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# *Rawcliffe Associates*<sup>Ltd</sup>

CHARTERED STRUCTURAL & CIVIL ENGINEERS

*Incorporating Ian H Paxton & Associates*

Est. 1961



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Our Ref: Misc.Cassidy+Ashton.NewBarn.Stonyhurst.DFR

## Updated Structural Report

on 320160488P

New Barn

at

Stonyhurst Estate

Stonyhurst College

Stonyhurst

Client:

Stonyhurst Estate  
Stonyhurst College  
Stonyhurst  
Clitheroe  
BB7 9PZ

Report Prepared by:

D F Rawcliffe  
BSc CEng MStructE

27<sup>th</sup> April 2016

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**Registered in England - Registration No. 5124940**

**UPDATED STRUCTURAL REPORT ON NEW BARN AT STONYHURST  
ESTATE, STONYHURST COLLEGE, STONYHURST**

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**UPDATED STRUCTURAL REPORT ON NEW BARN AT STONYHURST  
ESTATE, STONYHURST COLLEGE, STONYHURST**

## **INTRODUCTION**

At the request of Stonyhurst Estate, we were asked to inspect the above barn and carry out a structural inspection for the renewed Planning Application following previous Planning Applications in July 2003, July 2005 and May 2007. A copy of the revised application site plan is attached to Appendix A.

The inspection was carried out on 20th April 2016 and the weather on the day of the inspection was sunny and dry.

The reader is assumed to be standing on the farm courtyard facing the South West elevation and all locations are described from that position.

An updated Structural Report was carried out by ourselves in 2007 and a copy of this report and its appendices are attached to Appendix B, and this updated report is based on this document.

## **SITE INSPECTION**

Inspection of the external and internal elevations revealed no significant structural changes, with the exception of the damage to the eaves stonework of the lean to gable end on the South West elevation on the left hand side projection, which requires localised stone repair to the eaves quoin and surrounding stonework.

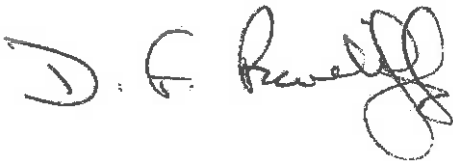
On the North West elevation missing roof tiles at eaves level have allowed water ingress onto the eaves stonework, which has caused damage to the stoneface below this area with signs of moss growing, which will allow frost damage to occur both to the face of the stone and to the mortar joints.

**UPDATED STRUCTURAL REPORT ON NEW BARN AT STONYHURST  
ESTATE, STONYHURST COLLEGE, STONYHURST**

## **CONCLUSIONS AND RECOMMENDATIONS**

We have concluded that the existing barn can be converted to residential usage with the structural alterations as outlined in the original report in Appendix B and shown on Andrew Long Building Design Drawing No. 9935/C and D and Robin Hall Associates Drawing No. C26-1-1 attached to Appendix B.

