Andrew Parkin
Structural Engineer

Structural Condition Report

on

Existing Outbuilding

at

58 Main Street, Coln St Aldwyns

Andrew Parkin IEng AMIStructE MICE
14 Fosse Close, Abbeymead, Gloucester GL4 5EF
phone: 07925 303822 email: andy@andrewparkin.co.uk

INTRODUCTION

This structural condition report has been prepared for Mr D Perkins.

The purpose of this report is to provide an assessment of the structural condition of the existing stone outbuilding located within the garden of 58 Main Street, Coln St Aldwyns and its suitability for alteration into a more functional ancillary building.

It is understood that the site is located with a designated conservation area and consequently, planning and/or listed building consent approvals maybe required for any proposed alteration works to the existing outbuilding.

This report is to be read in conjunction with relevant drawings and any supporting documentation prepared by domus Designs.

The report describes the overall structural condition of the existing building at the time of inspection.

The site inspection was undertaken on 5th July 2023.The weather conditions at the time were dry and bright.

REPORT

The existing outbuilding is rectangular in form measuring approximately 3.9m x 3.7m on plan and comprises a tiled duo-pitched timber roof, supported by solid Cotswold stone walls. The building interior is sub-divided into three individual spaces by solid stone walls.

North Elevation

The stonework on the north gable is of a generally good condition and the wall maintains a good vertical alignment over its height. Some weathering of the wall has occurred at the lower level immediately above ground level, resulting in some loose stonework and mortar loss.

South Elevation

The stonework on the south gable is of a generally good condition and the wall maintains a good vertical alignment over its height. The timber lintel above the door opening has decayed, which has resulted in some cracking within the stone walling above.

On the south-east corner of the wall, there is a small section of stonework missing at the lower level.

East Elevation

The east elevation of the building is open fronted to the right-hand side of the central internal dividing wall, with the remaining section of the elevation comprising solid stonework. A small window opening is provided within the wall panel.

In its original form, the east elevation of the building appears to have been completely open fronted, with the section of masonry to the left-hand side of the elevation being a later infill.

Straight unbonded joints are provided at the abutments with the south gable and internal cross walls respectively.

A timber eaves beam is provided above the opening, which supports the ends of the common rafters. The eaves beam also extends across the width of the masonry panel.

West Elevation

The stone wall of the west elevation forms part of the boundary with the adjoining field. Over the length of the building, the wall height is raised above the general level of the drystone boundary wall. The lower level of the wall acts as a retaining structure to the raised ground level within the field.

The external face of the wall was not inspected from the neighbouring field, so its condition was not confirmed. The internal wall face contained some loose stonework, particularly at the lower level where the wall is retaining and at the wall head around rafter bearings.

Building Interior & Roof Structure

Access into the two enclosed interior spaces, is made via door openings located within the north and south gable end walls. Within the area to the south of the building, there is evidence of a section of original spine wall having been removed. The wall that has been removed, is on the same alignment as the remaining internal wall to the north side of the central dividing wall.

From within the building interior, an inspection of the roof timbers was possible. The existing timber rafters are typically 90mm deep x 55mm wide, spaced at 300mm centres. Timber laths have been applied to the top surface of the rafters, with a lime plaster finish to their underside.

The condition of the rafters is generally poor, with widespread decay of the rafter feet noted at the bearings on to the supporting walls. In addition, some deflection of the rafters was also noted. Some loss of the internal plaster finish has occurred due to deterioration of the timber laths from water ingress, as no roofing felt is provided under the external tiling.

The proposal is to substitute the existing profiled clay tiles with Cotswold stone tiles, to include a suitable breathable membrane.

CONCLUSIONS & RECOMMENDATIONS

Based upon the above findings, it is my considered professional opinion, that the existing solid stone walls of the north and south gables can be retained, as they are both of an acceptable structural condition. Similarly, the west elevation boundary wall can also be retained.

The south elevation gable wall will require some modification to infill the existing door opening, which is to be replaced with a new double door opening centred on the ridge line. This will provide the opportunity to remove the existing decayed timber lintel and make good any sections of walling as required. The new lintel to the external face of the wall over the new double door should be oak, so that it is in keeping with the original. Precast concrete lintels should be provided behind the oak lintel to suit the existing wall thickness.

The existing east facing elevation currently has a very low eaves, so this makes it impractical to gain access into the building interior from this side. Therefore, it is recommended that the existing eaves level be raised to match the eaves level on the opposing west elevation.

Given the overall poor condition of the existing timber roof structure, it is recommended that this be replaced with new rafters, ridge beam, wall plates and eaves beams.

