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Report

Date:	25.03.25
Reference:	1931-GRAS-XX-XX-RP-A-000002
Revision:	P4

GRAS

RIBA Work Stage: 4 Technical Design
Report prepared by: David Allan / Architect

Bat Derogation License Report

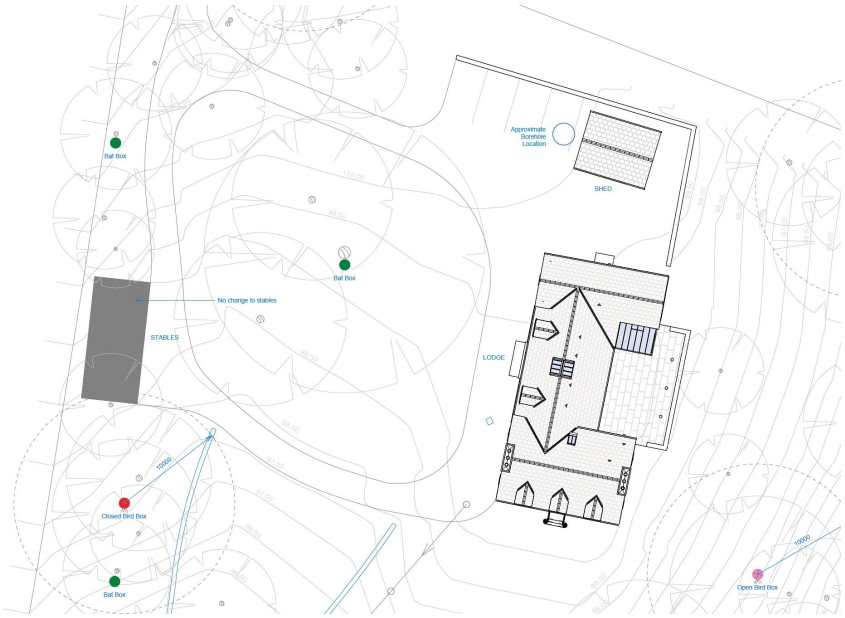
To be read in conjunction with the derogation license application form and NatureNorthWest survey report.

Introduction

Gartan Lodge is a late 19th century house situated in Carrowtrasna Lower, near to Letterkenny, Co. Donegal.

The property comprises a house, rear extension and storage building, all physically connected. There is a separate shed to the North of the storage building as well as a stable building on the west side of the site. The property has significant grounds with many mature trees, bushes and foliage. The main buildings are all traditionally built, with stone walls and timber framed floors and roof structures.

The house, storage building, shed and stables have sat unused for a number of years and are in a poor condition with windows and doors broken in and holes in ceiling and walls giving easy access to bats and other wildlife.



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The owner is looking to carry out a full renovation of the property to return it to a habitable condition. This includes a full replacement of the roofs of the house, storage building and shed. The existing link building is not worth retaining due to damp and degraded building elements. As such it will be demolished and a new link built as part of the works. No works are proposed to the stables.

Bats have made the roof spaces of the house, shed and stables into roosting spaces. The link building has no sign of bat activity, and it is therefore assumed to have no bats within. The storage building has some signs of bat activity, but no bats were detected during a dusk emergence survey.

This derogation license is being sought to allow for works to be carried out to the house, storage building and shed in a sensitive manner, ensuring that there is minimal disturbance to the bat population and that roosting space is provided before construction starts and after construction works are complete. No works are proposed to the stables building, so that roosting space will be retained.

Survey

A survey was undertaken by NatureNorthWest, an ecological consultant, to understand more about the resident bat species and the location of their roosting sites within the property. The full survey report is appended to this document. A summary of the findings is detailed below.

Survey Results

North Wing

Upstairs
Bat droppings were detected on the floor of the upstairs store area, small tortoiseshell butterfly wings were also detected at the same site. However, no bats were detected using this space during the dusk emergence survey. The indications of bat use point towards recent use by bats as some of the droppings were fresh as were the butterfly wings.

Downstairs
No bat signs of bat use or bat presence were detected during day or evening surveys in the downstairs spaces of the storeroom end of the house.

Link building

No signs of bat use or bat presence were detected in the link building.

Main House

Signs of bat use was recorded in both the dining room and kitchen of the main house. These signs were of numerous small tortoiseshell butterfly wings and some moth species wings. No droppings were detected in any of the downstairs rooms which indicates foraging use more than roosts. All rooms downstairs had a lack of cobwebs in the ceiling spaces with many cobwebs present on the room edges which indicted possible forging use of bats.

Upstairs
Small tortoiseshell wings were found in the master bedroom indicating bat foraging. Cobwebs were absent in all rooms upstairs where flight paths may exist. No droppings were recorded in the upstairs rooms.

Attic Space
Large numbers of droppings were found in two main clusters in the attic space of the main house. These were at the south end and the central space. An absence of cobwebs along with the droppings, some of which were fresh, pointed towards a bat roost in the attic space.

During the dusk emergence survey, 49 soprano pipistrelle bats were

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recorded emerging from two different areas between the fascia boards and the roof tiles. These were on both the east and west sides of the roof, near the southern end, immediately south of the supporting posts.

Soprano pipistrelles are a very common roof dwelling species in Ireland, their presence would indicate a nursery roost.

Outdoor buildings and surrounds

Outdoor shed
No bat droppings or other signs were recorded other than a lack of cobwebs in the main roof space. A number of bats were heard in between the felt roof lining and the slates at 9.14pm. 4 brown long-eared bats were seen emerging from the roof lining at the east end of the shed inside. They were recorded flying across the roof space inside the shed before exiting through the open doorway.

Stable building
Bat droppings and insect wings were observed at the southern end inside the stable building. No cobwebs in the roof space further indicated bat use. 2 brown long-eared bats were observed using the roof space, one roosting from the roof lining and one foraging between the rafters.

Surrounding area
Soprano pipistrelles were recorded multiple time from as early as 21.40pm, a full 30 minutes before darkness. They tended to concentrate around the trees to the east of the main house during this survey.

License Application

10.c.
This application qualifies under Regulation 54(2)(A-E) or the European Communities (Birds and Natural Habitats) Regulations in the interests of public health and public safety as well as in the interest of social and economic benefits.

The buildings are in a reasonable condition, albeit uninhabitable. If left untouched, this state of disrepair will worsen, and they may become dangerous and ruinous.

The financial value of the property would reduce as a result and the cultural value would be lost. There would be an increased health and safety risk from the potential collapse of buildings and, in addition, the potential for anti-social behaviour would increase.

The proposed works to the house look to renovate the buildings and return them to a habitable home.

11.1.

We are making an application for a derogation license to allow for the house, storage building and shed to go through the necessary construction works to return it to a habitable home. The work is necessary to secure and weatherproof the building.

The available options for the building are:

1. Do nothing.
2. Attempt to do the work whilst keeping the bat roost in place.
3. Provide alternative roosting spaces for the resident bat population.

Doing nothing is not an option as the building is in a state of disrepair and is

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worsening over time. Damp and resulting damage will degrade the fabric and structure of the building, ultimately threatening the existing roost, devaluing the property and creating more work to bring it into a habitable state.

Attempting to do the work whilst keeping the roost in place is also not an option as the work necessary to bring the house into a habitable state is significant and complex, requiring a prolonged period that overlaps with bat roosting periods, regardless of start time.

Providing alternative roosting spaces is the only available option for works and no suitable alternative exists as per Regulation 54 of the European Communities (Birds and Natural Habitats Regulations). Providing alternative roosting spaces will maintain the bat population on site and ensure that there is separation between the construction work and the bats roosting spaces with no conflict between the two.

11.2 - Evidence

Alternative roosting sites will be provided in the form of bat boxes on trees, a roosting box in the House attic space connected to the existing access point as well as creation of a ceiling roosting space in the shed. No works are proposed to the stables building and this roosting space will remain as existing.

The intention is to provide alternative or modified roost sites so as not to displace any bats or habitats.

Works are being conducted at the optimum time (Spring) in accordance with the NPWS guidelines - here.

For evidence that these actions will not be detrimental to the maintenance of the bat population in the area, please refer to the reports and studies in the following links. Create alternative bat roosts within developments - Conservation Evidence and Reviewing the evidence on mitigation strategies for bats in buildings Final report March 2018.indd.

11.3 - Mitigation

The alternative roost sites and re-creation of safe spaces for the bats within the finished structure are the mitigation.

The most successful way to retain bats is to modify the existing roost which is why we are proposing to maintain the existing access point in the House attic and provide a purpose-built timber roost box. This allows the bats to have access to their modified roost whilst also allowing construction work to be carried out.

In addition, numerous bat boxes will be provided around the property as well as the creation of a roosting attic space within the shed.

We are proposing the following mitigation measures:

1. Retaining roosting space within the stables building
2. Creation of a ceiling roosting space in the shed
3. Creation of a roosting box in the House attic space
4. Install of 6no. bat boxes in trees around the property
5. Install of 6no bird boxes in trees around the property
6. Maintenance of all existing trees
7. Induction procedures for all construction staff
8. Signage installed to inform staff about presence of bats and what to do if one is found.
9. Sympathetic lighting
10. Limiting noisy work to daylight hours

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11.4 – Further Information

Please see below for full details on the mitigation measures as well as information on the construction proposals to the property.

Mitigation

At the beginning of the construction period, it is proposed to create a ceiling within the shed building that will form an alternative roosting space for the Soprano Pipistrelles whilst works are being conducted. Slits will be provided to ensure access is available. The renovation works to the shed roof will be carried out in Spring 2026 and will therefore be subject to another license application. After these works are complete the ceiling/roosting space will be re-created and retained permanently with access via a proprietary slate. In addition, to accommodate the swallows, a slit on top of the door of the shed will be created to allow them access and create a nest internally. Shelves will be installed to catch droppings.

Within the House, a 1-2m long timber lined roosting box with internal rough finish that is connected to the existing access point (as per the ecologist's report) will be installed. This will act as a temporary replacement for the roost, which will be replaced with a permanent measure next winter, as per the advice of the ecologist.

Six bat boxes will be placed in nearby trees, prior to the start of works on site. The boxes will be sited at a height of between 3 and 6 metres, South facing and in suitable trees away from any potential disturbance, as specified by the ecologist. The bat boxes will remain in situ after the works have been completed on site.

In addition, three open and three closed bird boxes will be installed around the property. The boxes will face North and be sited between 3 and 6m high and more than 10m apart.

The proposals look to retain, protect and enhance some of the mature tree/woodland features on site to maintain adequate foraging provisions and habitat connectivity on site. Trees are all being retained and will be buffered from development and protected during construction in line with current best practice guidance.

As part of the onsite induction process all site contractors will be made aware that bats are known to be on site, what mitigation is in place to protect them and what to do if a bat is identified on site during works. Soft demolition techniques outside of the bat activity season will be applied to sensitive areas of the building, such as bargeboards and soffits are to be removed by hand. Signage will be placed around the site warning contractors and noting what to do if a bat is found.

Should any bats be found then works around this area will immediately stop and the NatureNorthWest ecologist and the local NPWS ranger will be contacted to remove and re-house the bat in an interim space.

Any lighting used during development works and post development will be sympathetic to wildlife and not illuminate adjacent green space on site, as this would impact bats and other crepuscular wildlife in the surrounding area. Works causing loud noise and vibration from May to August inclusive (main activity season) will be limited to daylight hours to avoid intolerable disturbance to foraging and commuting bats in the locality.

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Proposals

Gartan Lodge is a traditionally built, mid-19th century house set in five acres of land with mature trees and some small outbuildings. Although the buildings are not listed or on the National Inventory of Architectural Heritage, there are three natural heritage designations apply very close by.

The buildings are great examples of characterful solid stone domestic buildings and have historic, cultural and personal value – the house previously belonged to the grandmother of the current owner.

The buildings are in a reasonable condition, albeit uninhabitable. If left untouched, this state of disrepair will worsen, and they may become dangerous and ruinous. The financial value of the property would reduce as a result and the cultural value would be lost.

The proposed works to the house look to renovate the buildings and return them to a habitable home.

North Wing

As no bats were recorded roosting there is no proposal to create roosting spaces for bats within this building.

Link Building

No bats were found in this location and the proposals involve the full demolition of this portion of the house and rebuild. There are no proposals to provide spaces for bats in this section of the house.

House

The proposed works to upgrade the house are significant and will take a necessarily long period of time. Proposals look to make the building wind and watertight, replacement of all windows and doors, upgrading the structure and re-slating the roof and removing and reinstating the render on the walls. Refer to the Architect's drawings appended to this document.

The intention is to remove the roof coverings in late March/early April, ahead of the roosting period (which starts in May) so that no disturbance to an active roost is caused. Due to the length of time and nature of the works, the roof slates will be removed for an extended period and an additional weatherproof layer will be added. All insulation from the attic space and between the rafters of the cooms will be removed and therefore the existing roosting spaces will not exist during the roosting period.

A significant amount of insulation alongside two new water tanks are to be installed. The existing ceiling structure is not proposed to be upgraded and is not structurally suitable for regular access. A thick layer of insulation is proposed on top of the ceiling to improve thermal performance.

The existing attic structure is not suitable for supporting safe access throughout the space. The structure would require significant modification to allow safe access to any re-created bat spaces for maintenance. For this reason, alongside general hygiene (removing bat guano and discarded insect carcasses) as well as a reduced risk of interaction, the attic space will no longer be accessible for bats. However, a 1-2m long timber lined roosting box will be provided in the attic connected to the existing access point as detailed above.

Shed

The shed will be upgraded externally, with new roof tiles and external render. The GSHP plant will be housed in this space alongside a log store.

As noted above a simple plywood ceiling/floor will be installed with bat slits,

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access slate and an access hatch to create an attic space that will be given over as bat space.

