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STRUCTURAL APPRAISAL

CLASS Q PLANNING PERMISSION

**SITE B – BARN 8 AND 10 TREMAYNE FARM,
CROWAN, CAMBORNE, CORNWALL TR14 9NB**

FOR

MR ADRIAN GOTT



Project : 2023.204
Date : November 2023
Engineer : G.Schofield C Eng, MI Struct E, MICE, MIEI
Issue No: 1 : 15.11.2023
Issue No: 2 : 17.11.2023

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Appendix 'C': Annotated Photographs

1.0 INTRODUCTION AND BRIEF

- 1.1 Graham Schofield Associates, Consulting Civil and Structural Engineers, have been instructed by Mr Adrian Gott of Addington Investments Ltd. to carry out a Structural Appraisal of two former Agricultural building known as Barns 8 and 10 located at Site B, Tremayne Farm, Crowan, Camborne, Cornwall, TR14 9NB.
- 1.2 The purpose of our appraisal and this report is to assess the structural integrity of the buildings for conversion to a functional dwelling 'as it stands' without any substantial structural strengthening, replacement or adaptations. Compliance with the above requirements are a necessity for the buildings to be considered for Class Q Planning Permission.
- 1.3 Our appraisal has been based upon a walk round visual inspection off the buildings. No excavations were undertaken for the inspection of the foundations and sub-strata.

Our report comprises our general and specific findings, discussion on the buildings structural condition, our conclusions and any recommendations. It is accompanied with a sketch of the buildings structural format, Architects proposals and annotated photographs.

- 1.4 Barns 8 and 10 are identical in age, structure and condition and therefore maybe combined as one and the same for the purpose of this report.

2.0 FINDINGS

To be read in conjunction with drawing number 2023.204.SK02 showing the structural layout and typical section (Appendix 'A') the Architects proposals (Appendix 'B') and the annotated photographs in Appendix 'C'.

Both barns 8 and 10 are identical in terms of their form of structure, cladding and condition. As such the findings cover both buildings..

2.1 General Findings

Barns 8 and 10, Site B are single storey detached former Agricultural Buildings having approximate plan dimensions 18.5m x 13.25m and estimated to have been built in the 1980's by a bespoke Poultry Shed Designer/Builder. The buildings are situated on a flat site with direct ground floor access to both gables.

The main elements of the building are as follows:-

Roof

Single skin profiled metal cladding which spans cold rolled galvanised purlins. The purlins are pitched at maximum 1.35m centres. The roof is asymmetric in profile.

The principal roof structure comprises galvanised hollow section rafters at 6.1m centres. The rafters are supported at eaves and ridge by galvanised hollow section with the connection augmented with a knee brace which provides a 'quasi' portal action for stability in the transverse direction.

Walls

Timber Yorkshire Boarding to full perimeter. Supported on cold rolled galvanised rails.

Floor

Earth floor.

Foundations

Bespoke and unique foundations comprising galvanised hot rolled beam sections running the full length of the building. This type of foundation, whilst being unusual, is basically a ground beam which, due to its section properties transfers the load to a uniformly distributed pressure onto the sub-strata.

Stability

The knee brace connection between the columns and rafters provides a portal action for the transverse loads, i.e. wind loads, and as such provides adequate stability in this direction.

Longitudinal stability is provided by traditional plan roof bracing which transfers the wind loads to the vertical cross bracing and ultimately the foundation.

2.2 Specific Findings and Discussion

2.2.1 Our initial observations of the buildings noted that they had maintained their shape and geometry in terms of horizontal and vertical alignment. There were no obvious signs of movement or distress.

2.2.2 Observations to each structural element are itemised below :-

Roof

The profiled metal cladding, whilst in reasonably good condition and displaying no signs or premature deterioration is however only single skin and requires replacing or upgrading to provide the necessary levels of insulation for energy conservation to meet the requirements of the Building Regulations.

The steel structure has no evidence of deterioration, and a basic structural check of the members confirms its adequacy.

Walls

The Yorkshire boarding is in relatively good condition and may be left in-situ to provide an external weather screen..

