1 CONTENTS

2 INTRODUCTION

Ecology Research and Solutions have undertaken extensive bat surveys on a private dwelling in Aghadoe, House, Knoppoge, Aghadoe, Killarney, Co. Kerry. The building is a protected structure. It is listed in the Kerry County Development Plan 2022-2028 Record of Protected Structures (RPS) under the reference number 2130661. The building has recently changed ownership, with the new owners to seeking to carry out conservation and renovation works on the building, in order to make it their family home. Along with extensive internal works and demolitions, there are planned upgrades and rebuilds to the many roofs of the building, to rectify that damage that has occurred over the years due to a lack of maintenance.

2.1 NAME, QUALIFICATIONS AND RELEVANT EXPERIENCE OF SCIENTIFIC STAFF

Table 1. Qualifications and experience of the team.

Name	Qualifications	Experience	Role
Rory Dalton	BSc (Hons) Ecology and Environmental Biology	13 years as a multidisciplinary ecologist, with extensive bat surveying experience accumulated over those years.	Application preparation, surveys.
Mick O'Connor	BSc (Hons) Wildlife Biology	3 years' experience as a multidisciplinary ecologist, with numerous bat surveys undertaken in that time.	Application preparation, surveys.
Tadhg Healy	BSc (Hons) Ecology and Environmental Biology	7 years' experience as a multidisciplinary ecologist with a particular focus on bats during the active season.	Survey lead
James Ambrose	BSc (Hons) Ecology and Environmental Biology	10 years + as a multidisciplinary ecologist, with extensive bat surveying experience accumulated over those years.	Surveys.

3 BACKGROUND

3.1 SITE, LOCATION AND OWNERSHIP

The subject site comprises Aghadoe House and associated structures at Knoppoge, Aghadoe, Killarney, Co. Kerry. The estate includes the principal house— a two- and three-storey Romanesque-style, cut-stone residence— together with the Gate Lodge (c.1828) and a later Lodge north of the main house. Until recent times the main house operated as a youth hostel (An Óige). The property is now in private ownership, the applicants having

acquired the estate in 2024 with the intention of restoring Aghadoe House to residential use as their permanent family home (Conservation Report, 2025).

3.2 Heritage Status

Aghadoe House and its associated structures are designated Protected Structures in the Kerry County Development Plan 2022–2028 and are also recorded in the National Inventory of Architectural Heritage (NIAH). The listings are as follows:

- **21306614 / RPS-KY-0569** — *Aghadoe House (Old)*
- **21306615 / RPS-KY-0570** — *Aghadoe House (Gate Lodge and Gateway)*
- **21306616 / RPS-KY-0571** — *Aghadoe House (New)*

The NIAH assigns the property a *Regional* rating, identifying special interest under the categories of architectural, artistic, historical and social (NIAH, 2022). These designations confirm the cultural significance of the property and its curtilage and impose a statutory duty to conserve its character, fabric, and setting. All proposed works are therefore framed in accordance with the conservation objectives of the Development Plan and national policy guidance (Kerry County Council, 2022; DHPLG, various).

3.3 Historical Context

The original house dates to c.1828, with refurbishment in the 1860s and rebuilding following fire damage in 1922. The nineteenth-century development of the house and demesne is documented in contemporary sources, which also evidence a more intricate historic roofscape and fenestration patterns than exist today. The twentieth century saw multiple phases of alteration to accommodate hostel use (Conservation Report, 2025).

3.4 Current Context and Condition

The Conservation Report summarises the building as structurally sound in its primary masonry fabric but notes significant localised failures associated with the roofs, chimneys, valleys, flashings and flat roofs, with consequential water ingress, wet rot in rafters/joists/wall plates, and confirmed active woodworm infestation in roof timbers (Conservation Report, 2025). A specialist timber survey identifies blocked/leaking valleys, porous chimneys requiring repair, areas of defective roof timbers requiring cut-out and replacement, poor-condition flat roofs, and window defects.

A separate structural engineer's report further corroborates these findings, recording porous chimneys with failed cappings/flashings, leaking valleys, wet-rot-affected timbers, and flat-roof failure—together constituting a pattern of progressive structural risk. The engineer advises replacement of the flat roofs and targeted replacement of affected pitched-roof sections, noting deterioration will certainly worsen if untreated (Sheehan, 2025).

3.5 Type of Proposed Activity

The proposed activity comprises:

- Change of use from youth hostel to private dwelling;
- Demolition of a later poor-quality rear addition;
- Conservation repairs to chimneys, cappings/flashings, natural slate re-roofing, timber repairs/replacement where defective, stonework repairs, and repair/upgrade of timber sash windows;
- Material alterations to reinstate historic features where supported by evidence (e.g. natural slate roofs, original fenestration); and
- A single-storey extension of contemporary but sympathetic design (Conservation Report, 2025).

The roof strategy includes phasing and sectional working so that parts of the roof remain available to roosting bats throughout, with the intention to commence the main works in October (after the maternity season), under ecological supervision and with bat-safe materials and access arrangements (NPWS, 2006; European Commission, 2021).

3.6 Need for the Proposed Activity

The need for the proposed activity arises from urgent public health and safety concerns identified through the *Structural Engineer's Report* (Sheehan, 2025) and the *Conservation Report* (2025).

Specifically:

- **Active fabric and structural failure** — porous and leaking chimneys, failed valleys, extensive wet rot in roof timbers and wall plates, and flat roofs that have "completely failed," creating a hazard from falling debris or partial collapse (Sheehan, 2025);
- **Ongoing deterioration of structural integrity** — loss of load-bearing capacity in rafters, purlins, and roof junctions that now pose a risk to occupants, visitors, and contractors; and
- **The necessity to stabilise a Protected Structure** to remove immediate danger while securing its long-term conservation in compliance with the *Planning and Development Acts 2000–2023* and *S.I. No. 477 of 2011* (Habitats Directive 92/43/EEC).

Both reports conclude that timely intervention is essential: localised patching is inadequate, delay would expand the scope and cost of future works, and controlled, phased repairs carried out now represent the least harmful option for human safety, heritage fabric, and bat conservation (Conservation Report, 2025; Sheehan, 2025).

The following photographs and conclusions are taken directly from the engineer's report (Sheehan, 2025). In his conclusion, he references *Figure 2* of that report, which corresponds to *Figure 2* in this document and illustrates the roof areas of greatest structural concern and the proposed phasing of works

“Conclusion

- We would like to draw attention to *Fig 2 Proposed Roof Plan.*
- It is our recommendation that the sections outlined in yellow have significant structural issues caused by wet rot. There is no immediate risk of collapse, but if left untreated, this well certainly change.
- Having reviewed the works required, we advise total replacement of all flat roof, and a total replacement of the areas outlined in yellow.
- We are reasonably satisfied that the areas outlined in blue can have localised repair works, and localised reinforcing works, and these sections of roof can be retained.” (Sheehan, 2025)

1) 

2) 

Photos 1, 2 & 3 show water egress from the chimneys. This has affected the timbers in these areas which will need complete replacement

1) 

2) 

3) 

4) 

5) 

6) 

Photos 4-8 show a selection of photos of the valleys and hip which have excessive water egress. This will require complete replacement in the affected areas. This is very prominent in the areas which require complete replacement.

