

**Addendum to planning application for High Buildings, Fryup Dale Head.**

This is to clarify which works have already been carried out, which works are proposed, and what is the current/intended use of each building.

The building letters, A to I, refer to my earlier site plan.

For general background please refer to my earlier application. It might also help to indicate the priorities which have guided this restoration.

- 1) Safety: To make the previously derelict buildings safe for use.
- 2) Security: To make them secure and lockable.
- 3) Weatherproofing: To make them dry and weatherproof.
- 4) Practicality: To adapt them for current agricultural use, with adequate light, door openings and access to basic facilities.
- 5) Style: To maintain their vernacular character with traditional building materials and construction methods.
- 6) Zero carbon: To make them zero carbon and energy self-sufficient.
- 7) Respect: To restore them out of respect for the people who built them and used them and lived in them over the years.

**Building 'A'.**

We've already taken down the crooked pillar holding up the big stone lintels on the west side, and rebuilt it; we've put stone flags over the earth floor: we have remade the wooden floor at the upper level, and built a platform to connect it to a wooden staircase. We've replaced the wooden shutters and door. We've made good the opening between the two bays and repaired the cracks in the central wall.

We propose to: erect simple oak wooden stairs to the upper level. Stabilise the buttresses. Replace the A-frame trusses and asbestos roof with oak trusses and a slate roof. Create an opening on the south side to light the lower level. Make barn doors on the west side. Build a work bench and sink on the east wall.

The south side gable has started to lean alarmingly as the roof purlins stabilising it have rotted due to the lack of coping stones on top of the South East corner wall. We've erected scaffolding and are dealing with this.

The north bay is used to park trailers, and the work bench for repairs etc. The upper level currently has no specific purpose, nor the lower south bay, though they are both used casually for storage. Until we have resolved the structural, security, light and weatherproofing issues it is not clear as to how we can best use them.

## **Connection between building A and B**

We restored the crumbling steps in 2012, and erected a roof to stop them being slippery and dangerous. They are currently open on both sides, leading to water and snow ingress into building B below. We propose to glaze both openings (to retain the visual separation of both buildings from North and South), and also install Yorkshire boarded doors. These doors would remain open when the buildings were in use. We intend to install (oak) newel posts and hand rails for safety reasons.

On the North side we propose to install a door into the corridor along the back of buildings B and D to make this secure.

## **Building B**

This was restored in 2012/13. The cubicles on either side of the doorway are for a shower and a toilet for anyone who works there. These have not been finished yet. No further changes are proposed.

This is for storage of tack, rugs, and tools etc, basically a tack room. However until the connecting staircase to building A is made weatherproof and secure, we cannot use it to its full extent.

The narrow room on the south side (restored on the original floor plan) is for battery and water storage - basically a plant room.

## **Building C**

All the works here have been completed.

The two separate areas at the south end are for fodder storage and animal food preparation respectively. Below this are three stables, and a fold yard for gathering and clipping sheep.

The corridor between the bottom two stables was restored on the identical floor plan and provides further access to the stables.

## **Building D**

This dry stone building was completed in 2018 with a flat roof. It is now proposed to build a pitched Dutch barn type roof over it to enable its use for hay and straw storage at the upper level as there is no other building here capable of storing big bales. Up to now they've been protected by tarpaulins which is highly inconvenient and messy and doesn't really work.

The lower level is full of agricultural machinery and tools, also occasionally for log storage and perhaps one day a biomass boiler.

### **Building E**

This has been completed. A roof built off the old oak trusses from building C now covers the area between buildings D and F and is a tractor shed.

### **Building F**

This has been completed. A dry stone shed extends off the dry stone wall, and is used for storing tree guards, stakes, and other woodland management tools. The smaller building beside it houses a generator.

Previously I submitted a pre-planning application to build a sloping greenhouse over the nursery area to which it connects, and I have been invited to make a full planning application, which I enclose below. You have named this proposed building 'J', and it is proposed the spars will be made from unpainted larch, and the roof be open and not glazed.

This is for a nursery for young trees, shrubs and herbs, which when transplanted will contribute greatly to biodiversity in the dale head. Currently the young plants are being destroyed by casual grazing from sheep and rabbits, so we need to make them secure from the sides but not necessarily from above, as all the plants are obviously hardy.

### **Building H**

This has been completed. We restored the collapsed building that was there previously, and the small railed yard below is for isolating sheep and also can be used as an occasional dog kennel.

### **Building G**

The skeleton of this building has been completed including retaining walls and rough larch posts and trusses.

We propose to install a tin roof and Yorkshire boarding on the sides.

It is a field shelter for horses and sheep in the winter.

