

BRP Associates

Structural & Civil Engineers

Unit 2, Bigods Hall, Bigods Lane, Great Dunmow, Essex CM6 3BE

Tel: 01371 875943

Email: engineers@brp-associates.co.uk

STRUCTURAL APPRAISAL

FOR

CONVERSION OF LARGE BARN

TO

DWELLING

AT

POTASH FARM

HOLBROOK

IP9 2PJ

FOR

DESIGN & CONSERVATION LTD

JOB NO: R3217

DATE: OCTOBER 2023

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1.0 INTRODUCTION

The existing barn is a large timber framed barn at Potash Farm, Holbrook, IP9 2PJ.

The conversion proposal scheme is given in Appendix B.

2.0 EXISTING MAIN BARN

a) TIMBER BARN

This is a large single storey barn structure, plan size of 24m x 8m.

The barn is currently in poor condition, with 50% of the roof collapsed and the remaining with significant distortion. The roof is a pitch roof, with either pantile or corrugated sheet covering, generally constructed in softwood with 100mm x 50mm rafters, purlins, and collar arrangement. There is a mezzanine floor on the righthand side in timber construction with central timber ports. The external walls are timber framed with 100mm x 70mm oak studs bearing onto 215mm brick plinth wall.

The ground floor appears to be solid slab.

b) BRICK BARN

This is a single storey brick barn abutting the timber barn. It is rectangle in shape, approximate plan size of 23m x 8.3m.

The barn has a pitch roof with corrugated sheet covering, supported on 100 mm x 50mm softwood timber purlins and 150mm x 50mm timber rafters, with ceiling tie members at 1.8m centres. The external wall comprises of brick plinth with stud posts at 1.8m centres and diagonal bracing and boarding, with the exception of rear lean-to roof, where there is 215mm brick wall to full height. The ground floor is solid slab.

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3.0 CONDITION OF BARN

Visual inspection of the barns was carried out on 5th September 2023, this revealed the following observations:

TIMBER BARN

- a) The general condition of the barn is fairly poor with 50% of the roof collapsed and external stud walls at the front and rear appear to be free standing and in an unstable condition due to loss of lateral ties provided by the roof.
- b) The current roof structure over the entrance and the mezzanine floor also has significant distortion.
- c) The rear and part of the front wall is free standing with significant lateral distortion and is considered to be unstable.

BRICK BARN

The general condition of the barn is reasonable, with feet of the studs encased in concrete and there is significant evidence of weathering of the brickworks along all elevations.

There is slight distortion to the roof structure, but it is considered to be in reasonable condition.

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4.0 ASSESSMENT AND RECOMMENDATIONS

TIMBER BARN

The proposal is to convert the main barn to a dwelling with additional first floor. Our thoughts are that 50% of roof had collapsed some time ago, with the remaining structure exposed to the elements and free-standing walls in an unstable state, with significant distortion and varying degrees of decay.

We feel that conversion is not possible and severe weather, such as a storm, may cause further collapse and suggest demolition and reconstruction using salvaged materials.

BRICK BARN

The proposed conversion will involve conversion with new roof cladding and ceiling and openings in existing wall, this will require the following structural considerations.

- a) Existing roof structure will need to be strengthened by incorporating additional rafters and tie members to accommodate additional loading.
- b) The brick walls will need to be underpinned, as the existing footings are considered fairly shallow, weathered brickwork replaced and walls repointed.
- c) The external stud walls will need to be strengthened with additional studs and decayed studs replaced.
- d) Additional lintels and timber framing will be required for the new openings.

We trust that the content of this appraisal is sufficient for your needs, but if you require any further information, please do not hesitate to contact the undersigned.

