

CONSERVATION REPORT

ARCHITECTURAL HERITAGE IMPACT ASSESSMENT

Project – Cart House, Stable, Byre & loft at Tullaghan, Co. Leitrim.
Repair of an outbuilding to maintain and prevent further deterioration

Grid Reference G 78224 57625

X (ITM) 578177 Y (ITM) 857638
Latitude 54.466764 Longitude -8.3366243

Address – Tawnytallan, Tullaghan, Co Leitrim F91 AK15

Prepared in support of an application for Traditional Farm Buildings Scheme Ref TF6931



Photo E_1 - North elevation of the building

Dated 13th August 2026 Ref CDT/35526

On behalf of

Ciarán Daly, Tawnytallan, Tullaghan, Co Leitrim F91 AK15

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CONTENTS

- (1) Introduction/ Overview
- (2) Historic Background
- (3) Description of project, adjoining structures and curtilage.
- (4) Assessment of Significance
- (5) Description of Proposed Development/ Methodology/ Sequence of Works
- (6) Impact of the Proposed Development
- (7) Recommended mitigation measures
- (8) Conclusion

Annexes

A3 Drawings

01 - Site Plan Layout	1/ 500
02 - Ground Floor Plan	1/100
03 - First Floor Plan	1/100
04 - Rafter Plan	1/100
05 - Roof Plan	1/100
06 - Elevations	1/200

Appendix A Roof specification

Historic Maps included in report.

Photographic record included in report.

Photographic survey dated the 13th August 2026 at 10.00h. mostly dry with showers, light breeze and 20 degrees.

General Notes

Qualifications

Micheal Sweeny is a registered architect (05188) & an RIAI Architect Accredited in Conservation at Grade 3

(1) Introduction/ Overview

The purpose of the report is to support an application for funding under the Traditional Farm Buildings Grant Scheme administered by the Heritage Council. The report was commissioned by Ciarán Daly who is the landowner.

The project consists of the following works which are conservation led interventions,

- (a) Repair/ re-slating of roof & new rainwater goods
- (b) Walls - Repair the existing stone walls and cart house arch
- (c) Doors/ windows repair and replacement like for like

The outbuilding is not mentioned in the NIAH (National Inventory of Architectural Heritage) and is not on the RPS (Record of Protected Structures). The project is not located in an ACA (Architectural Conservation Area)



Masons mark on east gable



Masons mark on north wall at steps up

The works proposed, in the attached schedule of work and specification, are to maintain and prevent further deterioration of the building and in my opinion do not require planning permission. The building is not a protected structure so a section 57 declaration is not required.



Photo E_8 South East corner, corner stone knocked out to be reset stone

Downpipe discharging onto wall/ ground to be relocated to west gable and piped to stream

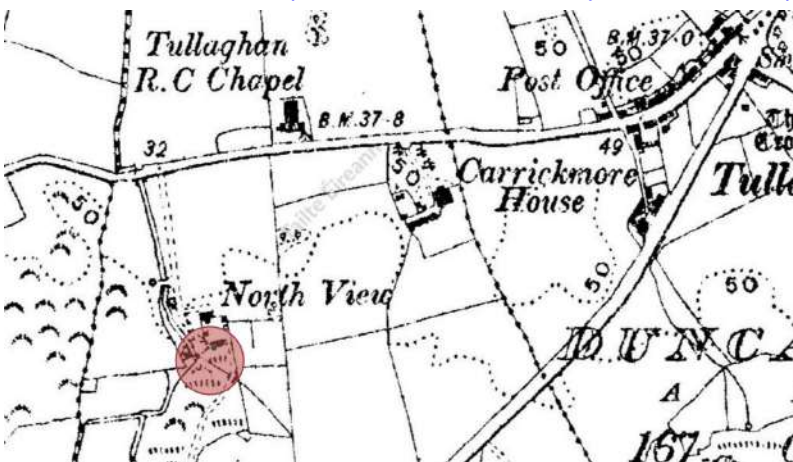
(2) Historic Background



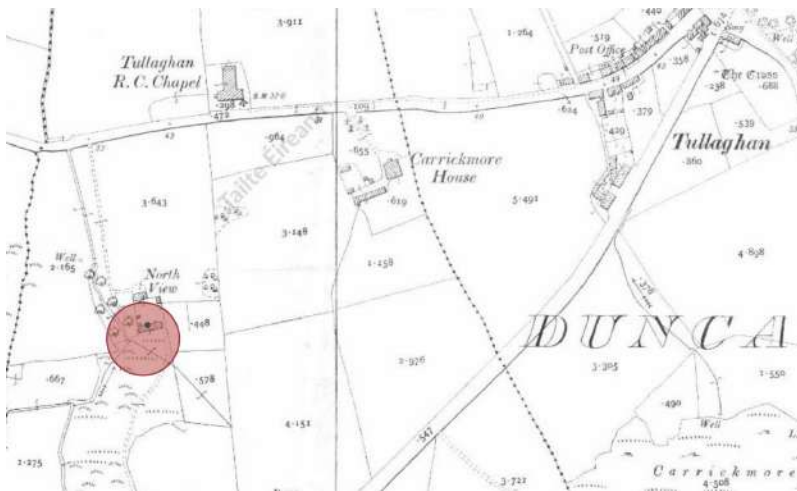
Extract from Historical Map 6 inch Colour First edition Surveyed 1829-1834 & printed 1829-1941



Extract from Historical Map 6 inch First edition Surveyed 1829-1834 & printed 1829-1941



Extract from Historical Map 6 inch last edition revision 1830s-1930s



Extract from Historical Map 25 inch Surveyed 1863-1924



Extract from Historical Map 25 inch Surveyed 1863-1924 (external steps can be seen on plan and outhouse etc)

The long building and North View House are not shown on the first edition map. On the later edition the outbuildings and North View House are shown along with other buildings such as Carrickmore House and Tullaghan RC Chapel. On the 25inch map the outbuilding and the house are clearly shown. A well to the north west of the outbuilding and a river running south to north with deciduous trees are shown to the west of the main house. The long outbuilding is shown on the later edition of the 6 inch which would suggest the house and outbuildings were built after 1850. Cart houses were built from c.1850s onwards and some of them combine stabling and hay lofts. It is on an elevated site overlooking the sea. The access road from the north branches off to the front of the house and carries on to the rear the yard and the outbuildings. The farm yard has not been changed much, its character, scale and setting is intact as the new slatted shed is located away from the court yard to the south and does not take from the setting. This farm building is built of stone and slate, materials used so that the building would last and guard the cart, livestock or crops/ feed etc. The buildings doors/ openings face north, similar to the house and it shelters the yard from the prevailing wind. It appears that the building may have been built in 2 stages to form a long building. The stonework of the byre/ loft and the cart house is slightly different and a joint in the long wall can be seen to the right of the steps. The opening at the top of the steps may have been wider as the panel of stonework appears to be an infill.

(3) Description of project, adjoining structures and curtilage.

1 - Location

The site is located to the west of Tullaghan Village and is located between 2 roads the N15 to the south and L2059 to the north.

2 - *Distinguishing elevation or plan features* - The building is long and made up of a cart house with cut stone arch and byre/ stable with lofts over

3 - *Number of bays/ storeys* - 2 storey

4 - *Architectural style* - Rural vernacular with formal elements, courtyard layout and cut stone arch.

5 - *Original type* – Farm outbuilding/ cart house/ stable & byre

6 - *Date of Construction/ estimated date of construction* - c. 1850s

7 - *Historical or subsequent uses* - Farm use for keeping cart and cows with hay loft over, byre later used for milking.