### **Building I**

This is the original farm house which we have partially restored as a ruin.

*Morgan Intakes  
Fryup  
North Yorkshire  
YO21 2AT*

NYMNP/PA

04/03/2021

March 1<sup>st</sup>

Dear Mrs Strangeway,

I enclose my planning application, and thought it best to address it to you personally as it may be a little (unintentionally) unconventional! I apologise for the amateur draughtsmanship, but hopefully everything will be clear enough.

Because of the varied material and my unfamiliarity with the process I thought it best to provide an index, which divides the application into sections, but is not numbered.

I have followed your guidance and only provided one copy of everything.

There is nothing here that was not in the pre-planning application, except the enclosing of the nursery area, and I have tried to make it clear that is a pre-planning issue. If you approve, I could readily provide more detailed drawings.

Please let me know if you need anything further.

With best wishes,

Yours,

Richard Burridge

## High Buildings, Fryup Dale Head Application Index

1. North York Moors Planning Application
2. 1:1250 Site plan with site edged in red.
3. Design and Access Statement
4. Copy of Updated pre-planning application
5. Copy of Willie Haigh 2011 report
6. Overhead photos of site
7. A4 Diagram of site
8. A2 site plans of a) existing development b) proposed development.
9. Various photos of the buildings from different angles
10. Notes and elevations on Building 'A'
11. Notes and sketches of steps between building "A" and "B".
12. Notes and elevations and sketches of Building 'D'
13. Notes and elevations on Building 'H'
14. Notes and sketches of glass enclosure of nursery.

# Design and Access Statement

## Fryup Dale Head High Buildings

This application follows two pre-planning applications, the first requested by Mr Andrew Muir in 2018, the second by Mrs Rosie Gee in 2020. I did not receive a response to my April 2018 application until April 2020, at which point Mrs Gee asked me update it. Very little has changed since either application, so I propose referring the drawings in this formal application to the updated 2020 application, which I gather met with broad approval, and which I enclose for reference.

The application effectively has two aspects, retrospective permission for restoration work already completed (mostly over 5 years ago), and work still outstanding. For the latter I enclose drawings, for the former mostly photographs.

The restoration dates from 2012, having bought Fryup Dale Head in 2007. Initially we fixed the land drains, planted trees, improved the soil and tried to increase habitat diversity, and we started on the buildings in 2012 - they were unusable health hazards, collapsing, soaking wet and full of rusting wire and dead sheep. Prior to 2002 they had been mostly used for clipping/dipping sheep, though originally the buildings were designed for cattle and pigs. They are in the middle of our 250 acre agricultural holding and are our only farm buildings, and while we were able to rent the farm buildings at Fryup Lodge for a few years, these have now been sold and are no longer available. In 2011 we commissioned a report from Willie Haigh (enclosed), and in 2012 took down what remained of the rotten roof of building B, and the rubble walls collapsed. We retained the other walls where possible and restored the rest on the existing floorplan, reproducing the door openings and lay out while raising lintel heights. We reused the stone and replaced rotten timbers and asbestos roof sheeting with new oak timbers and pantiles and slate. Apart from work to prevent water ingress, the most significant change is the 'fold yard' in the middle of the buildings and the drop in ridge heights. We felt this made the buildings more user friendly and improved their appearance, while maintaining their vernacular agricultural character.

We also restored the drystone wall below the buildings and the small building by the gate, and added a dry stone enclosure for growing trees and shrubs, and a larger drystone shed for storing hay and straw. Both these have emerged organically, ie without drawn plans, and the shed was built on footings uncovered while rebuilding the drystone wall at the upper level.

Overall our idea has been to sympathetically restore the buildings for agricultural use, and to maintain their traditional vernacular aspects while updating them for the 21<sup>st</sup> century.

To date this has all been done without drawings and I have done my best to draw accurate plans and elevations though I fear my efforts will fall short of what you are used to, for which I apologise. The restoration itself has been done by 3 or 4 of us over a few weeks every summer over the last eight years and alongside a public footpath, and I would say without exception our efforts have met with approval of residents and tourists alike.

All the proposals contained here were presented in my April 2018/September 2020 pre-applications, with one exception. I would like to propose a glazed roof over my nursery enclosure as I have found it impossible to protect it from vermin. I enclose a sketch and propose to build it on site, with unpainted hardwood spars and a metal post purlin arrangement beneath. I believe it will look entirely appropriate.