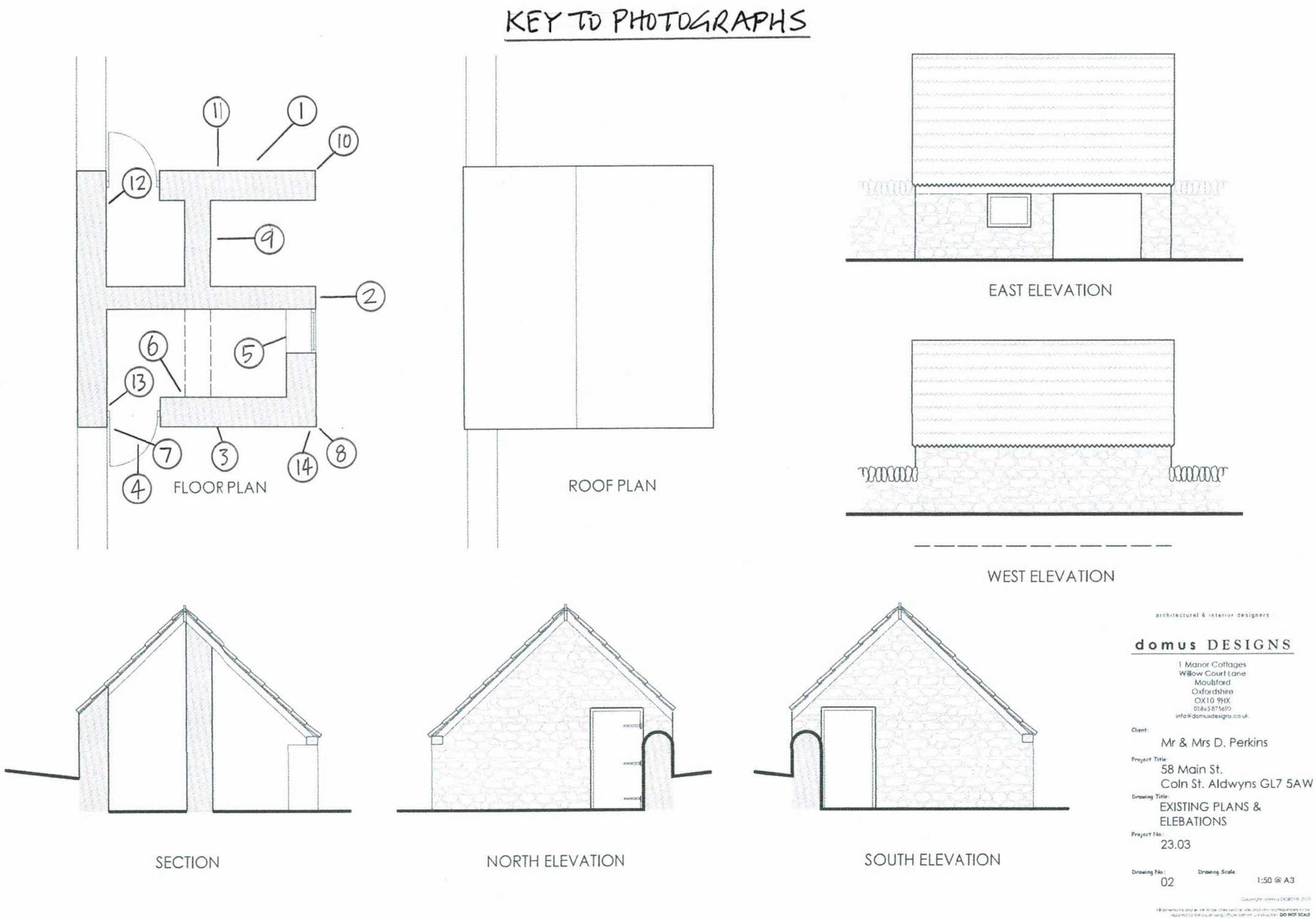
To make the building more usable, the partial removal of the existing internal cross wall should be considered. This will provide a single secure and lockable area, with the existing covered outdoor area to the east side retained in its original form, albeit with a raised eaves level.

Within Appendix A, a series of photographs taken at the time of inspection are provided, which record the existing building condition as described above.

Within Appendix B, a copy of the architects' drawings is provided. The proposed plans, elevations and section have been annotated to show details of the suggested proposals for alteration.