8 - *Current Use* - Storage

9 - *Alterations/ extensions/ renovation* – Slates on part of south roof was replaced and gutters were replaced. Repairs to slates using

10 – *Roof* – ‘A’ type roof with slates and ridge tiles bedded in mortar. Rafters with collars. Flush verges. Rainwater goods are not original.

11 – *Walls* - Solid stone walls c.600mm thick with stone exposed and pointed.

12 – *Openings* – Mostly new timber doors with vertical boards and vertical timber slats to some windows. Old sash window from house repurposed to fill opening to south wall. Cut stone facing to front of arch with rubble stone to form interior of arch.

13 – *Interior* – Cart House, stone walls and floor has been removed. Part plastered wall to what was stable. Plastered wall to room with timber column. Stone walls to byre with floor grupe. Open loft above the 2 rooms with opening above stable/ room with column for throwing down hay/ feed.

14 – Site

Courtyard has been concreted over and slopes towards river/ entrance. There is a boundary wall to east. Small drumlin hills and mature trees such as chestnut are in the immediate area. There is a nice view/ glimpse from the courtyard to the north to the sea, between the house and the other outbuildings/ wall.



Photo E_7 Courtyard/ house looking north to the sea.

15 - *Subsidiary Structures (if not being recorded separately)* - Other outbuildings on the site dating from around the same time as shown on the 25 inch map.

(4) Assessment of significance/ special interest

Architectural

The building is a good example of its type and forms and important part of a formal courtyard design. In the landscape/ rural area it makes a positive contribution and there are not many examples of this type of building in the local area.

Historical

There are few examples of this type of layout and large out-building in the area where most outbuildings would have been small scale. It represents a changing time in history, post famine and the development of farming and larger landholdings.

Archaeological

No comments

Artistic

No comments

Cultural

No comments

Scientific

Technical

No comments

Social

The building helps to create local identity, local distinctiveness and a sense of place. It also provides tangible evidence of local history and forgotten skills. Retaining such features matters because their history tells us of past practices, technology, innovation and achievements. While the building is not on the record of protected structures it forms an important part of the understanding the area.

(5) Description of proposed development/ Methodology/ Sequence of works

(a) Roof

The roof has been repaired in places and the new slates can be seen on the south slope. The floor over the cart house is gone; presumably it was badly damaged from rain getting in through the roof and removed as it was dangerous/ past repair. The roof is a traditional birdsmouth joint onto a wallplate on the inner face of the wall with little or no overhang or modern fascia and gutters.



Photo R_1 Rafter cut onto top of wall with eaves runner



Photo R_2 Wallplate and extender/ tilting piece



Photo R_3 Electrical cabling fixed along wallplate



Photo R_4 Light slating battens and nails have split the batten



Photo R_5 Roof detail at collar – broken battens etc/ No sign of parging or torching having ever been done

(b) Walls

The south wall should be re-pointed where the joints have eroded. The north wall and gables are less exposed and have not weathered as bad. The internal side of the arch appears to be eroded and was possible covered in a render. In general the verges need attention where the stones have fallen out and the edge of the slates and the slating battens are exposed.

The advice of an experienced stone mason should be sought for the repair of the arch.

Remove any loose pointing and re point external joints in traditional lime based mortar. Exact specification to be agreed when examined further but probably an NHL 3.5.

The cart house walls have a green growth from damp. This can be cleaned off. There is little or no cross ventilation in this area. The roof over the cart house was repaired and new slates added in the area over the cart house (see photo E_2 where different in slates in noticeable)



Photo E_2 South – Rear/ downpipe discharging to ground



Photo E_3 - East gable/ northeast corner



Photo E_4 South - Rear vent holes/ blocked up window



Photo E_5 - Cart house arch and steps



Photo E_6 North West Corner

(c) Openings, Doors & Windows

The existing doors and windows to the front appear in reasonable condition and are painted black.



Photo D_1 Door frame to byre to be completed/ repaired



Photo D_2 Door head built into wall



Photo D_3 Steel angle from previous project could be removed



Photo D_4 Trap door to loft could be added (for safety)

(d) Floors



Photo F_1 Timber post/ wall stain to be reviewed



Photo F_2 Post



Photo F_3 Underside of floorboards in Byre



Photo F_4 Floor boards near hatch 200x20mm approx

(e) Area surrounding the building/ levels etc

The yard was concreted over and slopes to the river. The floor level of the west end of the building is below the external ground level and the concrete is cast right up to the stone wall. The rear area (south) is wet and a bit overgrown. This could be drained to the river and overgrowth cleared.



Photo C_1 Cart House looking towards east gable



Photo C_2 Cart House wall-plate strap SE corner

Timing of Works/ Sequence of works/ methodology and specification

1 - Preliminary

Disconnect electricity. Add scaffolding while waiting for nesting birds to leave.
Inspect further/ clean out existing gutters especially south gutter.
Connect/ pipe downpipes to river.

2 - Roof

Consider phasing the slate removal taking into account time available/ progress.
Carefully remove slates and sort/ store on scaffolding in area where the slates will not be disturbed or be required to be moved to avoid double handling. It is important that the scaffolding is designed with this in mind (refer to detailed spec at end of report). Add temporary battens to underside/ to retain rafters in place.
Repair/ replace wall-plate where friable/ unsound with like for like treated timber
The rotten parts can be cut out and replaced with new timber laid on a damp proof membrane.
The rafters will need to be supported during this operation. The wall plate should be cut out on a sequential basis in sections of no more than 2 meters long, rather than all in one go.
Repair/ replace rafter extension timbers where friable/ unsound with like for like treated timbers.
Add new gutters & downpipes. Locate new down pipes on gable nearest the river and pipe to river, exact location TBC.
Maintain a continuous ventilation 20mm gap at eaves along the elevation to ventilate the rafters/ wall-plate. It is advisable to source and have delivered the new slate before stripping the roof.
New slate should match the original slate in thickness, size and colour. Changing thickness/ grade/ size can increase weight on the rafters and should not be done.
Working at roof level is potentially a dangerous operation and it is essential that any owner complies with all appropriate health and safety regulations when commissioning and undertaking roof repairs.

3 - Arch

Seek advice of an experienced stone mason regarding the arch.



Photo A_1 Cart house arch, cut stone facing outside



Photo A_2 Cart house arch from inside random rubble

4 - Walls - Internal.

Pin & point up the internal walls. Clean off green growth on cart house walls (presumably as a result of leaking roof in that area that was fixed up) Cross ventilate the space to help drying out.

5 - Walls – External

Remove any loose pointing and re - point. Generally, re-pointing is only required where the joints have weathered back to expose the edges of the stones or bricks and/ or where water penetration is occurring. Localised pointing is all that is required, especially on the south elevation.
If the joints are slotted out, but no deeper than around 1cm, leave them – there's nothing wrong.
If they are deeper, they may need pointing with NHL 3.5 mortar 1 part NHL to 2.5 or 3 parts sand (hard limestone stone). If they have obviously hard cement in them, and the brick or stone is flaking away around the joints, the joints need cleaning out and NHL mortar putting back in place of the cement
Lime mortar used should always be softer than the surrounding brick or stone

6 - Improve cross ventilation of buildings.

Replace sash window in Cart House with larch louvre screen.

Open up blocked up window with a larch screen for loft ventilation
Add doors to rear of byre & stable to improve cross ventilation of buildings.

7 - Surroundings etc

Drain wet area to rear/ south.

Reconnect electrical by registered electrician.

(6) Impact of the Proposed Development

The proposed roof works are significant in scope considering the budget and time window. They relate mainly to works to prevent further deterioration and the repair of the roof to prevent further deterioration. Only the minimum necessary is proposed. It is proposed to engage an experienced roofer for the works to the roof. The owner/ applicant is interested in pointing the walls and intends to do a lot of this work himself using the scaffolding. An experienced stone mason should be engaged for a few days to demonstrate working with lime mortar and mixing/ tools/ techniques etc.