NYMNPA

10/03/2021

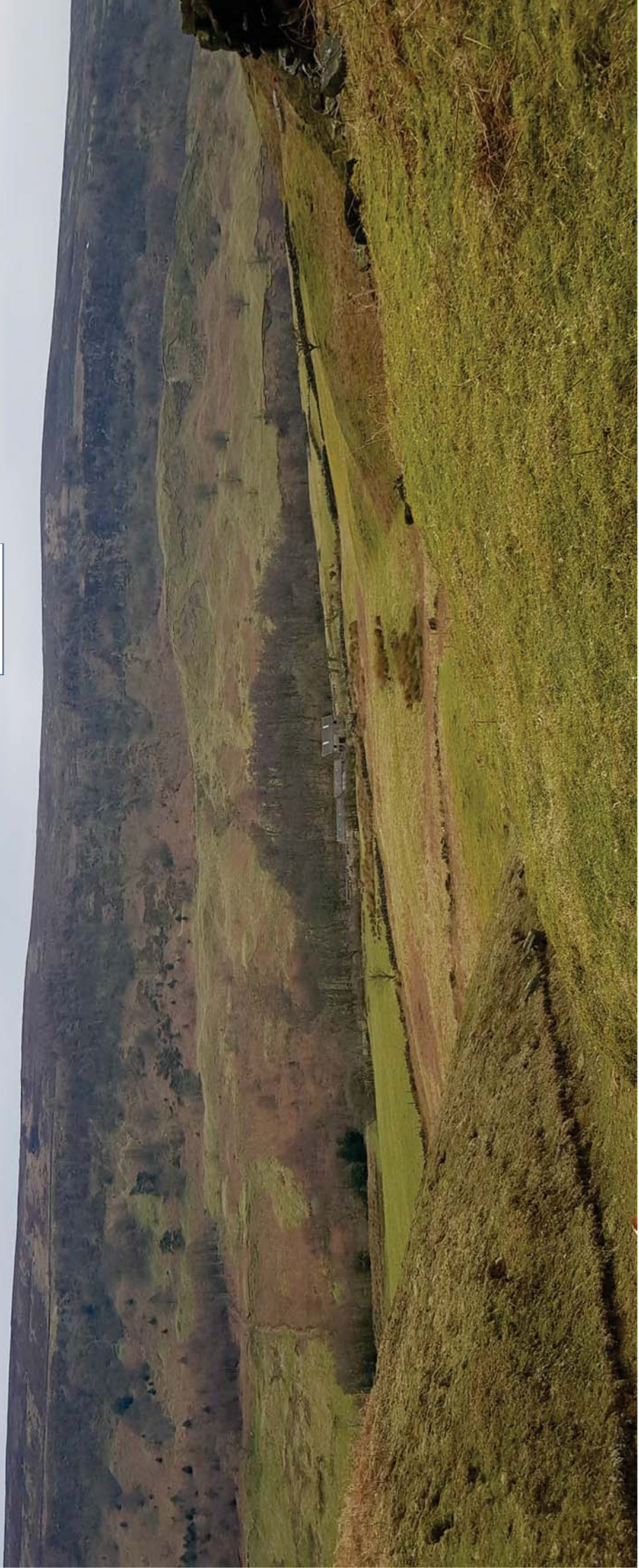




NYMNPA  
10/03/2021



NYMMPA  
10/03/2021



Richard Burridge  
Morgan Intakes  
Great Fryup Dale  
Lealholm  
North Yorkshire

E-mail: [w.haigh@caemr.co.uk](mailto:w.haigh@caemr.co.uk)  
Web: [williehaigh.co.uk](http://williehaigh.co.uk)

Registered Office:  
Higher Fleets  
Fleets Lane  
Rylstone  
Nr Skipton  
BD23 6NA

NYMNP

04/03/2021

Tuesday 20<sup>th</sup> September 2011

Our ref: W1318  
Your ref:

Dear Richard,

### ***Structural appraisal of Dale Head Farm***

As requested, I report below on our structural appraisal of the above property:

#### ***1.0 Brief***

1.1 The structural appraisal was commissioned by Richard Burridge to assess the structural condition of the buildings and advise on repairs. It is intended that any repairs required will form part of general restoration works to be carried out on the property.

1.2 The report is based on a visual examination of readily accessible areas of the structures. Due to problems with access it was not possible to inspect all of the structures, however the information obtained was adequate to give an overall structural appraisal of the buildings.

1.3 Although there may be references to the fabric of the buildings in this report, it should be pointed out that this report is concerned with the building structure only and that the advice of specialists should be sought in regard to the condition of items of fabric of the building i.e. doors, window frames, render and plaster, timber treatment, services, etc.

1.4 The method of appraisal is based on The Institution of Structural Engineers' "*Appraisal of existing structures*" dated October 1996.

