.
3. Access to the site is through private lands. The owners of the castle are engaged and committed to the care of the castle. Public access may be facilitated by appointment or for arranged days such as

2.1.1.1 Detail on the approach to works are as follows:

Preparatory work: -
Prop barrel vault and any openings in danger of collapse, if necessary, in consultation with the conservation architect and engineer. –

The clearance of vegetation, the removal of roots and minor excavation of fallen masonry. - Architectural features previously concealed to be recorded by the Conservation Architect and Project Archaeologist.

Phase 1:

Repairs to the west wall and barrel vault –

Minor excavations of fallen rubble stone to be carried out to both sides of the wall. –

Erect scaffolding on both sides. –

Cut back ivy on both sides of the wall and allow to die back. No ivy to be cut until a programme is in place for proper removal and repair of underlying masonry in the relevant areas. –

Conservation engineer to examine condition of barrel vault, wall, window heads, and top of wall. - Conservation engineer to carry out further investigations on site to specify how the overhanging northern end of the west wall can be secured in accordance with conservation best practice. –

Take sample of mortar from core of wall. Undertake visual analysis of aggregate type and size, to enable matching with local sand. Undertake laboratory analysis of mortar as historical record of medieval building technology and as means to design a new mortar of similar strength and composition. - Consolidate masonry at the base of the interior, around openings and along the top of the surviving crenelations and parapets with lime mortar to approved specification, using stone salvaged from the fallen masonry on site. –

Fallen masonry should only be reinstated where sound evidence can be found of its –

Repoint both sides of wall to approved detail. –

Consider use of hot-mixed lime mortar, informed by result of mortar sample analysis.

Phase 2: Repairs to south wall - Methodology to be as for Phase 1.

Phase 3: Repairs to east wall - Methodology to be as for foregoing phases.

Phase 4: Repairs to north wall - Methodology to be as for foregoing phases.

Phase 5: Ground level of castle –

Subject to NMS approval, clear out the build-up of debris and fallen masonry inside the castle back to the historic floor level under supervision of the project archaeologist. –

Lay new gravel surface on a geotextile layer.

3 Ecological Survey and site assessment

3.1 Pre-existing information on species at location and environs.

The NBDC[1] holds records of the following species within approximately 2km (Grid O12X) of Kilgobbin Castle:

- Brown Long-eared Bat (Plecotus auritus),2 records from National Bat Database of Ireland in 2010
- Common Pipistrelle (Pipistrellus pipistrellus sensu stricto), 5 records from National Bat Database of Ireland in 2021
- Leisler's Bat (Nyctalus leisleri),3 records from National Bat Database of Ireland in 2010
- Soprano Pipistrelle (Pipistrellus pygmaeus) 3 records from National Bat Database of Ireland in 2021

A bat survey completed in 2023 (June) to inform the conservation management plan also recorded Common pipistrelle, Soprano pipistrelle and Leisler bats around the project site.

3.2 Status of the species in the local/regional area (relevant to the consideration of the impact on the population at the relevant geographic scale (Test 3))

Of the bat species confirmed resident in Ireland, Common pipistrelle, Soprano pipistrelle, Leisler and Brown Long eared bats are identified as of least concern with widespread distribution[2].

Bat species in Ireland		
Species Name	**Status**	**Distribution**
Common pipistrelle *Pipistrellus pipistrellus*	Resident - Least concern	Widespread
Soprano pipistrelle *Pipistrellus pygmaeus*	Resident - Least concern	Widespread
Nathusius' pipistrelle *Pipistrellus nathusii*	Resident - Least concern	Widespread
Leisler's bat *Nyctalus leisleri*	Resident - Least concern	Widespread
Brown long-eared bat *Plecotus auritus*	Resident - Least concern	Widespread
Whiskered bat *Myotis mystacinus*	Resident - Least concern	Widespread
Natterer's bat *Myotis nattereri*	Resident - Least concern	Widespread
Daubenton's bat *Myotis daubentonii*	Resident - Least concern	Widespread
Lesser horseshoe bat *Rhinolophus hipposideros*	Resident - Least concern	Restricted to the western seaboard
Brandt's bat *Myotis brandtii*	Vagrant – not evaluated	Single confirmed record from Co. Wicklow
Greater horseshoe bat *Rhinolophus ferrumequinum*	Vagrant – not evaluated	Single confirmed record from Co. Wexford

Article 17 Reports (NPWS, 2019) states the following in terms of trends and range per the above species:

[1] National Biodiversity Centre Database, accessed 4th July 2025 Maps - Biodiversity Maps
[2] 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.

Table 3-1 Article 17 Reporting [3]

Species	Distribution ,habitat and trends per Article 17 Report (2019)
Common pipistrelle	The common pipistrelle (Pipistrellus pipistrellus) is one of Ireland's smallest mammals. It is widespread throughout the country and commonly encountered during bat surveys, although it may be less common or even absent from some parts of the far west. It is very general in its habitat preference, foraging in woodland, riparian habitats and parkland, along linear features in farmland, and in towns and cities. Some association with broadleaved woodland and riparian habitats at a local scale have been identified, while mixed forestry may be more important at a wider scale in the landscape. The distribution map represents over 14,000 records of common pipistrelle collected between January 2007 and June 2018. The data comes from the car transect monitoring programme, the BATLAS 2020 project as well as various other sources collated by Bat Conservation Ireland. They include roost records and records from detector surveys. Overall trend in conservation status is Improving.
Soprano pipistrelle	It is the most widespread bat species on the island of Ireland, occurring in all counties including the extreme north, west and south. It is the second most commonly encountered species in the national bat monitoring programme, although its abundance is variable across the island with no particular north-south or east-west pattern apparent. Summer roosts are usually in buildings, including modern suburban houses, old abandoned mansions, churches, amenity buildings and farm sheds. Bat boxes are also used. Soprano pipistrelles normally roost in very confined spaces, such as behind window sashes, under tiles and weather-boards, behind fascia and soffits, and within the cavities of flat roofs. Roosts of >1,500 individuals are known. The species is thought to hibernate in buildings and trees, but has seldom been recorded in winter. Although this bat is known to forage in a broad range of habitats, it shows some preference for aquatic habitats – riparian woodland, rivers and lakes Soprano pipistrelle bat records were widespread but found to be associated broadly with broadleaved woodland, riparian habitats and small amounts of urbanisation (Lundy et al. 2011; Dick and Roche 2017). Since these habitat types are currently stable or increasing, the habitat area and quality for the species are considered sufficient. Although population is increasing, range appears to be stable and the trend overall for habitat was taken, conservatively, as stable. Overall trend in conservation status is Improving.
Brown Long Eared	The brown long-eared bat (Plecotus auritus) is widely distributed in Ireland and across Europe. Its slow flight limits the distance that this species can travel at night-time and studies have found that almost all bats will forage