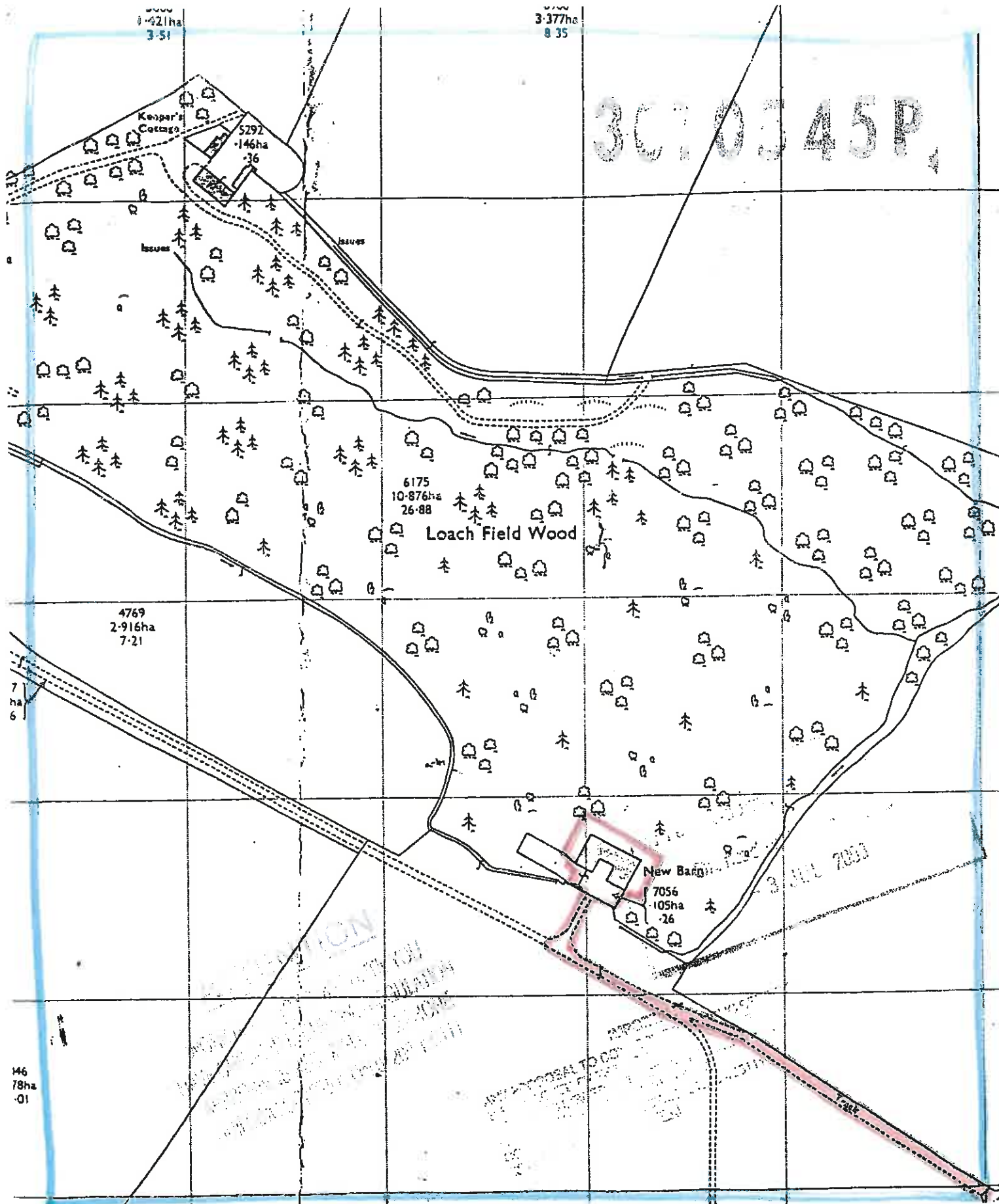
This report is confined to the points averted to above. We have not examined any other parts of the structure which were covered, unexposed or inaccessible and, therefore, we cannot confirm that any such part of the property is free from defect.

A handwritten signature in black ink, appearing to read 'D. F. Rawcliffe'. The signature is written in a cursive style with a large, stylized flourish at the end.

D F Rawcliffe

**UPDATED STRUCTURAL REPORT ON NEW BARN AT STONYHURST  
ESTATE, STONYHURST COLLEGE, STONYHURST**

**APPENDIX A**



**CARTER JONAS**

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**PROPERTY CONSULTANTS**  
 Regent House, 13/15 Albert Street, Harrogate, HG1 1JX  
 Telephone 01423 523423 Fax 01423 521373

30 MAR 2007

**APPLICATION SITE PLAN : NEW BARN, STONYHURST**

Date: July 2001	Scale: 1: 2500
Reproduced from/based upon the Ordnance Survey Map with the	This Plan is provided for reference purposes only and its accuracy is not

**UPDATED STRUCTURAL REPORT ON NEW BARN AT STONYHURST  
ESTATE, STONYHURST COLLEGE, STONYHURST**

**APPENDIX B**

**Structural Report**  
**on**  
**New Barn**  
**at**  
**Stonyhurst Estate**  
**Stonyhurst College**  
**Stonyhurst**

**Client:**  
**Stonyhurst Estate**  
**Stonyhurst College**  
**Stonyhurst**  
**Clitheroe**  
**BB7 9PZ**

**Report Prepared by:**  
**D F Rawcliffe**  
**BSc CEng MIStructE**

**8<sup>th</sup> May 2007**

**Structural Report on New Barn, Stonyhurst College Estate, Stonyhurst****Introduction:**

At the request of Stonyhurst Estate, we were asked to inspect the above barn and carry out a structural inspection for the renewed Planning Application following previous Planning Permission in July 2003 and July 2005. A copy of the revised application site plan (scale 1:2500) is attached to Appendix A.