#### ***2.0 Location of buildings and site details***

2.1 The structures are located at Dale Head, Great Fryup Dale, Lealholm, in the parish of Dandy, North Yorkshire. The OS map reference is 471900,502600. The ground, on which the buildings lie, falls steeply from approx west to east and is at a level of approx + 200 metres above sea level.

2.2 For the purpose of wind design of structures, the basic wind speed ( $V_b$ ) in the area is 25 metres per second (see Figure 6 in BS6399 Part 2 1995).

### 3.0 Existing structures and desk study

#### 3.1 Existing structures

The buildings consist of a range of structures, a barn (building A) approx 6 metres by 12 metres in plan to the west of the range on higher ground than the rest, a smaller building (building B) to the east approx 5 metres wide by 9 metres long connected to a long low building ( building C ) approx 27 metres long by approx 5 metres wide to the north. (See attached sketch/ key plan in the appendix). There are no as- built drawings available of the existing structures, as far as is known, and there are no details of the type of foundations. Although the range of buildings are sited on an approx NE to SW axis, for the purpose of this report they are assumed to be on a north south axis in describing the various elements of the structures. The main structural elements of the buildings are noted as follows:

##### 3.2.1 Barn (building A)

The building has a pitched roof with corrugated asbestos cement roof sheeting supported on timber purlins spanning between two timber quasi queens post trusses, and the central cross wall and the two gables. Originally a timber mezzanine floor (hay loft) probably existed. as there are signs of holes where the timber joists/beams rested. The ground floor is either earth (north bay) or stone flags and timber flooring (south bay). The walls are generally approx 400 to 500 mm wide coursed rubble stone masonry. There are two cart openings on the west side of the barn with massive stone lintols, supported on an approx 450 mm by 600 mm stone pier at the centre and the adjacent walls. The other lintols are generally stone externally and timber internally. The foundations were not inspected but it is likely that the walls are founded on plinth stones bearing directly on the ground.

##### 3.2.2 Building B

The building has a pitched roof with flat asbestos cement roof tiles supported on a fairly recent secondary system of timber purlins spanning onto timber rafters which span off the original (?) purlins, two on each slope. The purlins span between two timber A frame trusses in the north bay and the cross walls and gable wall. The roof is felted. The south bay of the building is unusual in being only approx 2 metres wide and there is a suspended upper floor with stone slabs spanning the width of the bay. The ground floor is either flagstones or earth. The walls are generally approx 450 mm wide coursed rubble stone masonry. The lintols are generally stone externally and timber internally.

##### 3.2.3 Building C

The building has a pitched roof with corrugated asbestos cement roof sheeting supported on three timber purlins on each slope. The purlins span between timber A frame trusses and the cross walls and gable wall. The walls are generally approx 450 mm wide coursed rubble stone masonry. The lintols are generally stone externally and timber internally.

### 3.3 Desk study

An archival search of old maps was carried out to determine the history of the buildings. Although old maps should be used with caution when interpreting structures, the OS maps especially into the 20<sup>th</sup> century are fairly reliable. The first OS map of the area, the 6 inch to mile 1857 OS map, indicates that the buildings were more extensive than at present ie a longer barn building ?, a possible link between building A and B, and the farmhouse (?) to the north. The following 1893 OS map and later maps into the C20 all show a reduced footprint in plan of the buildings, pretty well as they are now except with the retention of the farmhouse, which we understand was later demolished in the 1970's. It is likely that the buildings have been subject to many alterations and modifications over the years as agricultural practices have changed. Many of the upland farms in this area were affected by the enclosure acts of the late 18<sup>th</sup>/ early 19<sup>th</sup> centuries, when much rebuilding took place. Information made available to us indicates that the present buildings probably date from this period ie say about 1800 to 1830. In that period, the main livestock in this area, we understand, were cattle, horses, and pigs, and not sheep as now. Vernacular advice we have received on the likely use of the buildings is that the north bay of building A consisted of a double cart shed with either granary or hay loft above and the south bay a small barn (see forking holes and vent holes). The south bay of building B was possibly a piggery with hen house above, with low door and small feeding window? Building C may have been either implement sheds or looseboxes for cattle. (Sheephouses are not mentioned in any of the farm building publications for that area).

### 4.0 Structural appraisal

4.1 The buildings were examined on Tuesday 23<sup>rd</sup> August 2010. Where possible a visual examination was carried out of the structural elements and its structural condition inspected. Sizes of the main elements of the structure were noted. Plumbness of verticality of the wall was checked with a spirit level and photographs were taken as a record.