Roof: Roof will be re-slatted, rainwater goods to be replaced with more historically appropriate goods

Rationale: The roof of the structure is to be re-slatted. If original rainwater goods still exist they can be cleaned and refurbished. To restore character to the roof-scape, existing replacement rainwater goods will be replaced with cast iron goods. No uPVC guttering. Visual inspection from the round only was carried out and existing gutters were not closely inspected. Down pipes in general appear to be new pressed metal

Impact: The roof will be stripped and re-slatted. Existing sound slates will be re-used with similar slates sourced to match as necessary. The installation of new rainwater goods to match the profiles of original gutters and downpipes will have a beneficial impact on the character of the exterior facades.

Mitigation: Slates must be installed on battens that are spaced to the present batten gauge, ensuring that present coursing arrangement is copied. Batten gauge must be confirmed by the contractor prior to removal of battens. Sample slates must be presented to conservation consultant for approval.

(7) Recommended mitigation measures

None at this stage

(8) Conclusion

The roof of the building is in poor condition with several holes and slipped slates. Some repair work was carried out but overall the slates are in bad condition and the battens have failed and nail sickness is evident. The increase in rainfall and intensity of storms associated with climate change mean that the roof is at risk of losing more slates in the next few years. The verges are in poor condition with slates exposed to the wind. The proposal is to salvage as many slates as possible and replace the battens and nails. It may be that only a small quantity of existing slates can be salvaged and in this case it may be preferable to only use new slates rather than trying to match new slates with salvaged slates.

The rafters and collars are in good condition generally. The wall-plate in places is friable and it will have to be replaced along with the rafter extension pieces which are probably rotten at the ends/ eaves. To be reviewed once eaves is opened up. There doesn't seem to be much ventilation at the eaves/ gutter and care will need to be taken in the re-slatted eaves to make sure a continuous ventilation gap is maintained along the length of the eaves and that any gutter or slate overhang does not block this. Replacing the gutters and downpipes with rainwater goods more appropriate to the history of the building will improve the appearance along with better management of rainwater disposal away from the building.

There is an issue with the arch and it's not clear at the moment if the inner stones were just rendered or if it had a facing of cut stone to its soffit. Some key stones have fallen out. Further study and inspection of other cart houses would be helpful along with the advice of an experienced stone mason. Some pointing to the walls is necessary especially the south elevation.

Cross ventilation to the cart house has been reduced by the insertion of the old sash window and it is advised to add a larch louver screen here to allow light and air/ birds to enter. The same issue with the byre and the loft, the cross ventilation has been reduced by the closing up of the rear door/ window. As the building is not in active use the opening and closing of doors is not regular and this again reduces the movement of air through the building and drying out.

The roof is the priority and it is intended that this will be done by a local roofer experienced in this kind of work. The building is really 2 buildings and it may be sensible, considering the time window and time of year, to only strip and re-slate one part before starting on the other. The other works may be done in parallel by the owner/ applicant making use of the scaffold.

Long term consideration could be given to reinstating the floor/ loft of the cart house which helps to structurally tie in the wall and gable. The lack of tying in of the walls with the floor undermines the structural stability of the walls.

Working at roof level is potentially a dangerous operation and it is essential that any owner complies with all appropriate health and safety regulations when commissioning and undertaking roof repairs.

When considering a specification for all conservation interventions it is important to understand the building, the materials, the construction method used, the inter-reaction between different materials, the effects of weathering on the fabric and to identify the pollutants contributing to the decay of a building fabric. This linked to the knowledge of the history of a building, a detailed condition report and a detailed material analysis of the fabric will lead to a specification for necessary works to the building.

END

(Notes)

The accepted and established principles of conservation have been researched and used as reference to inform each intervention situation on its merits; the general principles contained in the Department of Environment Heritage and Local Government's publication '*Architectural Heritage Protection Guidelines for Planning Authorities*' 2011 have been consulted and considered in each situation. The Venice Charter 1964 and the Granada Convention 1985 have been consulted in forming the strategy. The following conservation strategy and principles for the building are described below.

Keeping buildings in use & preventative maintenance:

It is widely accepted that the best way to prolong the lifespan of a historical structure or the character of an area is through preventative maintenance. This proposal sets out a methodology to prevent further deterioration of the building and to repair certain elements so that the building can be used, and in this way the long-term maintenance and survival of the historic feature can be secured.

It is further suggested that the best way to prolong the life of a building/ heritage is to keep it in active use, ideally in its original use.

Research and Analysis:

Research and analysis have been carried out to establish the condition of the place/ structure and to identify the materials and building methods used. This method helps to identify the elements of special interest. This information was used to guide the preparation of the methodologies and specifications associated with this report and the proposal drawings.

Protecting the Special Interest:

In this instance the building has a historic, social and cultural interest and contributes to the local area in that it is visible from the local road. There are also traditional building materials and techniques of interest employed in its construction. Therefore, it is proposed to retain as much historic fabric as is practically possible and repairs are to be executed where possible with wholesale replacement of any elements to be avoided.

Minimum intervention:

The conservation approach for the proposed works to this building is one of minimum intervention by carrying out only the essential repairs necessary to prolong the longevity of the structure. The philosophy of any interventions is of '**doing as little as possible and as much as necessary**'. Only work which is necessary to achieve a suitably sensitive upgrade of the building has been included in the proposal. This minimum intervention approach will result in minimum impact on the structure and its character.

Maximum retention:

Particular attention has been paid to the retention of the maximum amount of historic fabric possible whilst achieving the maintenance of the existing building. Works are only considered if they can be implemented in such a way as to cause the least amount of disturbance and damage possible to the historic fabric.

Repair rather than replacing:

Proposed alterations to the fabric of the building have been kept to a minimum thus preserving the character of the building. Works to the stone walls and roof are to consist of repairing what exists and the addition of new parts where necessary and as identified on the drawings/ schedule of work.

Promoting honesty of repairs and alterations:

No attempt is being made under the current proposal to disguise or artificially age any element of the proposed works. Alterations will not be obtrusive or inappropriate but rather will contrast and complement the existing building and not confuse the historical record. Some alterations have been carried out to the building through the years and interventions carried out in this era of the buildings life should be discernible to future generations (contemporary works will bear a contemporary stamp).

Materials:

Materials are to be compatible with the existing fabric; new material introduced during 'like for like repairs' and restoration should match the original materials as closely as possible. Identical material used in repair can initially present a raw appearance in its context but will weather-in over time. The use of architectural salvage from other buildings is not to be employed in this project in order to avoid confusion in relation to understanding and appreciating the building and to avoid damage to other historic buildings which are stripped of original fabric for reuse elsewhere.

Reversibility:

Wherever possible the principle of reversibility or the ability to substantially deconstruct interventions in the future have been employed.

Preventive Measures – addressing triggers of deterioration:

Pinning stones have come loose from some joints and a larger corner stone was knocked aside. Pinning and lime pointing will along with re-setting the stones will prevent further damage.

Passive measures

No heating is proposed or mechanical systems are proposed.

Remedial measures – implementing conservation treatments to remedy specific problems

NA

Aesthetic measures – improving visual appearance, e.g. cleaning, reintegration, replacement of missing elements, decoration of adjacent surfaces, lighting and interpretation. This is not a public building/ setting and lighting and interpretation is not necessary.

Works to be carried out by suitably qualified person as per best practice and as per Department of Culture, Heritage and the Gaeltacht guidelines. Non-abrasive cleaning methods to be used for the stone.

Details of proposed timbers to be submitted prior to construction works commencing.

Pointing old stonework is a specialised job and must be done by people who know what they are doing.