The inspection was carried out on 2<sup>nd</sup> May 2007 and the weather on the day of the inspection was sunny and dry.

The reader is assumed to be standing on the farm yard facing the South West elevation and all locations are described from that position.

**Site Inspection:**

On the last Planning Application for Ribble Valley Borough Council a Guidelines for the Preparation of the Conversion Assessment and Method Statement report was compiled, a copy of which is enclosed in Appendix B and this update report is based on this document.

Inspection of all external elevations revealed no significant structural changes.

Inspection internally again revealed no significant structural changes.

**Conclusions and Recommendations:**

We have concluded that the existing barn can be converted to residential usage with structural alterations as outlined in the original report in Appendix B and shown on Andrew Long Building Design Drawing No's 9935/C and /D and Robin Hall Associates Drawing No's C26-1-1 attached to Appendix C.

This report is confined to the points adverted to above. We have not examined any other parts of the structure which were covered, unexposed or inaccessible and, therefore, we cannot confirm that any such part of the property is free from defect.

D F Rawcliffe



RIBBLE VALLEY  
BOROUGH COUNCIL

3 010 545 P

**NEW BARN  
STONYHURST COUQUEE ESTATES.**

Ribble Valley Borough Council  
Countryside Services  
3 JUL 2008

**This form should accompany  
all planning applications  
for change of use  
of rural buildings to dwellings**

**IMPORTANT**  
PROPOSAL TO CONNECT TO A PUBLIC SEWER MUST  
BE APPROVED BY THE COUNCIL'S PUBLIC SEWER  
DEPARTMENT BEFORE ANY WORK COMMENCES.  
CONTACT THE PUBLIC SEWER SECTION 01223 425111  
(SEWER) SERVICES CAN CALL

Submitted by .....

Date .....

RECEIVED

30 MAR 2007

# 1. GUIDELINES FOR THE PREPARATION OF THE CONVERSION ASSESSMENT AND METHOD STATEMENT

## GENERAL NOTES

In the preparation of the conversion assessment and method statement, consideration should be given to the following observations:

### Roof Structures

The removal of roof structures has a great influence on the overall stability of the walls; the removal of the roof therefore increases the risk of damage and/or failure of part or whole of the existing structural elements.

Removal of the roof structure should only be considered when works to stabilise the existing walls have been completed and following a full risk assessment identifying all precautions to be taken during these operations,

### Walling Materials

The assessment of existing structures where the wall construction is that of random stone requires special consideration. This type of wall generally relies on the mass of that wall and its material for load sharing qualities and structural integrity; alterations to walls and in particular the insertion of new openings, their size and location/method of installation has considerable bearing on their future ability to sustain loading conditions.

The Council's design requirements in general seek to reduce to a minimum the number of new openings. In order to sustain the future viability that is to retain those parts of the existing structure, openings should, therefore, be kept as small as is practical, the number of new openings in each elevation should be decided with sensitivity having regard to the integrity of the structure.

Details should also be given of the nature, source and method of integration of any new materials to be used both for repair and reconstruction.

### Building over existing structure

Building on top of existing structures should be avoided, the design scheme should always aim to utilise the existing structure with the minimum effect and alteration.

Building on top of the existing structure by increasing the height of the existing walls can cause failure of the existing structure or its foundations. Furthermore the new wall is likely to be constructed in modern materials over masonry construction; the mixing of differential materials can itself cause serious problems in the life cycle of that structure.

### External features

The proximity of watercourses, trees, and external services should always be taken into account in the conversion assessment.

### General advice

It is further recommended that conversion works should only be carried out by a competent person with knowledge and experience in conversion work. Those carrying out the works should hold the necessary insurances including for financial loss.

Works should always be carried out following good practice following an identified sequence incorporating adequate precautions so as not to prejudice or weaken any part or whole of the existing structure.

The responsible for carrying out conversion operations should take the responsibility to consult with the local authority where there is any doubt with regard to any part of demolition or part of the repair process or indeed when an unknown defect presents itself.