#### 4.2 Structural conditions and comments

Apart from major settlement of the cart opening pier and general lack of bond in the masonry in building A, and the significant movement of the masonry in the south east corner of the building B, the structures are generally in reasonable condition for their age, and are suitable for the proposed renovations. Specific observations for the structural elements are given below with comments on repairs where appropriate:

##### 4.2.1 Building A

###### Roof

The timber purlins and trusses appear to be fairly modern and in relatively good condition but are fairly light in section. There is no sign any racking of the trusses. It is intended to replace the existing roof sheeting with either blue slates or pantiles. New roof rafters will be required and although the existing purlins in the north bay are probably OK, the purlins in the south bay may be undersized for the new loadings, and will need to be checked depending on the roof covering.

### Ground floor

It is intended to provide a reinforced concrete ground slab over the north bay. Because of the slope of the land, the present existing formation is likely to be fill getting deeper to the rear (east) of the building and laying a slab directly onto the existing formation might result in differential settlement of the slab. A suspended timber floor could be provided with joists bearing on sleeper walls for the rear and concrete slab at the front, or alternatively the fill (assumed to be relatively soft (?)) could be dug out and replaced with hardcore compacted in 150 mm layers and then casting the ground slab say 150 mm with A142 mesh in the top.

### Vertical structure

There has been severe settlement (approx max 150 mm) of the pier on the front ( west ), leading to dropping of the masonry over, which is also bowing out and has major cracking. (see photo 1). It is not clear what has caused the failure, possibly the subsidence is due to insufficient size of footing and/or poor ground conditions, and it is evident that it probably occurred early on its life. The rear (east) wall is relatively plumb. The north gable is slightly bowing in with relatively minor cracks. The south gable is bowing out slightly with minor cracks. The internal cross wall has vertical cracks adjacent to and below the central opening. There is a lack of bond at the corners of the walls and between the side walls and the internal buttresses/cross walls with gaps between the masonry. The iron (?) ties and *tales* provided at the corners and at the buttresses to give some bond are corroded and are inadequate in any case to provide good lateral stability to the structure. Recommendations for the repair of the masonry in this building are given in paragraph 5 below.

The external masonry steps are in poor condition and will need to be rebuilt as required as part of the restoration of the link to building B.

## 4.2.2 Building B

### Roof

It is assumed that, when the building is reroofed, the secondary timber structure provided to support the asbestos tiles will be stripped out and replaced with new rafters at 400 centres spanning between the existing purlins. The existing purlins and trusses in this building appear to be the oldest timbers on site and are possibly the original timbers? There is no sign of major racking of the trusses and most of the timbers appear to be in reasonable condition. As long as they are checked for infestation it should be possible to reuse most of these timbers.

### Vertical structure

The major problem with the masonry is the movement of the south east corner which has dropped possibly due to subsidence of the ground ( see photo 2 ). Otherwise the walls, except for the south gable, which is bowing in slightly, are reasonably plumb with minor cracks. The corner will need to be rebuilt properly on new footings, say approx 900 wide by minimum 200 deep concrete footings, founded on firm ground. The walls should generally be repointed and the cracks filled in.

### 4.2.3 Building C

#### Roof

Many of the roof timbers appear to be relatively recent and are probably not the original timbers? It is assumed that the asbestos roof will be replaced with either slates or pantiles. New rafters will be required at 400 c/c. A problem with this building is that the headroom below the ties of the trusses is low approx 1.7 metres. A possible solution, if more head room is required, is to abandon the trusses, and provide additional cross walls, corresponding to the new room sizes, with openings. The rafters/ridge beams would span between the cross walls. Steel purlins/ridge beams are likely to be more economic than timber and would need to be sized for the selected roof covering.

#### Vertical structure

There has been some movement of the walls but the integrity of the structure is acceptable. The west and east wall masonry is bowing out in some areas. The east wall has also moved slightly longitudinally. The north gable is bowing in a bit. There are also minor cracks and holes in the masonry. The walls should generally be repointed and the cracks filled in.

### 5.0 Repairs to masonry of building A

5.1 Before starting work on the rebuilding, the roof truss and purlins should be propped (assuming the roof is not being restored at this stage?). It is also advisable to provide lateral stability to the gable with raking shores. I recommend that the pier and masonry of the west wall above is dismantled and rebuilt on new foundations. The base for the pier should be a minimum of 1.5 metres by 1.5 metres in plan by say minimum 600 mm deep concrete founded on firm clay. In rebuilding the masonry, stainless steel ties can be introduced at say approx 450 centres vertically between the south end of the wall to bond into the internal cross wall.