Using cement-based compounds is an absolute no-no – this introduces rigidity, and in an old building which needs to move, cement just cracks and falls off within a short period of time – it is useless, and a completely inappropriate material to use.

- If the joints are slotted out, but no deeper than around 1cm, leave them – there's nothing wrong.
- If they are deeper, they may need pointing with NHL mortar
- If they have obviously hard cement in them, and the brick or stone is flaking away around the joints, the joints need cleaning out and NHL mortar putting back in place of the cement
- Lime mortar used should always be softer than the surrounding brick or stone

Overview of Principal Conservation Recommendations

The roof will be repaired on a like-for-like basis. Historically appropriate rainwater goods to the front (north) and rear (south). Existing sound slates will be retained and reused with replacement slates matching in size, texture and colour. Slates will be nailed down with copper clout nails and stainless steel nail clips will not be used. Copper nails to BS 1202-2 1974 to be minimum 10mm head size, 3.35mm diameter shank, 38mm length.

1 Exterior Condition Survey:

1.1 Nature of Survey

The survey is based on a visual inspection of features and fabric. No opening up of concealed elements was carried out at this stage.

1.2 Roof:

Survey conducted: External roof was visually inspected from ground level only. Internal roof was inspected from within roof space. Because of inaccessibility, the roof space inspection was limited to a visual inspection from loft level on the west building and from ground level on the east building (the cart house no longer has a loft floor)

2 EXTERNAL RECOMMENDATIONS

Roof

2.1 Roof Slates:

Roof to be re-slatted. Remove roof slates and assess for quality. Slate ripper to be used to break existing nails. Retain for reinstatement if sound. Slates to be stored vertically on site within timber crates. Slates should not be stacked horizontally. All sound slates may be used in one area depending on quantity salvaged. New natural slates to be provided to other slopes. New slate will match existing in texture, colour and size. Copper clout roofing nails to be used to BS 1202-2 1974.

2.2 Ridge and Hip Tiles:

Remove terracotta ridge and store on site for reuse.

Clean mortar from underside of tiles with bolster chisel. Store on site for re-bedding with lime mortar.

2.3 Rainwater Goods:

Original rainwater were replaced. New round bottomed gutters and round down pipes to front (north), and rear (south) elevations to be added. Any Original rainwater goods on site to be cleaned, primed and inspected for faults, repaired and painted. Non-original rainwater goods to be replaced with cast-iron units as per original profiles or as agreed with the conservation architect.

3.2 Conservation Best Practice

Conservation and alteration of the building is guided by the ICOMOS Venice, Granada and Burra Charters. All personnel and sub-contractors must have relevant experience in conservation projects.

4 EXTERNAL SPECIFICATIONS

4.1 Specified Products

The specifications in relation to product/system performance requirements and compliances can be achieved by a range of products/systems and no compliant tender will be rejected on the basis that it does not comply with any product/system references where incorporated into specifications and drawings being intended only for guidance aesthetically where noted as similar in appearance (S.I.A).

It is proposed to carry out conservation repairs to the building, repairing where possible and replacing with materials to match where necessary, in accordance with conservation best practice and to the approval of the conservation architect.

4.2 Biological Growth

Biological growth can trap moisture and prompt decay. All plant life and biological growth shall be carefully removed by hand taking care not to disturb surrounding historic fabric. Where plant life cannot be removed completely by hand without disturbing masonry, a biocide may be specified, consult with the inspecting authority for further direction.

4.3 Roof

Roof repairs to include the re-slating of the roof, replacement of rainwater goods

5.1 Roofing Pitch

In general, the historic pitch should be maintained unless otherwise stated.

5.2 Stripping of Slates

Any modern/inappropriate replacement slate shall be disposed of according to regulations.

The existing historic ridge tiles shall be carefully salvaged and stored for re-use.

Stripping shall be in accordance with BS 6187 and site staff responsible for supervision shall be experienced in the assessment of risks involved and methods of stripping to be used.

5.2.4 Protection of Internal Areas

Stripping of the roof area shall be carried out on a phased basis to ensure that the entire building is not exposed at any one time. The contractor shall provide temporary weathering's to be installed each day at the close of works or when otherwise necessary to protect against rainwater ingress. During stripping works the contractor shall prevent the overloading of any ceiling or floor areas due to the accumulation of debris. Temporary storage of waste material in roof spaces or within buildings is not permitted (unless otherwise agreed with the inspecting authority). Temporary designated walk-way planking shall be provided by the contractor and must be used when circulating within roof space.

5.2.5 Recording of the Existing Slating Arrangement

The existing slate is arranged in diminishing courses - re-slating of the roof areas must faithfully replicate the original pattern/arrangement. Before stripping commences, record the number of courses on each roof pitch and the slate length/grade of each course.

5.2.6 Stripping of Existing Roofing Fabric

The existing roofing fabric (to include ridging, slate and battens) shall be stripped from the roof salvaging sound natural slate and ridging for reuse.

- a) The existing ridge tiles are to be carefully removed, assessing condition during removal and salvaged for reuse.
- b) The existing slate is to be carefully stripped using a slate ripper.
- c) Slates are to be removed with a view to reuse.
- d) Cracked or delaminated slates shall not be used and shall be disposed of.
- e) The existing timber battens, underlay & other waste material shall be disposed of.
- f) The contractor shall quantify salvaged slate and ridge tile numbers during the stripping process to confirm the level/extent of replacement.

5.2.7 Evaluating Sound Slate

- a) All sound slates must be tested for soundness, graded and stored for reuse taking care to avoid damage.
- b) Double-handling of the slate shall be avoided where possible.
- c) A 'ring-test' shall be carried out to ascertain sound slates. Hold the slate by a corner and tap with a hard object. Where a clear ring resonates this should be considered sound/salvageable. Where a dull sound resonates this slate shall be discarded.

5.2.8 Storage of Salvaged Slate

- a) All sound slates shall be stacked on the scaffolding taking care to avoid damage.
- b) A suitable area of the scaffold, engineered to take the required loadings, shall be designated for the storage of the slate.
- c) Slates shall be stacked according to size and stacked vertically on their heads.
- d) Provision shall be made for air circulation when stacking slate.

5.2.9 Storage & Removal of Salvaged Ridging

- a) All sound historic ridging tiles shall be stored on timber pallets/crates.
- b) Historic mortar shall be removed from the ridge tiles prior to palletising.

6 Roofing Timbers

6.1 General

Following roof stripping, a further inspection of the exposed individual timber elements (rafters, purlins, wall plate & valley boards) shall be carried out by the structural engineer following stripping of the slate to confirm the level/extent of repair.

6.2 Replacement Timber

- a) Timber repairs/replacement should be carried out using material from the same species where possible and from a reputable source. Well-seasoned pressure treated timber shall be introduced to replace missing or damaged timbers (Class 4 BS 8417).
- b) Timber shall be obtained from well managed forests or approved architectural salvage yards - contractor to provide documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
- c) Moisture content of the replacement timber must closely match the original to prevent differential distortion. In general, the moisture content of timber at time of installation should not be more than 20% for heated spaces and 24% for unheated spaces.
- d) Softwood shall be graded as per the following:
Timber of a target/ finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried). Timber graded un-dried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.
- e) Defects such as warping, bowing, twisting or cupping of timber not to exceed limits established in BS 4978 or BS EN 14081-1 for softwood, or BS 5756 for hardwood.
- f) Sapwood must not be specified as this is more susceptible to insect infestation.
- g) The cutting and machining of timber shall be carried out as much as possible before treatment of the timber. Where timbers have been excessively processed these shall be retreated at saw cuts or where planed. Where surfaces are exposed by minor cutting/drilling the area shall receive two flood coats of a solution recommend by the main treatment solution manufacturer.