A slit on top of the door of the shed will be created to allow starlings to access and create a nest internally. Shelves will be installed to catch droppings.

Stable building
No works are proposed to this building, so the conditions for bats will be the same.

External
Six bat boxes will be installed on the South side of the beech trees on the property. They will be installed at a height of between 3 and 6 metres. These have been identified on the site plan attached.

These will be installed before the beginning of construction works to be available when the bats come out of hibernation and are looking for roosting locations.

As an active swallows' nest was found in the storage building, six bird boxes (three open fronted and three small holed) will be installed on the North side of trees around the property. These have been identified on the site plan attached.

Construction Programme

Construction works are likely to commence in late March, early April 2025 during the hibernation period for all bats. Although it is possible that bats could be hibernating within the buildings, within the walls and around window junctions, there are no signs to suggest this activity. Any bats found on site will be reported as noted above

The works to the shed roof will be carried out during the period mid-March to end of April 2026 when the hibernation period is over, and roosting period has not yet begun – subject to a future derogation license application.

Materials

The proposed roof membrane is a certified 'bat safe' membrane. Refer to the appended certification and product specification.

Any timber treatment product will be bat friendly.

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Summary

The buildings are great examples of characterful solid stone domestic buildings from the end of the 19th century and have historic, cultural and personal value – the house previously belonged to the grandmother of the current owner.

The buildings are in a reasonable condition, albeit uninhabitable at the moment. If left untouched, this state of disrepair will worsen, and they may become dangerous and ruinous. The financial value of the property would greatly reduce as a result and the cultural value would be lost.

The proposed works to the house look to renovate the buildings and return them to a habitable home. These works necessitate a change to the roosting spaces currently inhabited by soprano pipistrelle bats due to the extent and nature of the works.

Although some existing roosting spaces are being modified as part of the renovation works, this is being done in a sensitive manner and the intention is to create spaces for the local population of bats and birds. The mitigation proposed is as follows.

1. Retaining roosting space within the stables building
2. Creation of a ceiling roosting space in the shed
3. Creation of a roosting box in the House attic space
4. Install of 6no. bat boxes in trees around the property
5. Install of 6no. bird boxes in trees around the property
6. Maintenance of all existing trees
7. Induction procedures for all construction staff
8. Signage installed to inform staff about presence of bats and what to do if one is found.
9. Sympathetic lighting
10. Limiting noisy work to daylight hours

Work to the main house will begin ahead of the roosting period when bats are least likely to be present and the boxes noted above will be installed ahead of construction commencing. Work to the shed roof will occur between mid-March and the end of April 2026.

Should any bats be found then works around this area will immediately stop and the NatureNorthWest ecologist and the local NPWS ranger will be contacted to remove and re-house the bat in an interim space.

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Appendix A
Photos of Property

House – View from South

Storage building/North Wing – View from North

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Shed

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Appendix B
Architectural Drawings

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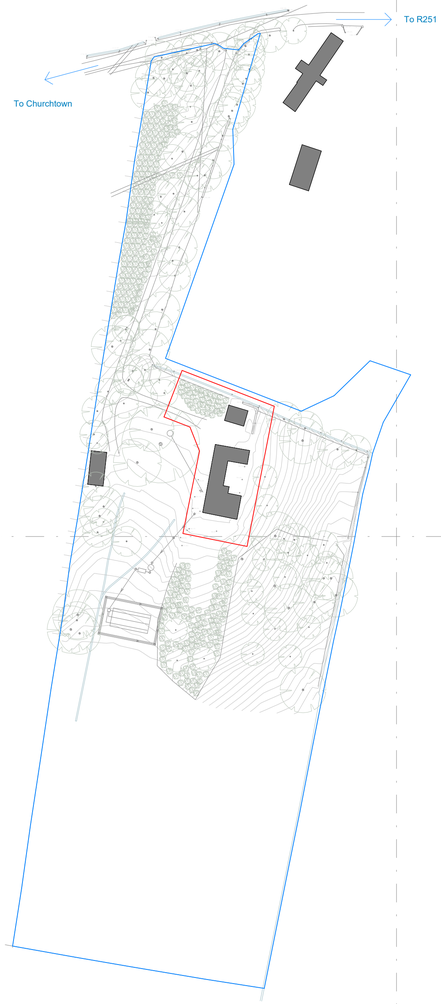
E 606,400
E 606,600
N 919,000
N 918,800
N 918,600



Client Ownership Boundary
Contract Extent Boundary

General Notes

Do not scale for construction purposes. Contractors shall work to figured dimensions only. Verify all dimensions on site and clarify all discrepancies with the architect prior to construction. Drawings to be read with all relevant specification and schedules.

Fire safety related elements shown for information only and must be confirmed by a suitably qualified, independently appointed fire engineer and/or specialist.

Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
Tom Slaney

Date
14.02.2025

Drawing Status
Sketch

Drawing Title
Location Plan

Drawing No.
1931-GRAS- **ZZ-ZZ** -DR-A-**006101**

Revision
P1

Scale / Format
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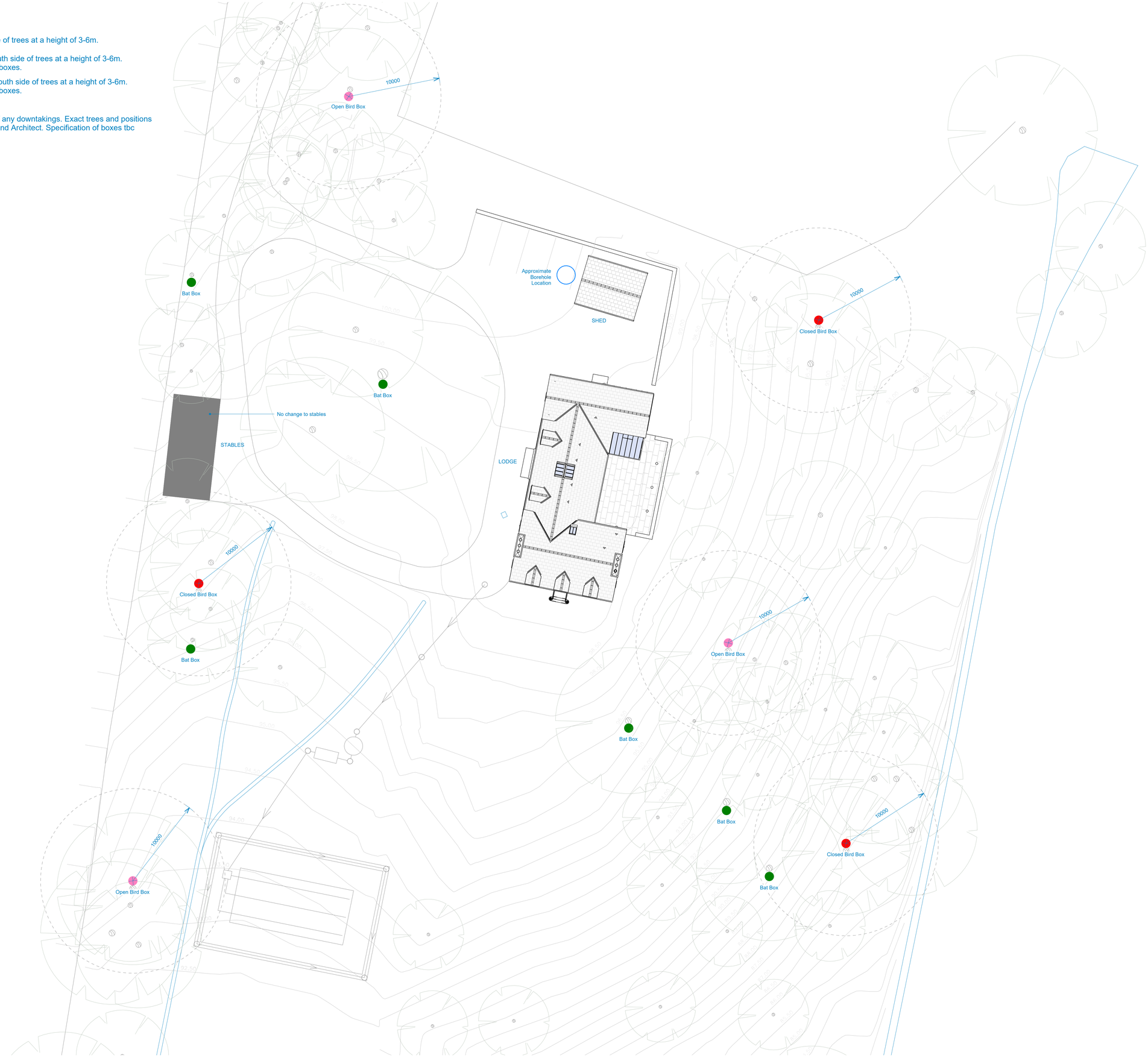
Key

- Bat Box - installed on the South side of trees at a height of 3-6m.
- Open Bird Box - installed on the Nouth side of trees at a height of 3-6m. Minimum 10m apart from other bird boxes.
- Closed Bird Box - installed on the Nouth side of trees at a height of 3-6m. Minimum 10m apart from other bird boxes.

Bat and bird boxes to be installed ahead of any downtakings. Exact trees and positions to be confirmed on site with the Ecologist and Architect. Specification of boxes tbc



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Project
Gartan Lodge

Address
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Client
Tom Slaney

Date
14.02.2025

Drawing Status
Sketch

Drawing Title
Site Plan - Proposed

Drawing No.
1931-GRAS- ZZ-ZZ -DR-A-006102

Revision
P1

Scale / Format
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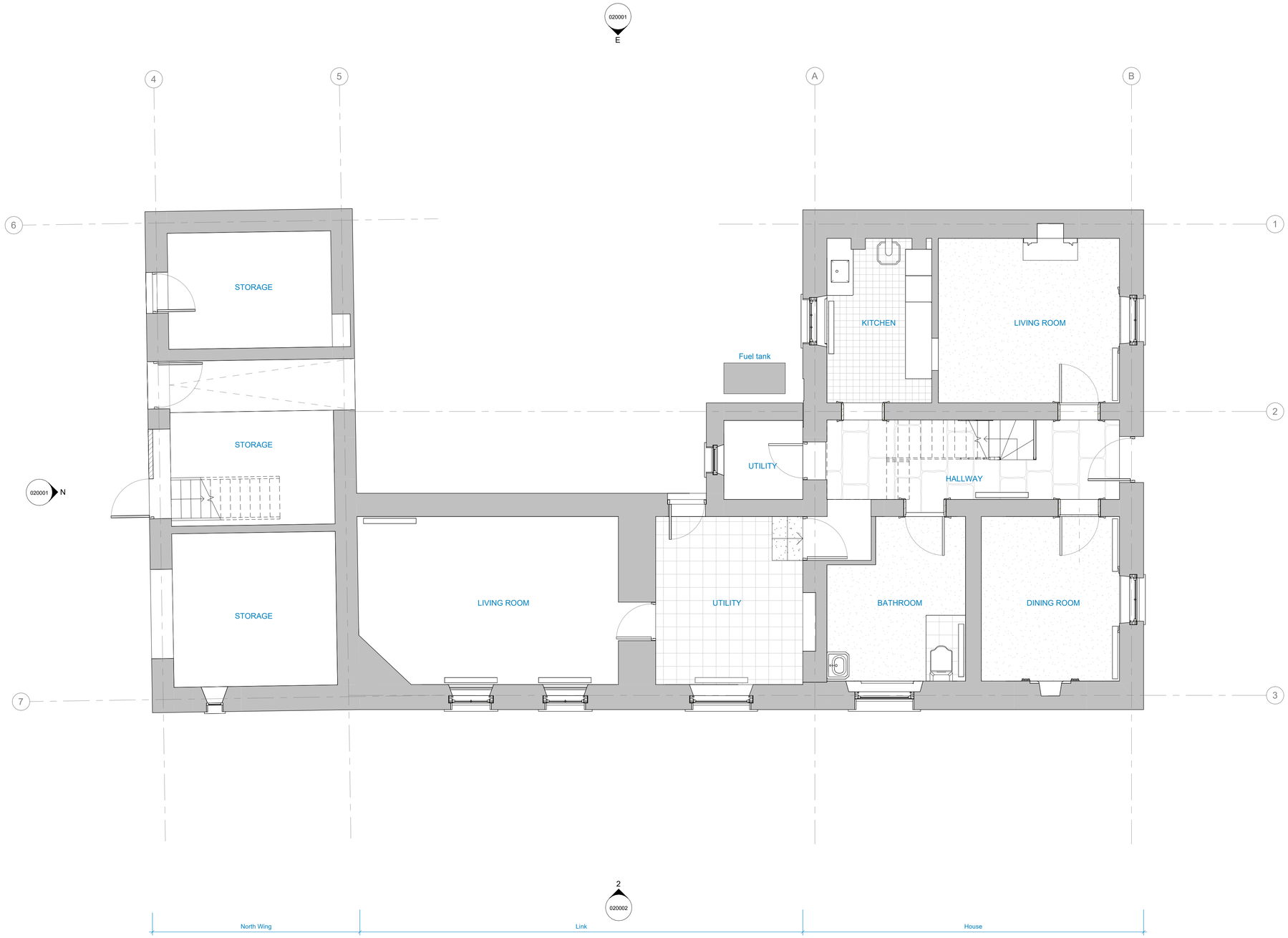

Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
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Date
14.02.2025