[3] Microsoft Word - 01_AR1719_sp_6985_Vandenboschia_speciosa.docx

Species	Distribution ,habitat and trends per Article 17 Report (2019)
	within 1.5km of the roost. Modelling indicates that the brown long-eared bat selects areas with broadleaf woodland and riparian habitats on a local scale, while the presence of mixed woodland at a wider landscape level is also important. It can cope with low levels of urbanisation, but wetlands such as bog, marsh and heath are avoided. Brown long-eared bats rely heavily on manmade structures for roosting. Most of the roosts recorded in Ireland are in buildings, with very small numbers in bridges, trees and bat boxes, although the natural summer roost of this species across Europe is tree holes. Brown long-eared bats show a high degree of roost fidelity and will often use traditional roosts for generations. While the species has been found in a range of building types, from old mills to bungalows, churches or large mansions typically support the largest numbers. The species has shown a significant increase of 32.5% (95% C.I. = +11 to +54%) over the monitoring period (11 years), equivalent to an average annual increase of 3.18%. See Aughney et al. (2018) for full details.. Since these habitat types are generally stable or increasing (woodland) the habitat quality for the species is assessed as good and the trend overall is taken as stable. Overall trend in conservation status is Improving.
Leisler	Leisler's bat is one of the most common and widespread bat species in Ireland. Over 7,000 distribution records were collated for this species between 2007 and 2018. The range of the Leisler's bat in 2013, based on data from 2001-2012, was calculated as 69,900km2 . Although the current range appears greater, this is considered to be a reflection of better data following more concerted survey work, rather than a genuine increase due to expansion. The trend is considered to be stable. Leisler's bat records were widespread but found to be associated broadly with broadleaved woodland, mixed woodland and riparian habitats and small amounts of urbanisation (Lundy et al., 2011). Since these habitat types are at least stable or, in the case of woodlands, increasing, the habitat area and quality for the species is considered good and the trend is taken, conservatively, to be stable. Overall trend in conservation status is Improving.

3.3 Objective(s) of survey

The objective of the survey was to ascertain the presence/absence of bat species in advance of any proposed works as part of the CMF 2025.

3.4 Description of Surveys Area

The focus of the survey was Kilgobbin Castle, as this is the structure that the CMF works relate. The castle itself is a Recorded Monument, ref. no DU0265-017001-. The Record of Monuments and Places (RMP) includes the following description: Class: Castle – tower house Townland: KILGOBBIN

The castle is best described as BL3 Stonework, given its age and construction techniques. The castle is covered in dense vegetation. The ground around the castle comprises a mix of species, dominated by bramble(rubus spp), Buddelia spp, ivy and grasses.

The immediate surrounding area comprises amenity grassland that forms part of a wider garden associated with Kilgobbin Castle and the private house of the owner that also extends to old farm buildings.

A mature treeline is present at the northern and western boundary and an old cut stone building is adjacent to the main road.

3.5 Survey methodology[4]

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

- Guidelines for Ecological Impact Assessment in the UK and Ireland version 1.2 (CIEEM 2022)
- Bat Surveys for Professional Ecologist Good practice guidelines, Bat Conservation Trust 2023.
- Applications for Regulation 54 Derogations for Annex IV species Guidance for applicants, V1 2025
- 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);
- 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);

[4] (including evidence as to how the methodology represents best practice and is appropriate to the Objective). Methodology should include survey maps, details of timing, climate, equipment used and identify any uncertainties or difficulties encountered.

- The EIA Directive;
- Wildlife Acts 1976 (as amended);
- National Biodiversity Plan 2023-2030. Department of Housing, Local Government and Heritage (2024)

3.5.1 Desk study

A desktop study was undertaken to compile records of bat species within 2km of the proposed development site, using the National Biodiversity Data Centre (NBDC) database and the Bat Conservation Ireland database.

3.5.2 Field Surveys

3.5.2.1 Habitat and Tree Surveys

Habitat suitability for foraging/commuting/roosting bats was assessed during a survey of Kilgobbin Castle site on 4th July 2025 and 5th July 2025. No mature trees are present within the castle other than saplings however two coniferous trees covered in ivy are present very close to the front elevation of the castle. Therefore, a ground level evaluation of these trees to assess their potential to support roosting bats and potential to act as landscape features for commuting and foraging bats was undertaken. This was based on the Bat Conservation Trust (2023) Guidelines.

3.5.2.2 Inspection of castle for potential bat roost features

A ground-level assessment of the Castle (both internal and external) was conducted to evaluate its suitability for supporting roosting bats and its potential as an important landscape feature for commuting and foraging bats. This assessment was based on guidelines from Bat Survey for Professional Ecologists: Good Practice Guidance (2023), see Table below.