## 2. CONVERSION ASSESSMENT

The conversion assessment must draw together all the elements in the conversion/construction process (having regard to the condition of the existing structure), which have an influence on the stability and/or integrity of the structure.

The assessment must be distinctive and specific to that project.

The report should follow this general format and headings; the space between the headings is mainly indicative; you may wish to expand or extend the information provided under a particular heading.

Site/Location Address

*New Barn, Stonyhurst Estate.*

Ordance Survey Grid Reference

### CONDITION OF EXISTING STRUCTURAL ELEMENTS

List the condition/type of construction/materials of each structural element separately, along with your intentions to alter/repair/extend or demolish elements in connection with this conversion.

## **A. Roofs;**

### Condition of existing roof/roofs:

Including the type of construction and roof covering, condition of trusses, purlins and rafters. The degree of attack by wood - boring insects should be assessed together with remedial measures.

*Traditional roof construction. Natural blue slate on battens on rafters, either 2 or 1 row of purlins/slope on substantial King post trusses with hips and valleys at junctions. Some slates are loose or missing.*

*The roof structure is of high quality, with substantial machined timbers and is generally in fine condition.*

## **Roofs;**

### Alteration/repair/removal:

*The whole roof, including the secondary lean-to sections is to strip and check and treat for any fungal/insect attack. There would appear to be no need for any other action.*

*The roof will be of warm roof construction.*

## **B. Walls;**

### Condition of existing walls:

Including type of construction and materials; list each elevation separately e.g. north, south, etc., in conjunction with the accompanying plans.

Any defects (i.e. cracks and bulges etc.) should be clearly identified and marked on the accompanying plans.

Walls significantly out of plumb also need identifying together with an assessment of their effect on the overall integrity of the structure. The method of repairing defects should be fully specified in the paragraphs below.

*Solid stone walls of coursed flat faced sandstone with hammer dressed quoins, heads, jambs and cills to all elevations. Although the pointing is in poor condition, the walls are finely built, there is no bulged or loose masonry and none of the walls appear to be out of plumb or require underpinning.*

**C. Walls;**

Condition/repair/extension or demolition;

Indicate type of construction and materials.

List each elevation in sequence eg north, south etc in accordance with the accompanying plans.

The formation of each new or altered opening should be assessed having due regard to the size and position of the opening with respect to the overall structural integrity of the building.

South West Elevation.

*A crude opening has been formed in the more westerly gable and it is proposed to seal this and re-form the original opening, using a hammer dressed surround. The re-walling may be in masonry recovered from new openings formed elsewhere. Two openings are to be extended vertically to form door openings and one door opening will be reduced to form a window. Some material will be exchanged. Four new ventilator openings, size 250 x 500mm are to form, with hammer dressed surrounds.*

North East Elevation.

*Form two new openings, 1000 x 1200 and two new openings 1200 x 1200, all to replicate the existing with hammer dressed heads, cills and jambs. Form three new ventilator openings, size 250mm x 500mm with surrounds as before. The masonry recovered from this work is to be re-used to the south west elevation.*

North West Elevation.

*Form two new openings, 1200 x 1200 to replicate the existing with hammer dressed heads, cills and jambs.*

South East and North West Inner Elevations.

*Form two new ventilator openings to each elevation, size 250mm x 500mm, all as before.*

**D. Details of demolition work;**

Total wall area, measured externally

Total wall area to be demolished *None*

% of walls demolished *None*

(refer to guidance notes on method of calculation)

## **E. Walls.**

### Formation of internal lining walls.

Indicate if it is the intention for new walls to provide additional support to the existing structure.

*Composite lightweight block/styrofoam walls are proposed to improve the insulation value of the external walls. These walls will be tied to the existing structure by means of epoxy bonded stainless steel ties and also tied to concrete block cross walls.*

*A typical footing detail for a lining wall is included in this report.*

## **F. Floors;**

### Existing/proposed floors:

Include construction materials and relationship to internal and external ground levels, also relationship to depth of existing and proposed foundations.

Identify where upper floors are to be used to provide additional support to the existing structure.