1) 

2) 

Photos 9&10 show ends of rafters and joists in the section to be replaced which are affected by wet rot. and will require replacement.

3) 

4) 

A lot of the cause of valleys leaking has been lack of maintenance. The rotting of the facia & soffits has continued to the rafters & joists as shown in photos 9 & 10.

5) 

6) 

The flat roof sections have completely failed and requires complete replacement. This is common for flat roofs in any case.

3.7 Planning History

Historic alterations include nineteenth-century refurbishments, partial rebuild after the 1922 fire, and late-twentieth-century hostel adaptations (Conservation Report, 2025). In 2019, permission was granted for redevelopment of the outbuildings as a distillery/visitor facility (Ref. 19/565), extended in 2024; these works are outside the scope of the current residential project (Kerry County Council, 2022).

3.8 Policy Context

The proposals are framed by conservation principles of minimum intervention, repair over replacement (when feasible), reversibility, appropriate materials, and keeping the building in use (DHPLG, various; EUROBATS, 2018). The design approach adopts these principles in all proposed works.

At county level, the Kerry County Development Plan 2022–2028 supports the conservation and repair of protected structures, encouraging viable use while safeguarding significance (Kerry County Council, 2022). The proposals—returning the building to residential use while repairing and reinstating character—are consistent with these objectives.

3.9 Zoning / Development Plan Designations

The application site falls within M4 – Built-Up Area, with the surrounding grounds designated for Landscape Protection and Woodland Preserve under the Fossa Local Area Plan 2018–2024, as read with the County Development Plan (Kerry County Council, 2022).

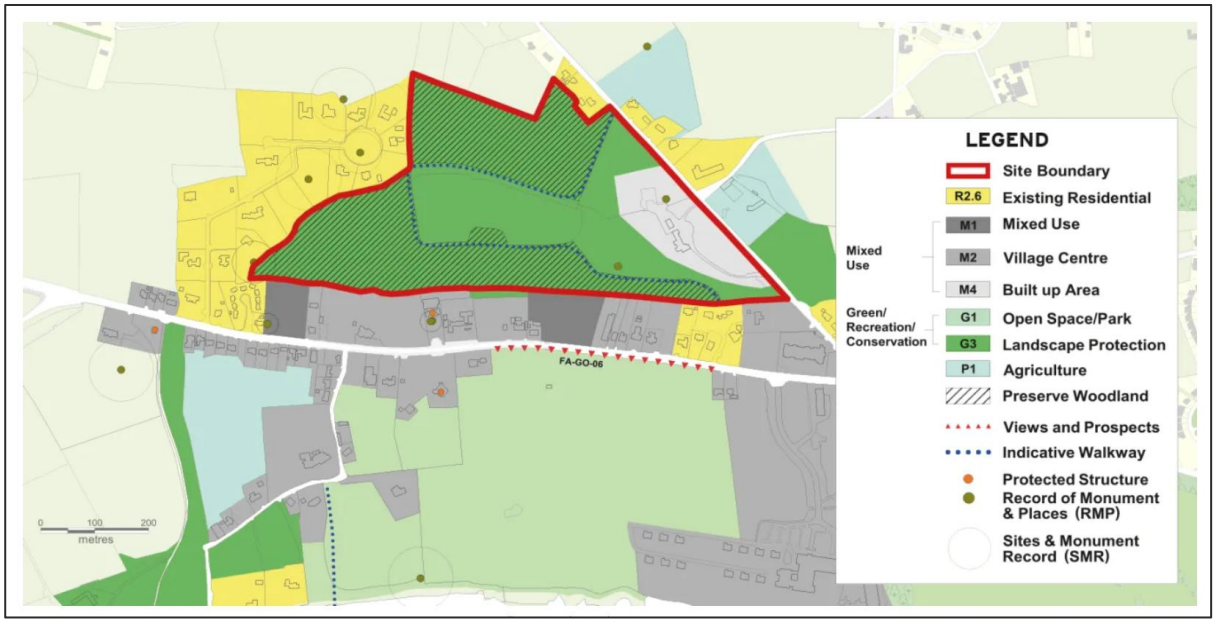


Figure 1. Zoning map.

3.10 Summary and Rationale

In summary, the proposed works are necessary, proportionate, and fully compliant with heritage and ecological policy. They respond directly to verified public health and safety risks arising from structural defects—water ingress, decayed and weakened timbers, and failed flat roofs—that now endanger persons and property (Sheehan, 2025; Conservation Report, 2025).

The activity comprises essential stabilisation and conservation repairs delivered under best-practice conservation and ecological supervision, in line with the *Bat Mitigation Guidelines for Ireland* (NPWS, 2022), *BCT Good Practice Guidelines* (Collins, 2023), and *EUROBATS Guidelines for Consideration of Bats in Building Renovation Projects* (2018). Phased, hand-stripped works beginning in October will ensure bat-sensitive timing while eliminating the structural hazards identified.

The project will remove an identified safety risk, secure the building's long-term stability and use, and maintain or enhance its value as a bat roost through retention and improvement of roost features. The approach achieves both statutory safety objectives and the conservation of a Protected Structure, delivering a neutral-to-positive outcome for heritage and biodiversity (Berthinussen et al., 2021; European Commission, 2021).