Signed.[redacted]…… Dated: 11/08/2023
Andrew Parkin IEng AMIStructE MICE

APPENDIX A –Photographs


KEY TO PHOTOGRAPHS
11
1
10
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9
2
6
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13
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FLOOR PLAN
ROOF PLAN
EAST ELEVATION
WEST ELEVATION
SECTION
NORTH ELEVATION
SOUTH ELEVATION
architectural & interior designers
domus DESIGNS
1 Manor Cottages
Willow Court Lane
Moulsford
Oxfordshire
OX10 9HX
01865875690
info@domusdesigns.co.uk
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EXISTING PLANS &
ELEBATIONS
Project No:
23.03
Drawing No:
02
Drawing Scale:
1:50 @ A3
DO NOT SCALE

Photograph 1
View on to gable end wall of North Elevation

Photograph 2
East Elevation showing low eaves level and distortion in the roof structure.

Photograph 3
View on to gable end wall of South Elevation.

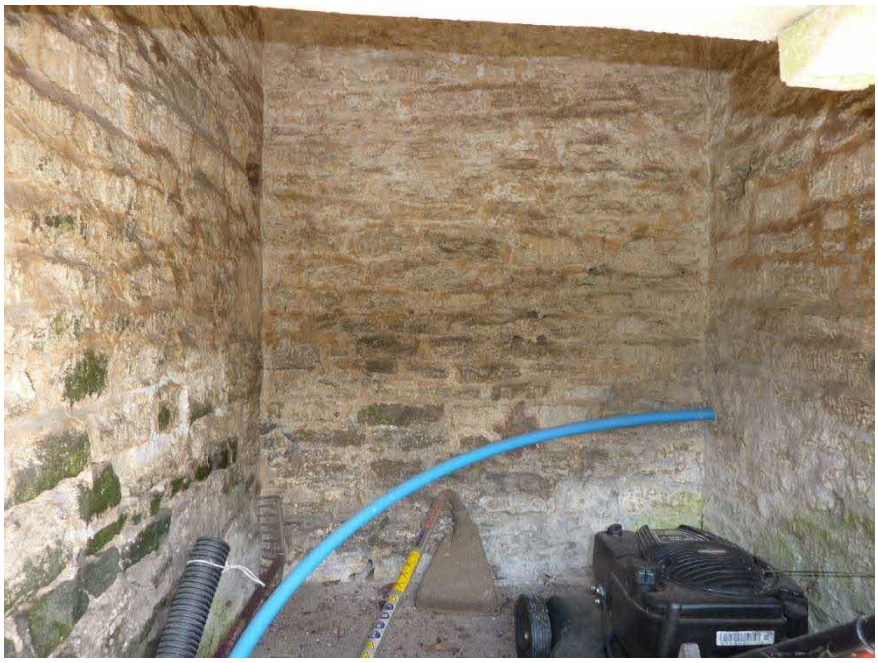
Photograph 4
Decayed timber lintel over door opening in South Elevation gable.

Photograph 5
View to underside of roof structure within building interior (south side).

Photograph 6
Evidence of wall removal within building interior adjacent to South gable.

Photograph 7
Poor condition of stonework below lintel bearing on South gable.

Photograph 8
Loss of low level stonework on South-East corner.



Photograph 9
Interior space as viewed from open frontage in East Elevation.

Photograph 10
Decay to timber eaves beam on North-East corner.

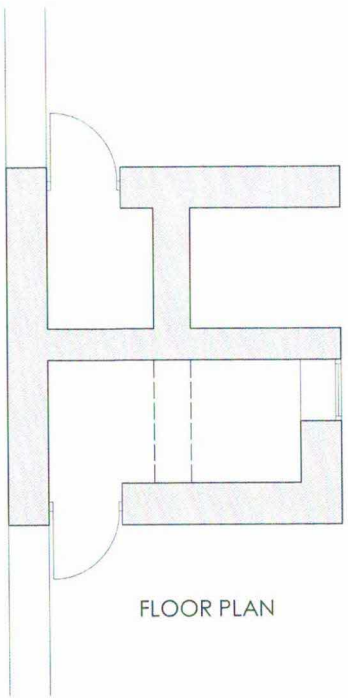
Photograph 11
Weathering of low level stonework on North Elevation gable.

Photograph 12
Decayed rafter end bearings on to West Elevation wall.