*The existing ground floor is a concrete slab of more modern construction than the original building. This will be replaced with insulated slab construction (see detail sheet). There will be no problems with external ground levels.*

*There is no existing first floor, although it is possible that lofts were incorporated in part of the original structure. The new first floor structure will be supported by the new lining walls.*

## G. Ground works;

Identify all external or internal ground works which may require alteration and the effect on the existing structure and the conversion process. These should include;

### Foundations:

Including any remedial works i.e. underpinning or retaining walls.

The assessment should consider the level of the existing foundations in relation to existing and proposed ground floor and external levels.

Any proposal to reduce external levels should identify how adequate cover is to be maintained to the foundations.

*The original structure is robust and inherently sound. There is no necessity for any underpinning.*

*The external ground level is below floor level with the exception of the north west and a small section of the north east elevation.*

*A form of external (French) drain is necessary in these locations. It is probable that the pointing requires clearing of loose or vegetable matter before a waterproof render is applied.*

*A typical detail for a French drain is included in this report.*

### Services:

Identify all service excavations in close proximity likely to affect the existing structure.

Include existing/proposed drainage arrangements.

*No mains drainage is available to the site and a small sewage treatment plant would be advisable. This would drain to an outfall system to be designed after a percolation test in accordance with BS 6297.*

## H. Other factors;

Identify all other features which you feel either have a bearing on the structural conversion assessment and/or should be brought to the attention of the developer. Including.

- Assumptions made which must be proven by further investigation.
- Items which require specific cross reference to the method statement.

*The existing roof structure is of fine construction. It is reasonable to assume, however, that some insect attack may have taken place and a specialist report should be sought.*

## 3. METHOD STATEMENT

The method statement must demonstrate that works will be carried out in such a manner, following an identified sequence, incorporating adequate precautions, so as not to prejudice or weaken any part or whole of the existing structure.

Where parts of the structure have been identified for demolition, those demolition processes to form part of this method statement.

The assessment must be distinctive and specific to that project.

The report should follow this general format and headings, the space provided between the headings is merely indicative; you may wish to expand on the extent of information provided under a particular heading.

### Site/Location Address

*New Barn, Stonyhurst Estate.*

### Ordnance Survey Grid Reference

**A. Initial Procedures;**

Identify the initial procedures which must be carried out prior to any works commencing on site.

This to include; notifications and familiarisation with the site conditions and construction elements. Areas of the building which are to be retained and those which are to be demolished.

*All the barn structure is to be retained. A modern silage clamp to the north east is to be removed.*

*In addition to Planning Permission, consent will be required under the Building Regulations. Detailed plans, elevations and sections will be required, preferably to a scale of 1 : 50. If the work is not undertaken for a private owner, it is probable that CDM Regulations will apply.*

**B. Initial Precautions;**

Indicate clearly all walls and other structural elements to be propped and/or provided with raking shores. Itemise the full extent of those operations and the method to be employed; the location of props and shores to be marked on the accompanying plans and elevations.

*None envisaged.*

**C. Sequence of Works;**

Clearly identify the sequence in which the works are to be carried out; including the precautions to be taken. This should be carried out having regard to the interaction of structural elements and operational procedures.

Particular reference should be made to works which require independent support measures i.e. the formation of openings in the existing structure. Where necessary make reference to the accompanying plans and elevations.

Sequence as follows:

*There are no remedial works required. Full scaffolding will be required before removal of the roof covering, which should be retained for re-use. The new openings to be formed are relatively minor and no unusual support measures save those of good building practice are required.*

## D. Special Conditions;

### Demolitions

Clearly identify the areas of the existing structure which are to be removed in part or whole, these areas to be marked on the accompanying plans and elevations (areas to be removed edged red on the plan and elevation).

Make clear distinction where walls are being repaired i.e. parts of walls being removed for defective area and where lengths of the walls full height are being demolished.

The method statement should include these parts of the demolition by each structural element i.e. south facing wall, and shall include all necessary precautions to restrain and support the remaining structure during the course of these works.

*None envisaged.*

## E. General

Attention should be drawn to all items of work which, although not identified specifically within the sequence of works, may have a bearing upon or influencing factor within the conversion process.