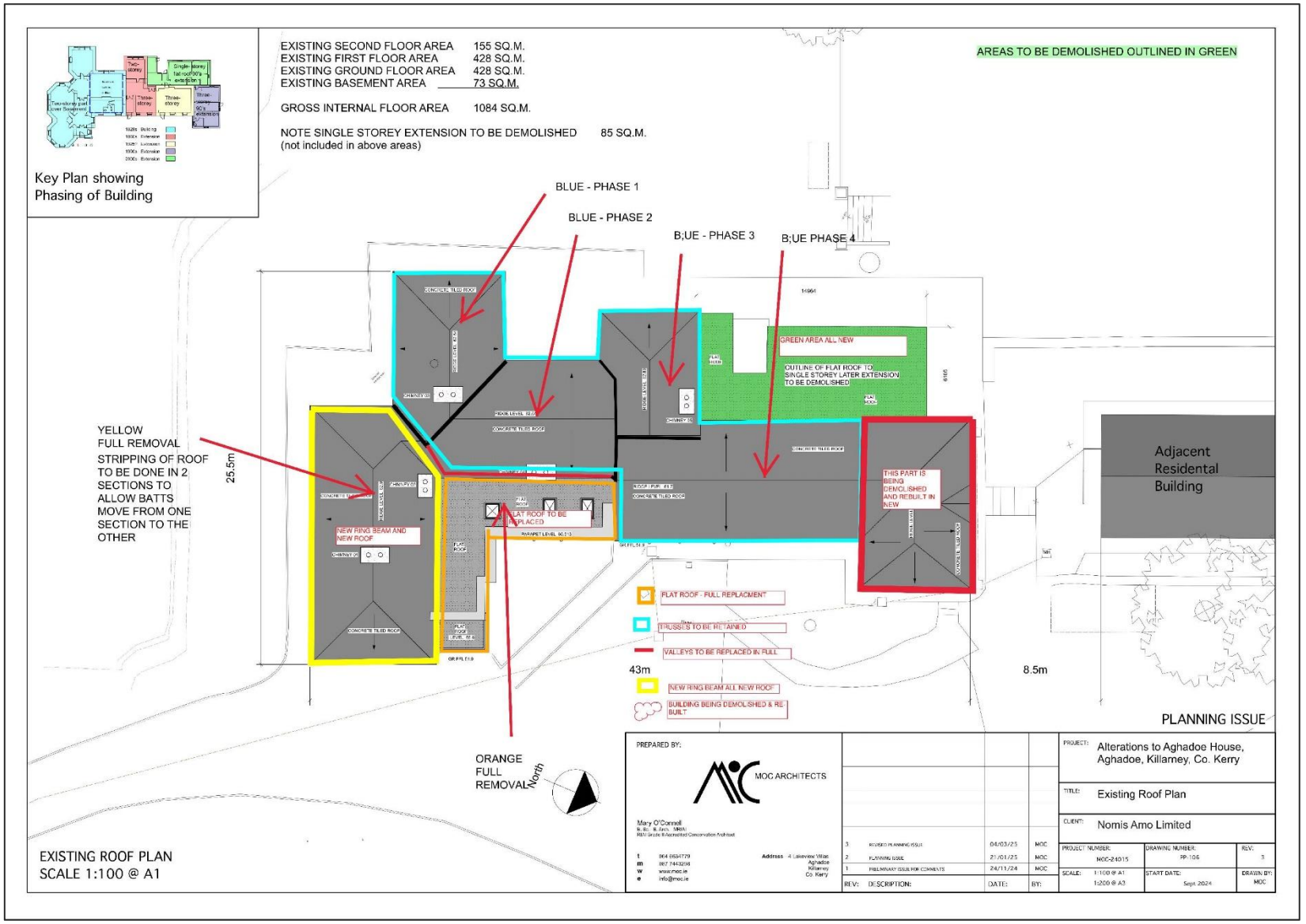
4 FULL DETAILS OF PROPOSED ACTIVITY

The proposed activity involves a programme of roof and timber repairs, chimney reinstatement, stonework conservation, and limited extensions, required to address structural defects that now pose a public health and safety risk. These include long-standing water ingress, extensive wet rot in roof timbers, and active woodworm infestation leading to the progressive weakening of load-bearing elements (Sheehan, 2025; Conservation Report, 2025).

The works are essential to remove the identified safety hazard and to stabilise the building fabric while conserving the architectural and ecological value of this Protected Structure. All interventions will be undertaken in accordance with the *Bat Mitigation Guidelines for Ireland* (NPWS, 2022) and *BCT Good Practice Guidelines* (Collins, 2023), under the direct supervision of a licensed bat ecologist.

A phased, hand-stripped methodology will be adopted to ensure that safe working conditions and ecological safeguards are maintained throughout. Existing bat roost features will be retained or reinstated, and temporary roost boxes will be provided in advance of works. The programme will commence in October, following the maternity season, and will proceed sequentially so that suitable roosting refuge remains available at all times.

Figure 2. Proposed roof plan



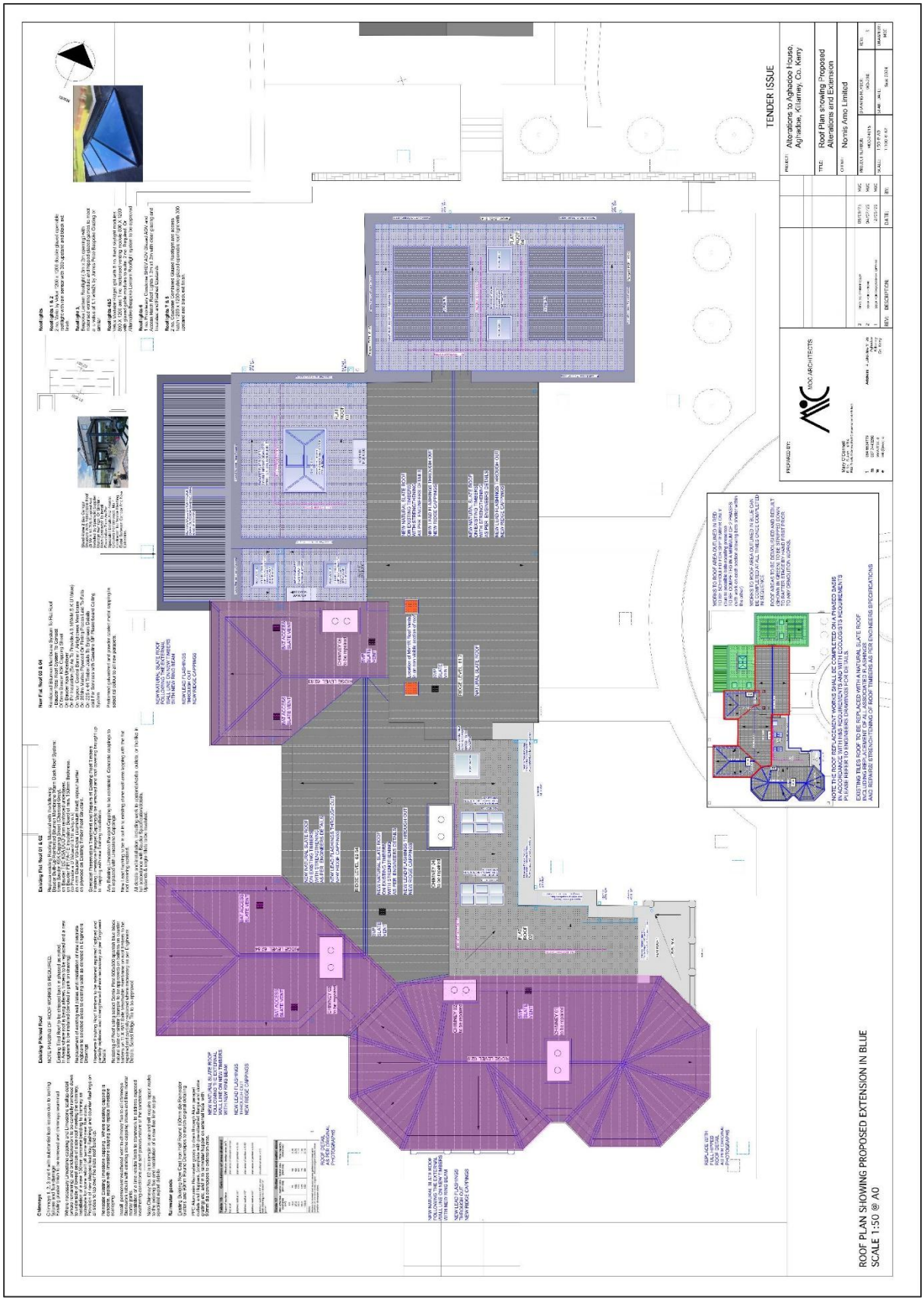


Figure 3. Detailed plans

4.1 SCOPE OF WORKS

The proposed works are required to eliminate active structural hazards and secure the long-term safety of the building, while conserving its architectural and ecological value as a Protected Structure. All works will be undertaken under the supervision of a licensed bat ecologist and in accordance with the *Bat Mitigation Guidelines for Ireland* (NPWS 2022), *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins 2023), and the *EUROBATS Guidelines for Consideration of Bats in Building Renovation Projects* (2018).