6.3 Storage of Timbers

- a) Keep all timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
- b) All timber components shall be stored under cover, clear of the ground and with good ventilation.
- c) All truss rafters shall be kept vertical during handling and storage.

6.4 Repair Procedure

Nb. The roofing timbers shall be allowed to dry out for a period prior to commencement of repair works.

- a) A joiner with conservation expertise shall carry out this element of the work.
- b) Decayed timbers shall be repaired/ replaced as necessary using a mixture of traditional techniques and honest repairs.
- c) Repairs/replacement of individual members shall be fully completed before progressing to the consecutive member to limit stress on the surrounding roofing fabric. It may be necessary to temporarily strap/brace timber elements/trusses during repair works.
- d) Complete replacement of existing timber members shall only be considered where these have deteriorated to such an extent and where directed by the Structural engineer.
- e) Repair of the roof shall take account and respect historic undulations in the existing roof (note that where undulations are excessive and where these are deemed to risk the weather tightness of the roof it may be necessary to amend the existing roof structure through the addition of shims etc).
- f) All replacement timber shall in general replicate the original detail and dimensions, unless otherwise specified by the structural engineer.
- g) Ridge and valley boarding shall be repaired/ replaced to match existing (extent of intervention to be confirmed on site by the inspecting authority).
- h) Supplementary rafters to be added as per the structural engineer's instruction.
- i) Splice repairs to be carried out as per the structural engineer's instruction. The decayed section of timber shall be cut out and new timber spliced in. Fixings shall be of stainless steel with traditional wedges or adhesives used between timber surfaces.
- j) Works to purlins and trusses to be carried out in-situ. Truss footings shall be cut back and additional timber wedges installed to improve irregularities and reduce stresses in the roofing plane. Temporary removal and

storage of rafters (suitable covered area) will be required to facilitate works. Where it has been agreed to remove elements, these must be tagged with a unique reference number for identification and accurate re-assembly. Rafters to be replaced in original position following works to purlins/ trusses.

k) Existing wall plate to be repaired/replaced (extent of intervention to be confirmed on site by the inspecting authority).

l) Flitch plates/shoes and other hybrid metal repairs must be non-ferrous in material. Fixings shall be of stainless steel. These shall be installed as per the structural engineer's detail.

m) Ensure adequate air circulation around all beam ends and provide a vapour permeable membrane between timber and masonry.

6.5 Preservative Treatments

a) All new timber shall be preserved as per section Z12 and the Wood Protection Association Commodity Specification C8.

b) All existing large retained built-in timbers (wall plates & truss ends) shall be treated liberally in situ by drilling and injection method with an approved insecticide and preservative treatment (refer to structural engineer for product specification).

c) All remaining roofing timbers shall be treated liberally in situ by liberal method with an approved insecticide and preservative treatment (refer to structural engineer for product specification).

d) The products shall be applied in accordance with statutory conditions of approval given on product labels and as manufactures' recommendations.

e) Prevent staining to surrounding finishes and furnishings during treatment – any damage to be made good by the contractor to the satisfaction of the inspecting authority.

f) Take care not to contaminate supplies/tanks – note that live water tanks are housed in a number of roof areas.

g) Electrical equipment and supplies shall be isolated to prevent the ingress of treatment liquids/fluids.

h) Decayed timber elements or infected material which has been identified for removal, by the inspecting authority, shall be incinerated to prevent the spread/re-infestation of timbers.

7 Re-Slating of Roofs

7.1 Area

Existing salvaged slate shall be used during re-slating, augmented where necessary, with new natural slate to match. It is anticipated that 70% of the existing historic slate will be sound and shall be salvaged for reuse.

7.2 Replacement Slate

Replacement slate shall be to match the dimensions of the existing and shall be first quality Penrhyn 'Blue Bangor' natural Welsh slates and shall be S1 Grade, or comparable, free of defects, potentially damaging inclusions and iron pyrites, with punched rather than drilled nail holes.

The inspecting authority may consider salvaged slate as a suitable replacement providing that this is of exceptional quality and from a verified reputable source. The Contractor is to provide sample of replacement slate for approval by the inspecting authority.

7.3 Procedure

Slate shall be laid following the original slating arrangement and must faithfully replicate the original pattern, head and tail laps.

a) Slating workmanship shall conform to BS 5534 and BS 8000 Part 6.

b) The setting out shall be to true lines and to provide a regular overall appearance, with neat fit at edges, junctions and features taking account of historic undulations in the existing roof (note that where undulations are excessive and where these are deemed to risk the weather tightness of the roof it may be necessary to amend the existing roof structure through the addition of shims etc).

c) Slating shall start at the eaves and fixed diagonally & up the roof slop ensuring each slate is fixed with 2 no. nails.

d) Where re-sizing/trimming is necessary, slates are to be cut using traditional hand tools to avoid a sawn, finish. Ensure that cut slates are not less than 150 mm wide.

e) Top course and the second course from the top shall be of such a dimension as to maintain the correct lap. The top course slate shall be nailed and bedded at the head in mortar.

f) The eaves course slates shall be fixed with tails projecting 50mm over gutter or to centre or gutter, whichever dimension is the lesser.

g) A double course (undercloak) of slates shall be laid to the eaves supported on a continuous tilting fillet.

- h) Allow slates to project beyond face of wall at gable verge between 38-50mm or as otherwise instructed by the inspecting authority – Nb. on heritage structures it may be preferential to match the historic position even where this falls outside the 38-50mm zone.
- i) Slating should always be laid perpendicular to the battens and where the eave is not square the tails of the eaves slate shall be dressed to accommodate the raking line.
- j) Slates shall be laid to tilt away from verges and an extra wide slate shall be used at verges to maintain bond.
- k) Vertical joints between slates shall be 4mm wide.
- l) Where slate thickness is not uniform, slates are to be laid so that the thicker end of the slate is the tail. Thicker slates shall be used on the lowest courses and slates within a course shall be of even thickness to ensure that these are consistent in any one course. Slates are to lie evenly without rocking, avoiding sudden changes in thickness and gaps between courses.

7.4 Fixings

- a) Slate shall be provided pre-holed however where nailing holes are to be made, they shall be punched from the back of the slate allowing for countersinking of the nail, with care taken to avoid undue spalling. Drilling of nail holes will not be allowed.
- b) The slate shall be secured to the softwood timber battens using two copper clout slating nails to BS 1202-2 and shall be of 11 gauge and 20mm to 25mm longer than the thickness of two slates.

7.5 Battens

- a) Install replacement roofing battens to centres ensuring that the coursing of the slate provides from the reinstatement of the existing arrangement.
- b) The battens shall be sawn softwood to match existing.
- c) The species and factory pre-grading shall be in accordance with BS 5534, clause 4.11.1 with permissible characteristics and defects not to exceed limits in BS 5534, Annex D.
- d) Moisture content at time of fixing and covering shall not exceed 22%.
- e) The battens shall be preserved as per section Z12 and the Wood Protection Association Commodity Specification C8.
- f) The length of the battens shall be sufficient to span three rafters with butt joints positioned centrally on rafters.
- g) Fixings shall be galvanised round plain shank nails with each batten fixed securely to each rafter. Fixings shall be at least 30mm longer than the thickness of the batten.
- h) Where battens are fixed to masonry these shall be set out in straight horizontal lines, aligned on adjacent areas with fixing centres no greater than 400 mm.
- i) Batten ends shall be fully supported.