Drawing Status
Sketch

Drawing Title
Ground Floor Plan - Existing

Drawing No. 1931-GRAS- **ZZ-00** -DR-A-**016101**

Revision P1

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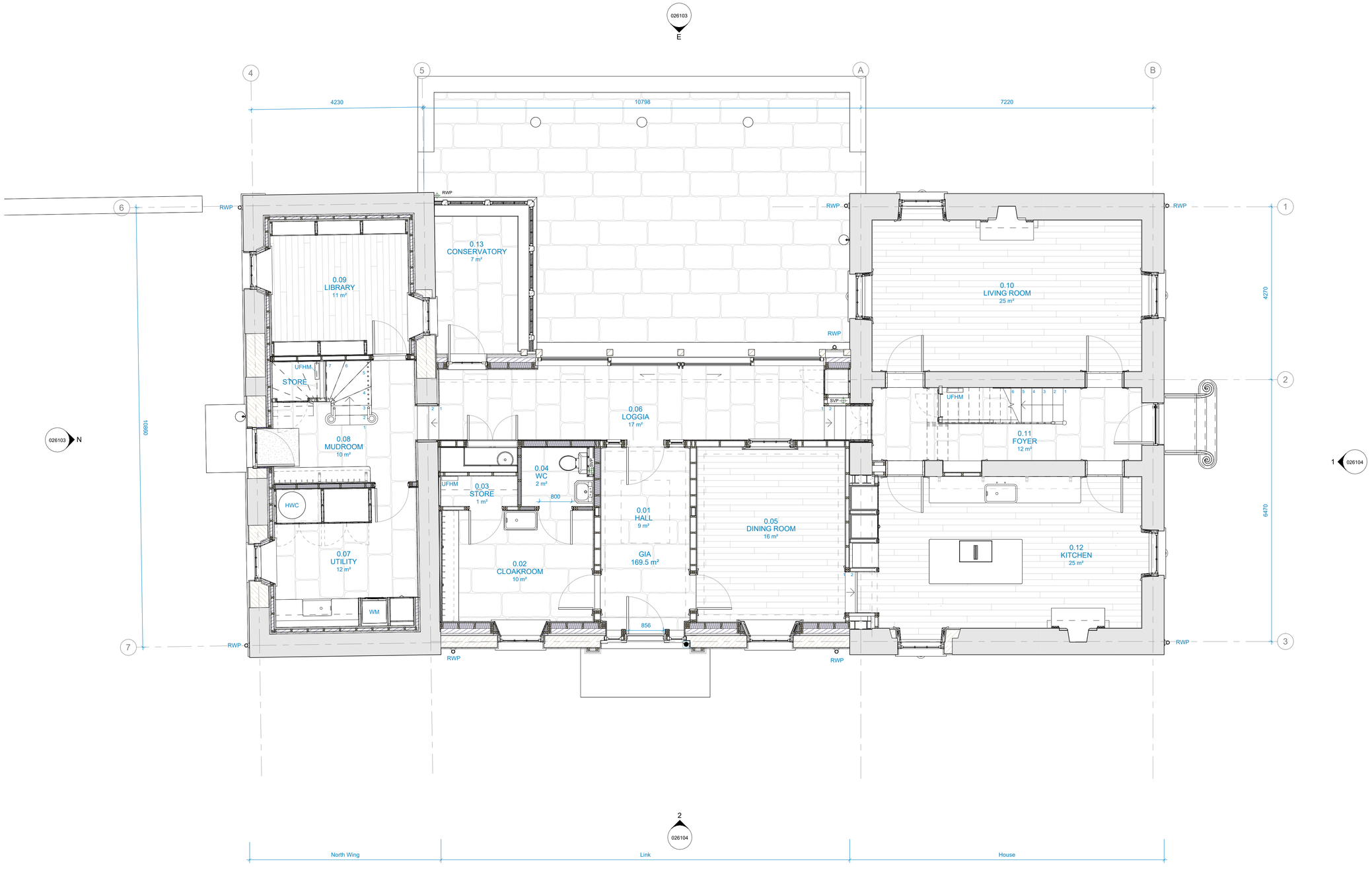

Project
Gartan Lodge

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Client
Tom Slaney

Date
14.02.2025

Drawing Status
Sketch

Drawing Title
Ground Floor Plan - Proposed

Drawing No. 1931-GRAS- **ZZ-00** -DR-A-**016104**

Revision P1

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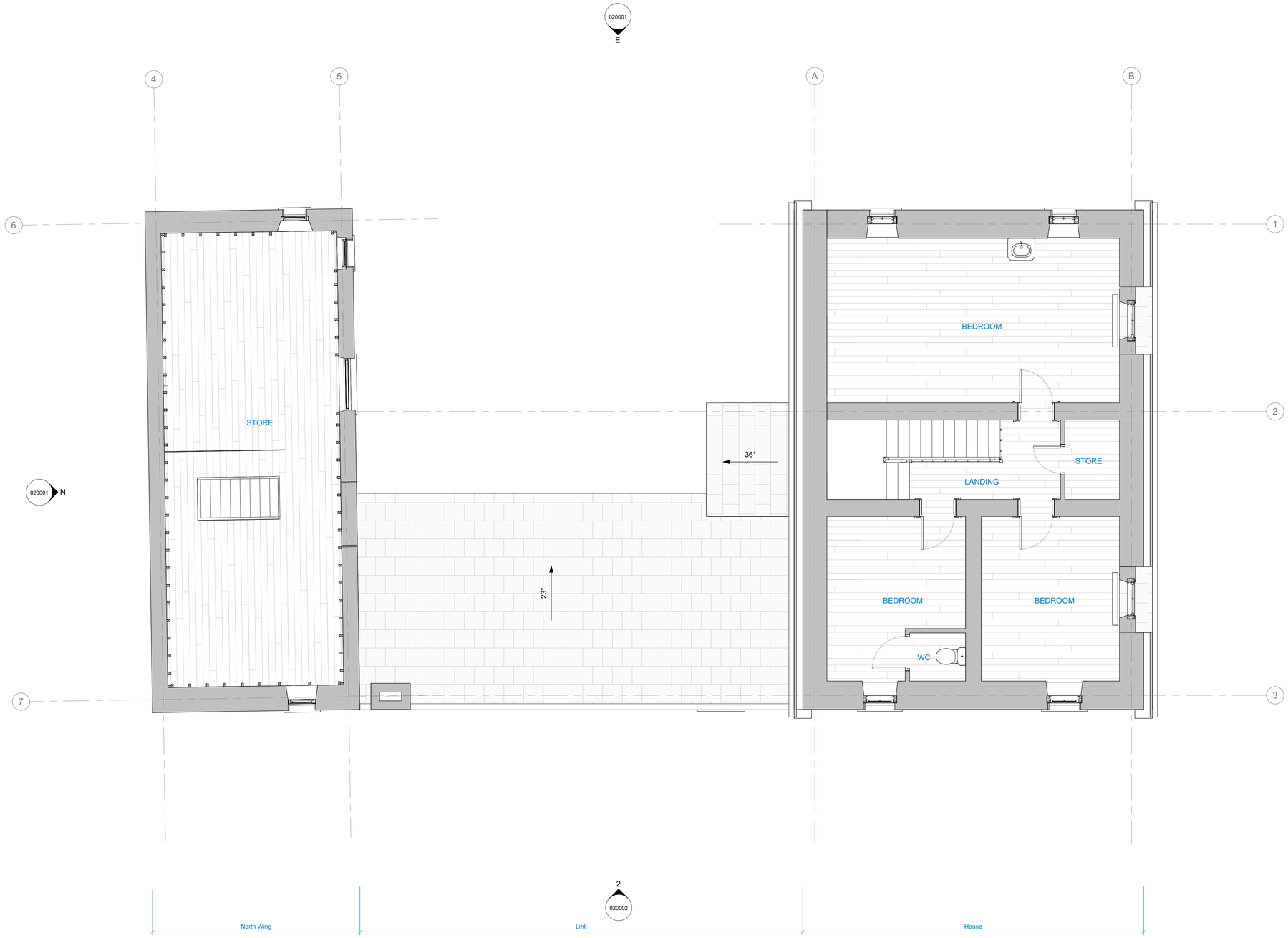

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Drawing Status
Sketch

Drawing Title
First Floor Plan - Existing

Drawing No.
1931-GRAS- **ZZ-01** -DR-A-**016102**

Revision
P1

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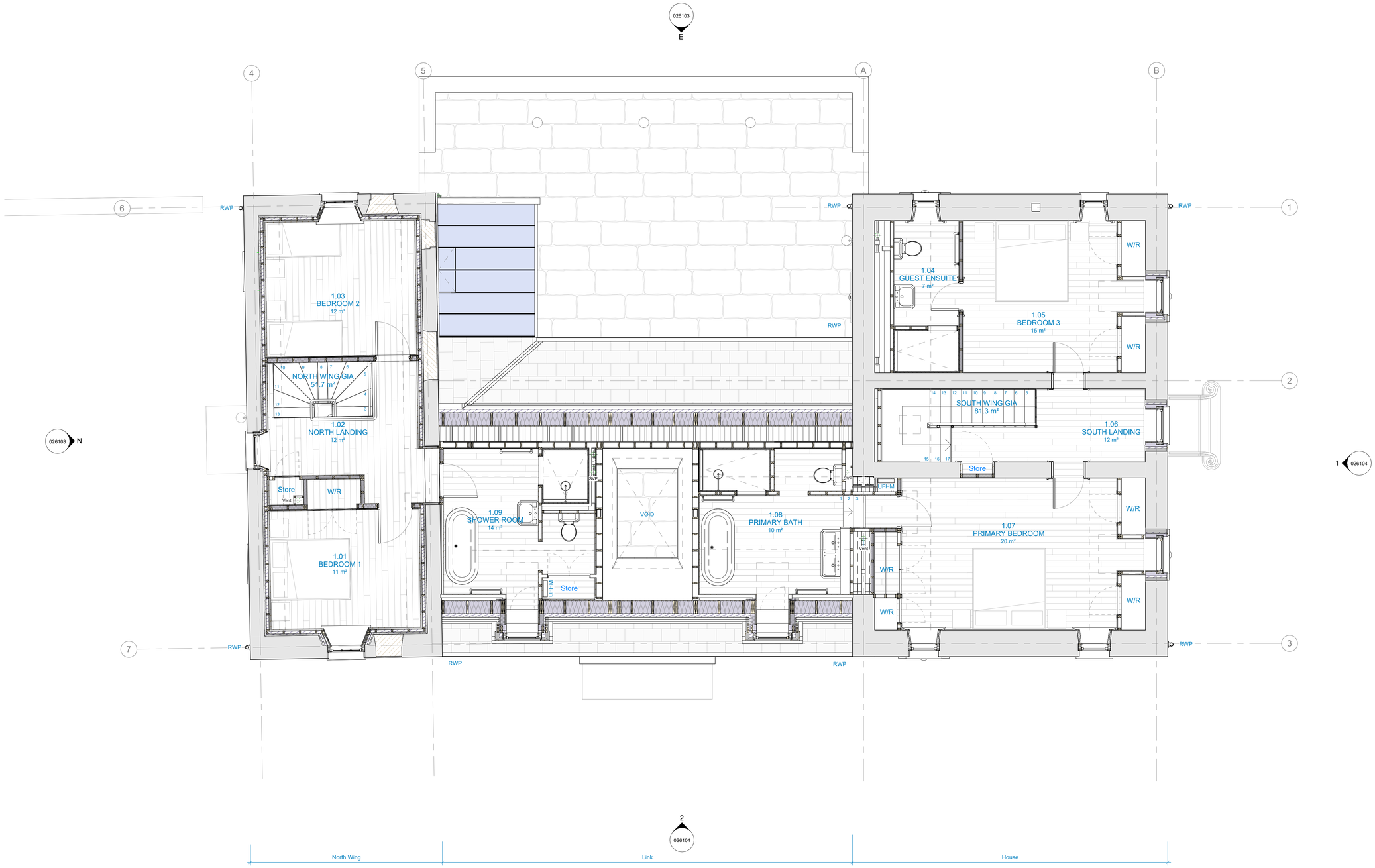

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Drawing Title
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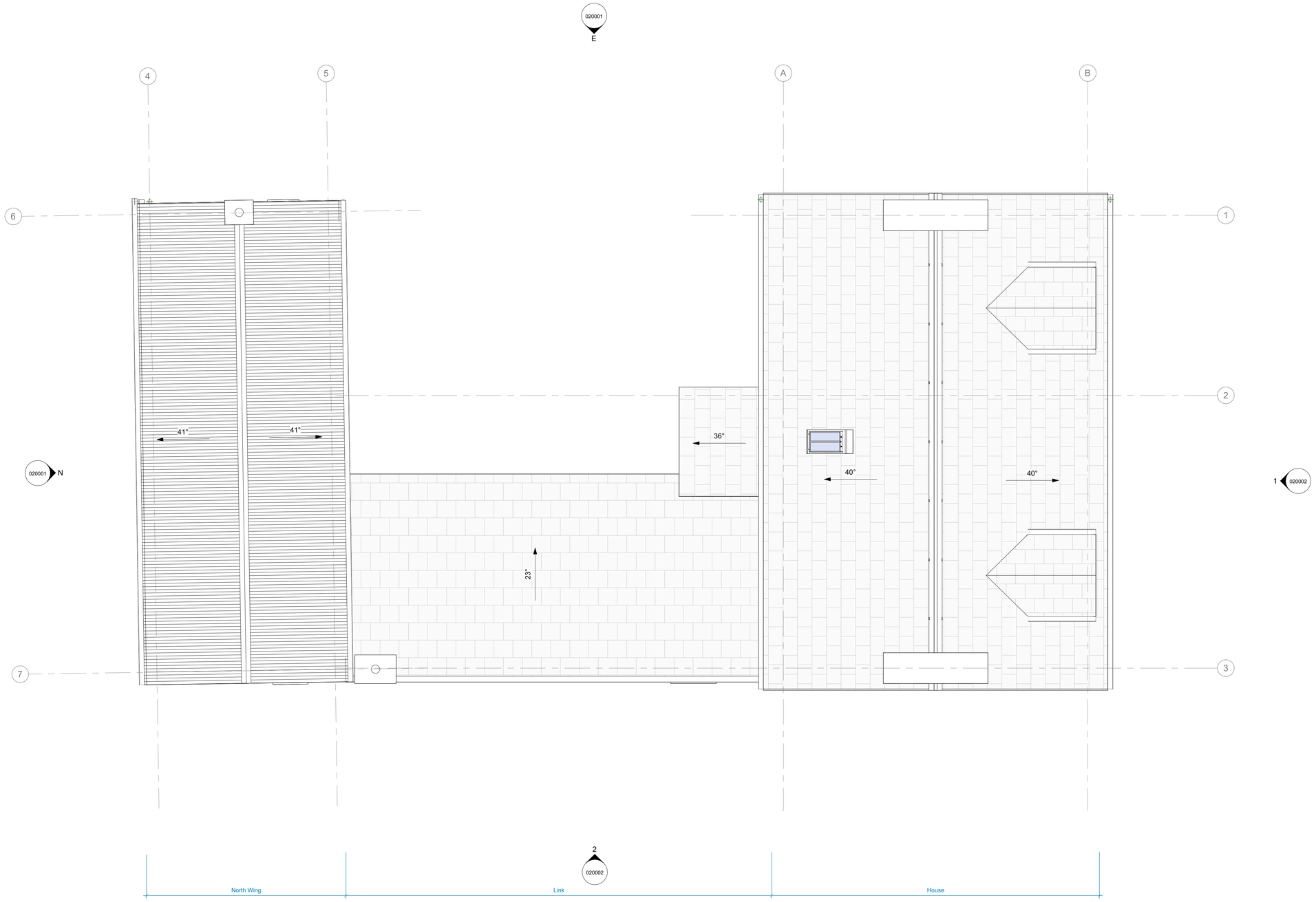