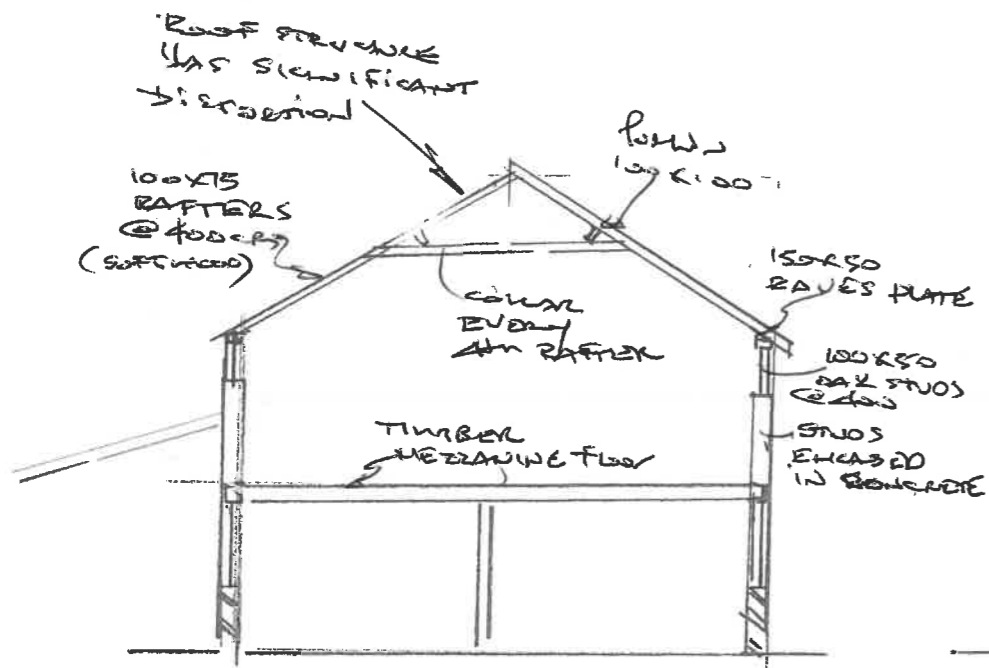


B Patel
BSc (Hons) CEng MStructE FConSE

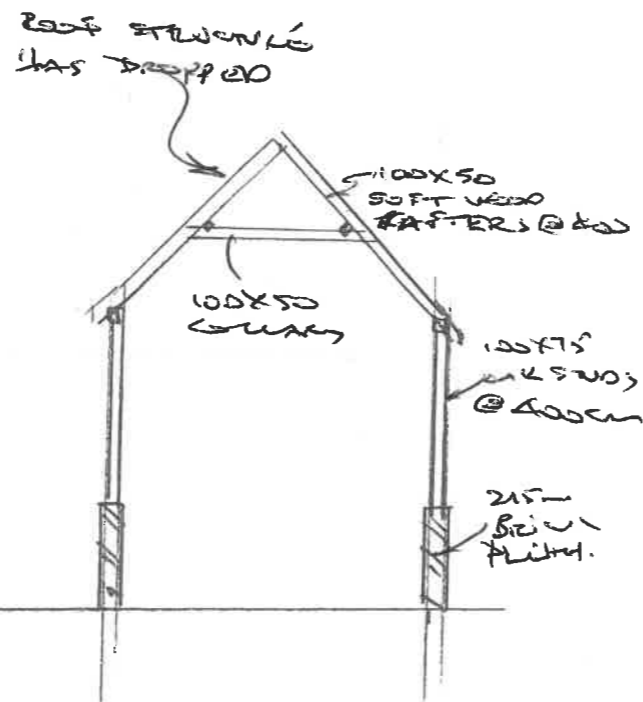
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APPENDIX A

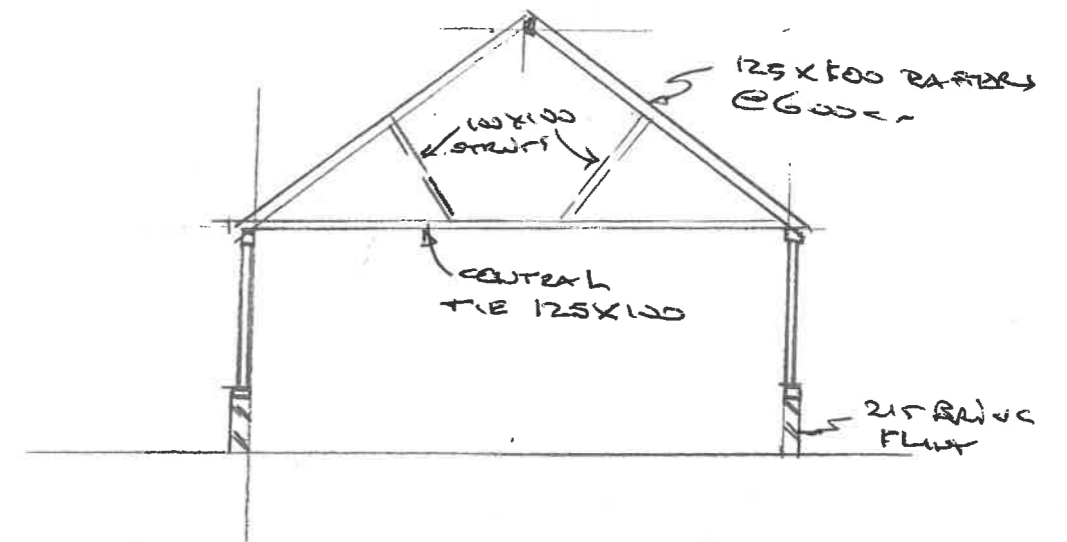
EXISTING ARRANGEMENT



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

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Structural & Civil Engineers