Floor

An earth floor is not uncommon in many Agricultural buildings and would have provided a commensurate surface for the intended use of the building e.g poultry.

Foundations

The unique form of foundation will be encapsulated into the new ground floor slab, enhancing the buildings stability.

3.0 CONCLUSIONS

- 3.1 Barns 8 and 10 are former Agricultural buildings estimated to have been built during the 1980's. Their form of structure and materials used are contemporary for the era of construction.
- 3.2 The proposal is to adopt the existing structure to provide the principal support in connection with the buildings conversion from a redundant agricultural barn into a dwelling under Class Q Planning.
- 3.3 Our inspection of the property, and a basic check on the buildings structure, revealed the building to be of sound structural condition and lacking any form of distress or damage.
- 3.4 ***It is our considered opinion that in its current form and condition the existing barn numbers 8 and 10, Site B can be classed as a substantial and permanent structure and are not in any need of immediate structural works. He proposals for conversion to a dwelling will only enhance the building's current structural condition.***
- 3.5 A proviso' to the above statement in 3.4 is that a conversion shall adhere to the existing structural lines with no removal or alterations to the main frames which would compromise the local and overall structural integrity of the building.
- 3.6 ***Having examined the Architects proposals, the layout is compatible with the building structure, thus the above statement is satisfied.***

4.0 RECOMMENDATIONS

- 4.1 We recommend the main structural frames remain completely intact with no removal or alterations to the rafters and stanchions. The partitioning of the building into rooms shall follow the line of the structure.
- 4.2 ***Having examined the Architects proposals, the layout is compatible with the building structure, thus the above statement is satisfied***
- 4.3 To ensure longevity of the structure the following works shall be carried out:-
- Treatment of all timbers with an insect repellent and preservative.
 - New ground floor slab incorporating a damp-proof membrane and insulation. The existing steel section ground beams shall be encapsulated into the main slab.

Appendix 'A'