The survey was ground based due to the poor condition of the castle and access is not possible to higher walls. Therefore, binoculars were used to see from the ground level any evidence for Potential Roost Features (PRFs). This was also used to assess any signs of bat activity such as staining, insect remains, droppings. The thermal camera was deployed to assess for any temperature changes within the castle structure which could indicate roosting bats during emergent survey.

Table 3-2 Roosting suitability for structures and habitats (Collins, 2023)

No roosting suitability	No features likely to be used by any roosting bats at any time of yea	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).

No roosting suitability	No features likely to be used by any roosting bats at any time of yea	Potential flight-paths and foraging habitats
Negligible roosting suitability	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 roosting suitability	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 roosting suitability	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 roosting suitability	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 Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flightpaths such as river valleys, streams, hedgerows, lines of trees and woodland edge. surrounding habitat. These structures have the potential to	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flightpaths 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

No roosting suitability	No features likely to be used by any roosting bats at any time of yea	Potential flight-paths and foraging habitats
	support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	parkland. Site is close to and connected to known roosts.

3.5.2.3 Survey conditions, location of surveyors,

Details are provided below

Survey	Date and time	Weather	Location of surveyors for duration of survey
Emergent activity survey	4th July 2025 Sunset From 21:45 to 23:00	16C at sunset 66% relative humidity Calm, very occasional light drizzle	53.2597440, -6.2132685 53.2596464, 6.2130024
Elekon S2 static detector	Recording from 21: 45 to 5:15	Temperature range from 16 to 16.7C	53.25981/-6.21307

3.5.2.4 Equipment used.

The following survey equipment was used:

- Elekon Batlogger M2 x 2
- Elekon S2 x1
- Torches
- Thermal imaging camera PixFrd ARC series.

3.5.2.5 Analysis of data from surveys

The results are analysed using Batexplorer software. All of the bat passes that were recorded on the detectors were later identified to species level or genus level for Myotis species. Bat passes are considered as single bat calls recorded within 15 seconds intervals by the bat detector. These are not necessarily indicative of the number of bats present (i.e., one bat can be recorded multiple times while foraging) but are a measure of the level of activity within the project area.

The results are presented in terms of calls and records per species and map based results showing activity recorded during the emergent survey. A bat pass (or call) does not reflect individual bats rather the level of activity and varies depending on the ecology of the species. For example, pipistrelles fly around a habitat and forage as they fly; Leisler bats commonly fly high over an area, and quite quickly traverse the areas.

3.5.2.6 Limitations

Surveys were conducted in the correct activity season and in good weather conditions. Due to the dangerous condition of the castle with no safe access, closer inspection of the structure was not possible. The use of thermal cameras and binoculars were used to assist in viewing potential roost features and activity from the ground.

3.6 Survey results[5.]

3.6.1.1 Desk study

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

- Brown Long-eared Bat (Plecotus auritus),2 records from National Bat Database of Ireland in 2010
- Common Pipistrelle (Pipistrellus pipistrellus sensu stricto),5 records from National Bat Database of Ireland in 2021
- Leisler's Bat (Nyctalus leisleri), 3 records from National Bat Database of Ireland in 2010
- Soprano Pipistrelle (Pipistrellus pygmaeus), 3 records from National Bat Database of Ireland in 2021

The bat habitat landscape suitability index (BCI) was also consulted and as shown below the overall suitability index across all bat species in 26.56..The maps are a visualisation of the results of the analyses based on a 'habitat suitability' index. The index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats. The maps are constructed using spatial units of the OSi National Grid. The index presented is for all species combined, in addition to the individual species' indices as shown below in the table.

All bats (suitability index): 26.56

The suitability index for different bat species listed below:

All Bats	26.56
Pipistrellus pygmaeus	40
Plecotus auritus	31
Pipistrellus pipistrellus	45
Rhinolophus hipposideros	0
Nyctalus leisleri	40
Myotis mystacinus	19
Myotis daubentonii	19
Pipistrellus nathusii	3
Myotis nattereri	42

[5] including raw data, any processed or aggregated data, and negative results as appropriate. Photographs and maps must be provided where site-specific features are referred

3.6.1.2 Building and Tree inspection survey

Kilgobbin Castle is considered to have high roosting potential for bats. The building, although roofless, does offer a many roosting features including gaps, cracks in the stonework and mortar. The castle also has a number of features that could offer sheltered and dark habitat for roosting bats, these include the barrel vault and rectangular holes for former joists as shown below in Photo 3.1. In addition, there is dense vegetation present on much of the surviving walls, including thick ivy that offers roosting potential for bats.

The two trees immediately adjacent to the fencing, whilst covered in ivy are classified as low PRF. This is due to the species type, of douglas fir with little visible cracks or crevices, and whilst dense the ivy stands are less than 5mm thick.

Photo 3-1 potential roost features at Kilgobbin Castle

3.6.1.3 Bat activity survey 4th July 2025

Bat Activity surveys were carried out on 4th July 2025 by two surveyors; one focusing on the south and east surviving walls, the second surveyor on the north and western surviving walls. The interior of the extant castle is best viewed from the northwest location. Infrared cameras were used during surveys to help confirm any possible bat emerging activity.

In total, 289 recordings of bat activity were recorded over the course of the first bat activity survey. This number represents the calls recorded on both surveyors' bat loggers (Elekon M2) and does not directly correspond to the number of individual bats, but rather the number of calls captured.

During the emergence survey the following bat species were recorded with the corresponding number of calls:

• soprano pipistrelle Pipistrellus pygmaeus 1815 calls;

• common pipistrelle Pipistrellus pipistrellus1337 calls;

• Leisler's bat Nyctalus leisleri 189 calls;

• Myotis species 7 calls;

The most common bat recorded by the detectors were Soprano pipistrelle. The earliest bat species recorded was also Soprano pipistrelle at 22:15. A number of bats were observed during the survey, commuting and foraging around the mature treeline adjacent to the castle. Bats (soprano pipistrelle) were also observed commuting north east over a gap in the treeline. An individual Common pipistrelle was observed emerging from this area at 22:40 as indicated by red circle in the photo below. No other bats were recorded or observed emerging from the Castle over this emergent survey.