### 1. *Re-use of materials.*

*Care should be taken to re-use existing material wherever possible. It should be possible to re-use at least 75% of the blue roofing slate; any new slate should be carefully matched.*

### 2. *Rain water goods.*

*All rainwater goods should be 125mm half round cast iron, with matching 65mm down pipes.*

### 3. *Windows and doors.*

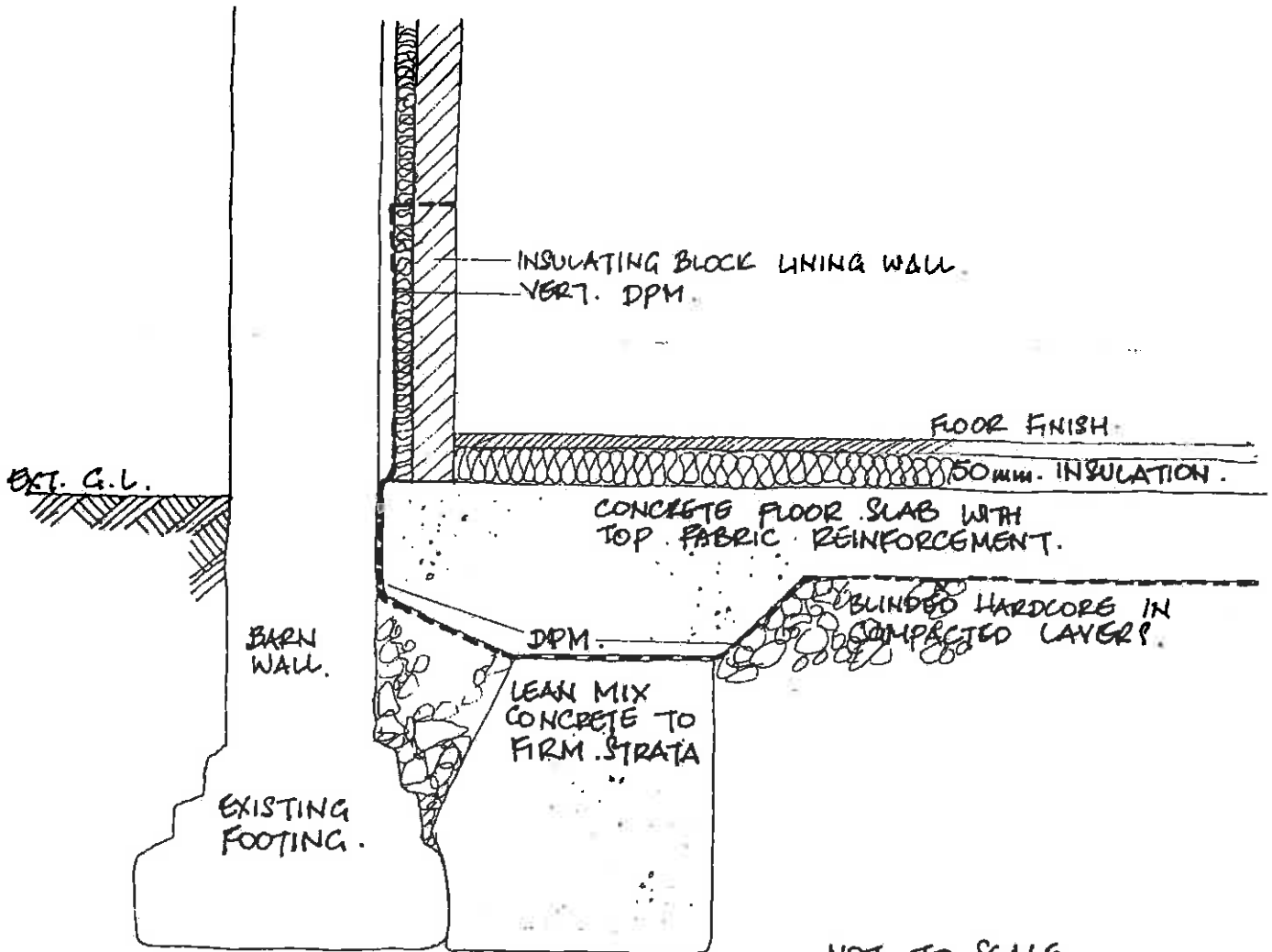
*Windows should be either vertical sliding sash or side hung casement, a minimum of 150mm in check. The main cart door opening should have frames of min. 150 x 125mm section and be a minimum of 300mm in check.*

*Doors should be of unequal width boards or glazed as shown. Frames to be a minimum of 150mm in check. All are to be in English Oak. Under no circumstances should African or Malaysian hardwoods be used.*