2023.204.SK02

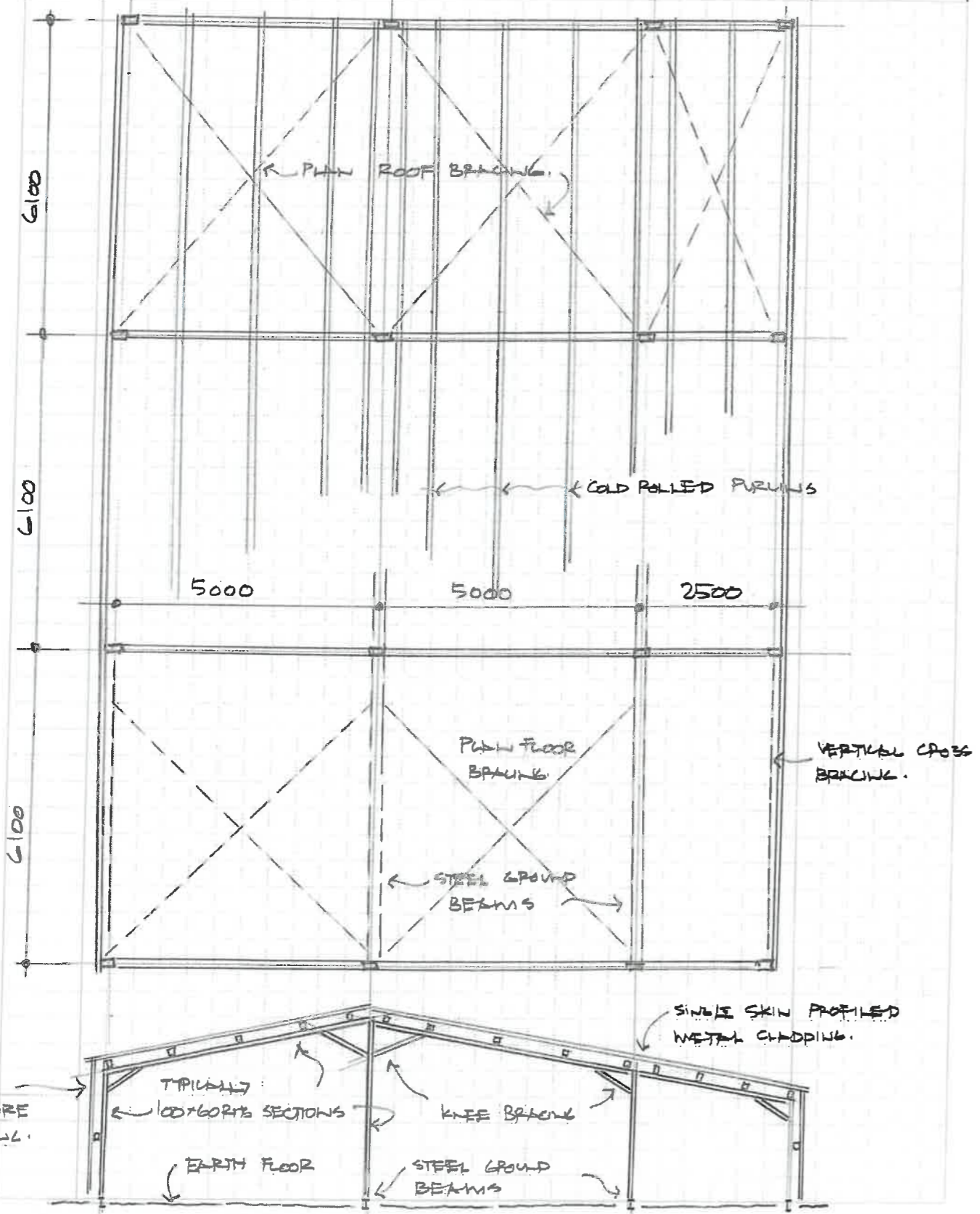
Structural Layout and Typical Section

Project MR. ADRIAN GOTT BALIS BAY 10 TREWATNE.		Project No. 2023.204.L
Part of structure STRUCTURAL APPRAISAL		Calc. sheet No. SK02.
Drawing Ref:	Calculations by GS.	Checked by GS.
		Date NOV. 23

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Members ref.	CALCULATIONS	OUTPUT
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PLAN AND SECTION OF EXISTING STRUCTURAL LAYOUT. 1:100.

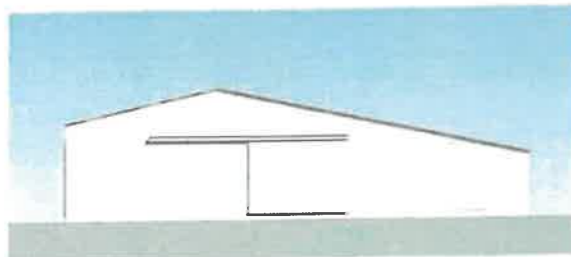
Appendix 'B'

2358-102-P2

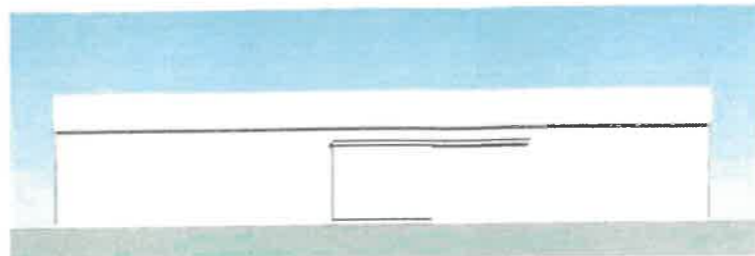
Existing Floor Plan, Elevations and Section

2358-111-P2

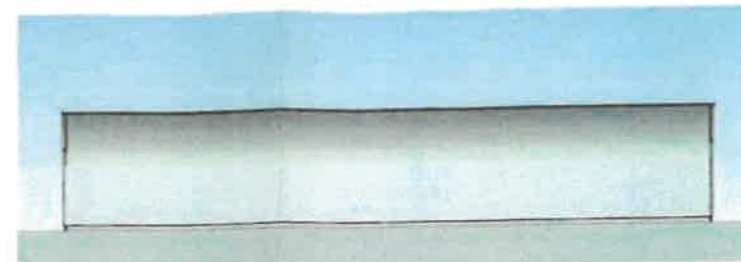
Proposed Floor Plan, Elevations and Section