Photo 3-2 Red circle indicates approximate location of emerging Common pipistrelle at 22:40.

Figure 3-1 Bat species recorded during bat activity survey 4th July 2025

3.6.1.4 Static survey 4/5th July 2025

An Elekon S2 static bat detector was deployed overnight on the fencing facing the interior of the castle. This recorded a total of 188 recordings over the course of the night with the most common recorded calls the common pipistrelle (1172), followed by Soprano pipistrelle (875 calls), and much lower number of Leisler calls (108), 4 recordings of Myotis spp with 23 calls were recorded during this survey.

3.6.1.5 Evaluation of results

The bat survey results undertaken confirm that Kilgobbin Castle is currently used by bats for roosting purposes. One Common pipistrelle was recorded and observed emerging from the upper level of the north western part of the castle despite the building supporting numerous potential roost features. Based on the above results, the roost is used by at least one common pipistrelle, though numbers may fluctuate over time and conditions given the castle does include several features for potential roosting. Based on the above and application of Bat Mitigation Guidelines (2022) the roost is of low status, comprising at least one bat of common species, see Table below.

Table 3-3 Extract from Bat Mitigation Guidelines (2022)

IWM 134 (2022) Bat Mitigation Guidelines

Conservation significance	Roost status	Mitigation/compensation requirement (depending on impact)
Low	Feeding perches of common/rarer species	Flexibility over provision of bat-boxes, access to new buildings etc. No conditions about timing or monitoring
	Individual bats of common species	
	Small numbers of common species. Not a maternity site	
	Feeding perches of Annex II species	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements
	Small numbers of rarer species. Not a maternity site	
	Hibernation sites for small numbers of common/rarer species	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
	Maternity sites of common species	
	Maternity sites of rarer species	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
	Significant hibernation sites for rarer/rarest species or all species assemblages	
	Sites meeting SAC guidelines	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
High	Maternity sites of rarest species	

3.6.2 Population size class assessment.

Considering the size of the common pipistrelle roost (one individual bat) identified within Kilgobbin Castle and the current conservation status of bat species in Ireland as 'Least Concern' , and their widespread distribution and stable population in Ireland, it can be concluded that following the implementation of measures outlined in Section 4.3.2 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

4 Evidence to support the Derogation Tests

4.1 Test 1 - Reason for Derogation:

This derogation is being sought under Regulation 54(2)(a-e) of European Communities (Birds and Natural Habitats) Regulations: namely 2c I and ii.

2c) 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:

i) Where the reason is for public health and public safety, summarise the evidence provided to support this reason (e.g. documentary evidence of the risk from a chartered structural engineer, tree surgeon, Garda Síochána, qualified health professional etc.)

ii) Where the reason is 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", summarise the nature of the public interest and how this outweighs the conservation interest of the species under strict protection.

4.1.1 There should be a clear explanation as to why a specific reason(s) has been selected in the application form.

This derogation is being sought partially under item (i) due to poor structural condition of the castle, in the absence of works it is at risk of further deterioration and collapse. The outcome of this on the local bat population of common pipistrelle would be the loss of the existing roost.

The second item (ii) relates to public interest and the historical and conservation significance of the castle and this derogation is being sought on these grounds also. The Castle is over 500 years old and represents one of the few surviving castles that were built to defend the Pale, Kilgobbin Castle is strategically positioned between Stepaside and Two Rock Mountain to defend access from Wicklow to Dublin and is a national monument.
A Conservation Management Plan for Kilgobbin Castle was prepared by the project team under a Community Monuments Fund grant in 2023. The conservation management plan was commissioned to assess the condition of the structure and make recommendations for conservation works to contribute to a better understanding of the building through improved presentation and repairs to conservation best practice.

The following works to be carried out under a CMF grant in 2025:
1. Removal of vegetation and ivy from the castle ruin.
2. Temporary propping of remains of barrel vault and failing window heads
3. Excavation of fallen rubble stone and sorting for reuse
4. Masonry repairs and consolidation of the remains of the castle including the repairs to walls tops and repointing.

The works will maintain the integrity of the surviving building for future generations, will be open to public in agreement with the landowner and allow further research into this significant historic building. This outweighs the conservation interest in that survey results indicate very low usage of the castle by an individual common pipistrelle bat. Based on the survey results the removal of vegetation is a low impact given the survey results showing very low use levels of the structure, likely as a night roost by a

common pipistrelle bat (Bat Mitigation Guidelines 2022). The works will not require the full mortar application across all stonework and retention of crevices and cavities will be identified under supervision. Vegetation will re establish over time on the structure post works. This is identified as a low, temporary impact to the bat species identified.

4.2 Test 2 - Absence of Alternative Solutions

4.2.1.1.1.1 Alternative 1:Do-Nothing

In the absence of the proposed works (ie Do Nothing) the structural condition of the building will continue to decline with ongoing loss of historic features of significance.

There is risk of full or partial collapse of the extant two walls.

This would result in complete loss of any bat roosting opportunities in the castle and the outcome would be adverse impacts on the local bat population and risk of potential masonry falling onto public road and /or damage to adjacent mature treeline. The loss or damage to the mature treeline could also result in adverse local effects to bats using the treeline for foraging and commuting.

4.2.1.1.1.2 1. Alternative 2 timing of vegetation removal

In order to assess the structural condition of the castle at the upper elevations, vegetation removal is required in line with the scope of works.

This could be deferred to later in the season, such as November however, this would result in the works not being completed by end of October 2025 which is a requirement for grant approval under the Community Monuments Fund 2025.

In the absence of the works being completed, which are in line with best conservation practice, the grant will not be issued, and in fact works will not be scheduled at all. This will result in the same effects on bat species as outlined under the above Do Nothing Alternative.