8 Replacement of Ridge Tiles

8.1 Area

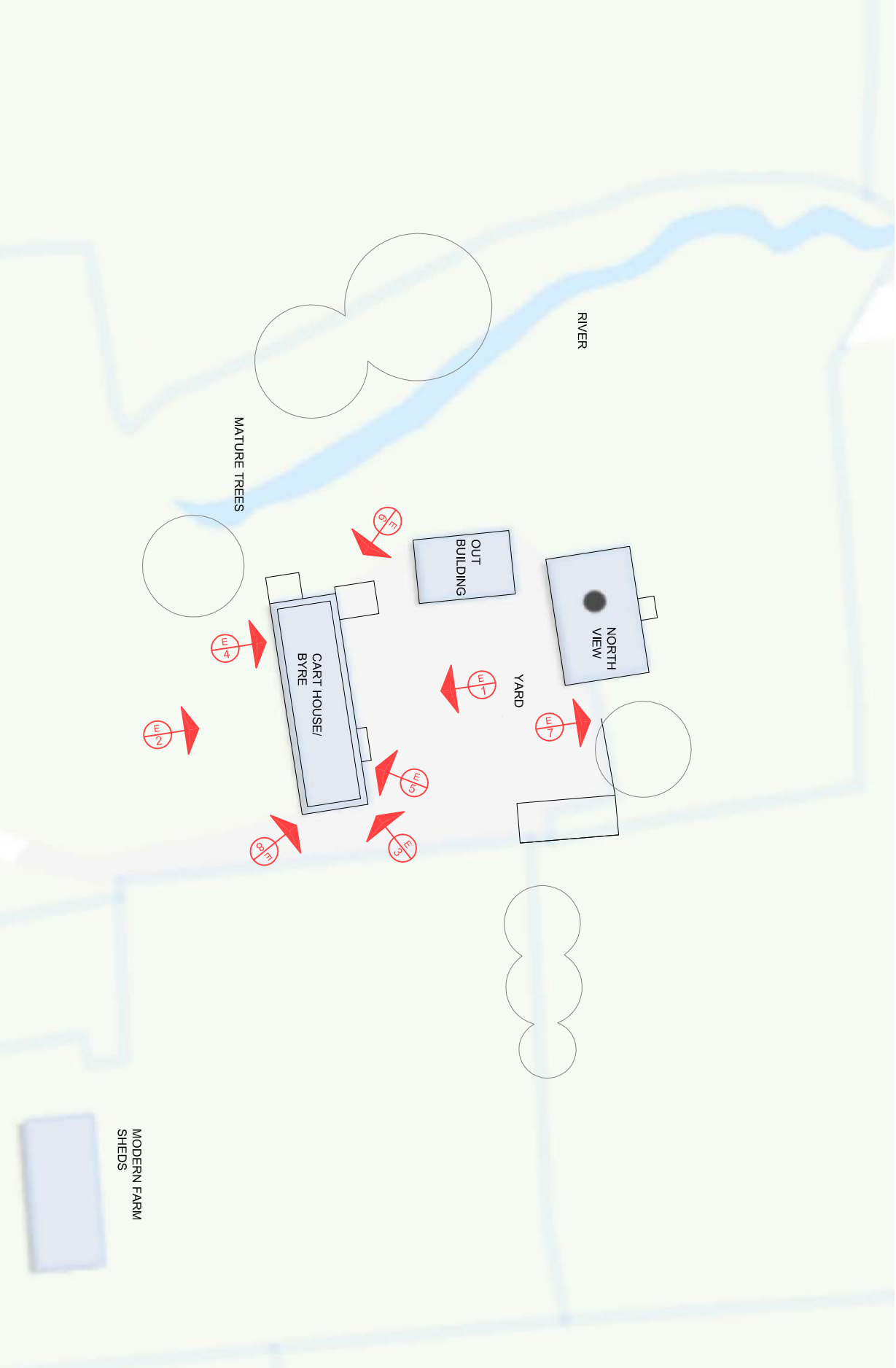
Existing salvaged ridge tiles shall be used during re-ridging, augmented where necessary, with new clay ridge tiles to match existing. It is anticipated that 75% of the existing historic ridge tiles will be sound and shall be salvaged for re-use.

8.2 Replacement Ridge Tiles

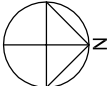
Replacement ridge tiles shall be to match the dimensions of the existing and shall be blue clay free of defects. The inspecting authority may consider salvaged ridge tiles as a suitable replacement providing that these are of exceptional quality and from a verified reputable source. Contractor is to provide a sample of the replacement slate for approval by the inspecting authority.

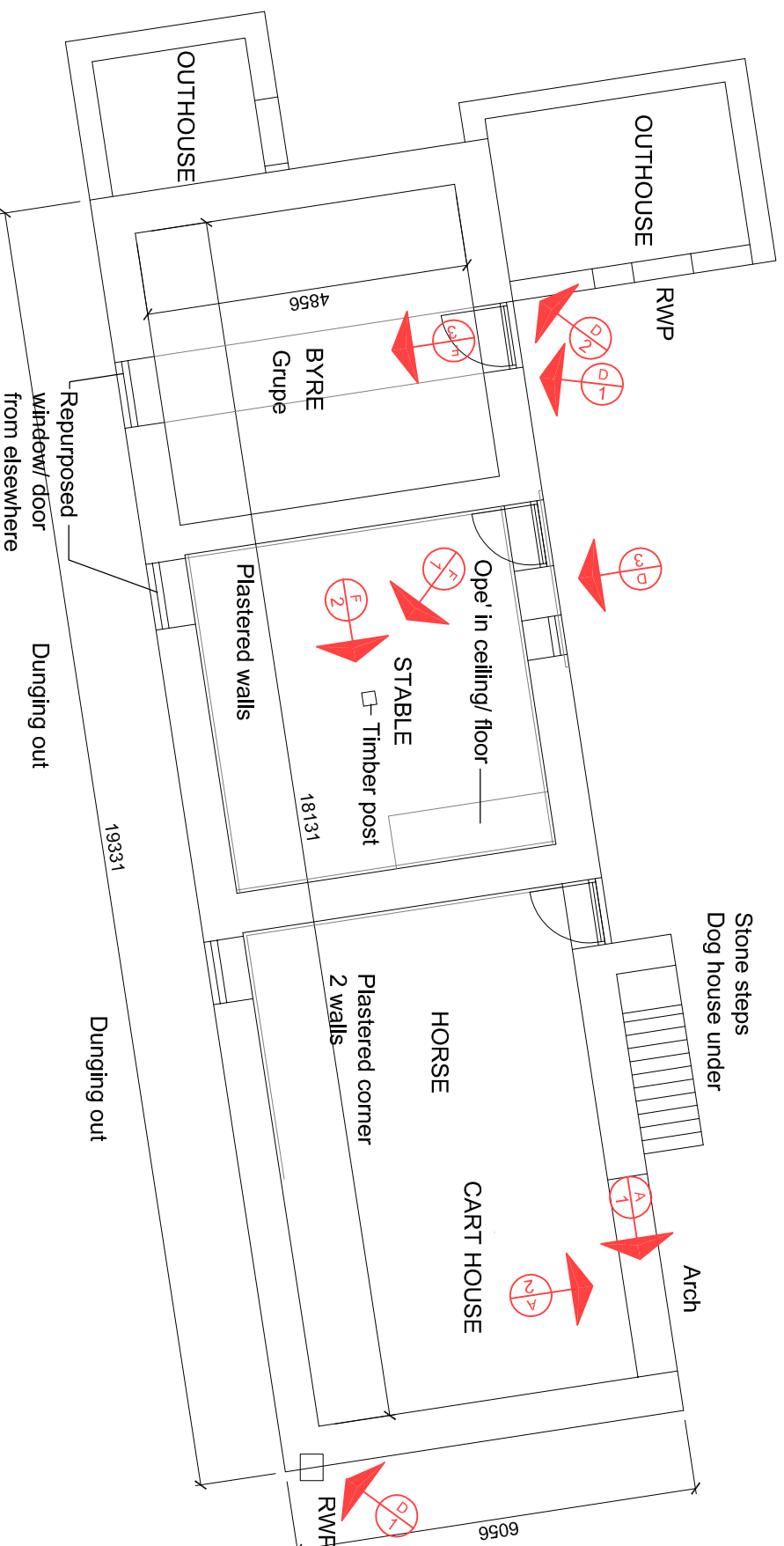
8.3 Procedure

- a) Clean all existing historic mortar from the ridge tiles.
- b) The tiles shall be bedded in the following mortar mix (without the need for separate pointing) – the mix shall be 2:1 Sand: Lime NHL 5.
- c) Lay a band of mortar on each side of the ridge and at each end.
- d) Carefully set the tiles into the mortar and bed them down.
- e) Remove excess mortar with a trowel, taking care not to smear the roof tiles or the slates.
- f) Protect the ridge mortar from rainwater until sufficiently cured – there must be no leaching of lime onto the slates.