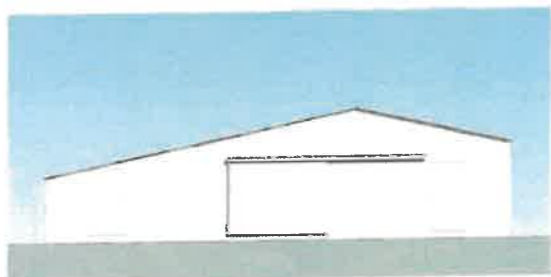
Site B - Barn 8 & 10 - North Elevation
1 : 100



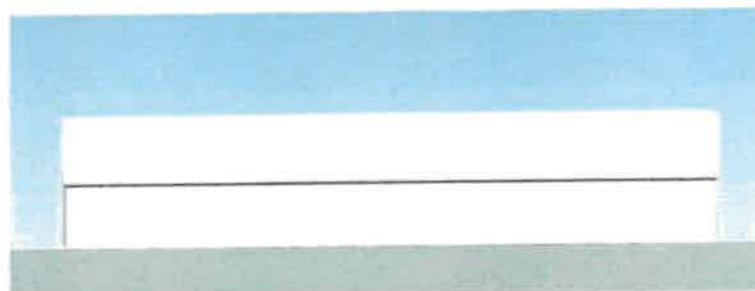
Site B - Barn 8 & 10 - East Elevation
1 : 100



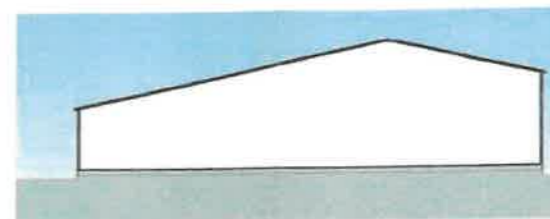
Site B - Barn 8 & 10 - Section A-A
1 : 100



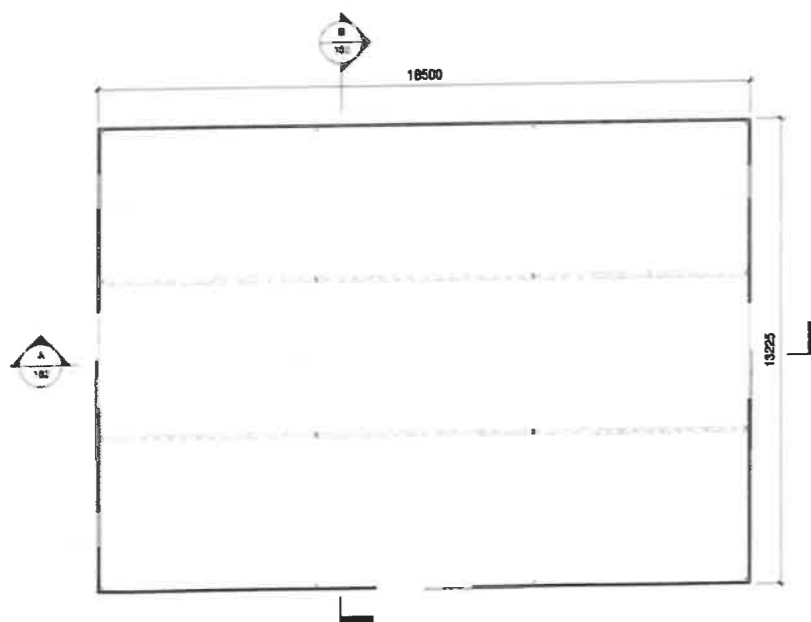
Site B - Barn 8 & 10 - South Elevation
1 : 100



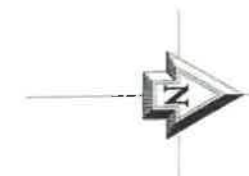
Site B - Barn 8 & 10 - West Elevation
1 : 100