Project
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Address
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Client
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Date
14.02.2025

Drawing Status
Sketch

Drawing Title
Roof Plan - Existing

Drawing No.
1931-GRAS- **ZZ-RL** -DR-A-**016103**

Revision
P1

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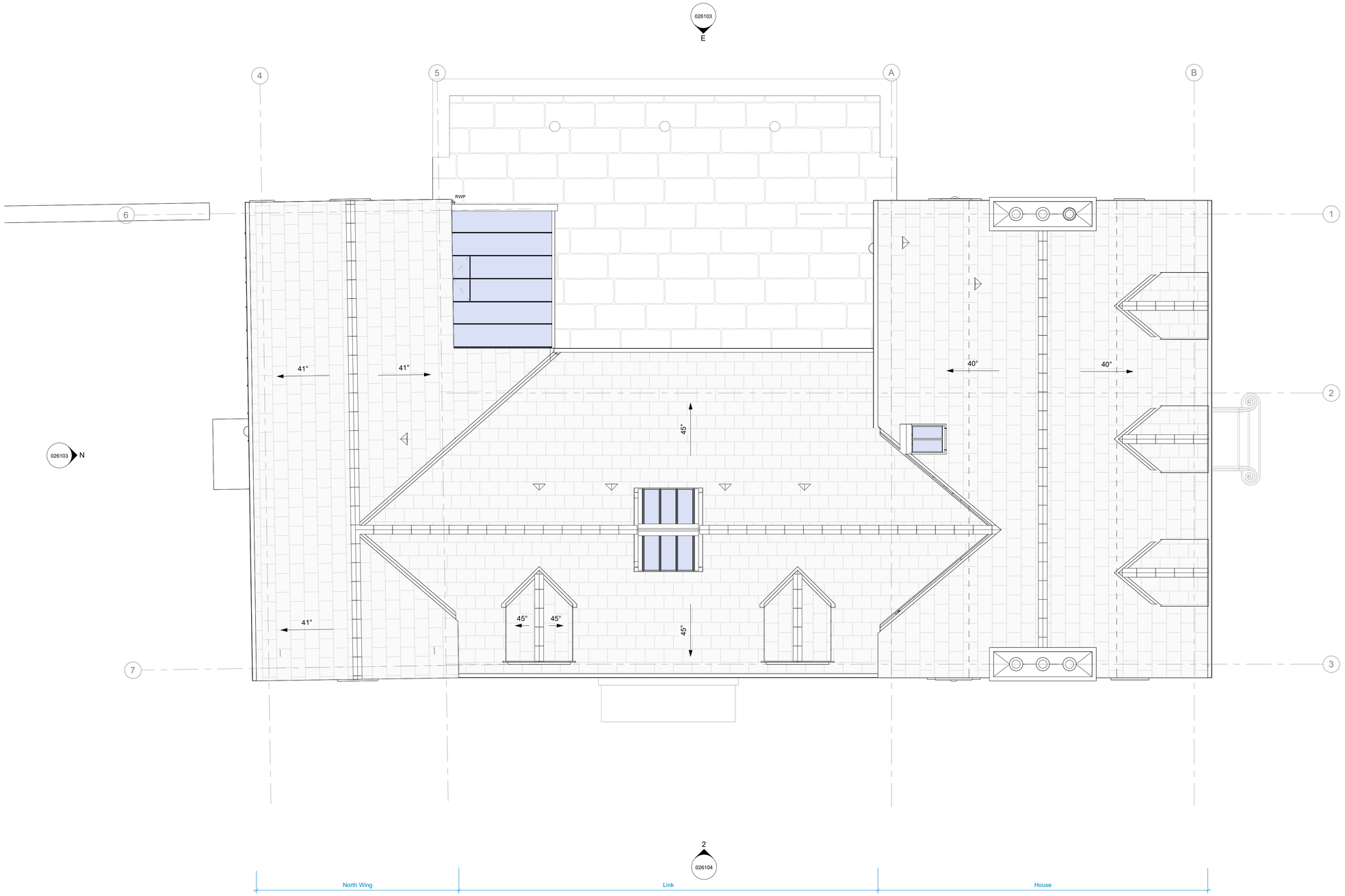
Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL



Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
Tom Slaney

Date
14.02.2025

Drawing Status
Sketch

Drawing Title
Roof Plan - Proposed

Drawing No.
1931-GRAS- **ZZ-RL** -DR-A-**016106**

Revision
P1

Scale / Format
1 : 50 / A1

Drawn by
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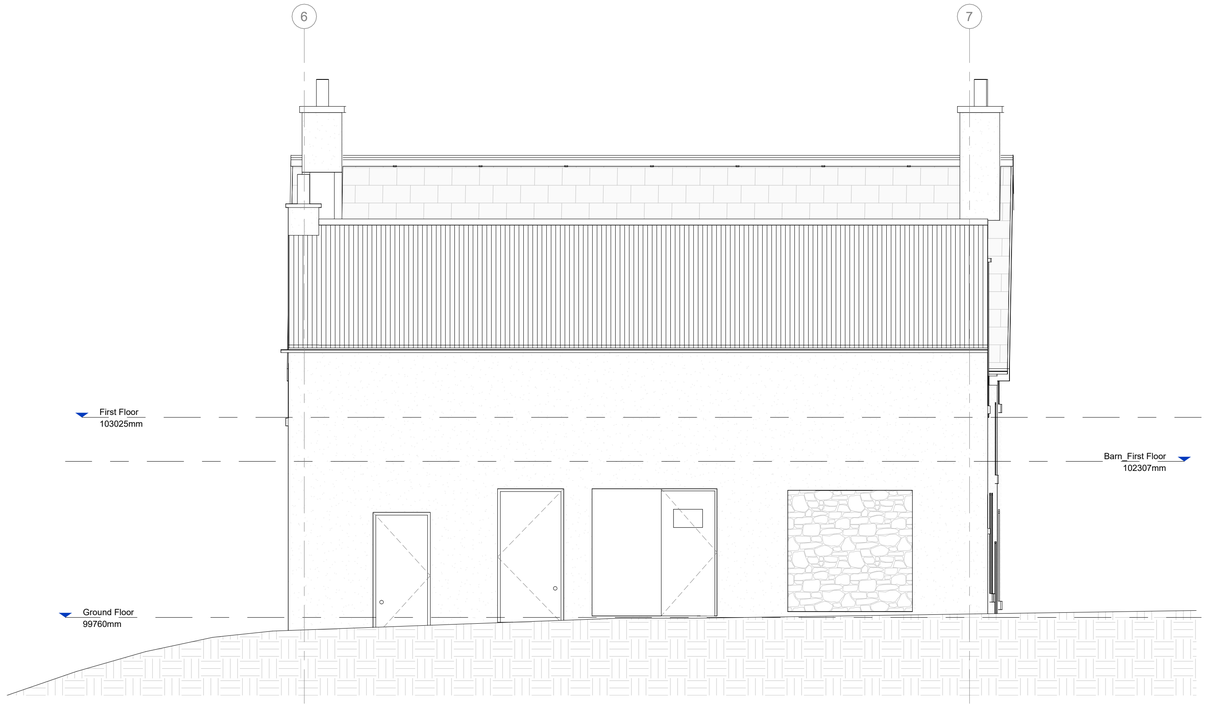
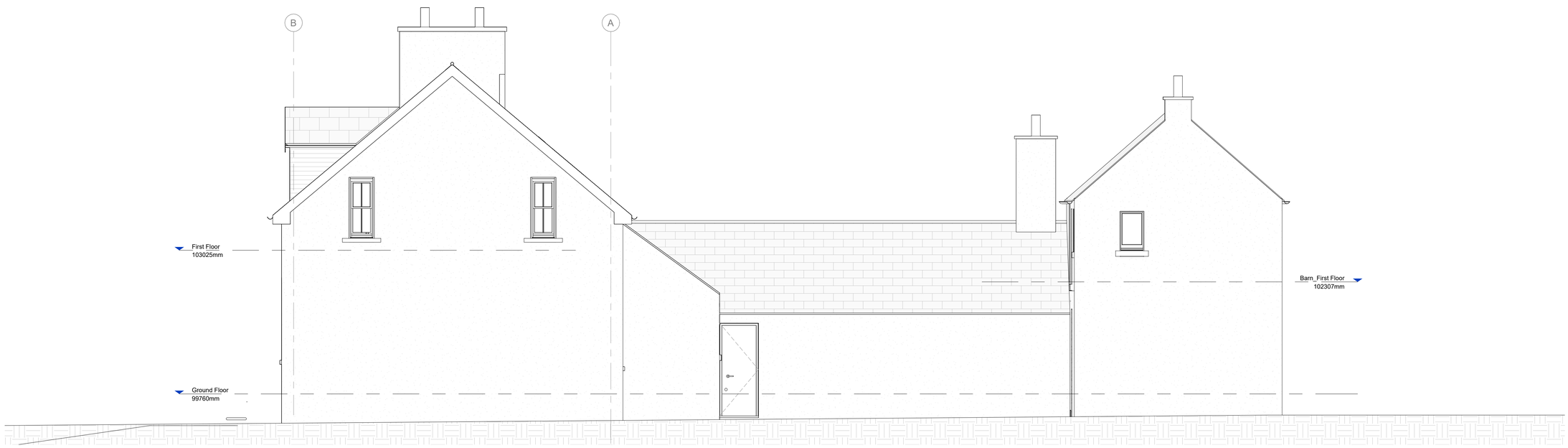


North Elevation
1 : 50



East Elevation
1 : 50

General Notes

Do not scale for construction purposes. Contractors shall work to figured dimensions only. Verify all dimensions on site and clarify all discrepancies with the architect prior to construction. Drawings to be read with all relevant specification and schedules.

Fire safety related elements shown for information only and must be confirmed by a suitably qualified, independently appointed fire engineer and/or specialist.

Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
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Address
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Client
Tom Slaney

Date
17/01/25

Drawing Status
Sketch

Drawing Title
Elevations - North & East - Existing

Drawing No.
1931-GRAS- **ZZ-XX** -DR-A-**026101**

Revision
P1

Scale / Format
1 : 50 / A1

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South Elevation
1 : 50

West Elevation
1 : 50

General Notes

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Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
Tom Slaney

Date
17/01/25

Drawing Status
Sketch

Drawing Title
Elevations - South & West - Existing

Drawing No.
1931-GRAS- **ZZ-XX** -DR-A-**026102**

Revision
P1

Scale / Format
1 : 50 / A1

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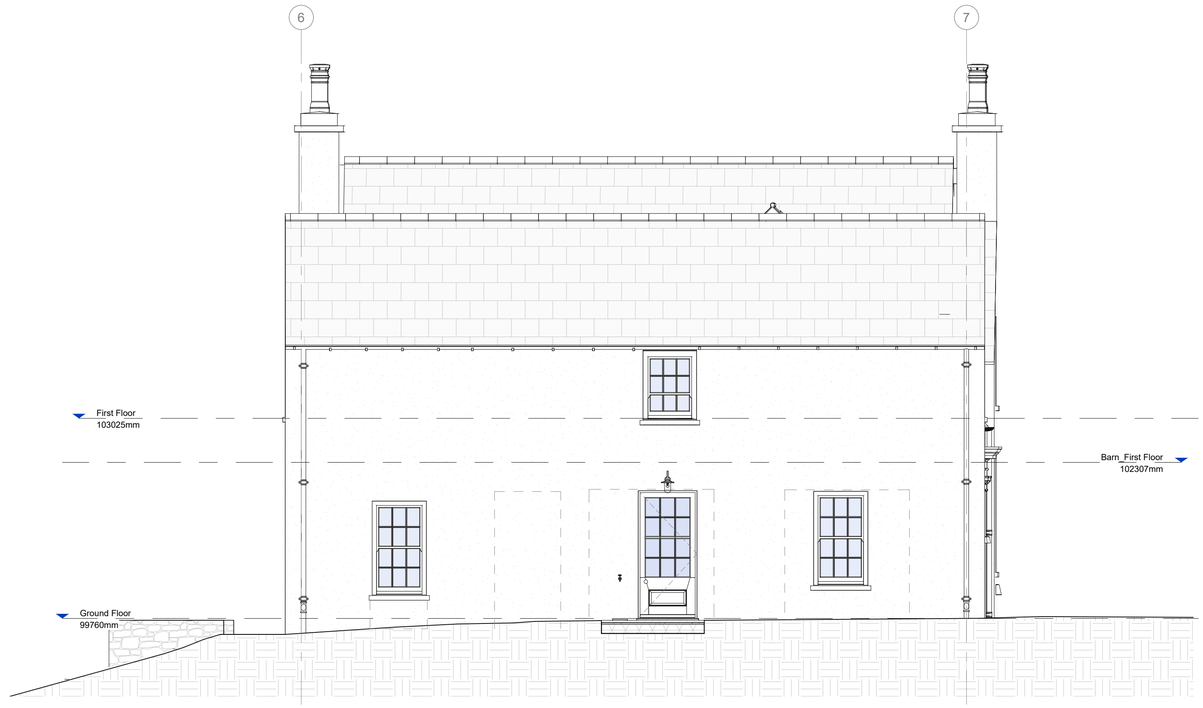