Unit 2, Bigods Hall,
Bigods Lane, Great Dunmow, Essex CM6 3BE
Tel: 01371 875943
Email: engineer@brp-associates.co.uk

Architect / Client:

DESIGN & CONSERVATIONS LTD

Project:

MAIN BARN, POTASH FARM
HOLBROOK, IP9 2PJ

Title:

SECTIONS

Scale:

1:100

Date:

SEP/02

Drawn:

BF

Designed:

BF

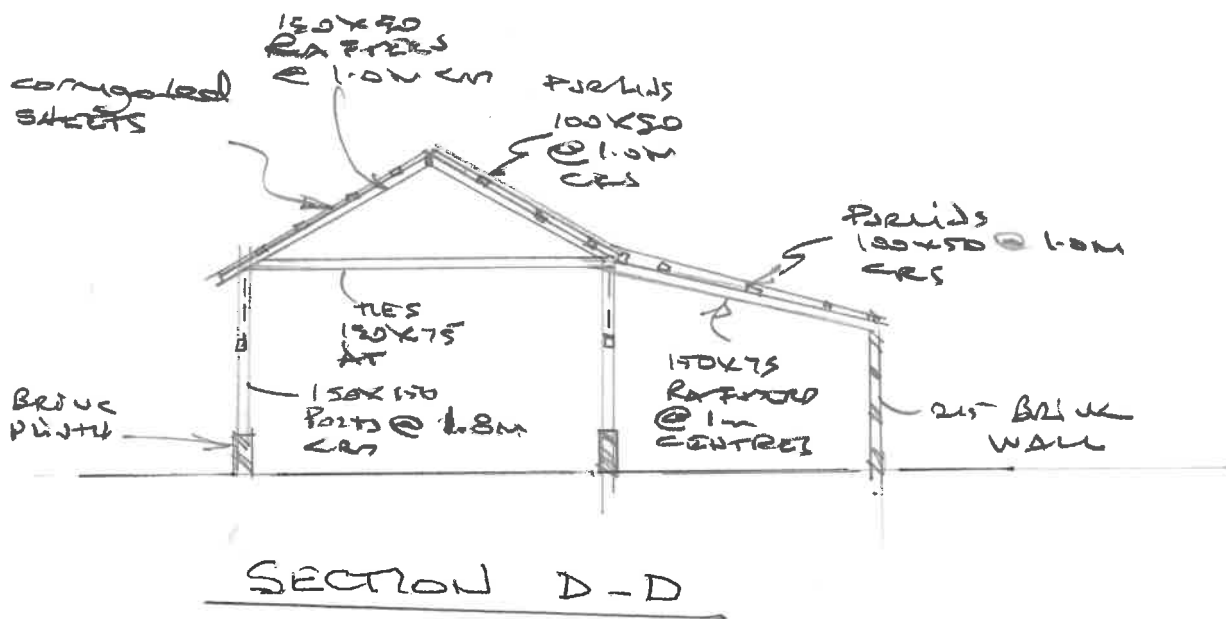
Checked:

Job No / Drawing No / Revision:

R3217/SK/02

Revision:

Date:



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Structural & Civil Engineers

Unit 2, Bigods Hall,
Bigods Lane, Great Dunmow, Essex CM6 3BE
Tel: 01371 875943
Email: engineer@brp-associates.co.uk

Project: DESIGN & CONSERVATIONS LTD

Title: MAIN BARN, POTASH FARM
HOLBROOK, IP9 2PS

Date:

Scale:

Job No / Drawing No / Revision

R3217 / SK / 03

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Photograph 1

Showing the missing roof and timber rafter to stabilise the wall.

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Photograph 2

Showing crack damage and distortion to rear external wall.