Site B - Barn 8 & 10 - Section B-B
1 : 100



Site B - Barn 8 & 10 - Ground Floor Plan
1 : 100



0 2 4 6 8
Scale 1:100

REV	DATE	BY	CHKD	REVISION DETAILS
P2	03/11/21	HB	ARW	Approved Floor Plan
P1	01/09/20	HB	ARW	Final Floor Plan

PROJECT TITLE
Pre-application Advice Request for Conversion of Existing Residential & Leisure use at Tremayne Farm, Cornwall, TR14 9NB

CLIENT
Mr. Adrian Goff

DRAWING TITLE © Harrison & Pitt Architects Ltd

SITE B - BARN 8 & 10
As Existing Floor Plan, Elevations & Section

DRAWING STATUS	SCALE 1 : 100	● A1
PRELIMINARY	DATE: August 2023	
DRAWING NO.	DRAWING	CHKD.
2358-102	P2	ARW

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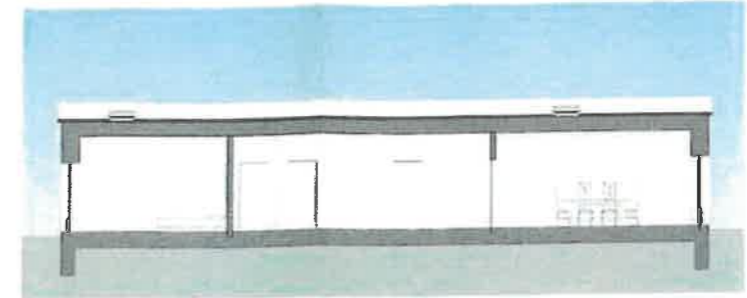
DO NOT SCALE FOR CONSTRUCTION



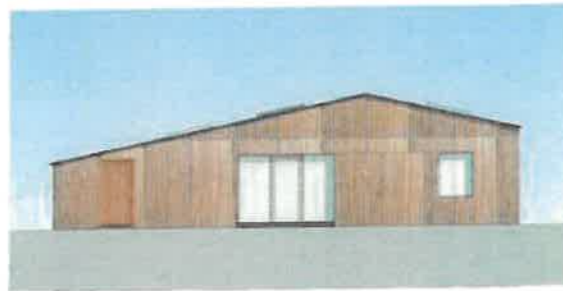
Site B - Barn 8 & 10 - North Elevation
1 : 100