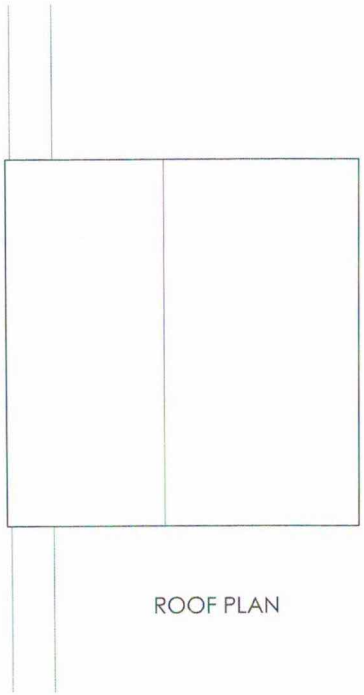
Photograph 13
Poor condition of internal wall face of West elevation adjacent to door opening.

Photograph 14
Decayed verge rafter and eaves beam/wallplate on South-East corner.

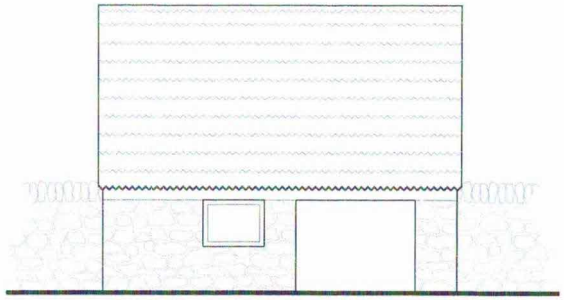
APPENDIX B –Architect Drawings



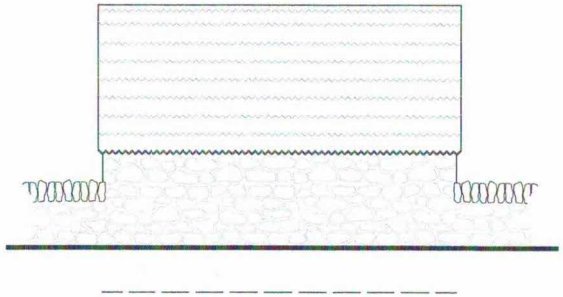
FLOOR PLAN



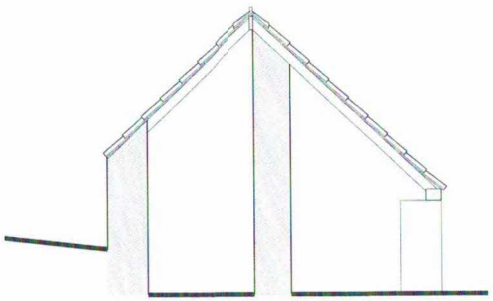
ROOF PLAN



EAST ELEVATION



WEST ELEVATION



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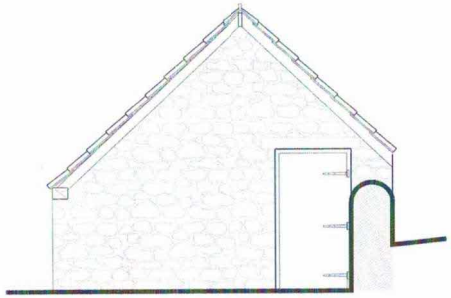
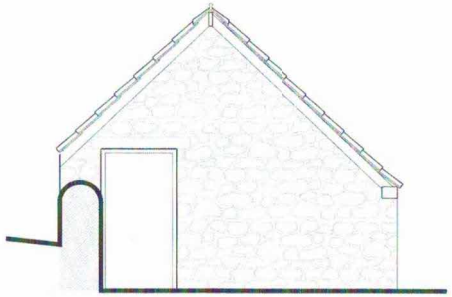