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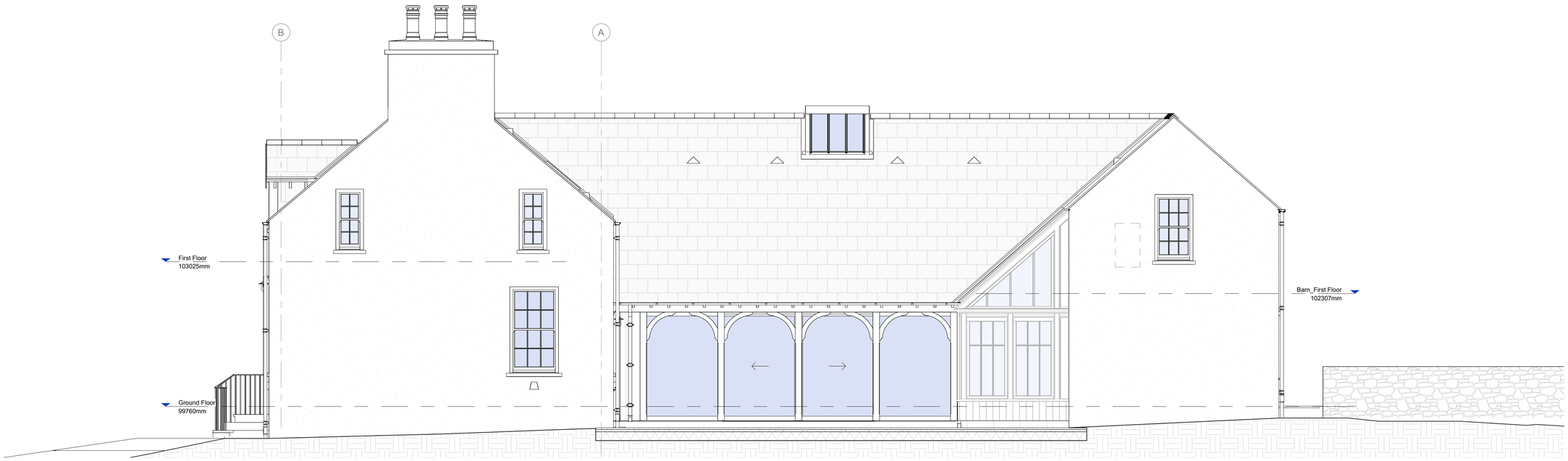

East Elevation
1 : 50

General Notes

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Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
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Client
Tom Slaney

Date
17/01/25

Drawing Status
Sketch

Drawing Title
Elevations - North & East - Proposed

Drawing No. 1931-GRAS- **ZZ-XX** -DR-A-**026103**

Revision P1

Scale / Format 1 : 50 / A1

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South Elevation
1 : 50

West Elevation
1 : 50

General Notes

Do not scale for construction purposes. Contractors shall work to figured dimensions only. Verify all dimensions on site and clarity all discrepancies with the architect prior to construction. Drawings to be read with all relevant specification and schedules.

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Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
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Client
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Date
17/01/25

Drawing Status
Sketch

Drawing Title
Elevations - South & West - Proposed

Drawing No. 1931-GRAS- **ZZ-XX** -DR-A-**026104**

Revision P1

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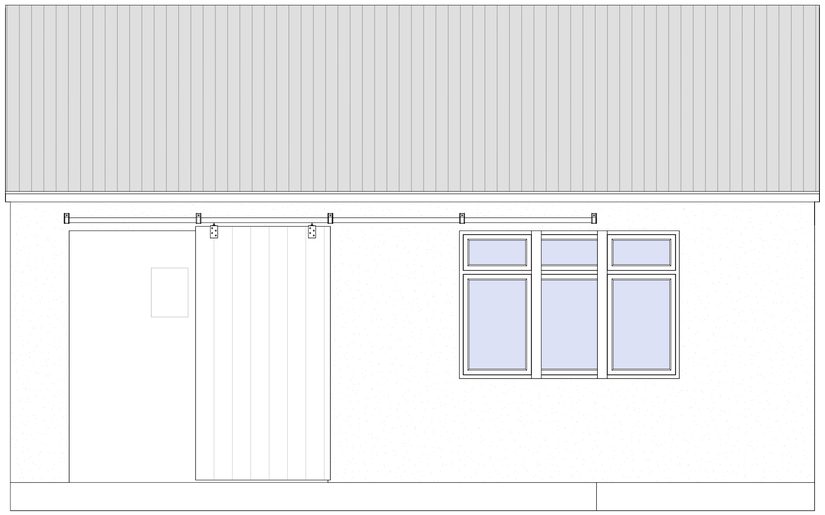
Note:

The works to the shed roof can only be carried out during the period mid-March to end of April 2026 when the bat hibernation period is over and roosting period has not yet begun.



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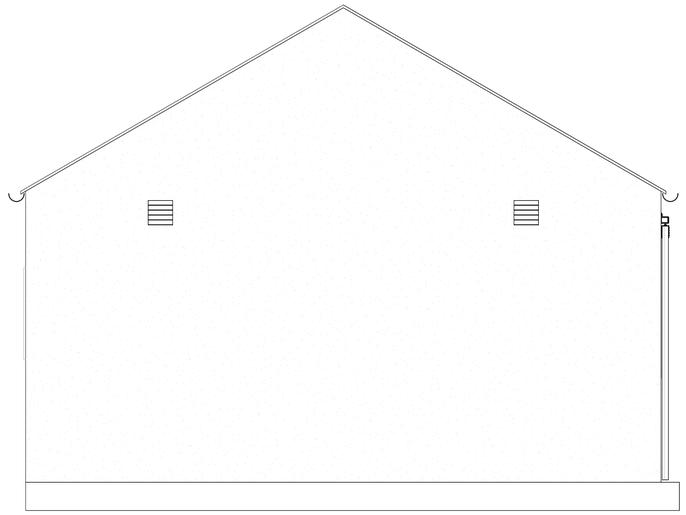
1 : 25



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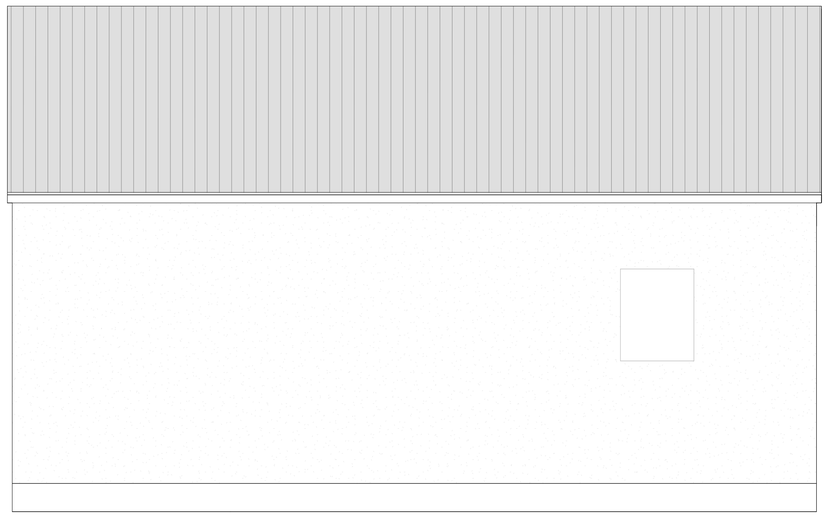
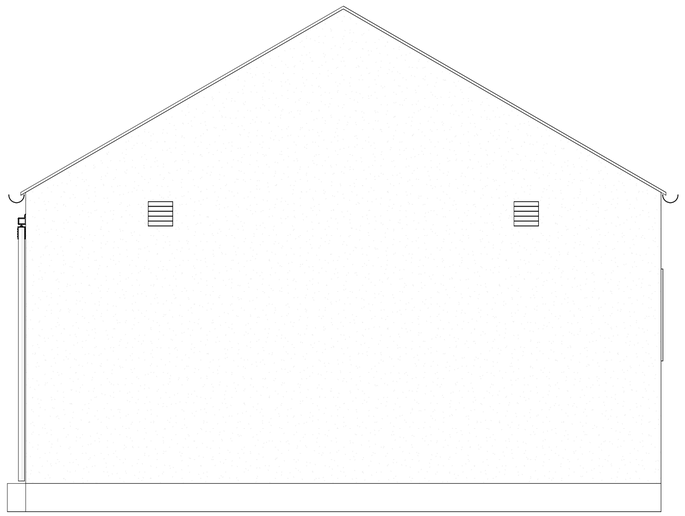
1 : 25



3 | North Elevation -Existing Copy 1
1 : 25



4 | East Elevation - Existing Copy 1
1 : 25

General Notes

Do not scale for construction purposes. Contractors shall work to figured dimensions only. Verify all dimensions on site and clarify all discrepancies with the architect prior to construction. Drawings to be read with all relevant specification and schedules.

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Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
Tom Slaney

Date
17/01/25

Drawing Status
Sketch

Drawing Title
Shed - Elevations - Existing

Drawing No.
1931-GRAS- **ZZ-XX** -DR-A-**026105**

Revision
P1

Scale / Format
1 : 25 / A1

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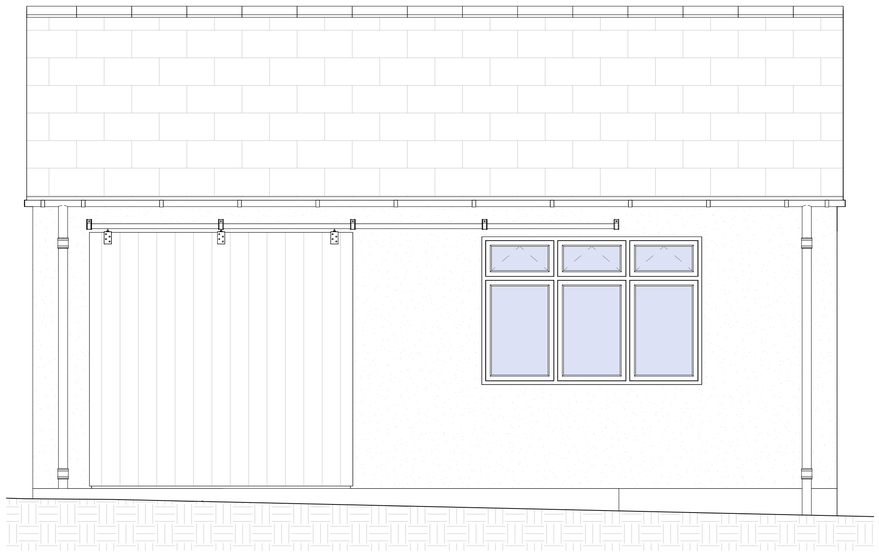
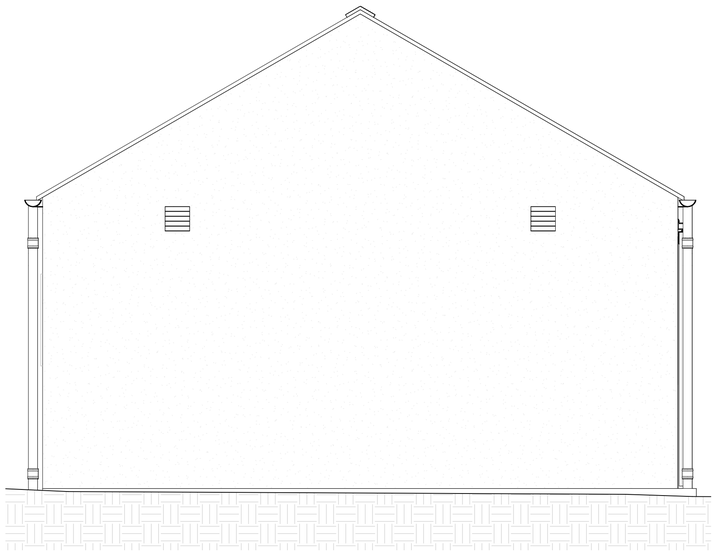