Site B - Barn 8 & 10 - East Elevation
1 : 100



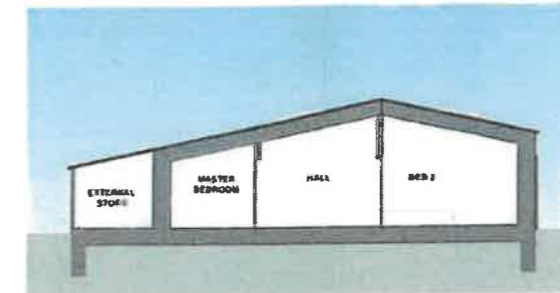
Site B - Barn 8 & 10 - Section A-A
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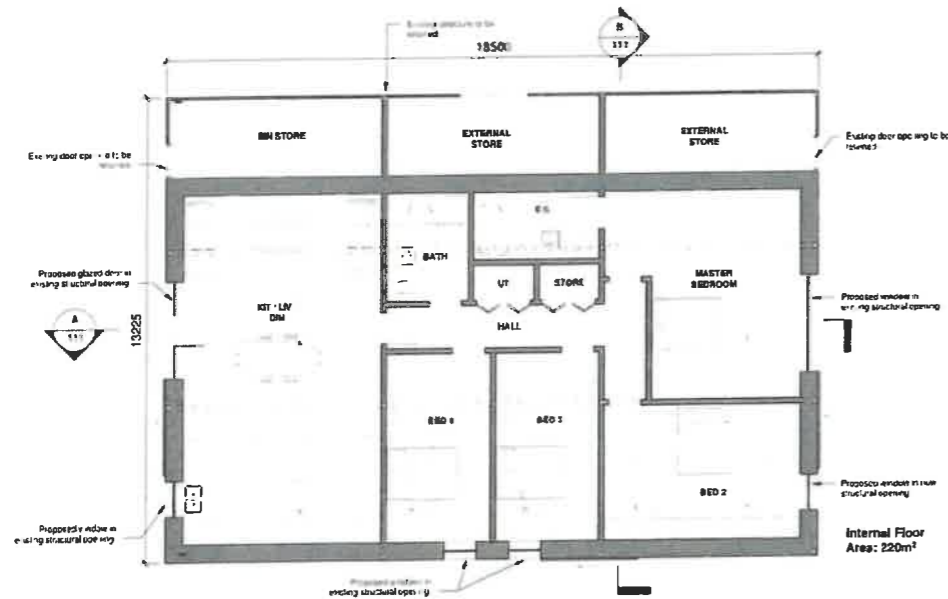
Site B - Barn 8 & 10 - South Elevation
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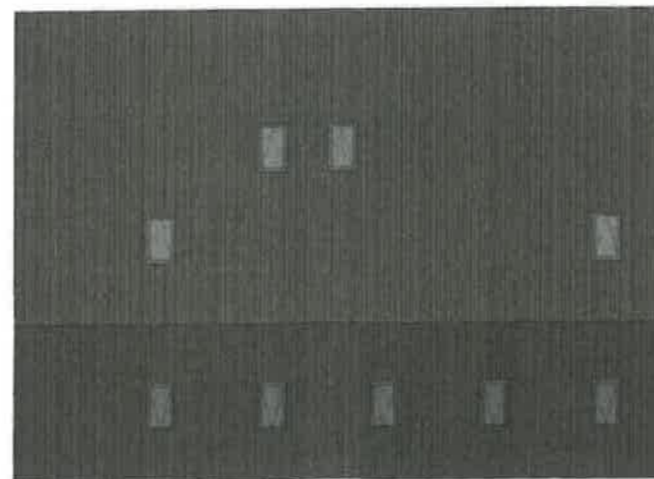
Site B - Barn 8 & 10 - West Elevation
1 : 100



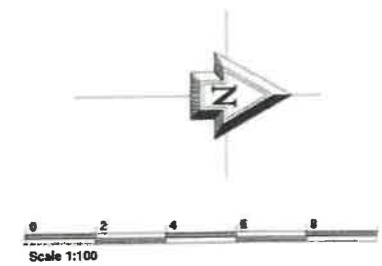
Site B - Barn 8 & 10 - Section B-B
1 : 100



Site B - Barn 8 & 10 - Ground Floor Plan
1 : 100



Site B - Barn 8 & 10 - Roof Plan
1 : 100



P2	08/11/23	HB	ARK	Amended internal layout
P1	01/02/23	HB	ARK	Initial layout
REV	DATE	BY	CHKD	REVISION DETAILS

PROJECT TITLE
Pre-application Advice Request for Conversion of Existing Residential & Leisure use at Tremayne Farm Cornwall TR14 9NB

CLIENT
Mr. Adrian Gott

DRAWING TITLE © HPA & Partners Ltd
SITE B - BARN 8 & 10

As Proposed Floor Plan, Elevations & Sections

DRAWING STATUS	SCALE 1:100	@ A1
PRELIMINARY	DATE August 2023	
DRAWING NO.	DRAWN	CHKD
2358-111	P2	ARW

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DO NOT SCALE FOR CONSTRUCTION PURPOSES