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Potash Farm, Holbrook

October 2023

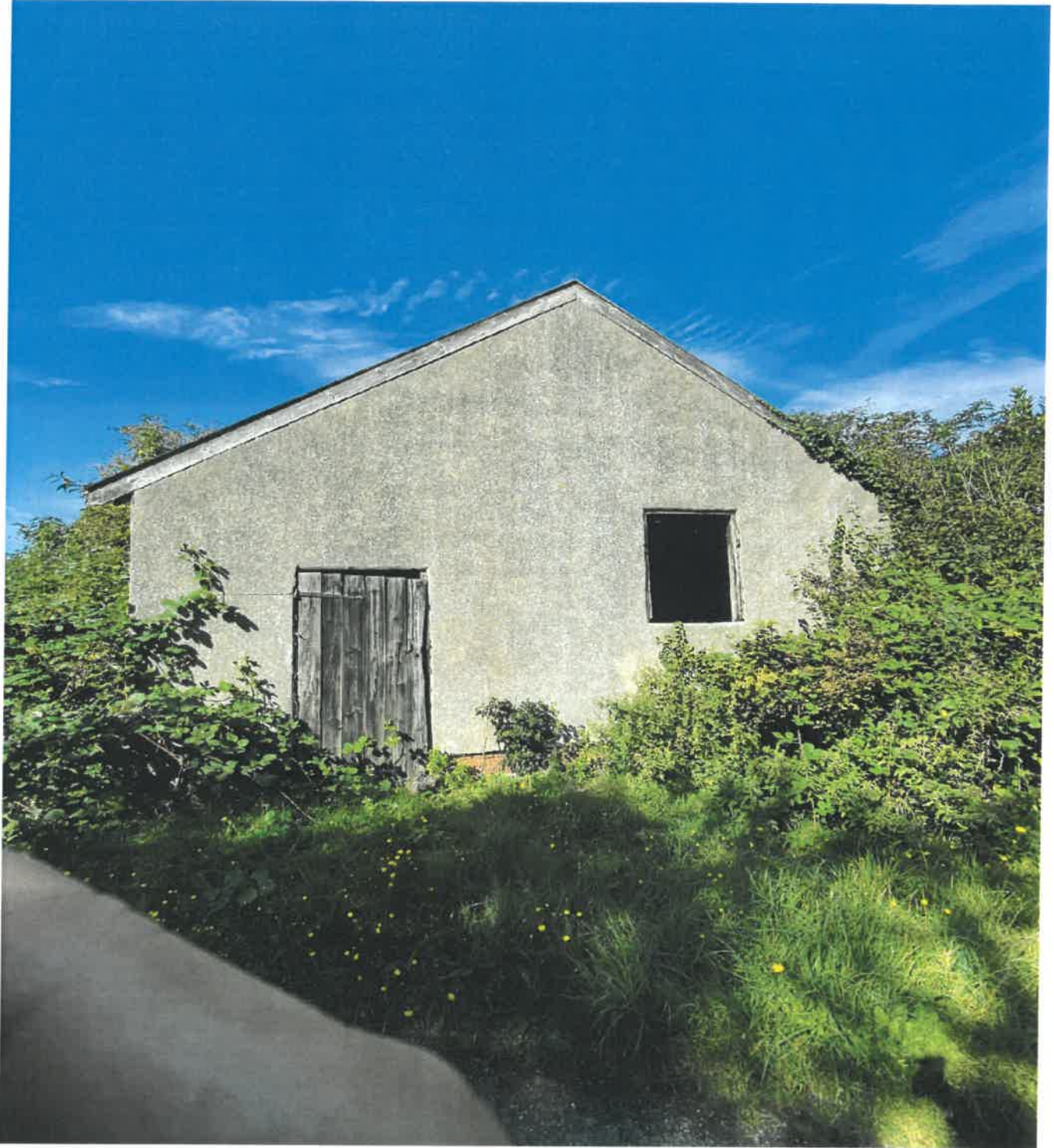
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Photograph 3

Showing weathering in brick plinth.