### 4. *Mortars and pointing.*

*It is essential that strong cement mortars are not used. The mortar mix for both building, repairing and pointing is to be 1 part hydrated lime, 1 part Portland cement, 6 parts coarse and 3 parts fine aggregate.*

*Repointing should be in accordance with SPAB pamphlet No. 5 and slightly recessed.*

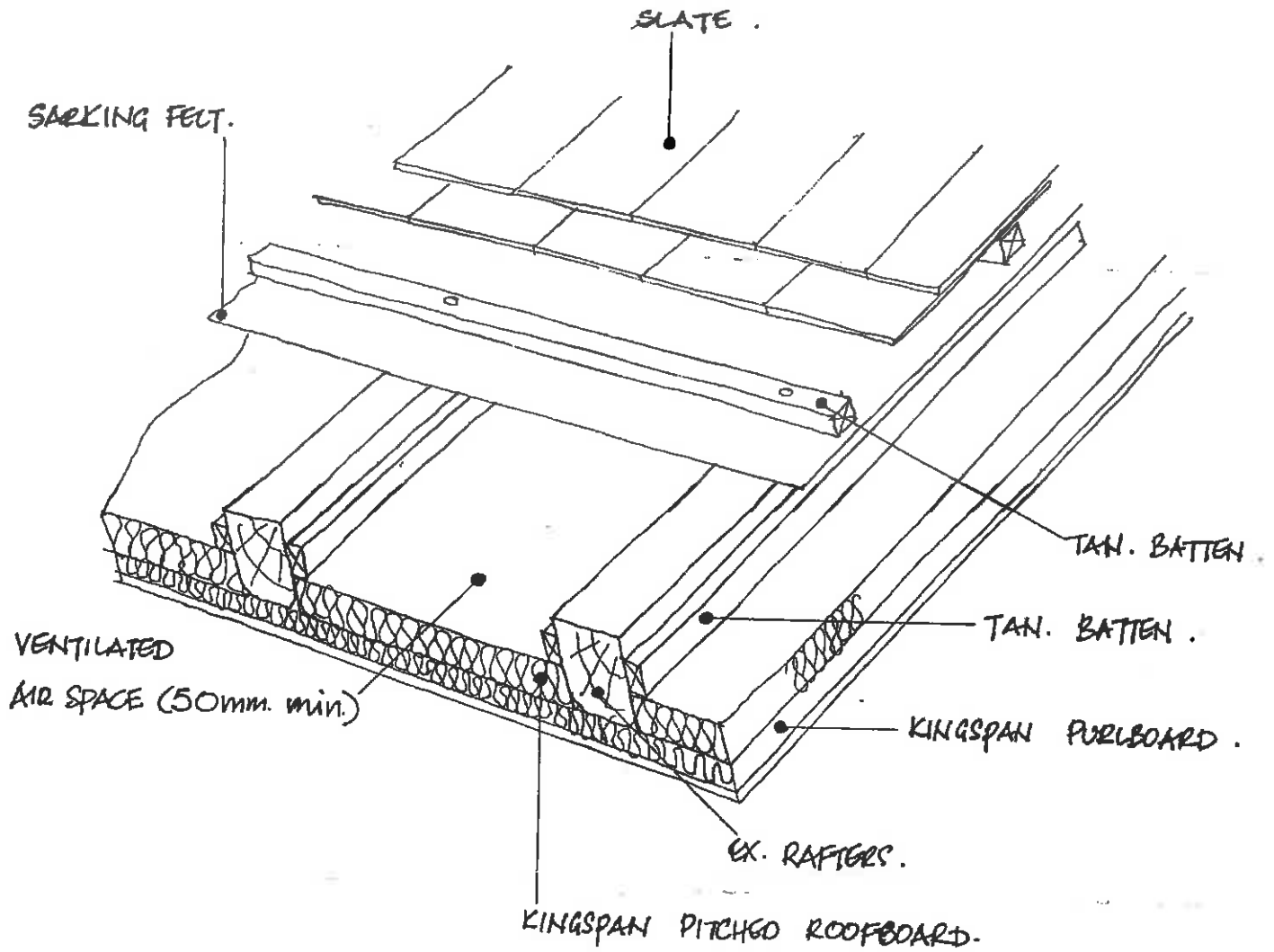


NOT TO SCALE .