Appendix 'C'
Annotated Photographs



Photo 1 Barn 8

Barn 10



Photo 2 - North Elevation Barn 8



Photo 3 South Elevation Barn 8



Photo 4 - South Elevation Barn 8



Photo 5 - East and South Elevation Barn 8

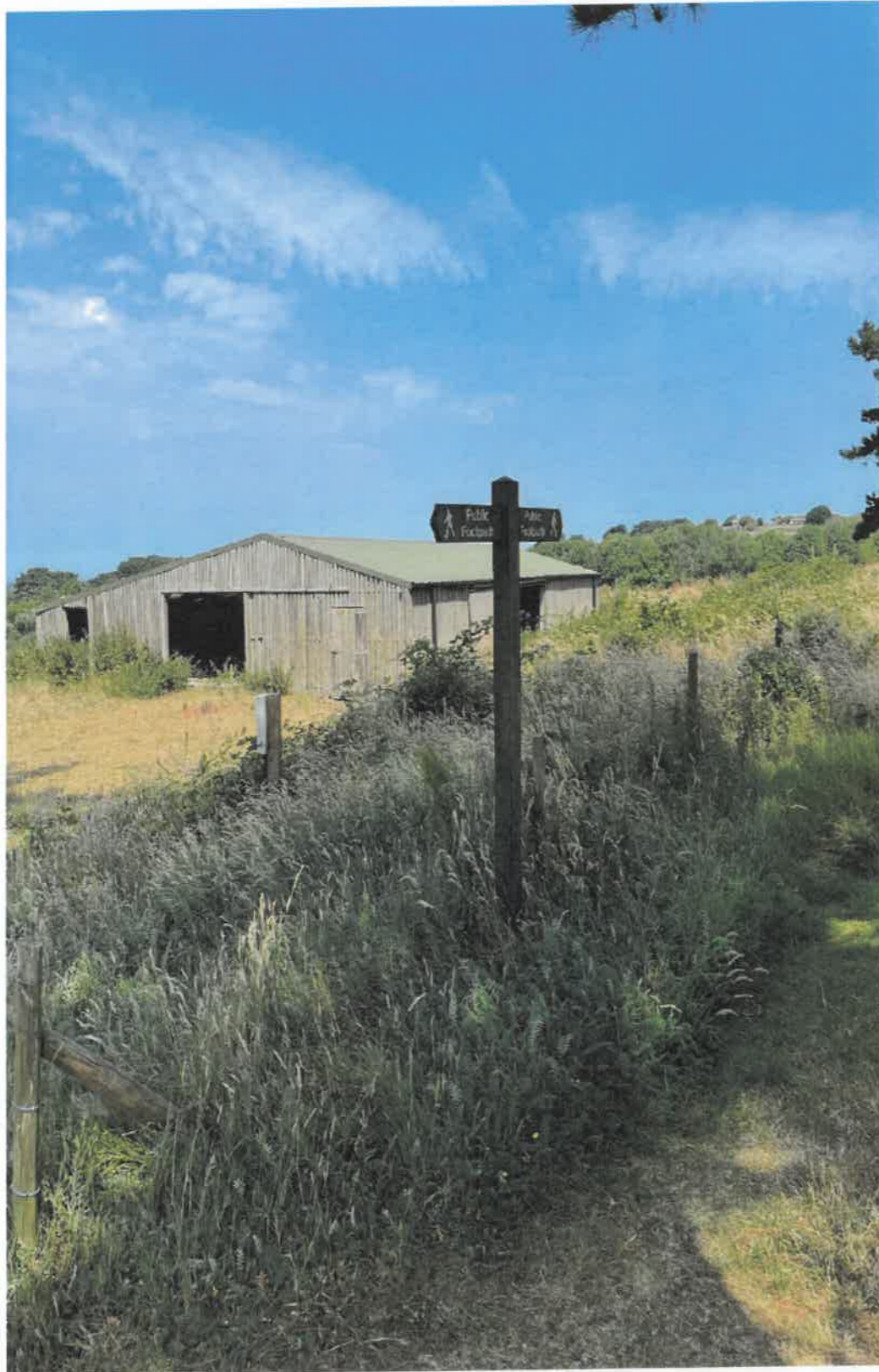


Photo 6 - South and East Elevation Barn 10



Photo 7 - South Elevation Barn 10



Photo 8 - West and South Elevations Barn 10



Photo 9 - Internal View Showing Full Range of Structural Elements and Their Connectivity



Photos 10-11 Typical View Showing Knee Brace Connection Rafter to Stanchion