1 | South Elevation
1 : 25



2 | West Elevation
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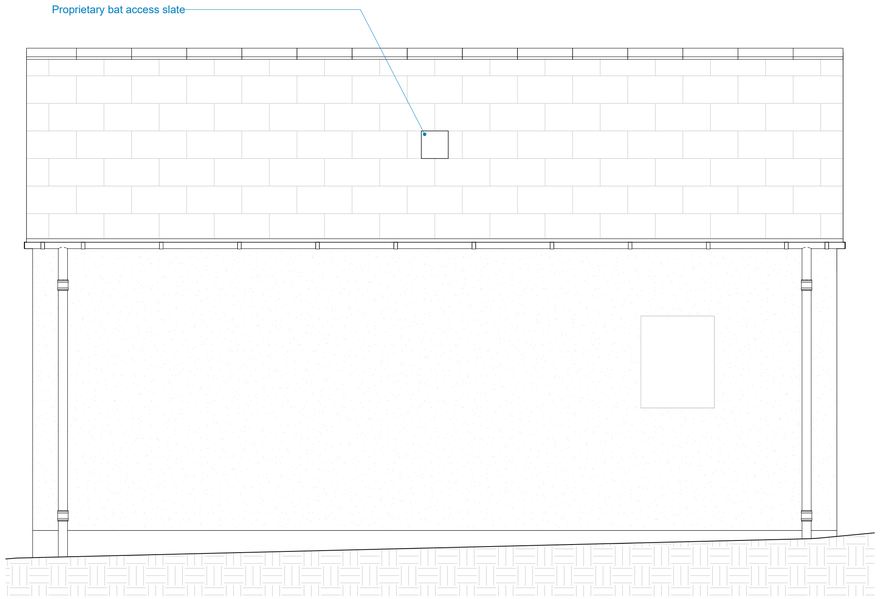
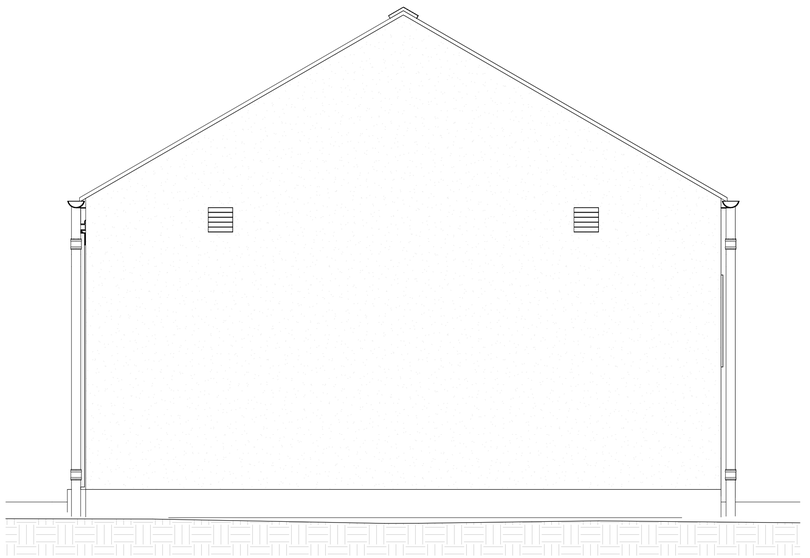


3 | North Elevation
1 : 25



4 | East Elevation
1 : 25

General Notes

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Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
Tom Slaney

Date
17/01/25

Drawing Status
Sketch

Drawing Title
Shed - Elevations - Proposed

Drawing No. 1931-GRAS- **ZZ-XX** -DR-A-**026106**

Revision P1

Scale / Format 1 : 25 / A1

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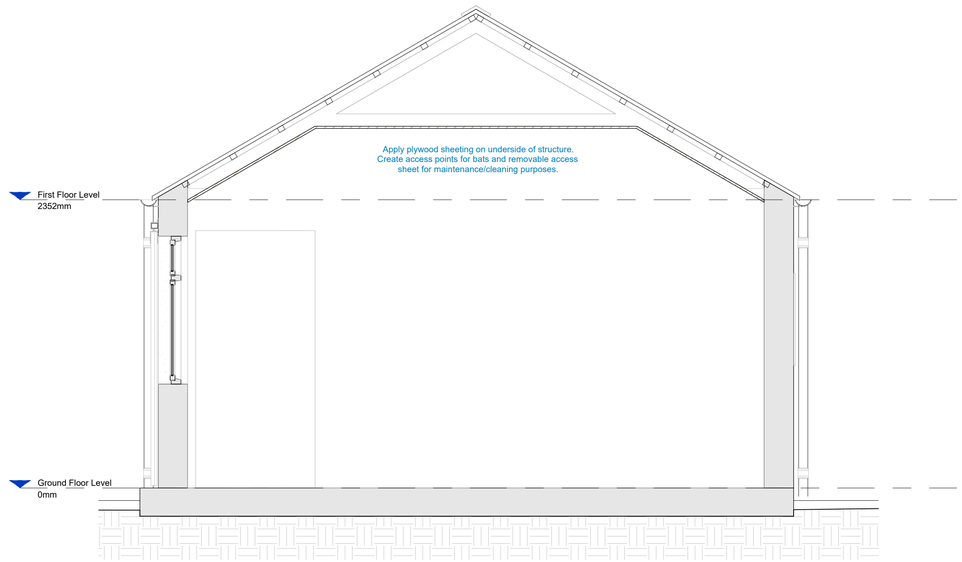
Note:

The works to the shed roof can only be carried out during the period mid-March to end of April 2026 when the bat hibernation period is over and roosting period has not yet begun.



H | Proposed Section HH
1 : 25

General Notes

Do not scale for construction purposes. Contractors shall work to figured dimensions only. Verify all dimensions on site and clarify all discrepancies with the architect prior to construction. Drawings to be read with all relevant specification and schedules.

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Revision	Description	Date	Dr	Ch
P1	Derogation License Application	14.02.25	DA	DL

Project
Gartan Lodge

Address
Letterkenny Co. Donegal, Ireland

Client
Tom Slaney

Date
17/01/25

Drawing Status
Sketch

Drawing Title
Shed - Section HH - Proposed

Drawing No. 1931-GRAS- **ZZ-XX** -DR-A-**036101**

Revision P1

Scale / Format 1 : 25 / A1

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Appendix C
Material Specifications

Leeds Institute of Textiles & Colour
SCHOOL OF DESIGN

UNIVERSITY OF LEEDS

Testing Services Report

19 September 2024

Leeds Institute of Textiles & Colour (LITAC)
School of Design, University of Leeds
Clothworkers' Central Building, University Rd.
Leeds, LS2 9JT
litac@leeds.ac.uk

Client:
Eng. Stan Admiraal BBE
SIGA
Rütmattstrasse 7, 6017 Ruswil
Switzerland
+41 41 499 69 86
+44 744 668 2221
Stan.Admiraal@siga.swiss

Ref: BMT001C-revised

Services:

Evaluating the snagging propensity of roofing membranes in buildings by roosting bats

Procedure:

The roof membrane samples were tested as-received on both the face and back (N=3). The procedure followed is as outlined in Essah et al., 2020[1] at 1,000 rotations. The test failure threshold was ≥1 loop/cm^2.

Sample:

- SIGA Majcoat 350 (8750-150033) Diffusion-open, thermally weldable layer

[1] Essah, E.A., Russell, S.J., Waring, S.D., Ferguson, J., Williams, C., Walsh, K., Dyer, S. and Raynor, R. 2020. Method for evaluating the snagging propensity of roofing membranes in buildings by roosting bats. *Building Research & Information*. **48**(8), pp.886–898.

Results:

Following the modified pilling test for both sides of the membrane, Majcoat 350 showed no evidence of loop formation on either side.

Summary Table:

Sample	Side	Average loops/cm^2			Comments	Overall Material Pass/Fail
		Sample A	Sample B	Sample C		
Majcoat 350	Face	0	0	0	No loop formation observed due to surface coating	Pass
	Back	0	0	0	No loop formation observed due to surface coating	

Photos of representative control and snagged test specimens are provided in the following pages.

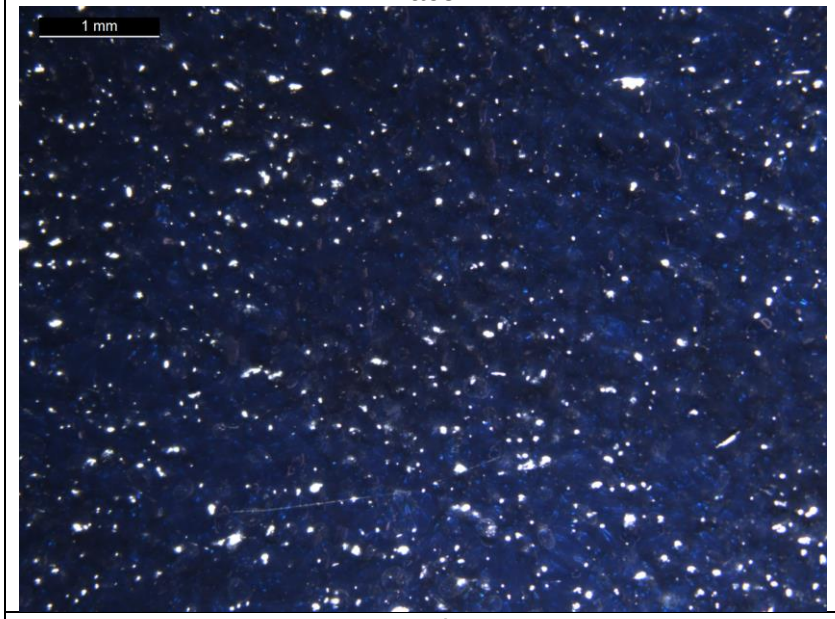
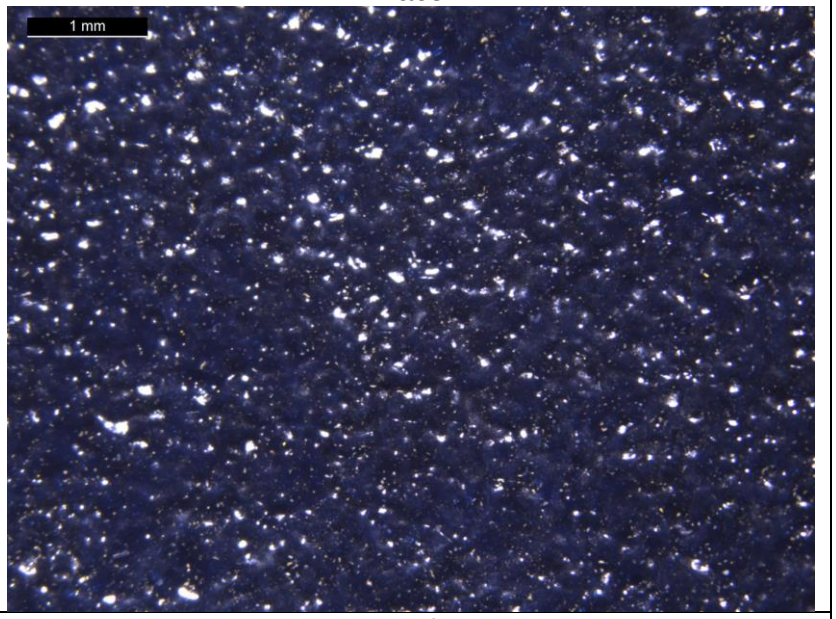
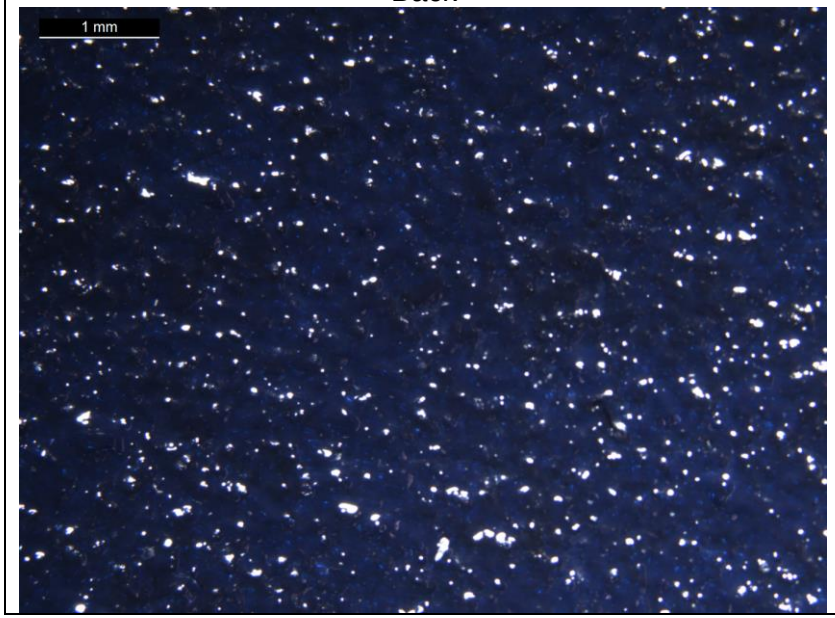
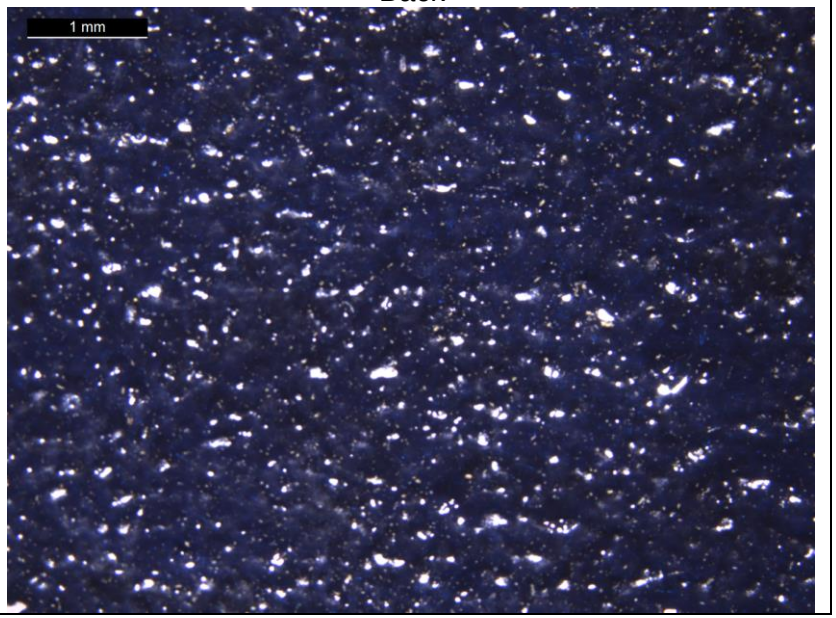
Tests conducted and report written by:

Mary Glasper, MSc
Research Technician, LITAC

Report reviewed and approved by:

Stephen J. Russell
Professor of Textile Materials & Technology
Director, LITAC

Majcoat 350

Control	Test
Face 	Face 
Back 	Back 

Product data sheet

Majcoat® 350

Updated on: 03.07.2023

Reference standard: EN 13859-1

Distributor: SIGA

Type of application: roofing underlay membrane for rainproof and windtight

Instructions: see manual

Construction: 3- layered; Special fleece with TPU coating.