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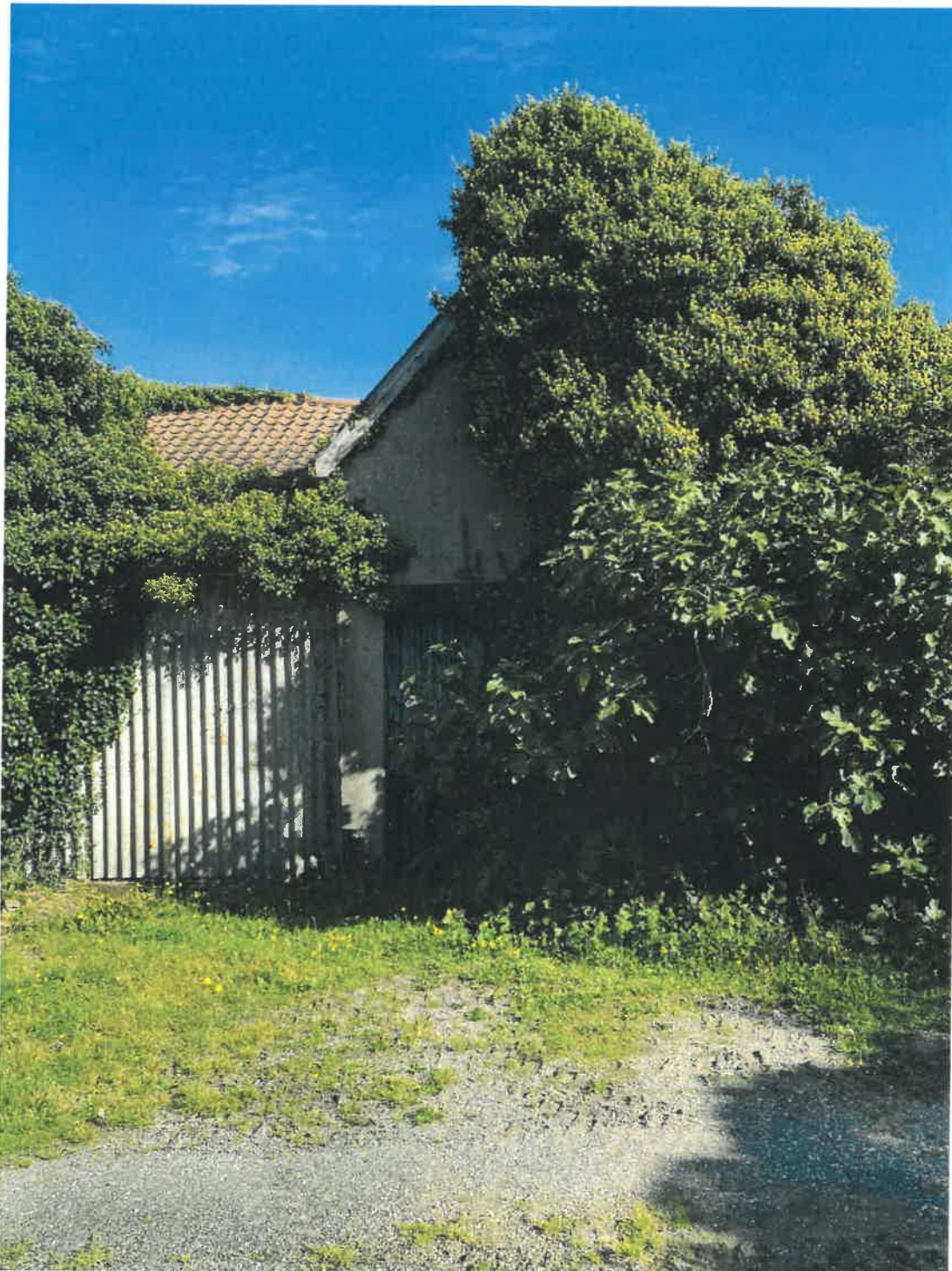


Photograph 4

Showing lefthand flank wall.