SITE LAYOUT PLAN 1/ 500 @ A4

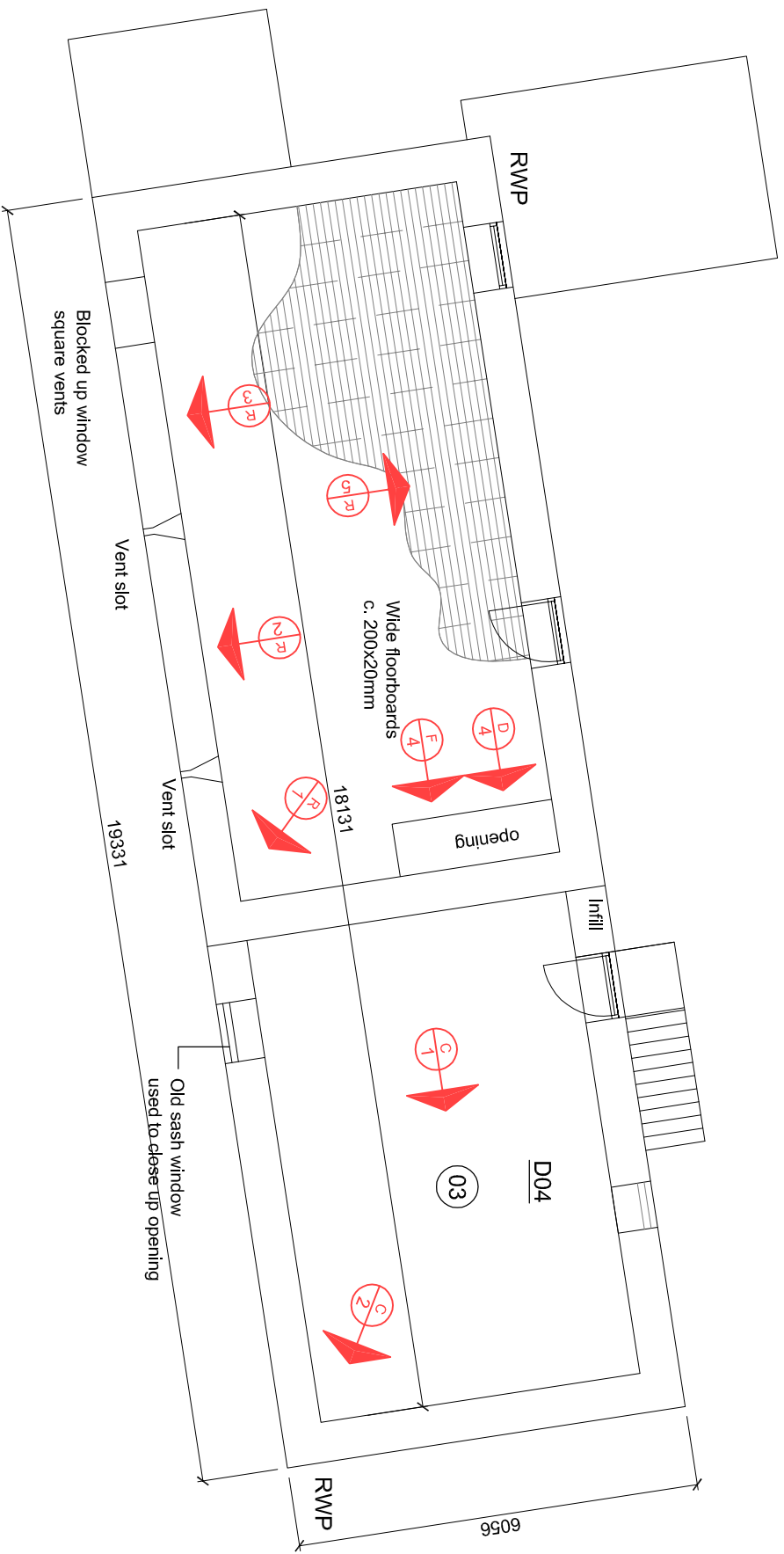




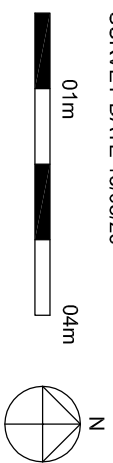
GROUND FLOOR PLAN 11/100@A4
SURVEY DATE 13/08/26