4.2.1.1.2 Alternative 3:Supervision of vegetation removal in September 2025 and identification of suitable crevices and cavities for retention

Once the scaffolding is erected, vegetation is proposed for removal at the upper elevations of the castle. Given the survey data indicates the castle functions as a minor roost in line with the Bat Mitigation Guidance, the mitigation proposed for this application includes supervision by the ecologist Ruth Minogue of scaffolding erection (to ensure access by bats at night) plus supervision of the vegetation removal on site should bats be disturbed in September.

Immediately adjacent to the castle is a mature treeline and a small building with access for bats should any be disturbed and fly away. Given the open aspect of the castle, attempting to capture disturbed bats at height in open conditions is not possible.

Therefore, this alternative, whereby vegetation clearance is done later in the activity season (mid Sept) under supervision and mitigation is advanced as the most appropriate and suitable option. This avoids disturbance to bat roosts at the most sensitive time of year and will be undertaken under supervision. The identification of appropriate crevices to remain open by the ecologist in consultation with the conservation specialists will allow continue access for bats roosting in the castle.

4.3 Test 3 - Impact of a derogation on Conservation Status6

Without bat mitigation measures, the proposed works namely the removal of vegetation and works to the castle to stabilise and do works in line with the scope of works, will have an overall minor impact on local bat populations of Common pipistrelles given the survey results that show the castle is used as a night roost by this species in low numbers and the presence close by of other buildings that have high bat roost suitability.

Mitigation measures relate to phased timing of vegetation removal to September and the supervision of scaffolding erection to ensure access for bats is not prevented, the supervision of vegetation removal and the identification of appropriate crevices /cracks for retention in consultation with the project architects to ensure structural stability is provided for the building whilst retaining suitable roosting crevices for these bat species.

The presence of Common pipistrelle roosting is not unexpected. This species are widespread and commonly occurring throughout the country and are “commonly encountered during bat surveys” (NPWS, 2019). Common and Soprano pipistrelle are also “very general in their habitat preference, foraging in woodland, riparian habitats and parkland, along linear features in farmland, and in towns and cities” (NPWS, 2019). The national population of this species is increasing and no existing pressures or threats to the conservation status of this species at a national level have been identified. Overall, the future prospects for this species in terms of range, population and habitat are Good (NPWS, 2019). Stone (2015 et al) also demonstrates the wide variety of alternative roosts that pipistrelles can use, ranging from individual roosts behind ivy on trees to substantial colony roosts in inhabited dwellings (Stone et al. 2015).

The strategy outlined in this report includes measures to avoid and minimise disturbance to bats. In light of the size of the roost(s) identified, the nature and setting of the proposed works, the mitigation strategy proposed (see Section 4.4) along with the fact that the bat species are well established in the area and currently classified as 'Least Concern', it can be concluded that, with the implementation of the proposed mitigation measures, the development will not have a detrimental impact on the maintenance of the local bat population. Therefore, this will ensure that the national population remains at a favourable conservation status within their natural range

4.4 Full and detailed descriptions of proposed mitigation measures that are relevant to the potential impact on the target species[7].

This section recommends appropriate measures that can be undertaken to ensure compliance with this legislation and policy and provide ecological enhancements.

[6] Applicants should include details of the population at the appropriate geographic scale and an evaluation of how the proposed activity will affect the conservation status both before and after mitigation measures have been applied

[7] Evidence that such mitigation has been successful elsewhere should be provided, where available.

4.4.1.1 Ecological Clerk of Works Vegetation removal

The timing of the remedial works is significant to ensure disturbance to bats is avoided. The optimum period for carrying out works at summer roost sites is from the 1st November to 1st March. However, as noted under Section 4, works after end of October will not be supported under the CMF grant scheme and therefore this derogation seeks to provide for vegetation removal in September under project ecologist supervision. The following mitigation measures are proposed to minimise and reduce disturbance to any bats that may be roosting in this month.

- The Ecological Clerk of Works on site (who will also be the named license holder for works) will give a toolbox talk to key personnel involved in works on Kilgobbin Castle, outlining the importance of the roost, the legal protection afforded to bats, and the measures outlined in this report to avoid disturbance or mortality of bats and what to do in the event of any unforeseen discovery of bats during works. This briefing will outline the legislation with regard to bats and guidance as to what to do, should they encounter a bat or any evidence of the presence of bats at any time during the construction phase. This will involve postponing construction activity until after bats have vacated the ivy. The contractor will be obliged to read and agree to the conditions outlined in the bat mitigation strategy as part of the contracting process.
- The ECoW will conduct an all-night bat activity survey the night before any work begins (i.e. before any scaffolding is in place) to ensure there are no bats present. This survey will be completed using bat loggers and an infrared camera to confirm bat presence.
- Prior to vegetation removal the castle should be surveyed immediately prior to works to confirm absence of bats roosting during the autumn season Vegetation removal will be undertaken during the daytime hours only.

4.4.1.2 Retention of some crevices and cracks to support roosting bats

Following the inspection of the castle by conservation specialists there will be opportunities to retain some crevices to allow access for bats once the works are completed. Given the roosting preferences of common pipistrelle are as follows.

- Summer roost sites are usually in buildings (often occupied houses) but tree holes and heavy ivy are also used (NPWS, 2022). in cracks and crevices in new and old buildings, behind panelling, shutters and eaves. Also found in bat boxes and trees (Bristol University nd)

4.4.1.3 LIGHTING

There is no potential for foraging bats within the vicinity of vegetation removal works, to be impacted by temporary elevated lighting levels during the construction phase of the proposed works as the proposed works will only be taking place during daylight hours. There are no proposals to remove the trees associated with the boundary that adjoins castle which is being used for commuting and foraging by a number of bat species. No mitigation is therefore required.