4.1.1 Roof repairs (general)

The pitched roofs are in poor structural condition due to prolonged water ingress, defective valleys, and timber decay. These areas will be carefully dismantled and repaired under ecological supervision. Works include removal of defective chimneys, perished cappings, and failed flashings, followed by reinstatement using lime-based mortars and new lead flashings. Roof valleys will be rebuilt to traditional profiles. Decayed rafters, purlins, and wall plates will be replaced with new bat-safe timber sections of matching dimensions. Roof coverings will be fully hand-stripped and re-slated in natural slate matching the original, in accordance with the *Conservation Report (2025)*, ensuring structural safety and architectural integrity.

4.1.2 Flat roofs

The flat-roofed sections of Aghadoe House have completely failed, both structurally and in terms of weatherproofing, as confirmed by Sheehan (2025). Widespread moisture ingress has led to timber decay, loss of decking integrity, and deterioration of adjoining ceiling joists. In their current state, these areas pose a significant health-and-safety hazard from potential collapse or falling debris during high-wind events. All failed flat-roof structures will be fully dismantled and replaced with new engineered assemblies incorporating appropriate structural falls, thermal insulation, and continuous drainage detailing to modern standards. New timber joists will be dimensioned to the original spans and set out to replicate the roofline, ensuring visual continuity while achieving adequate load capacity. Replacement coverings will use a breathable, conservation-grade bituminous system with a vapour-permeable membrane (e.g. Bauder TEC KSA DUO or equivalent) on marine-grade plywood decking. All parapet interfaces and junctions will receive new lead or stainless-steel flashings dressed into lime-mortar beds. Flat-roof replacement will proceed in short, discrete phases to allow ecological checks before and after stripping; the supervising ecologist will inspect voids for roosting bats before any section is removed.

4.1.3 Southern-most pitched roof (complete replacement)

The southern-most pitched roof, which encloses the hexagonal section of the building, has been assessed as structurally unsalvageable. Extensive wet rot, failed valleys, and decayed wall-plate junctions have resulted in loss of structural integrity. Although collapse is not yet imminent, Sheehan (2025) concludes that failure is inevitable if untreated. This section will therefore be fully replaced to remove the public-safety risk while reinstating the building's original form and proportions. Works will include the installation of a new reinforced ring beam at wall-plate level, new principal rafters, purlins, and hips in graded structural softwood (strength class C24 or better) pre-treated off-site with boron preservatives. All

design details will replicate the original roof geometry, using traditional mortise-and-tenon and splayed-scarph joints where feasible. Roof coverings will be hand-laid natural slate on battens over a breathable underlay (TLX Batsafe or bitumen 1F) with lime-mortar ridge bedding. To maintain ecological continuity, the roof will be replaced in two sequential halves, ensuring that at least one half remains intact and available for roosting at all times. The licensed ecologist will inspect cavities and soffit voids during dismantling, and temporary multi-chamber bat boxes will be installed on adjacent elevations prior to commencement. Following completion, integrated bat-access slates will be incorporated on south-facing slopes, connecting to open roof voids to provide permanent roost opportunities.

4.1.4 Timber replacement and woodworm management

Active wood-boring insect (woodworm) infestation has been confirmed in several roof timbers and ceiling joists. These timbers exhibit surface frass, exit holes, and localised structural weakness. In their current condition, they represent a continuing safety hazard and a potential vector for further deterioration of sound timber elements. Infested and structurally unsound timbers will be removed and replaced in a controlled, phased sequence, following a "soft-strip" methodology under ecological supervision. Where feasible, partially affected timbers will be spliced or sistered rather than wholly replaced to minimise disturbance to existing fabric and any potential bat roost cavities. To protect bats, no in-situ chemical treatment will be used. Instead, replacement timbers will be pre-treated off-site with a boron-based preservative, which is non-toxic to mammals and compatible with breathable lime-based construction. Timbers will match the original species (European redwood or whitewood) and section sizes to ensure structural equivalence and aesthetic consistency. All removed material will be disposed of safely to prevent re-infestation. During works, the ecologist will inspect each exposed section for bat presence before removal, and any bats found will be transferred to temporary roost boxes and released at dusk. This controlled approach will both eliminate a current structural and health risk and ensure continuity of roost potential within the restored roof fabric.

4.1.5 Stonework repairs

Defective masonry, including open joints and failed pointing, will be repaired with lime-based mortars matched to the historic fabric. Chimney stonework, parapets, and gables will be consolidated or reinstated as needed. These works will secure the masonry envelope against further water ingress and decay while maintaining breathability and reversibility.

4.1.6 Windows and Joinery

The building retains multiple timber sash windows, many of which are deteriorated. Repair will be prioritised, with splicing-in of sound timber to replace decayed sections. Where beyond repair, new joinery will replicate historic profiles and details. Ironmongery and glazing will be upgraded to improve functionality while maintaining heritage value. Other joinery elements, such as soffits and fascias, will be repaired or replaced in sympathetic materials.

4.1.7 Extensions and Alterations

Later poor-quality rear additions of no architectural merit will be demolished. A new single-storey extension will be constructed in a clearly contemporary but sympathetic style, distinguishable from the historic structure but subordinate in scale. Internal services will be upgraded, with heating, ventilation, and discreet renewable energy technologies incorporated in line with conservation guidance.

4.2 MITIGATION MEASURES

All mitigation has been designed to ensure that essential health-and-safety repairs can proceed without detriment to the maintenance of the local bat population at favourable conservation status. Measures follow the *Bat Mitigation Guidelines for Ireland* (NPWS 2022), *BCT Good Practice Guidelines* (Collins 2023), and *EUROBATS Guidelines for Consideration of Bats in Building Renovation Projects* (2018).

4.2.1 Ecological supervision and induction

Before commencement, all contractors will attend a formal bat-ecology induction led by the licensed ecologist. The session will outline legal protections for bats, the ecological sensitivities of the site, correct handling procedures, and the stop-work protocol. A pre-works verification survey will confirm current roost use immediately before construction. A licensed bat worker will be present for the first day of roof opening, remain on call throughout, and complete daily briefings with the site manager. Any bats encountered will be handled under NPWS licence, placed in a dark holding box or pre-installed roost box, and released at dusk. All encounters will be logged and reported to NPWSPre-works checks

4.2.2 Pre-works checks

Each roof section will be subject to dusk emergence and dawn re-entry surveys immediately prior to opening. Works will only proceed if conditions are suitable and if no bats are detected in the active section. Roof opening will not occur in cold, wet, or windy weather that could increase risks to displaced bats.

4.2.3 Roof phasing and staging

The roof will be hand-stripped in staged sections, never removed in its entirety. The ecologist will inspect each section as it is opened, allowing immediate safeguarding of any bats discovered. This sequencing ensures continuous refuge within the building, preventing full displacement. The modular roof design facilitates this sectional approach. Phasing will be agreed jointly by the project manager and the ecologist. The method mirrors successful precedent projects—Kylemore Gothic Church, Co. Galway (NPWS 2006 Case Study 6) and The Vyne, UK (Historic England 2020)—which demonstrated that phased reroofing can maintain colonies in situ. A wider synthesis (Berthinussen et al., 2021) found 67 % of colonies re-used retained or modified roosts under comparable mitigation.