5.2 The internal cross wall is needed to provide overall lateral stability to the building. Openings can be formed as required but at least say a minimum of 600 mm wide masonry should be retained as buttress to the west wall which would incorporate the stainless steel ties from the rebuilt west wall (see 5.1 above). An alternative to ties is to tooth in the new masonry of the west wall into the cross wall buttress, if this is also being rebuilt at the same time. The east end of the cross wall appears to be reasonably bonded into the east side wall and as much of this should be retained. The bond of the two internal buttresses on east and west sides of the south bay (supporting the truss) should be restored by drilling say approx 20 mm diameter holes at approx 600 centres vertically, filling with suitable epoxy resin such as the *Rawl R-KER* cartridge system and then inserting a 16 mm diameter stainless steel bar. Alternatively *cintec* anchors could be used (see attached leaflet) by approved installers.

5.3 Generally the walls should be repointed and the holes filled in. A specification for a mortar mix is attached but a mortar should be adopted which is appropriate to local sands.

5.4 The timber lintols should generally be replaced with steel lintols, say 152 by 89 by 16 kg/m UB's will cope with most of the smaller openings, whilst say 2 no 203 by 133 by 25 kg/m UBs over the cart openings. Reused timbers could be used to cover the steel.

5.5 The coping stones on the rear (east) side of the south gable should be restored. The other coping stones should be checked when the roofing proceeds and repaired as necessary. The kneeler stones appeared to be generally Ok, but when the roofing goes ahead, should be examined for movement and refixed if necessary. Rainwater goods such as gutters and down pipes should be provided to this and the other buildings.