Characteristics:

		Standards	Units	Values
Dimensions	length width straightness	EN 1848-2 EN 1848-2 EN 1848-2	m m -	33.4 1.5/3 passed
Total weight		EN 1848-2	g/m^2	380
Thickness			mm	0.8
Resistance to tearing (nail shank)	lengthwise crosswise	EN 12310-1	N	245 235
Tensile properties **Maximum tensile strength**	lengthwise crosswise	EN 12311-2	N/50 mm	440 500
Tensile properties **Elongation**	lengthwise crosswise	EN 12311-2	%	55 45
Air layer thickness equivalent to diffusion s_d:		EN 12572 (C)	m	0.3
Resistance to water penetration		EN 1928	-	W1
Fire classification		EN 13501-1 VKF	Class BKZ	E 4.1
ZVDH Class		ZVDH guideline	-	UDB-A USB-A
Tightness against rain			-	passed
Temperature resistance	min. temperature max. temperature	EN 1109	°C	- 40 90
Maximum short-term temperature resistance			°C	up to +120
Outdoor weathering **Suitable as temporary cover/construction period sealing**				16 weeks

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Appendix D
Bat Survey Report

Churchill House, Churchill, Co. Donegal

Bat survey and assessment

Report prepared for

DEDALUS ARCHITECTURE

By

Aengus Kennedy

26 - June - 2024

Aengus Kennedy
NatureNorthWest
Bayhill
Ramelton
Co. Donegal

naturenthwest@gmail.com 086 812 3019

SUMMARY

Site:	Gartan Lodge, Carrowtrasna Lower, Churchill, Co. Donegal, F992 X431
Structures:	Main house, shed and stable
Grid reference:	C 06388 18808
Bat species present:	Soprano Pipistrelle, Brown long-eared
Roost location:	Soprano pipistrelle roost - south roof of main house
	Brown long-eared roosts - roof lining of both out-buildings
Bat access:	Main house - Under slates on south end of building
	Shed and Stable - doorways and roof lining
Proposed work:	Upgrading and modernising of structure
Impact on bats:	Potential impact on nursery roosts for both species
Bat survey by:	Aengus Kennedy

Recommendations

- No work should be conducted that effect the roofs of any of the buildings or the upstairs ceilings during the months of May to mid October to avoid disturbance of roost space.
- No work should be conducted to the roofs of the out-buildings until mid March, when potential hibernation period is over. This allows for a very short window from between mid March to the end of April for roof work to be conducted in the out-buildings.
- No work should be conducted on internal walls of the main house during the winter months, avoiding any potential hibernation disturbance of soprano pipistrelles.
- Attic and roof spaces should remain open for bats to forage. This is significant in all buildings but in particular in the out-buildings as brown long-eared bats tend to actively forage inside the roof space before leaving.
- Access must be retained for bats in the out-buildings by the use of either half doors, louvers and/or the retention of existing openings. Large entrances are recommended around the doorways for continued future use by brown long-eared bats.
- Access slits must be provided at the gable ends of both out-buildings.
- Access slits must be provided at the access sites recorded on the south end of the main building (see figure 2).
- Access slits must be provided at the gable ends of the upstairs store room.
- If timber treatment is used, it must be bat friendly.
- Any crevices should be carefully checked for bats, using a torch, before repointing. Repointing must be kept to a minimum.
- If bats are found at any stage of the building work, work must cease and the author and NPWS ranger must be contacted. NPWS ranger for the area: Mark McFadden - 087 687 7693
- Bat boxes should be fitted on both the south side of the beech trees and on the south side of the building after construction works are completed.
- Bird boxes, both open fronted and small holed are recommended for the north side of the building and on some of the trees when works are completed.
- Access should be kept in the north facing sheds via half doors or retaining existing openings for birds.
- It is also recommended that the project manager contacts the local area conservation ranger (details above) to inform them of bat presence, this survey and the mitigation recommendations. If work is to carried out at or near the bat roost(s) a derogation licence would be necessary.

Introduction

Aengus Kennedy, ecological consultant, was requested by DEDALUS ARCHITECTURE to provide a bat survey of the buildings to ensure any animals using the structure were safeguarded during planned works.

The day survey of the structures was conducted on the 12th of June 2024 from 12 - 2pm and again from 7pm - 9.30pm (external and internal). The existing walls and roof spaces in the main house offer many opportunities for bat use through various crevices and gaps as there is available access to brick work and within the roof spaces. The large open roof spaces and open doorways of the out-buildings also offer opportunities for bat roosts.

A dusk emergence survey was conducted from 9.45 pm - 12 midnight.

The surveys found evidence of bats using rooms in the main house and in both out-buildings. A potential nursery roost for soprano pipistrelle's was discovered in the main building and small numbers of brown long-eared bats were detected using both out-buildings.

Site location and access

The estate is located in the Churchill area, on the east side of lough Akibbon, address recorded above.

Bat survey

This report presents the results of two site visits by Aengus Kennedy on the 12th June, 2024. These visits comprised of a day time survey of all buildings, inside and out, followed by two bat surveyors conducting a dusk emergence survey. Evidence of bird nests was also noted.

Survey methodology

Survey of bat fauna was carried out by means of a thorough search within the site. The roof space of the buildings was inspected for bat use. Presence of bats is indicated principally by their signs, such as staining, lack of spider webs, feeding signs or droppings - though direct observations are also occasionally made.

Survey constraints

There were no seasonal constraints in regard to the bat survey as it was undertaken within the active bat season. Weather was calm and ideal.

Brief description of Gartan Lodge from the perspective of bat habitat

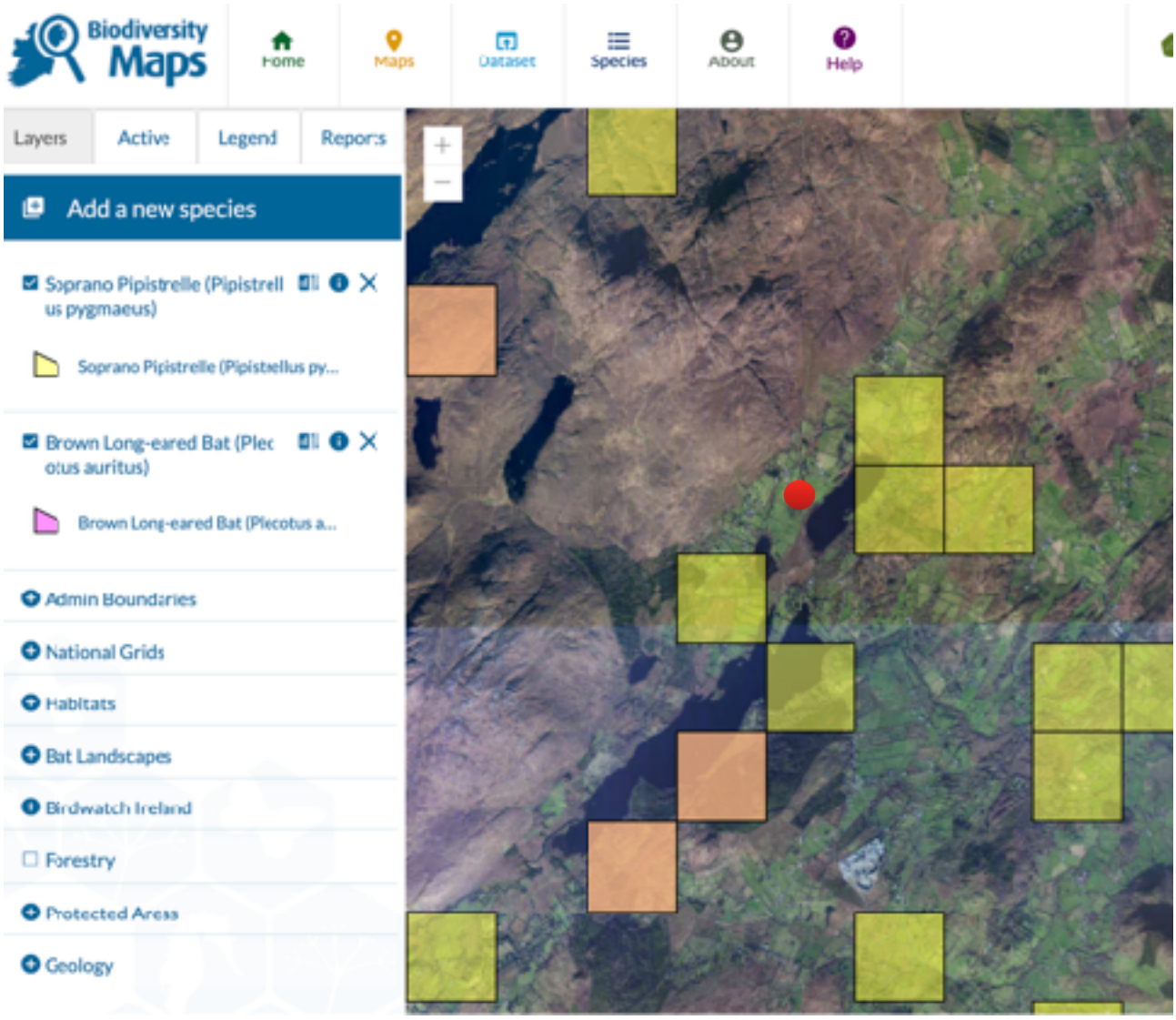
The estate is situated in an agricultural area of countryside with associated stone walls and mature tree-lines mainly of sycamore and beech and horse chestnut on the approach road and around the south and east side of the building. Mature and developed hedgerows are also present in the area. Scrub habitats are also present. Lough Akibbon lies to the west of the site. This area is ideal for insect diversity, bird and bat diversity.

Desktop survey of historical bat presence

Recordings from the Biodiversity Data Centre (https://maps.biodiversityireland.ie/)show bats recorded in the Churchill area in the past. Searches were conducted for all native species, findings for species detected can be seen below. Estate location is indicted by a red spot.

A search on the biodiversity Ireland mapping website for soprano pipistrelle and brown long-eared bats showed that both species were recorded historically in the area. Red spot indicates barn location. Yellow squares indicate soprano pipistrelles, orange brown long-eared bats.

Soprano pipistrelles are both easier to record and more common, this trend is reflected in the existing records. Information from this survey will be inputted into the biodiversity datas centres database.



Results of bat survey

Main house

Store room upstairs ref: FFL:99.30
The initial indication of bats was the lack of cobwebs in the rafter support beams and roof spaces of rooms, indicating a possible flight paths. Bat droppings were detected on the floor of the upstairs store area (see figure 1), small tortoiseshell butterfly wings were also detected at the same site. However, no bats were detected using this space during the dusk emergence survey. The indications of bat use point towards recent use by bats as some of the droppings were fresh as were the butterfly wings.

Store rooms downstairs ref: FFL:99.30
No bat signs of bat use or bat presence were detected during day or evening surveys in the downstairs spaces of the store room end of the house. An active swallows nest with 4 chicks was recorded in the north east store room. Historic swallows nests were in both the central and the north east store room (see figure 2).

Link building ref: FFL:99.26
No signs of bat use or bat presence were detected in the link building.

Main house downstairs ref: FFL99.76
Signs of bat use was recorded in both the dining room and kitchen of the main house. These signs were of numerous small tortoiseshell butterfly wings (see figure 3) and some moth species wings. No droppings were detected in any of the downstairs rooms which indicates foraging use more than roosts.
All rooms downstairs had a lack of cobwebs in the ceiling spaces with many cobwebs present on the room edges which indicted possible forging use of bats.

Main house upstairs ref: FFL99.76
Small tortoiseshell wings were found in the master bedroom indicating bat foraging. Cobwebs were absent in all rooms upstairs where flight paths may exist. No droppings were recorded in the upstairs rooms.

Attic space of main house ref: FFL99.76
Large numbers of droppings were found in two main clusters in the attic space of the main house. These were at the south end and the central space (see figure 4). An absence of cobwebs along with the droppings, some of which were fresh, pointed towards a bat roost in the attic space.
During the dusk emergence survey, 49 soprano pipistrelle bats were recorded emerging from two different areas between the fascia boards and the roof tiles. These were on both the east and west sides of the roof, near the souther end, immediately south of the supporting posts (see figure 6).

Attic space of main house ref: FFL99.76 (contd.)

The emerging points and locations of droppings within the house are marked in figure 6. The first bat to emerge was recorded at 10.20pm, 11 minutes after sunset and the last recording was at 11.25pm. Soprano pipistrelles are a very common roof dwelling species in Ireland, their presence would indicate a nursery roost.

Outdoor buildings and surrounds

Outdoor shed ref: FFL:99.87

No bat droppings or other signs were recorded other than a lack of cobwebs in the main roof space. A number of bats were heard in between the felt roof lining and the slates at 9.14pm. 4 brown long-eared bats were seen emerging from the roof lining at the east end of the shed inside, the earliest at 22.46pm (see figure 7). They were recorded flying across the roof space inside the shed before exiting through the open doorway.