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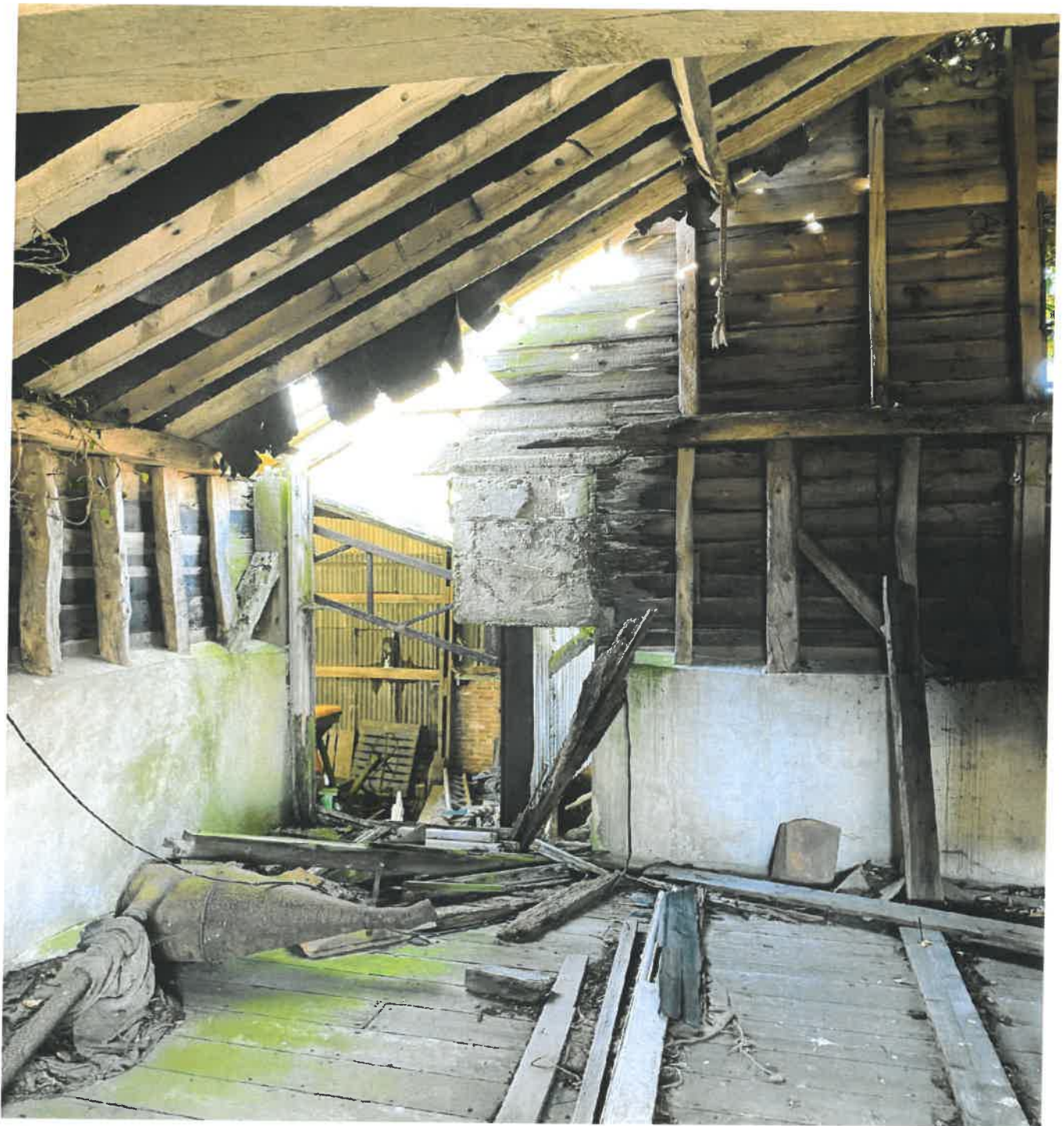
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Photograph 5

Showing entrance to the barn covered in overgrown vegetation.