4.2.4 Temporary roost provision

At least two multi-chamber Woodstone bat boxes will be installed on warm, sheltered south- or southeast-facing elevations (3–5 m height) at least two weeks before works begin. These provide immediate alternative roosts during construction and will remain for a

minimum of two years post-completion. Boxes will be inspected annually and maintained in good condition.

4.2.5 Gate Lodge

Although previously assessed as unsuitable for roosts, the Gate Lodge attic will be inspected once scaffolding provides safe access, ensuring no bats are present before works continue.

4.2.6 Access points

Historic openings that currently provide bat entry will be reinstated or re-created following repair. At least two Habibat bat-access slates will be fitted on the southern attic roof approximately 300 mm below the ridge, aligned with internal rafters to aid climbing. Roof underlay will be cut to connect these openings to internal voids. Where original crevices are sealed for structural reasons, equivalent openings of similar dimension will be created nearby.

4.2.7 Materials and membranes

Roofs above or adjacent to roosting areas will be finished in bitumen 1F felt, which is proven bat-safe. Where a breathable membrane is unavoidable, only TLX Batsafe or equivalent will be used; all other BRMs are prohibited. Timbers will be pre-treated off-site with boron-based preservatives only. No permethrin, pyrethroid, or solvent-based chemicals will be applied. Insulation will consist of rigid PIR boards or contained mineral-roll types, leaving accessible cavities between rafters. Expanding foams will not be used within roost zones; lime mortars and bat-safe sealants will be substituted.

4.2.8 Physical controls during works

Hand tools will be used within 2 m of known or potential roost features to avoid vibration and noise. Newly opened voids will be covered immediately with breathable hessian to prevent accidental entry. Scaffold netting will be tensioned to avoid sagging and entanglement. Bird spikes, sticky gels, or deterrents will not be used near roost access points. No works will occur between 30 minutes before sunset and 30 minutes after sunrise on roof sections with bat potential.

4.2.9 Lighting

No external lighting will be installed near roost access points. Temporary scaffold lights will be switched off at dusk. Any essential safety lights will be PIR-controlled, warm-coloured (2700 K), low lux (<5), fully shielded, and directed downwards. The site compound will be positioned away from bat commuting routes to prevent light spill.

4.2.10 Monitoring and reporting

Post-works monitoring will be carried out through emergence surveys in Year 0 and Year 1, with Year 2 if requested. Internal inspections with an endoscope will confirm use of bat access slates. A detailed log of bat encounters will be maintained, and a completion report will be submitted to NPWS with mitigation details, incidents, and monitoring results.

4.2.11 Contingencies

If a maternity roost is found in any roof section, works will pause and be rescheduled for after the maternity period. If a hibernation cluster is found, works will also pause until bats disperse naturally or until an NPWS-approved exclusion is in place.

5 Ecological Survey and Site Assessment

5.1.1 a. Pre-existing information on species at location and environs

Available records from NPWS datasets, the National Biodiversity Data Centre (NBDC), and previous ecological assessments indicate the presence of several bat species in the wider Killarney area (NPWS, 2006; NBDC, 2025). The local landscape of mature woodland, pasture, and proximity to Lough Leane provides excellent foraging habitat and connectivity to designated SAC sites. Discussions with NPWS staff confirmed a known lesser horseshoe bat (Rhinolophus hipposideros) roost in nearby woodland. During the present surveys, lesser horseshoe bats were also recorded commuting near the Gate Lodge and road entrance, though not in proximity to the main house itself. This confirms the site lies within the foraging range of this sensitive Annex II species.

5.1.2 b. Status of the species in the local/regional area

The Killarney region supports significant populations of common and soprano pipistrelle (*Pipistrellus pipistrellus*, *P. pygmaeus*), brown long-eared (*Plecotus auritus*), and Leisler's bat (*Nyctalus leisleri*) (Berthinussen et al., 2021). Kerry also holds nationally important populations of lesser horseshoe bat, with local roosts contributing to the long-term conservation of the species in Ireland (NPWS, 2006). These populations are considered of at least regional to national significance. Accordingly, even small or intermittent roosts within the Aghadoe House complex make a meaningful contribution to the wider population.

5.1.3 c. Objectives of survey

The surveys sought to:

- Confirm presence or absence of roosting bats in Aghadoe House and associated structures;
- Identify active and potential access points;
- Determine species composition and conservation value;
- Assess impacts of proposed works;
- Provide data to inform mitigation and compliance with Regulation 54(2) derogation tests (NPWS, 2006).

5.1.4 d. Description of Survey Area

The survey area comprised the main house (attics, roof voids, eaves), the Lodge, and the Gate Lodge, as well as immediate grounds. The main house includes large attics with pitched and flat roof elements, providing crevice and void roost opportunities. The Lodge and Gate Lodge offered more limited roost potential, the latter being damp and structurally compromised. The surrounding parkland with mature trees supports commuting and foraging routes (Collins, 2016).

5.1.5 e. Survey methodology

Surveys followed *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016), NPWS *Bat Mitigation Guidelines* (2006), and EUROBATS guidance (EUROBATS, 2018). Methods included:

- **Daytime hand-searches** (13/05/2025): internal and external inspection of accessible voids for droppings, staining, feeding remains, and roost signs. Endoscope used to check deep cavities.
- **Emergence surveys:** 10 dusk/dawn surveys carried out by 2–4 ecologists, covering potential access points in rotation, beginning 30 minutes before sunset and continuing up to 1.5 hours after.
- **Static monitoring** (13/05–18/05/2025): SM2/SM4 static detector deployed in the attic, with data analysed using SonoBat software.
- **Motion-sensing trail cameras** placed in attic voids.
- **Climate data** recorded at each survey session.

Limitations:

- The Gate Lodge attic could not be fully inspected due to structural instability.
- Weather conditions limited activity during one dawn survey.

This mixed-method approach is in line with best practice (Collins, 2016; EUROBATS, 2018) and ensures robust assessment of roost use.

5.1.6 f. Survey results

Figure 4. Location of bat droppings found, and positions of detection equipment.

- **Emergence surveys:** No bats were directly observed exiting identified access points. However, bats were repeatedly recorded flying close to all buildings, with continuous activity during survey windows.
- **Species recorded flying on site:**
    - Soprano pipistrelle (*P. pygmaeus*)
    - Common pipistrelle (*P. pipistrellus*)
    - Lesser horseshoe (*R. hipposideros*) — commuting near Gate Lodge/road entrance
    - Leisler's bat (*N. leisleri*)
- **Manual search:** Moderate accumulations of droppings found in the southern attic of an added extension (highlighted in blue in figure 4), smaller quantities in the northern attic of added extension (highlighted in red-dash in figure 4). Droppings varied in age, with some fresh, indicating recent use. No evidence of roosting in the Lodge or Gate Lodge.
- **Static detector:** Brown long-eared bat (*Plecotus auritus*) calls recorded in the southern attic space of the added extension (highlighted in blue) space on one night, indicating the presence of at least a single individual. Calls were faint, consistent with the species' quiet echolocation.
- **Trail cameras:** No bats directly observed in attic voids.

- **Other species:** Pine marten (*Martes martes*) evidence found in the attic (scat, bones, crow remains). Predation pressure may explain limited bat presence despite suitable conditions.

Figure 5. Significant piles of bat droppings.