NORTH ELEVATION



SOUTH ELEVATION

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domus DESIGNS

1 Manor Cottages
Willow Court Lane
Moulsford
Oxfordshire
OX10 9HX
01865 875690
info@domusdesigns.co.uk

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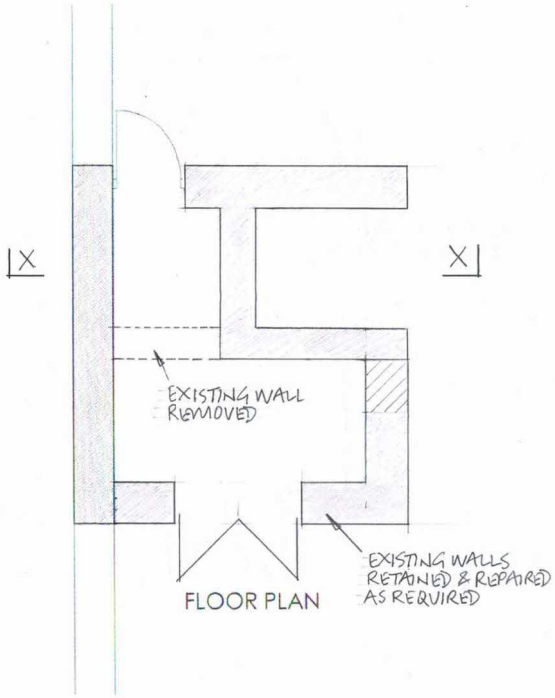
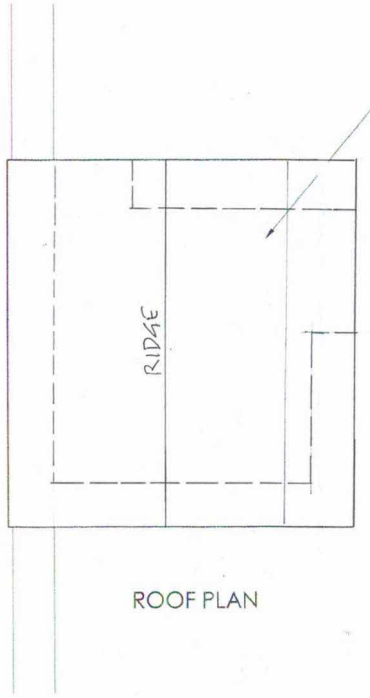
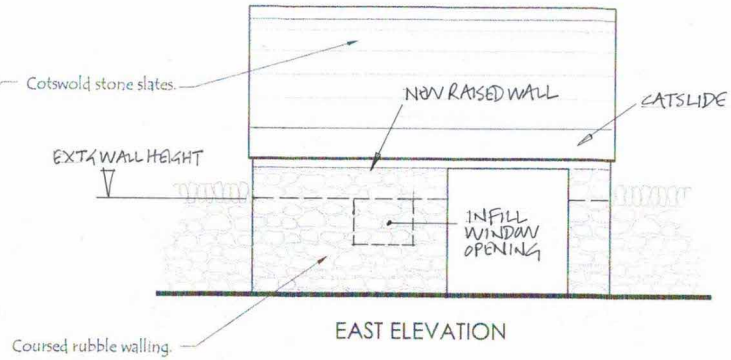


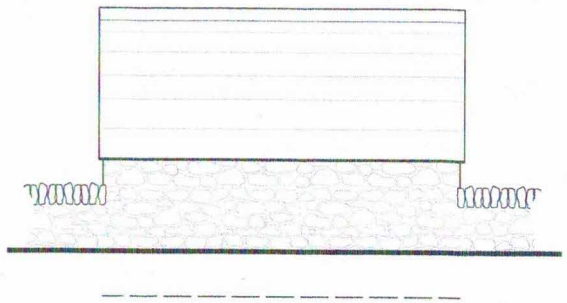
FLOOR PLAN



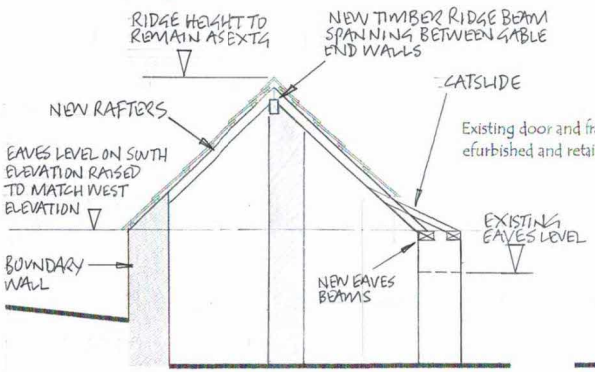
ROOF PLAN



EAST ELEVATION



WEST ELEVATION



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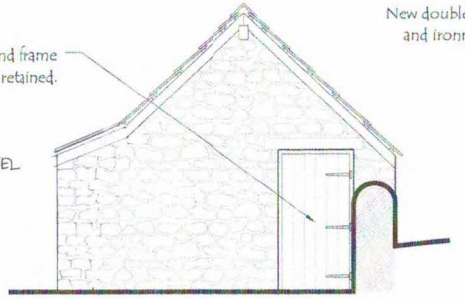

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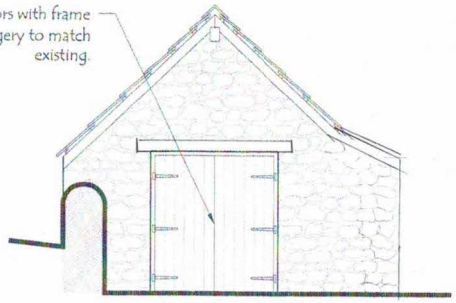

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