4.4.1.4 PROVISION ALTERNATIVE ROOSTING OPPORTUNITIES.

Given there is an old building unused close to the castle this may also function as a bat roost, however the provision of additional woodcrete boxes in the mature trees, is recommended. Schwegler Bat Box

IFF and 2F (universal) are recommended, a minimum of 3 or 4 boxes should be provided. Flat Bat Box 1FF » Schwegler Natur

The location, siting and specification to be provided by the project ecologist and installed under supervision by the ecologist. The bat boxes will be installed at a height of 3m to 5m and will be firmly attached to tree trunks in east, south, and west orientations. There will be a minimum clearance of 1m (e.g., no overhanging branches or ivy encroachment) around each opening in the box. 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. Common pipistrelles are known to use bat boxes, and Schwegler Bat Boxes are more durable than timber construction. Research by Vincent Wildlife Trust[8] (2015) shows Pipistrellus spp. preferred 1FF boxes that offer crevice-like roosting conditions. Monitoring the impacts of the derogations

4.5 Monitoring of implementation of derogation and if ojbectve was achieved.

Monitoring is recommended during both the vegetation removal and restoration phase and post works. The following mitigation should be monitored:

- Inspection of bat boxes within one year of erection of bat box scheme. Register bat box scheme with Bat Conservation Ireland. This should be undertaken for a minimum of 2 years. This will involve a daytime inspection of the bat boxes using an endoscope and thermal imagery scope.
- Monitoring of any bat mitigation measures. All mitigation measures should be checked to determine that they were successful. A full summer bat survey is recommended post-works (within 2 years of the completion of the project).
- If proposed bat mitigation measures are strictly adhered to, the potential impact of the proposed development is likely to be reduced from minor to negligible impact.

The mitigation measures will be deemed successful should bat activity be recorded in the castle structures in 2 years post works, and 2 years post installation of bat boxes. 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.

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 works under the CMF.

Remedial action will be prompted should the bat boxes or bat surveys indicate absence of roosting bats using the bat boxes following the monitoring period of two years. Remedial action to be discussed with NPWS and could include relocation of bat boxes or provision of different type of bat boxes in other trees.

[8] https://www.vwt.org.uk/wp-content/uploads/2015/08/VWTIrelandBatBoxReport.pdf

4.6 Applicants should provide details of proposed reports to be submitted to the NPWS including the results of monitoring.

A report documenting adherence to measures within Section 4 of this report will be produced by the licensed ecologist and forwarded to the NPWS within three months of completion of the proposed works on Kilgobbin Castle.

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- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. (National Roads Authority (NRA) 2006);
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- 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)

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RIAI ACCREDITED CONSERVATION ARCHITECTS GRADE I

Project name: KILGOBBIN CASTLE

Kilgobbin Castle, Kilgobbin, Co. Dublin

Title: CONSERVATION METHOD STATEMENT

for a Section 12 Notification

Client: Michael Guiney

Date: May 2025

Directors
Desmond Byrne BArch MRIAI
Richard McLoughlin BArch MSc MRIAI
Registered in Ireland no. 408083, VAT no. 6428083T

Record of Monuments and Places

The castle is a Recorded Monument, ref. no DU0265-017001-. The Record of Monuments and Places (RMP) includes the following description:

Class: *Castle – tower house*

Townland: *KILGOBBIN*

Background

A Conservation Management Plan for Kilgobbin Castle was prepared by the project team under a Community Monuments Fund grant in 2023. The conservation management plan was commissioned to assess the condition of the structure and make recommendations for conservation works to contribute to a better understanding of the building through improved presentation and repairs to conservation best practice.

The present design team was formed in 2023, consisting of:

- Richard McLoughlin, Lotts Architecture, RIAI Conservation Architect Grade 1
- David Maher, conservation engineer
- Antoine Giacometti, Archaeology Plan, archaeologist
- Minogue and Associates, ecologist

Scope of Works

The following works to be carried out under a CMF grant in 2025:

1. Removal of vegetation and ivy from the castle ruin.
2. Temporary propping of remains of barrel vault and failing window heads
3. Excavation of fallen rubble stone and sorting for reuse
4. Masonry repairs and consolidation of the remains of the castle including the repairs to walls tops and repointing.

Preparatory Works

- Conservation engineer to examine condition of barrel vault, walls tops, window heads and overhanging northern end of the west wall.
- Temporarily prop remains of the barrel vault and openings in danger of collapse.
- Clearance of vegetation, removal of roots and minor excavation of fallen masonry to be set aside and used in repairs. Lifting of loose masonry to be carried out under archaeological supervision. No ivy to be cut until a programme is in place for proper removal and repair of underlying masonry in the relevant areas.
- Scaffolding to be erected to the external and internal elevations.
- Architectural features previously concealed to be recorded by the Conservation Architect and Project Archaeologist.
- Undertake visual analysis of aggregate type and size to enable matching with local sand.

Proposed Works to the East Wall

Condition

- The north section of the east wall has collapsed with approximately a third of the wall to the south upstanding including the projecting tower.

- Extensive vegetation and deep roots have caused the wash out of mortar resulting in the displacement of masonry.
- A large square opening at first floor level survives.
- Loss of masonry has occurred to the surviving crenelations to the southern section of the wall.
- Masonry along the northern section of the east wall survives at low level. It is covered in vegetation, and it is difficult to discern surviving features and the extent of the intact masonry.
- To the internal elevation, masonry has been robbed out at low level.
- Square put log holes below the springing point of the barrel vault survive.