Figure 6. Evidence of pine martin. Crow feathers and scat were found.

5.1.7 g. Population size class assessment

Based on droppings, acoustic detections, and direct observations, Aghadoe House supports a small day/maternity roost of brown long-eared bats, with probable intermittent use by pipistrelles. Fresh and historic droppings suggest periodic occupation, potentially as a transitional or mating roost. The roost is assessed as small (<50 individuals) and of local conservation value, but contributes to the wider roost network in the Killarney area. The confirmed presence of commuting lesser horseshoe bats nearby further increases the ecological importance of maintaining roost potential at the site (NPWS, 2006; Berthinussen et al., 2021).

6 Evidence to support the Derogation Tests

6.1 Test 1

6.1.1 (i) Explanation of selected reason

The application seeks a derogation under Regulation 54(2)(c) of the *European Communities (Birds and Natural Habitats) Regulations 2011* (as amended), namely:

"in the interests of public health and public safety, or for other imperative reasons of overriding public interest."

This reason has been selected because the condition of Aghadoe House now represents a credible and immediate safety hazard to persons entering or working in or near the building. The *Structural Engineer's Report* (Sheehan, 2025) identifies widespread structural defects, including:

- Extensive wet-rot decay affecting the principal rafters, wall-plates, and valley timbers, causing visible deflection and partial separation of joints;
- Porous chimneys and defective valleys, through which rainwater is penetrating directly into the roof voids, saturating the upper floor timbers;
- Collapsed sections of flat roof, where decking failure has produced open holes and unsafe edges; and
- General loss of roof integrity, with loosened slates and flashings posing a risk of dislodgement during high winds.

The engineer concludes that several roof sections are *"no longer structurally reliable"* and that deterioration will accelerate rapidly if left untreated, creating a risk of localised collapse. He further notes that the compromised roof fabric limits safe access for maintenance or emergency response, placing contractors, inspectors, and the public at risk of injury from falling material.

The *Conservation Report (2025)* corroborates these findings, describing a "progressive loss of stability" in load-bearing elements, water-damaged ceilings, and active woodworm infestation extending into sound timbers. Both reports emphasise that controlled stabilisation is urgently required to remove the safety hazard, and that delaying works would necessitate larger-scale intervention later with greater ecological disruption.

While the immediate objective of the works is to protect public health and safety, the project has been designed to deliver that objective without ecological loss. Aghadoe House is a Protected Structure under the *Kerry County Development Plan 2022–2028* and supports a confirmed brown long-eared bat (*Plecotus auritus*) roost, with pipistrelle and lesser horseshoe bats recorded in the grounds. Allowing the structure to decay further would ultimately render the roof voids damp and uninhabitable, destroying the roost resource that currently exists.

By contrast, the proposed works will:

- remove an identified safety hazard through structural repair and roof replacement;
- reinstate a dry, stable roof environment suitable for continued bat use; and
- ensure long-term protection of the building's heritage and ecological function.

The project therefore addresses both statutory public-safety obligations and biodiversity-conservation duties in a single integrated programme. It is fully consistent with *NPWS (2022) Bat Mitigation Guidelines for Ireland*, Category C ("Public Health and Safety"), which recognise that urgent stabilisation of unsafe structures may proceed under derogation

provided it is conducted under ecological supervision. It also accords with *Article 16* of the *EU Habitats Directive (92/43/EEC)* and its transposition in *S.I. No. 477 of 2011*, ensuring that public-safety actions are balanced with strict protection of Annex IV species.

ii. Reference to NPWS and EU Guidance

This application has been prepared with reference to the NPWS publication *"Guidance on Applications for Regulation 54 Derogations for Annex IV Species: Guidance for Applicants"* (NPWS, 2021), specifically Section 3.1, which outlines acceptable reasons for derogation. Under this guidance, Regulation 54(2)(c) of the *European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)* allows derogations to be granted *"in the interests of public health and public safety, or for other imperative reasons of overriding public interest."*

The NPWS (2022) Bat Mitigation Guidelines for Ireland further clarify that Category C – Public Health and Safety applies where a building or structure has become unsafe for occupation or poses a risk of injury to people or property, and that urgent stabilisation or repair may proceed under licence provided that works are designed to avoid or minimise harm to bats. This case falls squarely within that category: both the *Structural Engineer's Report* (Sheehan, 2025) and the *Conservation Report* (2025) confirm that active structural failure, water ingress, and decayed timbers now present a demonstrable safety hazard, making immediate intervention essential.

The European Commission's 2021 Guidance on the Strict Protection of Animal Species of Community Interest under the Habitats Directive (C/2021/7301 final) also supports this interpretation. Paragraph 3.19 states that Member States may authorise derogations *"where actions are necessary to protect human life or to remove risks to public health and safety, including works to prevent accidents, collapse or injury."* The Commission recognises that public safety constitutes an imperative reason of overriding public interest, provided that the activity is proportionate and mitigation is in place to maintain species at favourable conservation status.

The present application satisfies these criteria. The proposed works at Aghadoe House are required to remove a proven structural hazard, prevent injury to persons entering or working near the building, and secure the long-term stability of a Protected Structure that also supports a bat roost. The project has been designed in full accordance with NPWS and EU guidance, combining the necessary safety measures with comprehensive ecological supervision and mitigation.

On this basis, the request for derogation under Test 1(c) — *Public Health and Safety* — is fully consistent with both national NPWS guidance and the EU-level interpretation of Article 16 of the Habitats Directive (92/43/EEC).

6.2 TEST 2

In accordance with Regulation 54(2)(c) of the *European Communities (Birds and Natural Habitats) Regulations 2011* and Article 16 of the *Habitats Directive (92/43/EEC)*, it is necessary to demonstrate that no satisfactory alternative exists that would remove the

identified public health and safety risk while maintaining compliance with species protection obligations.

Comprehensive review of options has confirmed that no alternative solution can address the immediate safety hazard, prevent further structural deterioration, and safeguard the existing bat roost simultaneously.

The Structural Engineer's Report (Sheehan, 2025; Appendix 1) concludes that several roof sections—particularly those outlined in yellow—have lost structural integrity due to prolonged water ingress around valleys and chimney stacks. Rafters, purlins, and wall plates are heavily decayed, with some elements showing visible distortion and loss of load-bearing capacity. Although immediate collapse has not yet occurred, the engineer states that failure is inevitable if repairs are not carried out. The flat roofs have already failed, with active leakage and rot posing a direct hazard from falling material and unsafe walking surfaces. The roof section outlined in blue remains serviceable but still requires localised attention to prevent future failure.

Aghadoe House is a Protected Structure under the *Planning and Development Acts 2000–2023*, meaning that any intervention must preserve historic character while meeting safety standards. The Architectural Heritage Protection Guidelines for Planning Authorities (DAHG, 2011, p. 159) stipulate that:

"Where possible, existing detailing, fabric and features of the structure should be preserved, repaired or, if missing or obscured, should be re-instated or revealed. In almost all cases, the materials used for alterations, extensions or repairs should match the original."

Accordingly, the roof must be repaired or reinstated using traditional methods and natural slate, consistent with the *Conservation Report (2025)* and the *Kerry County Development Plan 2022–2028*.