Yours sincerely

V  
Willie Haigh FIStructE

© Willie Haigh Consulting Engineer Ltd

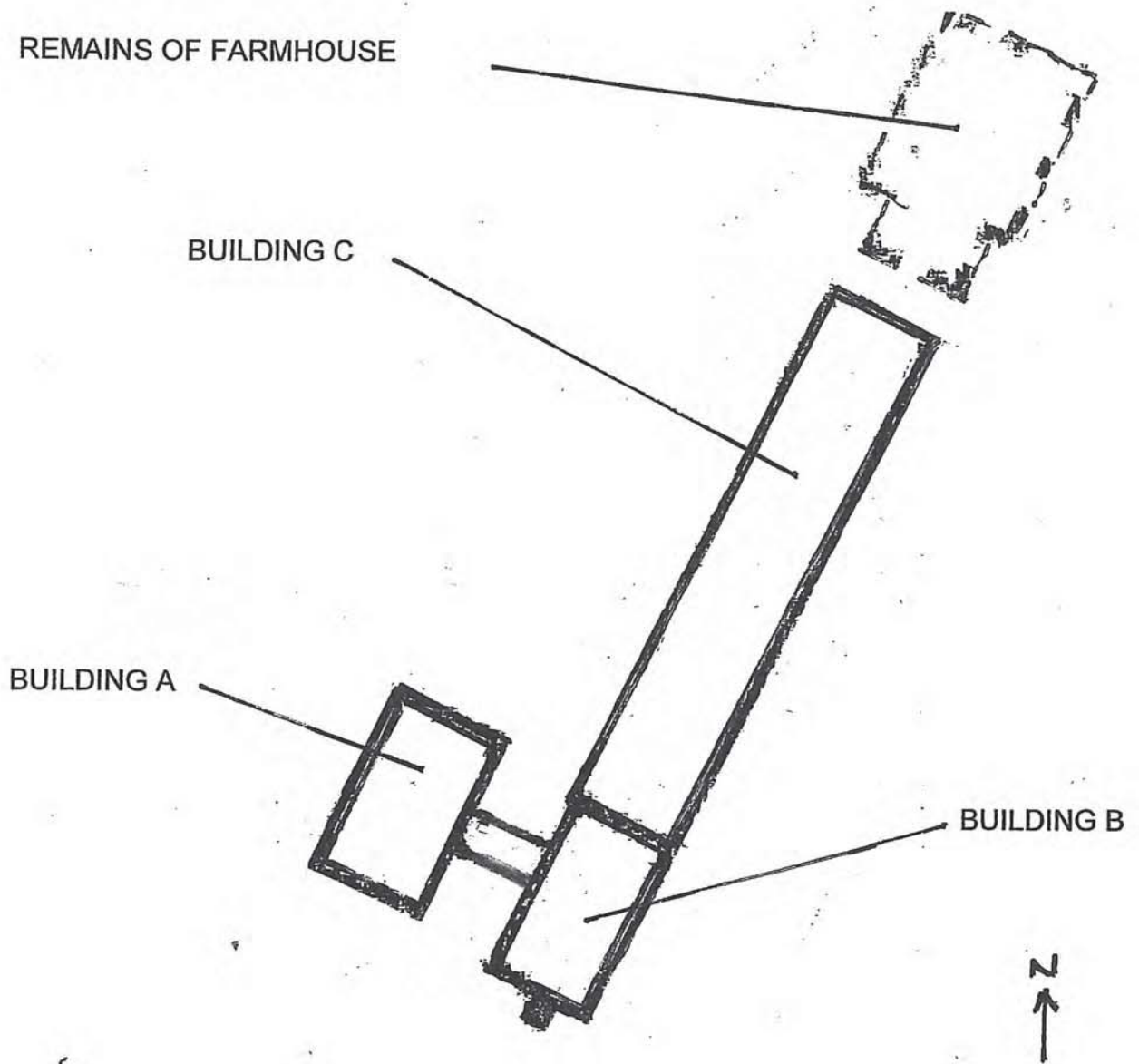
Enclosures

Cc Jonathan Lindh, Leeds Environmental Design Associates Ltd



Appendix

1.0 Key plan showing structures covered by this report



KEY PLAN (NOT TO SCALE )

2.0 Selected photos

Photo 1 Photo of front (west) elevation of building A (barn) showing settlement of pier and dropped masonry over

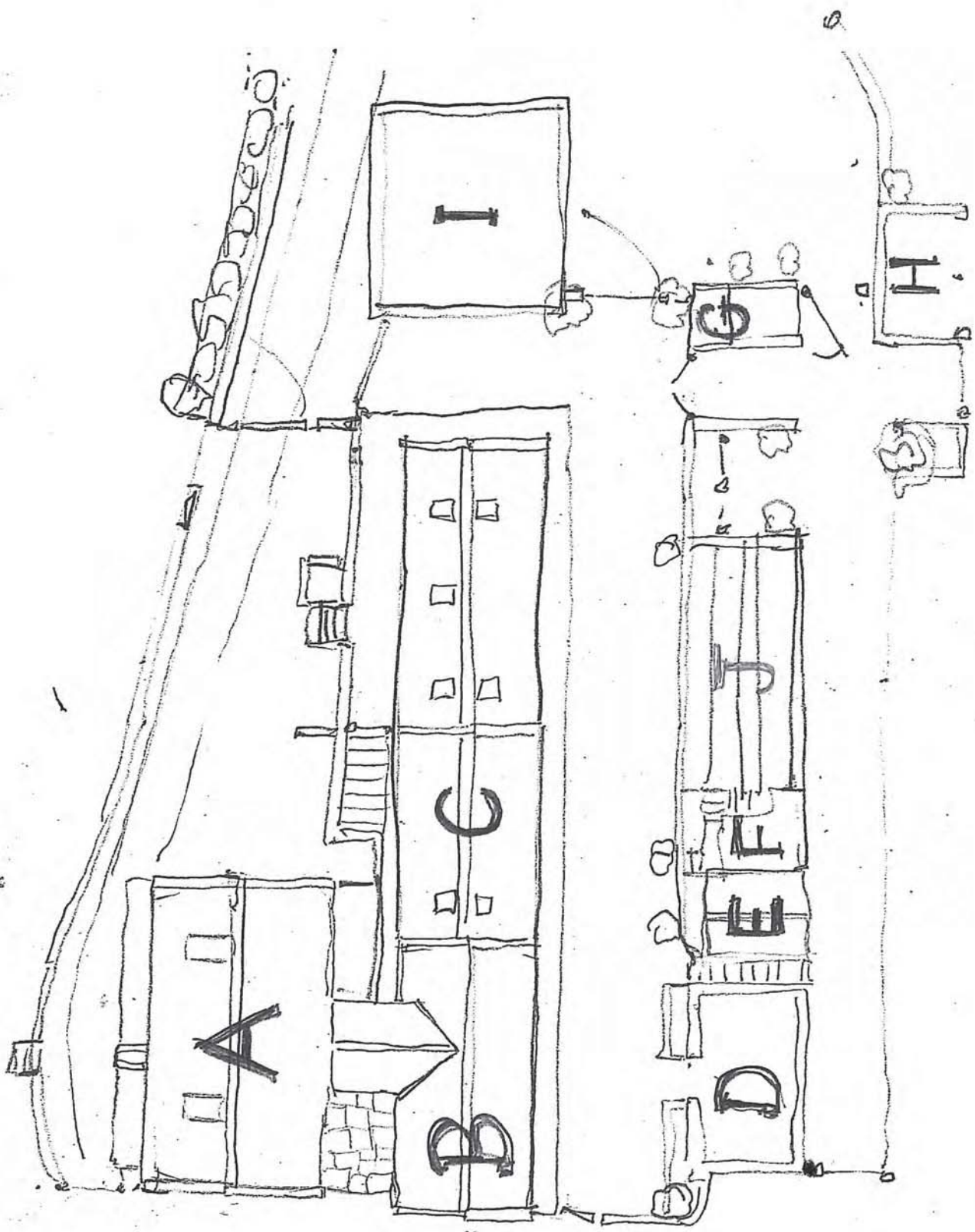
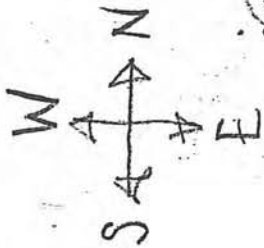