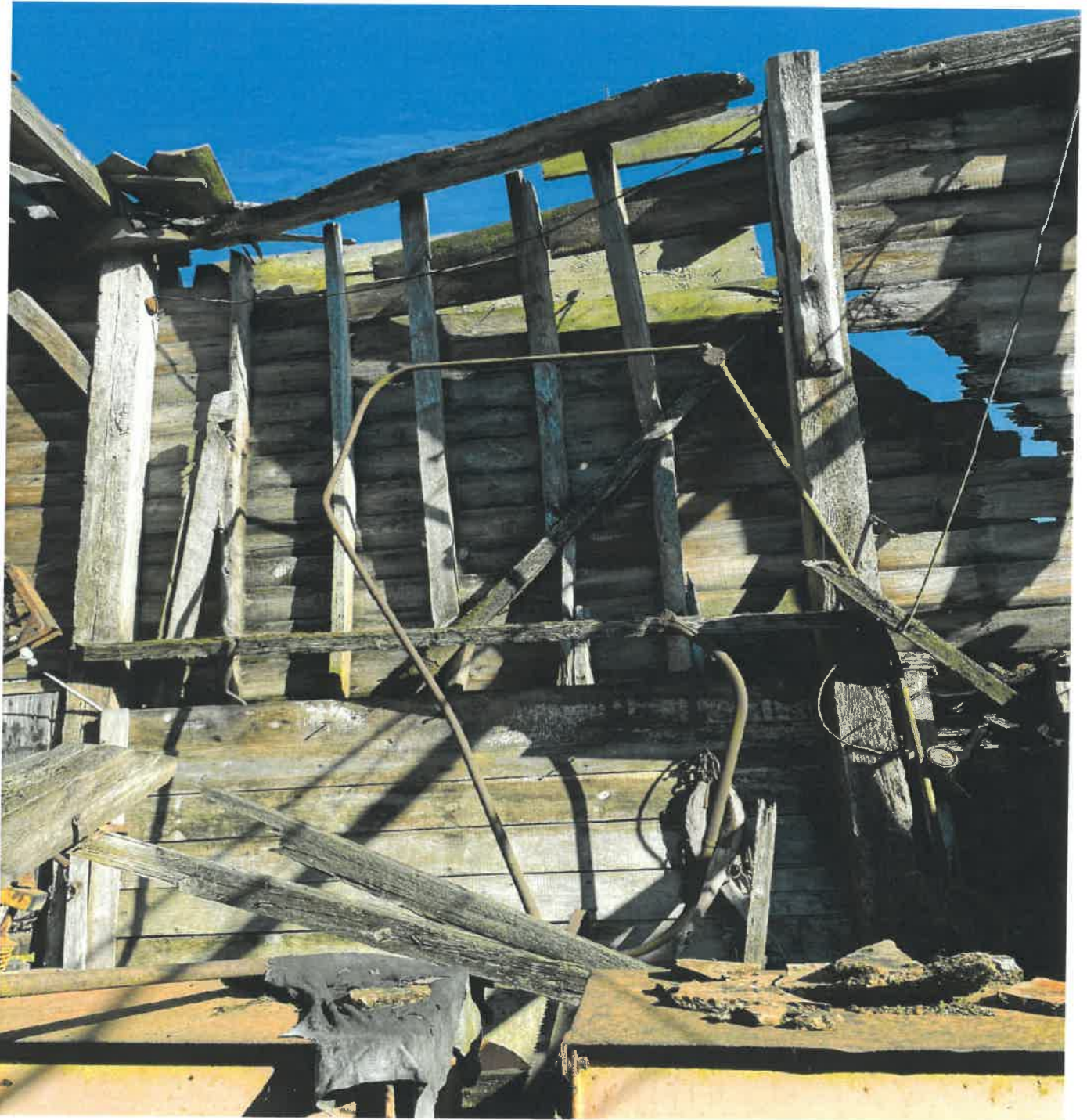
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Photograph 6

Showing missing section of lefthand end wall at first floor of mezzanine.

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Photograph 7

Showing missing roof and extensive distortion/damage to rear wall.

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Photograph 8

Showing collapsed roof.

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Photograph 9

Showing existing roof over the mezzanine floor overhanging.

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Photograph 10

Showing extensive distortion to the entrance roof.

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Photograph 11

Showing side walls of the entrance projection leaning outward.

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Photograph 12

Front elevation of brick barn.

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Photograph 13

Front elevation of brick barn.

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Potash Farm, Holbrook

October 2023

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Photograph 14

Showing lean-to timber store.

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Photograph 15

Showing weathered brickwork with loose bricks.

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Photograph 16

Showing rear lean-to roof.

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Photograph 17

Showing rear wall housing weathered bricks.

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Photograph 18

Showing typical roof and wall frame arrangement.

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Photograph 19

Showing existing roof arrangement.

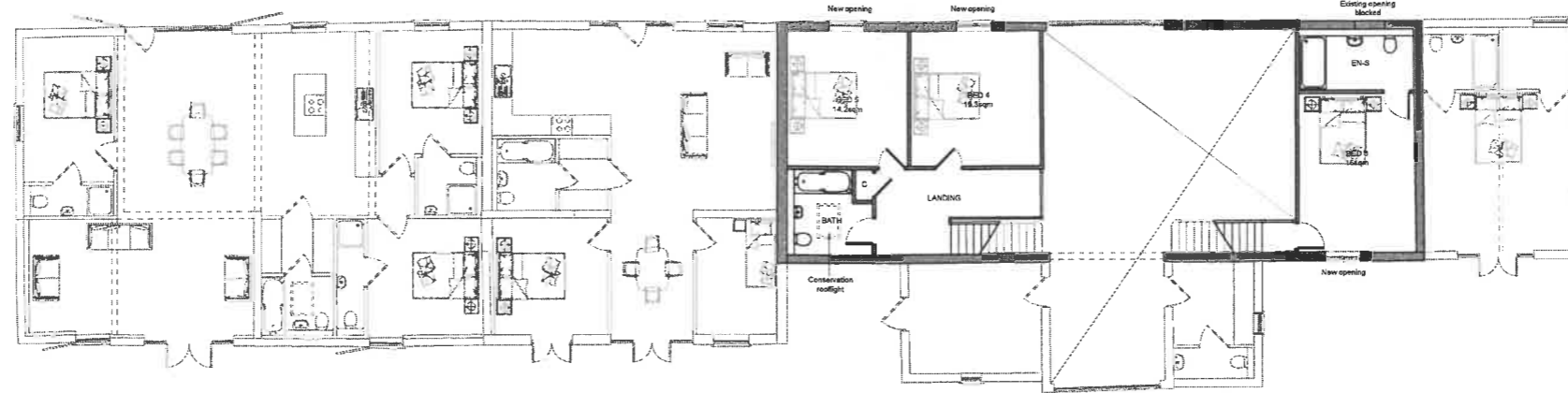
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APPENDIX B