Proposed repairs:

1) Following the erection of scaffolding, cut back ivy on both sides of the wall and allow to die back.
2) Consolidate masonry along the top of the surviving crenelations and parapets and at the base of the interior wall.
3) Repairs to the base of the opening off the projecting tower to the southeast corner.
4) Masonry repairs to be carried out with lime mortar to approved specification, using stone salvaged from the fallen masonry on site.
5) Fallen masonry should only be reinstated where sound evidence can be found of its historic form. Aim should be to 'conserve' rather than 'restore' or 'reinstate'.
6) Repoint both side of wall to approved detail.
7) Surviving architectural features to be consolidated.
8) Flaunching of top of wall in lime mortar to approved detail to allow rainwater run-off

Proposed Works to the South Elevation

Condition

- The southern wall of the castle is the most intact, 16.7m-17.50m above the ground.
- The projecting tower survives to the southeast corner.
- The elevation is covered in ivy and vegetation.
- The window openings survive in varying condition, cut stone reveals to the windows of the projecting tower are missing.
- Mortar wash out has occurred in areas to the external and internal faces.
- Masonry has been robbed out at the base of the interior face and above the centrally positioned window at first floor level.
- Although covered in vegetation it appears that some masonry loss has occurred along the top of the parapet walls and crenelations.

Proposed repairs:

1) Following the erection of scaffolding, cut back ivy on both sides of the wall and allow to die back.
2) Consolidate masonry to the internal elevation where it has fallen away.
3) Loose masonry along the top of the surviving crenelations and parapets to be consolidated.

4) Masonry repairs to the window openings and arches to be carried out to prevent further deterioration.
5) Masonry repairs to be carried out with lime mortar to approved specification, using stone salvaged from the fallen masonry on site.
6) Fallen masonry should only be reinstated where sound evidence can be found of its historic form. Aim should be to 'conserve' rather than 'restore' or 'reinstate'.
7) Repoint both sides of wall to approved detail.
8) Surviving architectural features to be consolidated.
9) Flaunching of top of wall in lime mortar to approved detail to allow rainwater run-off

Proposed Works to the West Elevation

Condition

- Most of the west wall survives intact with a segmental-headed embrasure from the northern end.
- To the external elevation, a series of square putlog holes survive similarly to the south wall. They are spaced out in groups of three vertically.
- The elevation is covered in ivy and vegetation. It is difficult to ascertain the extent and condition of the surviving stepped crenelations along the parapet wall.
- The window openings survive in varying condition.
- Extensive mortar wash out has occurred to the external and internal faces.
- Masonry has been robbed out at the base of the interior face and above the centrally positioned window at first floor level.
- Masonry loss has occurred along the top of the parapet walls and crenelations.

Proposed Works

1) Following the erecting of scaffolding on both sides, cut back ivy and allow to die back.
2) Masonry repairs of the overhang to the northern end of the east wall.
3) Consolidate masonry to the internal elevation where it has fallen away.
4) Loose masonry along the top of the surviving crenelations and parapets to be consolidated.
5) Masonry repairs to the window openings and fireplace and chimney to be carried out to prevent further deterioration.
6) Masonry repairs to be carried out with lime mortar to approved specification, using stone salvaged from the fallen masonry on site.
7) Fallen masonry should only be reinstated where sound evidence can be found of its historic form. Aim should be to 'conserve' rather than 'restore' or 'reinstate'.
8) Repoint both side of wall to approved detail.
9) Surviving architectural features to be consolidated.
10) Flaunching of top of wall in lime mortar to approved detail to allow rainwater run-off

Interior of the castle

Condition

- Fallen masonry of the historic collapses of the castle lies within the interior of the structure, covered by organic growth.
- Remains of the north wall and fallen sections to the north of the east and west walls survive at low level although densely covered in vegetation. It is difficult to ascertain the condition.
- Vegetation is present to the underside of the barrel vault.

Proposed Works

1) Subject to NMS approval, build of debris and fallen masonry inside the castle to be cleared back to the historic floor level under supervision of the project archaeologist.
2) Loose masonry to be sorted for use in the consolidation of the upstanding masonry walls.

Conservation Approach

The conservation works are to be carried out in consultation with the National Monuments Service in the Dept of Housing Local Government and Heritage (DHLGH) and will be overseen by an archaeologist and a Grade 1 accredited conservation architect.

Kilgobbin Castle is a site of architectural, archaeological and historical significance. It is a Recorded Monument, protected under the National Monuments Act 1930-2004. All repairs and must therefore be executed to conservation standard.

The following principles must be adhered to:

- Repairs to be carried out in accordance with the principle of 'minimal intervention'.
- Repairs to original elements to be favoured over replacement.
- Where replacement is unavoidable, this should be historically accurate in form, material and construction technique.
- Modern interventions should be visually identifiable and reversible.
- New work to be recorded in progress photographs.
- Works to be carried out by suitably skilled craftspeople having proven expertise working with historic buildings in their trade.
- Conservation architect to be consulted in advance on all matters relating to removal of historic fabric, repair materials, methods and details.

Lime for mortar and render

- Lime for pointing and bedding mortar to be natural hydraulic lime (NHL)

  NHL 2: Weaker, fatter, more breathable and flexible
  NHL 3.5: Suitable for most exterior work
  NHL 5: Stronger, less breathable and flexible, for very exposed conditions

  Manufacturers: St. Astier to be used as 2022

- Suppliers: Traditional Lime Company, Rath, Shillelagh Road, Tullow, Co. Carlow.
  Contact Edward Byrne, tel. 059 915 1750, email: info@traditionallime.com,
  www.traditionallime.com
- Mix proportions: 2.5 parts sand to 1 part NHL 2 or NHL 3.5 lime as binder.

NB: Apart from water, no other additives to be used.

- Alternative: Non-hydraulic lime putty. Consult architect for correct use.
- Sand: Coarse, sharp, well-graded from 6mm particles down to fine sand, to ensure volume of voids as small as possible. Darker particles will lessen the whiteness of the mortar. Sample to be approved in advance by architect.