APPROX DIMENSIONS ONLY BASED
ON VISUAL SURVEY/ PHOTOS AND MAPS

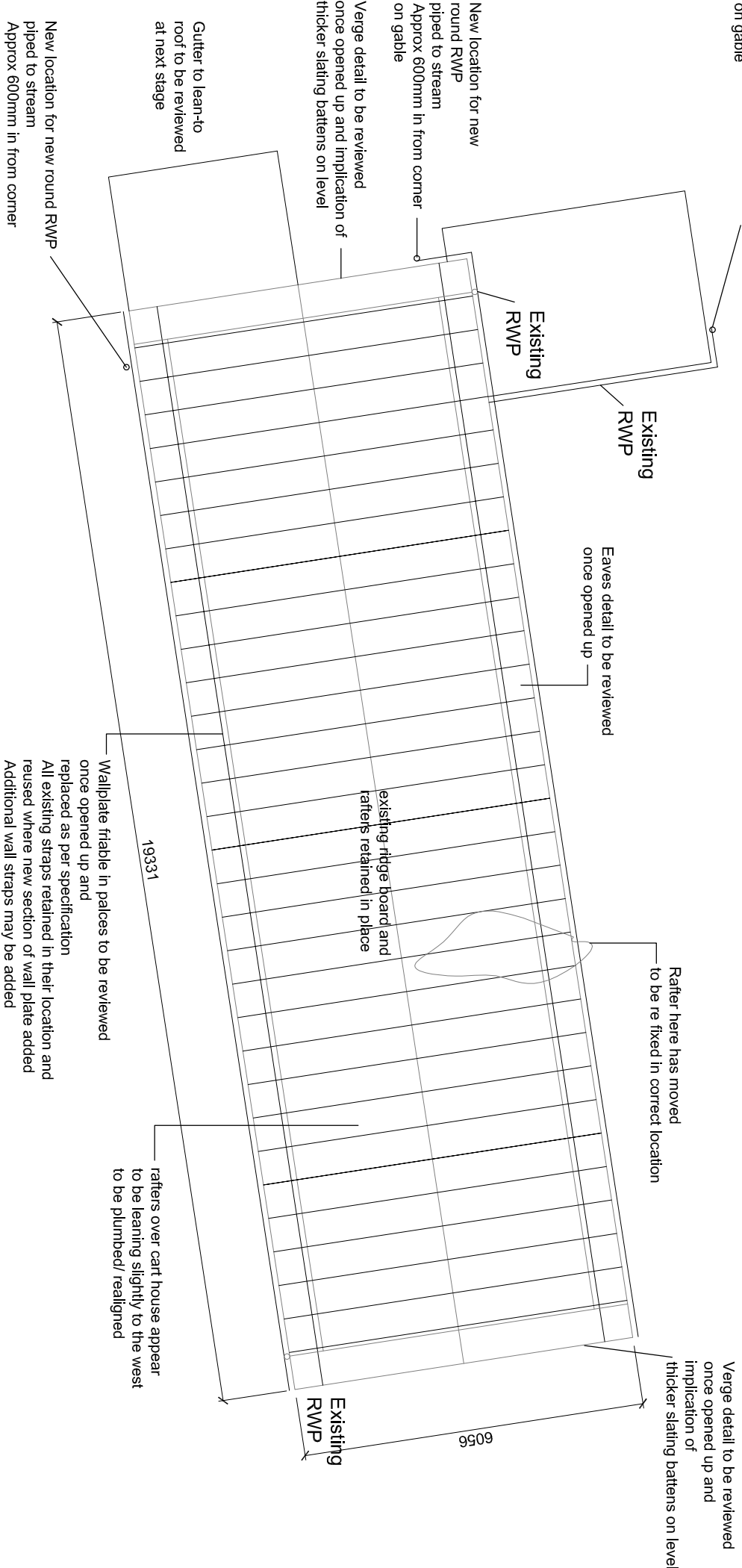


FIRST FLOOR PLAN 1/1/00@A4
 SURVEY DATE 13/08/26

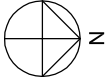


APPROX DIMENSIONS ONLY BASED
 ON VISUAL SURVEY/ PHOTOS AND MAPS

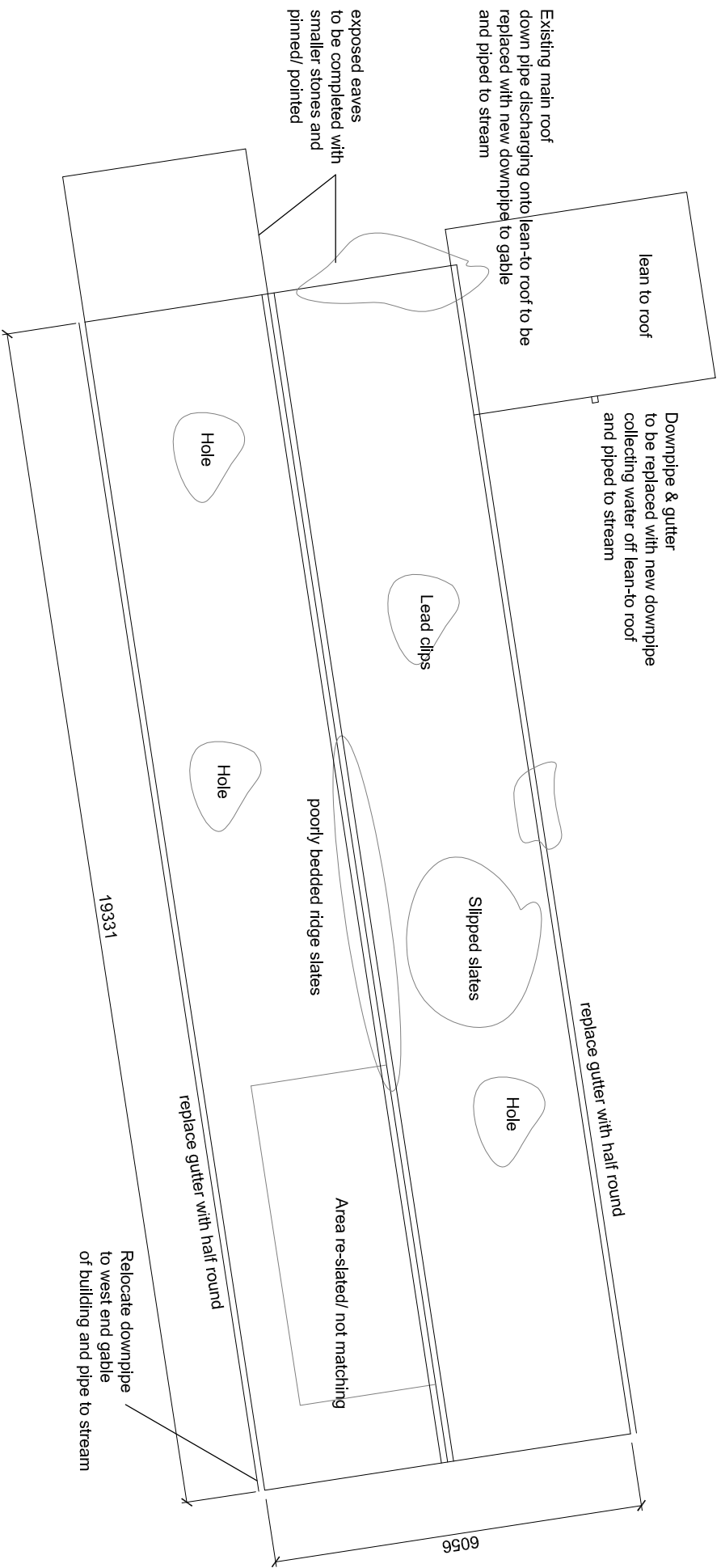
New location for new round RWP
piped to stream
Approx 600mm in from corner
on gable



RAFTERS/ WALLPLATE PLAN 1/100@A4
SURVEY DATE 13/08/26



APPROX DIMENSIONS ONLY BASED
ON VISUAL SURVEY/ PHOTOS AND MAPS

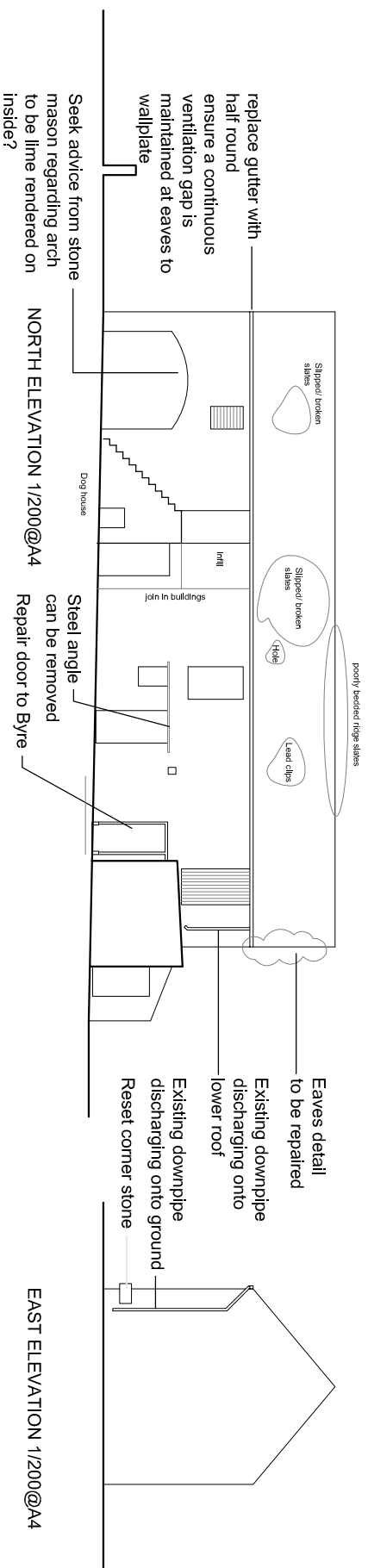


ROOF PLAN 1/100@A4
SURVEY DATE 13/08/26

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APPROX DIMENSIONS ONLY BASED
ON VISUAL SURVEY/ PHOTOS AND MAPS



APPROX DIMENSIONS ONLY BASED ON VISUAL SURVEY/ PHOTOS AND MAPS