6.2.1 Alternatives Considered

6.2.1.1 Do Nothing:

This option was rejected as entirely unsatisfactory. Leaving the building untreated would allow decay to progress, resulting in eventual collapse of roof sections and masonry. Such failure would endanger persons on or near the site, including contractors, inspectors, and members of the public, and would ultimately destroy both the Protected Structure and its bat roosting habitat. The structural engineer confirms that deterioration will continue rapidly due to persistent water ingress and woodworm activity, and that "patching" or delay would only expand the scope of future works.

6.2.1.2 Partial Repairs or Localised Patching:

Localised replacement of individual timbers or isolated valley repairs were considered but deemed technically unfeasible. Rot and decay are systemic and extensive, not confined to discrete areas. Partial patching would fail to restore structural integrity and would not eliminate the hazard of falling debris. The *Conservation Report (2025)* confirms that a piecemeal approach would be short-lived, requiring repeated invasive interventions and

creating repeated disturbance risk to bats. Such an approach would also contravene best-practice conservation policy, which requires comprehensive repair where damage is structural.

6.2.1.3 Chemical Treatment of Infested Timbers:

The use of conventional permethrin- or pyrethroid-based woodworm treatments was discounted due to their known toxicity to bats and other mammals. Both the *NPWS Bat Mitigation Guidelines for Ireland* (2022) and *EUROBATS Guidelines for Consideration of Bats in Building Renovation Projects* (2018) prohibit the use of residual insecticides in active or potential roost areas. Chemical treatment would therefore constitute a greater long-term risk to bats than the controlled removal and off-site replacement of affected timbers with bat-safe boron-treated timber.

6.2.1.4 Building Closure or Restricted Access:

Restricting access to unsafe areas or fencing off the building was considered but rejected as inadequate. The defects involve high-level roof elements, and falling slates or masonry could extend beyond any exclusion zone. Abandonment would not remove the hazard and would accelerate decay, ultimately resulting in uncontrolled collapse. In addition, the *Planning and Development Acts* impose a duty on owners of Protected Structures to maintain them in a safe condition; long-term closure would contravene this obligation and lead to enforcement proceedings.

6.2.1.5 Demolition and Reconstruction:

Demolition and reconstruction were considered disproportionate, unnecessary, and contrary to the conservation principle of minimal intervention. Such action would result in the permanent loss of historic fabric and complete destruction of the existing roost resource, breaching both architectural and ecological policy.

6.2.1.6 Preferred Option – Full Repair and Controlled Re-roofing (Under Ecological Supervision)

The only satisfactory solution is comprehensive repair and replacement of defective roof and timber elements, carried out in a phased and ecologically supervised manner. This approach eliminates the immediate safety risk, preserves historic form, and retains bat roost potential throughout the works.

The project design incorporates:

- Phased, hand-stripped roof removal with one section retained intact at all times;
- Pre-installation of temporary bat boxes and permanent bat-access slates;
- Bat-safe materials (bitumen 1F felt, TLX Batsafe membranes, boron-treated timber); and
- Ecologist supervision and timing restrictions to prevent disturbance during sensitive seasons.

This method ensures that stabilisation can proceed safely while maintaining bat habitat in accordance with *NPWS (2022)* and *EUROBATS (2018)* guidance. It mirrors successful mitigation strategies used at Kylemore Gothic Church, Co. Galway (NPWS, 2006 Case

Study 6) and The Vyne, UK (Historic England, 2020), both of which demonstrated colony retention during sectional roof replacement.

6.2.1.7 Conclusion

All reasonable alternatives have been evaluated and found unsatisfactory on technical, legal, or ecological grounds. Only the proposed full repair under ecological supervision can remove the current health-and-safety hazard while ensuring compliance with both conservation and biodiversity obligations. This approach therefore represents the only viable and proportionate solution under Test 2, consistent with *Regulation 54(2)(c)* and *Article 16* of the *Habitats Directive (92/43/EEC)*.

6.3 TEST 3

6.3.1 Possible Impacts on the Population of the species

Surveys confirmed that the main attic of Aghadoe House is used by a small roost of brown long-eared bats (*Plecotus auritus*), with droppings of varying ages showing intermittent but repeated occupation. Moderate accumulations in the southern attic and smaller deposits in the northern attic indicate that the space functions primarily as a day or transitional roost rather than a maternity or hibernation site.

No evidence of roosting by pipistrelles (*Pipistrellus pipistrellus*, *P. pygmaeus*), Leisler's bat (*Nyctalus leisleri*), or lesser horseshoe bat (*Rhinolophus hipposideros*) was found within the house. However, all three species were recorded foraging and commuting in the immediate surroundings, with lesser horseshoe passes detected at the Gate Lodge and along the tree-lined avenue. This shows that the property forms part of the functional landscape network used by multiple species, even if only *Plecotus auritus* roosts in the main structure.

The proposed works carry potential for temporary, short-term disturbance during roof and timber repair, primarily through:

- vibration and noise associated with hand tools near known roost features;
- temporary displacement of bats using active roof voids; and
- risk of accidental exposure of concealed bats when timbers are lifted.

However, these effects are fully mitigated by a carefully phased, ecologically supervised construction programme. Works will begin in October, after the maternity period but before hibernation, when only non-breeding adults are present and capable of relocation. All roof sections will be stripped by hand under direct supervision of a licensed bat worker, ensuring any roosting individuals can be safely recovered and relocated to pre-installed bat boxes.

The works will retain or recreate all known roost features—including access points, internal voids, and ridge crevices—and employ bat-safe materials (bitumen 1F felt, TLX Batsafe membranes, and boron-treated timber). Two Habibat access slates will be incorporated on the south roof slope, ensuring long-term connectivity between the exterior and the roof void.

Consequently, the project will not result in the loss of any roost type or reduction in overall roost capacity. Disturbance will be brief and localised, and the long-term outcome will be neutral to positive, as roof integrity, dryness, and microclimatic stability will be improved.

Evidence from the *Bat Mitigation Guidelines for Ireland* (NPWS, 2006: Case Study 6 – *Kylemore Gothic Church, Co. Galway*) and *Historic England* (2020, *The Vyne Roof Project*) demonstrates that phased reroofing under ecological supervision can maintain active colonies during major fabric works. A systematic review of mitigation outcomes (*Berthinussen et al.*, 2021) further shows that 67% of bat colonies re-used retained or modified roosts when traditional materials and sectional methods were used.

Given the small number of individuals involved, the species' regional abundance (NPWS, 2019; BCIreland Database, 2023), and the proven effectiveness of these measures, the predicted impact on the local population of *Plecotus auritus* and on associated foraging species is negligible. The derogation will therefore not be detrimental to the maintenance of the species at favourable conservation status in its natural range.

6.3.2 Mitigation and compensation measures

The mitigation strategy has been designed in accordance with *NPWS (2022)*, *EUROBATS (2018)*, and *BCT Good Practice Guidelines* (Collins, 2023), ensuring compatibility with both public-safety and ecological requirements.

6.3.2.1 Ecological supervision and contractor training

Prior to works, all contractors will receive an induction from a licensed bat ecologist, explaining the ecology of bats, their legal protection, and the specific measures being implemented on site. This ensures that all staff are alert to the presence of bats and aware of the correct procedures. A licensed ecologist will be present on the first day of roof stripping and on call thereafter. If bats are encountered, the ecologist will safely handle and relocate them to pre-installed bat boxes. Immediate reporting to NPWS will ensure transparency. This supervision greatly reduces the risk of accidental injury to bats during works.