Stable building ref: FFL:98.81

Bat droppings and insect wings were observed at the southern end inside the stable building. No cobwebs in the roof space further indicated bat use. 2 brown long-eared bats were observed using the roof space, one roosting from the roof lining (see figure 8) and one foraging between the rafters.

Surrounding area

Soprano pipistrelles were recorded multiple time from as early as 21.40pm, a full 30 minutes before darkness. They tended to concentrate around the trees to the east of the main house during this survey.

Legal status and conservation issues – bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions. All bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat is further listed under Annex II. Essentially this means disturbance of bats or their roost is prohibited by law.

Potential impacts of proposed works on bat fauna

Any proposed works could have significant impact on all three bat roosts observed. Most significantly, any work on the roof or upstairs ceilings of the main house between the months of April and October could disturb the soprano pipistrelle roost. Similarly any work on the roofs or works that result in blocking of doorways in the two out-buildings between April and October could well disturb the brown long-eared bat roosts observed. The lath and plaster internal walls in the main house have the potential for hibernation spaces for either species of bat so any work on these structures could impact on bats during the winter months.

Recommendations

- No work should be conducted that effect the roofs of any of the buildings or the upstairs ceilings during the months of May to mid October to avoid disturbance of roost space.
- No work should be conducted to the roofs of the out-buildings until mid March, when potential hibernation period is over. This allows for a very short window from between mid March to the end of April for roof work to be conducted in the out-buildings.
- No work should be conducted on internal walls of the main house during the winter months, avoiding any potential hibernation disturbance of soprano pipistrelles.
- Attic and roof spaces should remain open for bats to forage. This is significant in all buildings but in particular in the out-buildings as brown long-eared bats tend to actively forage inside the roof space before leaving
- Access must be retained for bats by the use of either half doors, louvers, half inch gaps at the apex, and/or the retention of existing openings.
- Access slits must be provided at the gable ends of both out-buildings.
- Access slits must be provided at the access sites recorded on the south end of the main building (see figure 5).
- If timber treatment is used, it must be bat friendly.
- Any crevices should be carefully checked for bats, using a torch, before repointing. Repointing must be kept to a minimum.
- If bats are found at any stage of the building work, work must cease and the author and NPWS ranger must be contacted. NPWS ranger for the area: Mark McFadden - 087 687 7693
- Bird boxes, both open fronted and small holed are recommended for the north side of the building and on some of the trees when works are completed.
- Access should be kept in the north facing sheds via half doors or retaining existing openings for birds.
- Bat boxes should be fitted on both the south side of the beech trees and on the south side of the building after construction works are completed.
- It is also recommended that the project manager contacts the local area conservation ranger (details above) to inform them of bat presence, this survey and the mitigation recommendations. If work is to carried out at or near the bat roost(s) a derogation licence would be necessary.

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Appendices

Bat ecology – general

The bat is the only mammal that is capable of true flight. There are over 1,300 species worldwide, representing almost a quarter of all mammal species. There are 47 species in Europe - in Ireland, nine species of bat are currently known to exist, which are classified into two families, the Rhinolophidae (Horseshoe bats) and the Vespertilionidae (Common bats).

Breeding and longevity

Irish bats can produce one young per year but, more usually, only one young is born every two years (Boyd & Stebbings, 1989). This slow rate of reproduction inhibits repopulation in areas of rapid decline. Although bats have been known to live for twenty or more years, this is rare as most die in their first and the average lifespan, in the wild, is four years.

Threats

All bat species are in decline as they face many threats to their highly developed and specialised lifestyles. Many bats succumb to poisons used as woodworm treatments within their roosting sites (Racey & Swift, 1986). Agricultural intensification, with the loss of hedgerows, tree-lines, woodlands and species-rich grasslands have impacted bat species also. Habitual roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development. Summer roosts are prone to disturbance from vandals. Agricultural pesticides accumulate in their prey, reaching lethal doses (Jefferies, 1972). Chemical treatments in cattle production sterilise dung thus ensuring that no insects can breed within it to be fed upon by bats. Likewise, river pollution, from agricultural runoff, reduces the abundance of aquatic insects. Road building, with the resultant loss of foraging and roosting sites is a significant cause in the reduction of bat populations across Europe.

Extinction

As recently as 1992, the greater mouse-eared bat Myotis myotis became the first mammal to become extinct in Britain since the wolf in the 18th century.

All the European bat species feed exclusively on insects. A Pipistrelle, weighing only 4 to 8 grammes, will eat up to 3000 insects every night, ensuring a build up of fat in the bat's body to allow it to survive the winter deep in hibernation.

Description of bat species within the area

Soprano pipistrelle Pipistrellus pygmaeus

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer.

Brown long-eared bat Plecotus auritus

In Ireland, in the hand, the Brown Long-eared Bat cannot be mistaken for any other bat species due to its striking ears which are almost as long as its body - up to 41mm in length - which make the bat appear larger than it actually is. In flight, the ears are extended forward, ahead of the bat but, at rest, the ears are folded sideways into 'ram's-horns' and, in hibernation, they are tucked away beneath the wings to prevent exposure. The tragus is very long and broad and can be mistaken for the pinna when the bat folds this under its wings. The fur is long, thick and silky, brown to Brown yellowish on the upper side and greyish-brown on the lower. The under fur is a pale, buff brown. The face is pink and bare. The temperament is very docile and the bat behaves timidly when handled. Its large eyes make the species especially endearing. These species colonise bat boxes easily. Source: Conor Kelleher / Bat Conservation Ireland.

*Bat distribution records from O'Sullivan (1994), Richardson (2000) and Roche and Tourney (2021).

**Two common species of pipistrelle bat are present in Ireland, recent taxonomic revision. The species are identified by the frequency they use for echolocation (46Hz [Common] and 55Hz [Soprano]), and both occur in similar habitats. Roosts occur in buildings and trees.

Timber treatment list

Products suitable for use in a bat roost can be described in terms of the active ingredients (biocides) that they contain.

Any products containing active ingredients listed in the following Table 1 are suitable for use in a bat roost. Products intended for remedial timber treatment may also carry a British HSE number indicating that they have received approval under the UK Control of Pesticides Regulations (COPR) 1986, but decorative finishes usually contain such low levels of biocides that they are exempt from this requirement (in the UK).

Table 1: Insecticides and fungicides suitable for use in bat roosts

Insecticides

Permethrin Cypermethrin Boron compounds

Fungicides and decorative finishes

Tri(bexylene glycol) biborate Disodium octoborate Borester 7

Dodecylbenzyltrimethyl ammonium chloride Alkyl(benzyl)dimethylammonium chloride (= Benzalkonium chloride)

Copper naphthenate Acypetacs copper Zinc naphthenate Acypetacs zinc Zinc octoate

Sodium 2-phenylphenoxide Diclofluanid

3-iodo-2propynyl-N-butyl carbamate (Polyphase/IPBC)

Propiconazole

Adapted from English Nature's Species Conservation Handbook

Photographic record

Figure 1. Bat droppings found in store room upstairs space.

Figure 2: Swallows nest in east shed.

Figure 3: Small tortoiseshell butterfly wing found multiple times.

Figure 4: Large numbers of bat droppings in attic space of main house. Each long black sliver is an individual bat dropping.

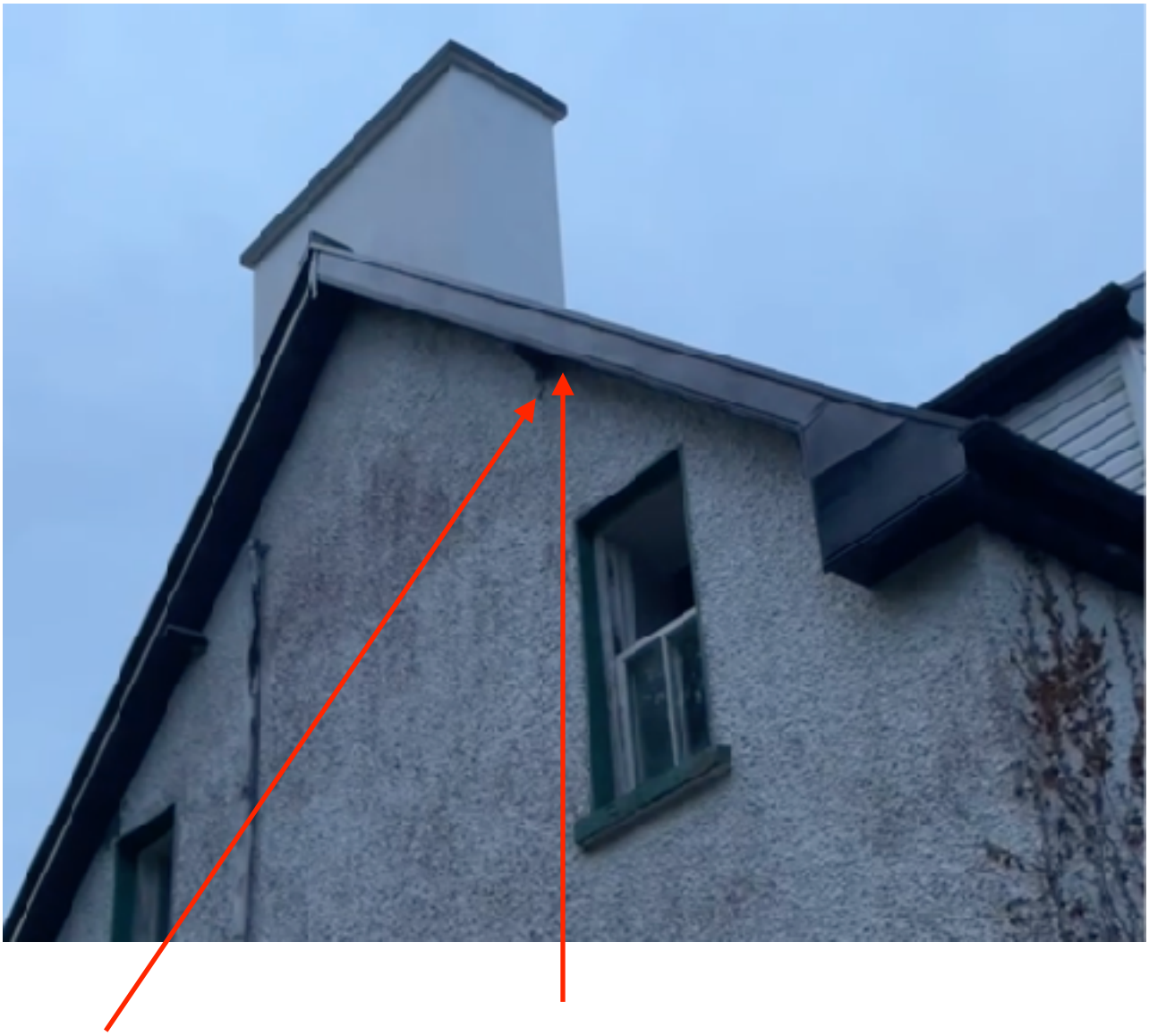

Figure 5: Screen-grab of video of soprano pipistrelle emerging from the more frequently used exit point located on the west gable side of the south end of the main house.

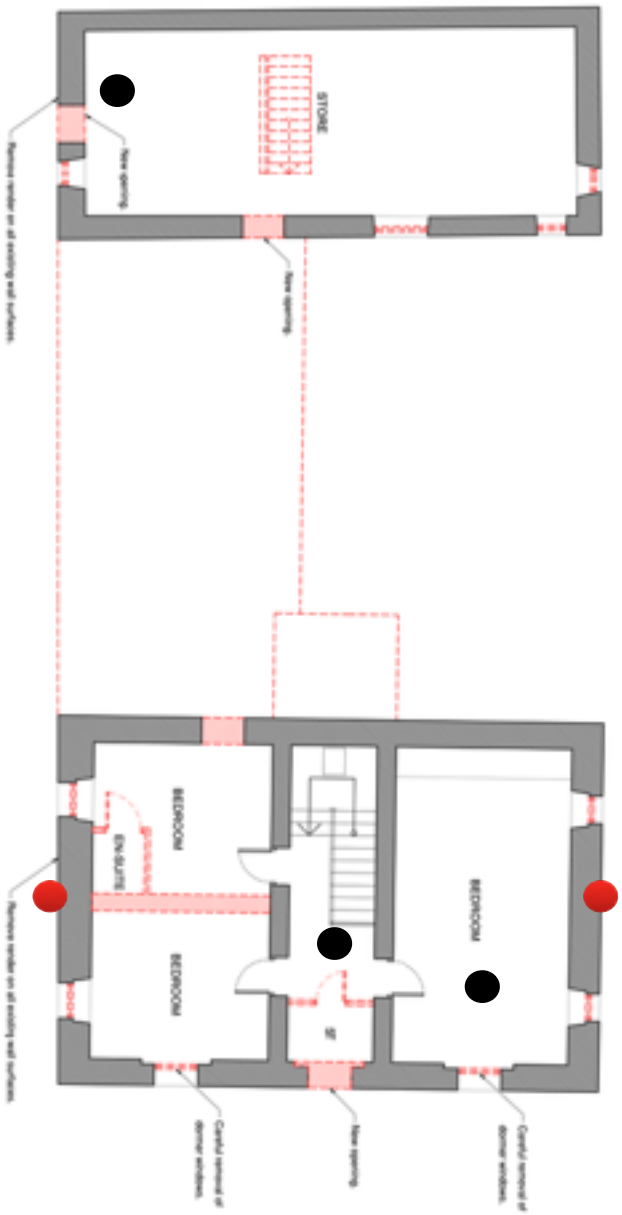

Figure 6: Bat dropping sightings (in black) in the upstairs store area and the attic of the main house and recorded sites of soprano pipistrelles exiting building (in red).
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Figure 6: Brown long eared bat emerging from its roost under the roof lining in the outdoor shed.

Figure 8: Brown long-eared bat roosting on roof lining in stable building.