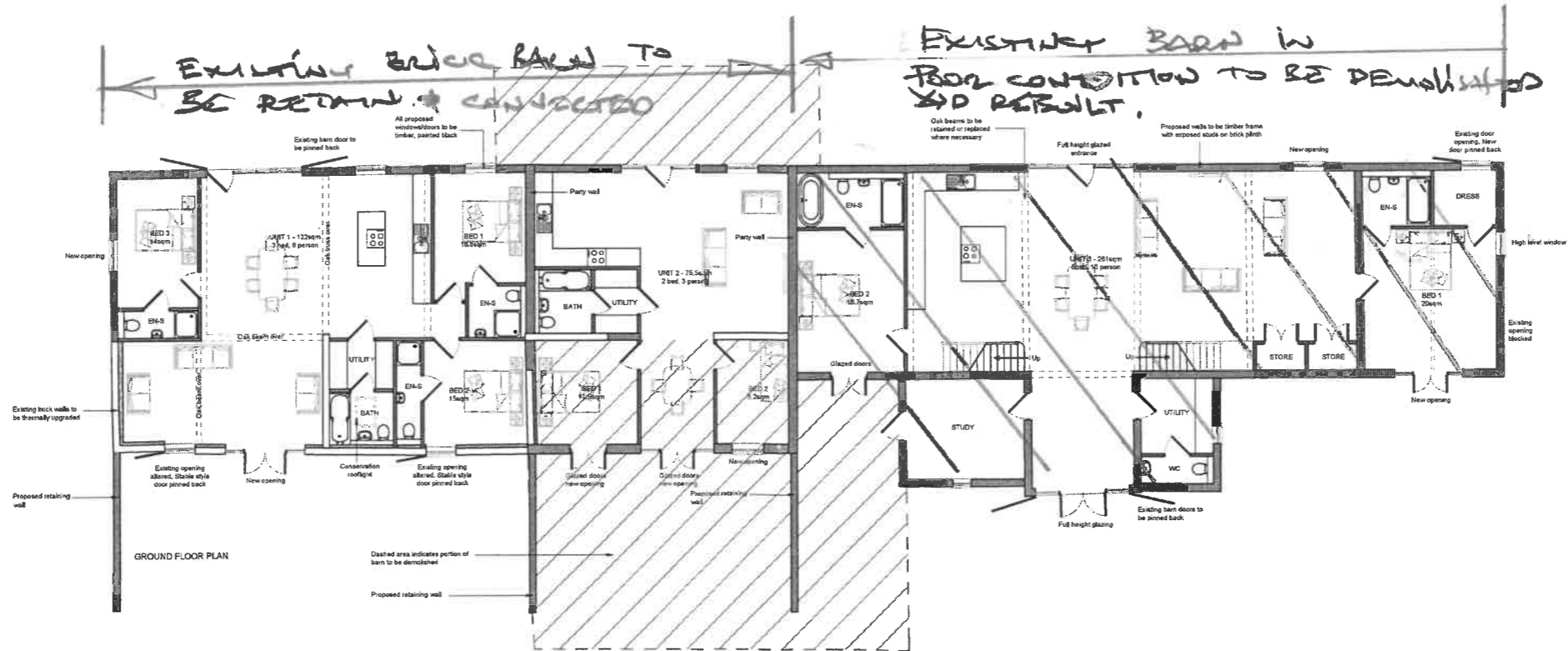
PROPOSED SCHEME

NOTE: All drawings to be read in conjunction with consultant structural engineers, mechanical and electrical consultants, acoustic engineers, energy consultants, specification, and detailed drawings. Drawing to be issued for the purposes shown within the drawing status box.

NOTE: Drawing to not be scale and written dimensions to be used only. Refer to drawing scale, paper size and scale bar.



FIRST FLOOR PLAN



GROUND FLOOR PLAN