FLOOR SLAB DETAIL.

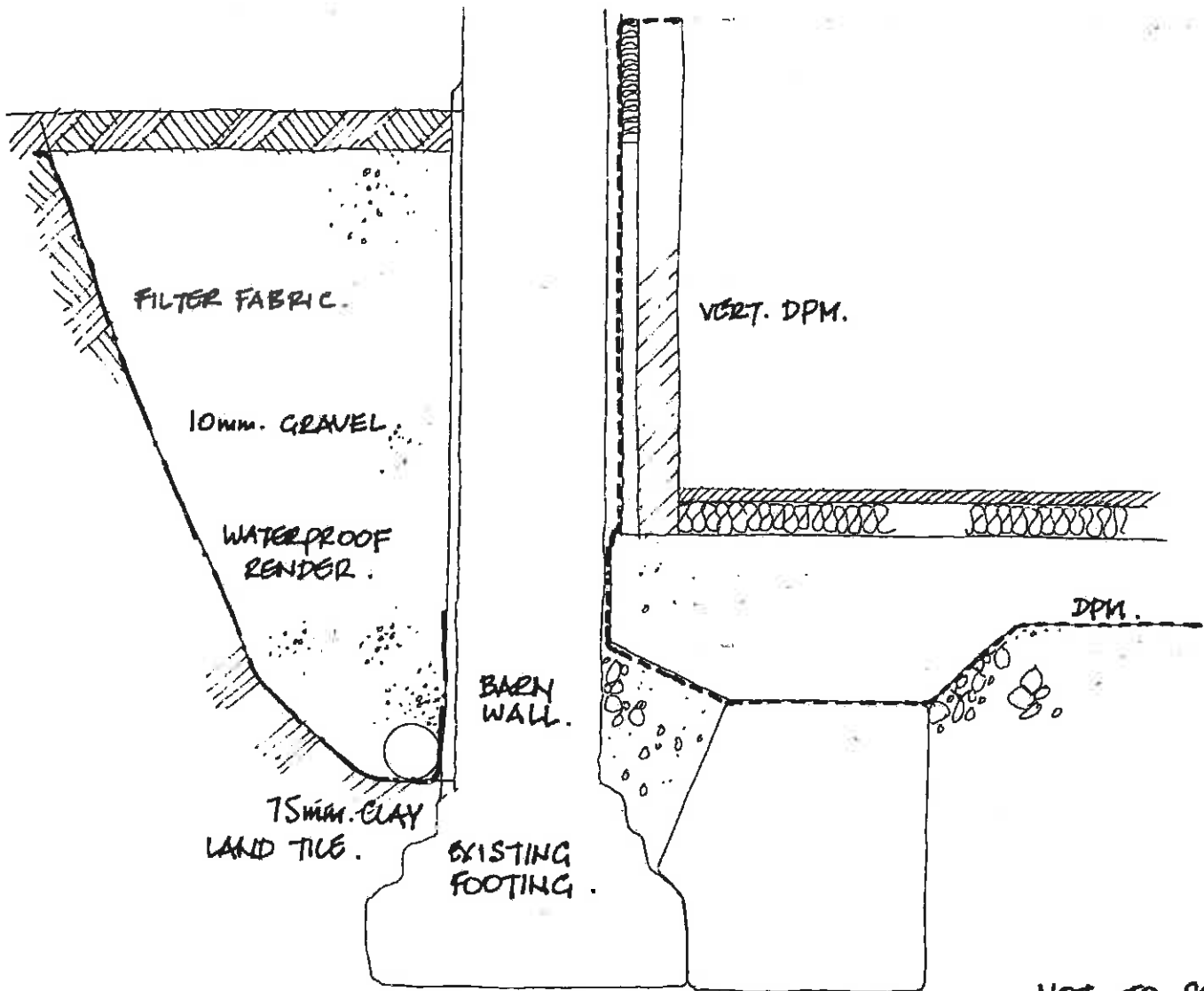
Acc. 1000.

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NOT TO SCALE.  
 WARM ROOF DETAIL.  
 ALL. 2000.



NOT TO SCALE .

FRENCH DRAIN DETAIL.

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