  Sand to be hard, durable, clean and free from adherent coatings such as clay. Ideally source sand from local sand pits.
- Proportion of water to binder to be the least possible required to give mortar of adequate workability.
- Mortar to be very well mixed, 'balling' to be avoided. If using a drum mixer, mix for at least 20 minutes and take particular care to avoid adding too much water.
- Leave mortar to stand for 20 minutes to allow lime to "fatten up" and improve its workability. Mix again briefly with shovel or mixer immediately before using.
- Use all hydraulic mortar within 2 hrs of mixing. Do not knock up, re-temper or use mortar that has begun to stiffen.
- Do not use if air temperature is at or below 5°C and falling, or below 3°C and rising. Maintain work above freezing until fully hardened.

Stonework repair

- Works to be carried out by an experienced conservation mason approved by the design team.
- Clean down exposed surfaces of stonework and remove all loose mortar and biological growth.
- Lime mortar to be used as described above. No mortars using Portland cement to be used.
- Build up stone walls course by course.
- Build outer and inner faces with larger rubble stones with smooth face outwards following horizontal lines of existing courses. Stones to be laid with longer flat side down. Smaller stones to complete spaces between larger stones and bring top of course to a horizontal line. Small stones to be set to prevent rocking of larger stones.
- Bedding: Sedimentary stone such as limestone and sandstone has been formed in layers. These stones should be laid with their natural bedding layers running horizontally. Face or edge bedding can lead to spalling or cracking of stone.
- Bond: Ensure vertical joints are spanned by larger stones, do not allow vertical joints to continue from one course to next.
- Build up core of wall carefully with rubble bonded to face stone as wall rises course by course.
- Ensure that 'through-stones' which bind inner and outer faces together are maintained, ideally one per m2 of wall. Where through stones are not possible provide 'bond stones' which extend into the core of the wall with short edge out. Tilt through-stones and bond-stones slightly outwards to expel water.
- Insert 'pinnings' or chips of stone into wider joints at end of days' work while mortar is still wet. Pinnings to reduce width of joints to optimum with of 12-20mm. Wider joints will tend to shrink and crack. In vertical joints pinnings to be tilted outwards.
- Mortar to be finished flush to surface of stone or slightly recessed where arises (edges) are rounded. Finished joint to be beaten with a stiff brush to close shrinkage cracks and expose sand aggregate.

Pointing repairs

NB: Pointing to be limited to areas where loss of mortar has compromised the integrity of the masonry.

- No historic mortar to be raked out. Only loose or failed mortar to be replaced.
- Bat protection: Check crevices with torch before pointing. If roosting or hibernating bat are present halt works and contact the project bat specialist or local NPWS ranger.
- Repoint only where existing pointing has been washed out and stability of stonework is affected, or where new render is to be applied. Retain open crevices which can be used as bat roosts. Do not remove sound pointing for sake of visual uniformity. Areas to be repointed to be identified in consultation with architect.
- Rake out loose mortar with hand tools, retaining any 'pinnings', i.e. chips of stone set into joints. Avoid use of power tools (exercise extreme care in cases where use is approved by the architect).
- Remove any ferrous items. Any traces of mould oil to be removed from surfaces by scrubbing with water containing detergent and rinsed with fresh water.
- Dry-brush to remove all loose particles. Remove all organic growth from within the joint.
- Dry masonry can draw moisture from lime mortar before it has cured and cause it to crumble and fail. Dampen surfaces as well as necessary to equalise suction before pointing. Particular attention must be paid to more absorbent areas. Surfaces must be wetted and re-wetted as work proceeds.
- Mortar to be of lime-sand in proportion 1:2.5 using traditional hydraulic lime NHL 3.5 and coarse sharp sand aggregate from local sand pits. No mortars using Portland cement to be used.
- Pinnings (chips of stone) to be inserted into wider joints to ensure a maximum joint width of c. 20mm.
- Joints to be pointed flush to surface of stone or slightly recessed where arises are rounded.
- Finished joint to be beaten with a stiff brush to close shrinkage cracks and expose sand aggregate.

Protection of lime work

- Setting of lime mortar occurs primarily by carbonation (i.e. contact to CO2 in the air with very gradual release of water). Full carbonation will take several weeks, and it is important that the mortar is protected from rapid drying out. Work should be carefully covered at the end of day's work with damp hessian sacking and polythene sheets to ensure that render/plaster/pointing does not dry out before it cures.
- Extra care must be taken with porous masonry and in warm or windy weather conditions.
- To ensure adequate setting, work must be protected at all times from frost, rain, sunlight and drying winds for 2 days in summer, and up to 7 days in winter using tarpaulin and straw.
- Keep finished work damp by spraying intermittently with clean water.

Health and safety using lime

- All lime and lime mortars are caustic and can dehydrate the skin. When using wear gloves, goggles, protective overalls, and if handling over prolonged periods barrier cream to protect exposed parts of the body.
- When using bagged lime in powder form, wear a dust mask to protect the lungs.
- All lime on the skin should be washed off as soon as possible. Keep a supply of clean water close at hand.

- Lime in the eye should be removed immediately and the eye washed out with distilled or clean water for at least 20 minutes. An eye wash bottle should always be kept at hand for this purpose.
- Seek medical attention where washing out does not alleviate the injury.

Bat Protection

- Bats are protected species under Irish and EU law. It is an offence to harm a bat, or its resting or breeding roost, or to block access to these roosts, even if such harm is done unintentionally (Wildlife Act 1976, amended 2000).
- All site operatives to be made aware of procedures specified for protection of bats.
- All site procedures to be carried out in close consultation with the project bat specialist and in accordance with the Derogation Licence where relevant.

Reusing collapsed masonry

- All works to ground surfaces around the base of walls, inside and outside, including retrieval of fallen stone to be monitored by the project archaeologist to ensure no archaeological impact, and to ensure that any unexpected findings discovered during the works are fully recorded
- No archaeological material or deposits will be excavated, should any be encountered.

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