6.3.2.2 Staged roof works with hand-stripping

The roof will not be removed in a single operation but stripped and rebuilt section by section by hand. This precautionary approach ensures that any bats present in concealed crevices are discovered without harm, and that roosting opportunities remain available at all times. The modular design of the Aghadoe roof lends itself to such phasing. Comparable projects provide strong precedent: at Kylemore Gothic Church, Co. Galway, phased reroofing under ecological supervision allowed brown long-eared bats to continue roosting throughout (NPWS, 2006: Case Study 6). At The Vyne, a National Trust property in Hampshire, UK, staged reroofing combined with purpose-built access slates ensured that pipistrelle and long-eared colonies remained in situ during major roof replacement works (Historic England, 2020). These case studies demonstrate that bats are able to adapt to phased reroofing when works are carefully timed and supervised.

6.3.2.3 Seasonal timing of works

The most sensitive roof section, which contains the roost, will be worked on in September–October. This is after maternity colonies have dispersed and when young bats are volant, but before the onset of hibernation. By avoiding summer and winter, the works will not interfere with critical breeding or overwintering stages. This timing is a widely accepted mitigation principle (Collins, 2016; NPWS, 2006).

6.3.2.4 Retention and enhancement of roost access

At least one permanent Habibat bat access slate will be incorporated into the reroofed structure. Unlike the current situation, where bats rely on irregular gaps in tiles and masonry, the access slate will provide a reliable, purpose-designed entry point. It will be installed on a south-facing roof slope, close to a rafter, with a corresponding hole cut in the felt beneath to maintain access to the attic. This approach, used successfully at The Vyne and in other UK projects (Historic England, 2020), ensures that bats can continue to use the roof void as a roost well into the future.

6.3.2.5 Bat-safe roofing materials

The reroofing works will use traditional bitumen 1F felt in areas with bat roost potential. Breathable membranes are excluded due to the well-documented risk of bats becoming entangled in the fibres (EUROBATS, 2018). Where a breathable product is unavoidable, TLX Batsafe will be specified, as it is designed to be safe for bats. This guarantees that future roosting bats are not exposed to hidden hazards.

6.3.2.6 Provision of temporary alternative roosts

Before works commence, at least one large multi-chamber bat box will be installed on the property. This serves multiple functions: (1) providing immediate alternative roosting space should bats be displaced; (2) acting as a safe temporary holding site for bats found during works; and (3) offering continuity of roosting opportunities during construction. Installing the box early allows bats to familiarise themselves with it.

6.3.2.7 Protection against predators

Surveys found evidence of pine marten in the attic. The planned works will close the large openings currently allowing pine marten access, reducing predation pressure and making the roost environment safer and more attractive to bats in the long term.

6.3.2.8 Post-construction monitoring

After the works are complete, a programme of monitoring will be undertaken by a licensed ecologist. This will include dusk emergence surveys, acoustic monitoring with static detectors, and inspection of the attic for droppings and other signs of use. Monitoring will verify that mitigation measures are effective and provide data for NPWS on long-term roost use.

6.3.2.9 Evidence base for effectiveness

The strategy is supported by published evidence. NPWS (2006) documents successful mitigation at Kylemore Gothic Church, where phased reroofing-maintained bat use. Historic England (2020) reports similar outcomes at The Vyne, where colonies remained in

situ. A wider review by Berthinussen et al. (2021) synthesised 109 studies and found that 67% of bat colonies re-used retained or modified roosts following staged reroofing with access provisions, confirming that these measures can safeguard populations at site level.

7 MEASURING THE IMPACTS OF THE DEROGATION

7.1 A. VERIFICATION OF IMPLEMENTATION AND EFFECTIVENESS

Monitoring will be undertaken by a suitably qualified and licensed bat ecologist with prior experience in supervising building works affecting roosts. The purpose of the monitoring programme is to provide robust, scientifically based evidence that:

1. The derogation has been implemented in full compliance with its conditions;
2. The mitigation measures have functioned as intended to safeguard bats during works; and
3. The site continues to provide viable, long-term roosting opportunities post-construction.

The monitoring framework has been designed in line with *Bat Conservation Trust Good Practice Guidelines* (Collins, 2023), *NPWS Bat Mitigation Guidelines for Ireland* (2022), and *EUROBATS 2018*.

7.1.1 Verification measures will include the following components:

7.1.1.1 Supervised works log

Throughout the works, the supervising ecologist will maintain a detailed record of all bat-related interventions and site observations. This will include:

- pre-works checks of each roof section;
- bat encounters and handling events;
- use of temporary or permanent bat boxes;
- timing of roof removal and reinstatement; and
- delivery of toolbox talks and staff briefings.

This record will provide a verifiable audit trail of compliance with licence conditions and ecological best practice.

7.1.1.2 Post-construction emergence surveys

At least two dusk emergence surveys will be conducted during the first active season following completion (May–August). Surveys will follow *BCT* and *NPWS* standards, using dual-observer coverage and full-spectrum detectors (e.g. Anabat, Echo Meter Touch). Observations will focus on the bat-access slates and known entry points to confirm continued use of the attic and identify any changes in activity level or flight paths.

7.1.1.3 Static acoustic monitoring

Two static bat detectors (one internal, one external) will be deployed for a minimum of five consecutive warm nights during peak season. Recordings will be analysed using SonoBat or

Kaleidoscope Pro software to verify species presence, call frequency, and timing of emergence. This data will provide a quantitative baseline for roost activity post-works and can be compared against pre-works recordings if available.

7.1.1.4 Internal inspections

Visual inspections of attic spaces will be carried out in spring and late summer to detect droppings, urine staining, prey remains, or body oils on timbers. Endoscopic checks will confirm use of ridge voids and access slates. These inspections will verify whether roosting opportunities have been maintained and whether the roost remains suitable for future bat use.

7.1.1.5 Bat box checks

Installed multi-chamber bat boxes will be inspected in accordance with NPWS licence conditions during late summer. Occupancy (droppings, odour, staining, or direct observation) will be recorded. Box positioning and condition will also be reviewed to ensure suitability.

7.1.1.6 Data analysis and evaluation of success

Monitoring data will be used to evaluate three performance criteria:

- **Compliance** – All mitigation actions implemented as per licence conditions;
- **Continuity** – Confirmed bat presence within the main attic or newly installed features; and
- **Functionality** – Roost access, temperature, and light levels consistent with long-term bat use.

If results indicate any reduction in roost use or failure of mitigation features, the ecologist will propose adaptive management measures in consultation with NPWS. These may include installing additional bat access slates, repositioning external boxes, increasing insulation around roost areas, or introducing supplementary roost features.

7.2 B. REPORTING TO NPWS

A formal monitoring report will be submitted to NPWS at the end of the first full bat activity season following completion of works. The report will include:

- Details of works supervision and mitigation implemented.
- Records of any bats encountered during construction.
- Results of emergence surveys, acoustic monitoring, attic inspections, and bat box checks.
- An assessment of whether the derogation objectives have been achieved.
- Recommendations for corrective measures, if required.

A further follow-up report will be provided after the second activity season post-works, to demonstrate longer-term effectiveness.

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