Photo 2 Photo of east elevation of building B showing settlement of south east corner of masonry









The buildings today  
From the South West



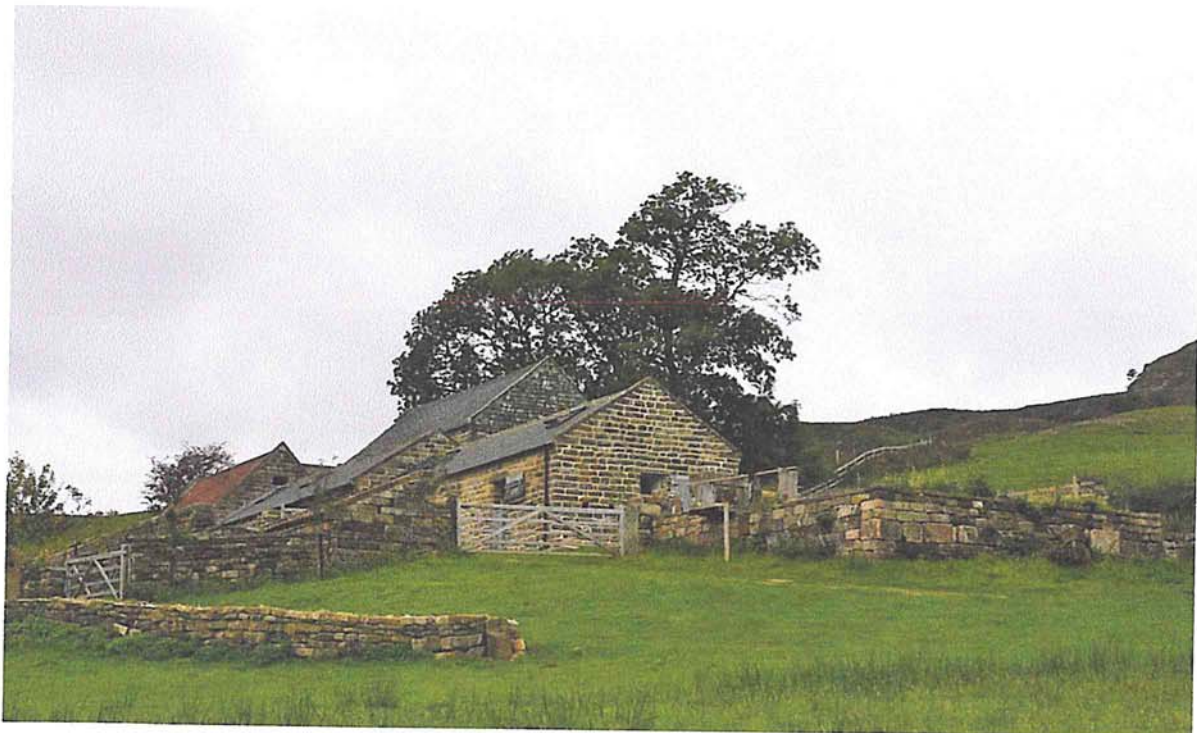
From the South East



From the North West



From the North East







## Building "A"

The intention is to stabilise and reroof this, and restore the upper floor in the North bay.

To date, we have stabilised the East wall by installing drainage and restoring the stone staircase to the lower buildings. Last year we supported the North end of the building with scaffolding raking shores, dismantled the leaning central column supporting the stone lintels forming the large openings on the West side, and rebuilt it upright with the same stone. We laid a stone flag floor and a drain on the West side to prevent surface water ingress, and made good a window opening on the East side. Above this we installed an oak beam supporting oak joists to create a wooden floor using old floorboards, and remade the wooden doors for the upper openings.

Still to do:

1. Create an open tread oak staircase to the upper floor.
2. Stabilise the buttresses as recommended by Willie Haigh's report.
3. Stabilise the upper part of the central wall by inserting sandstone dressed stone 'ties' across the cracks.
4. Lay a stone flag floor in the South bay of the building.
5. Make good the opening and step down between the two bays.
6. Remove the 1970s asbestos roof and roof trusses and replace with raised collar oak trusses and a slate roof into which we will set four roof lights to illuminate the upper floor.
7. Create a window opening in the South bay.
8. Build a workbench in the North bay to include a sink and drain.

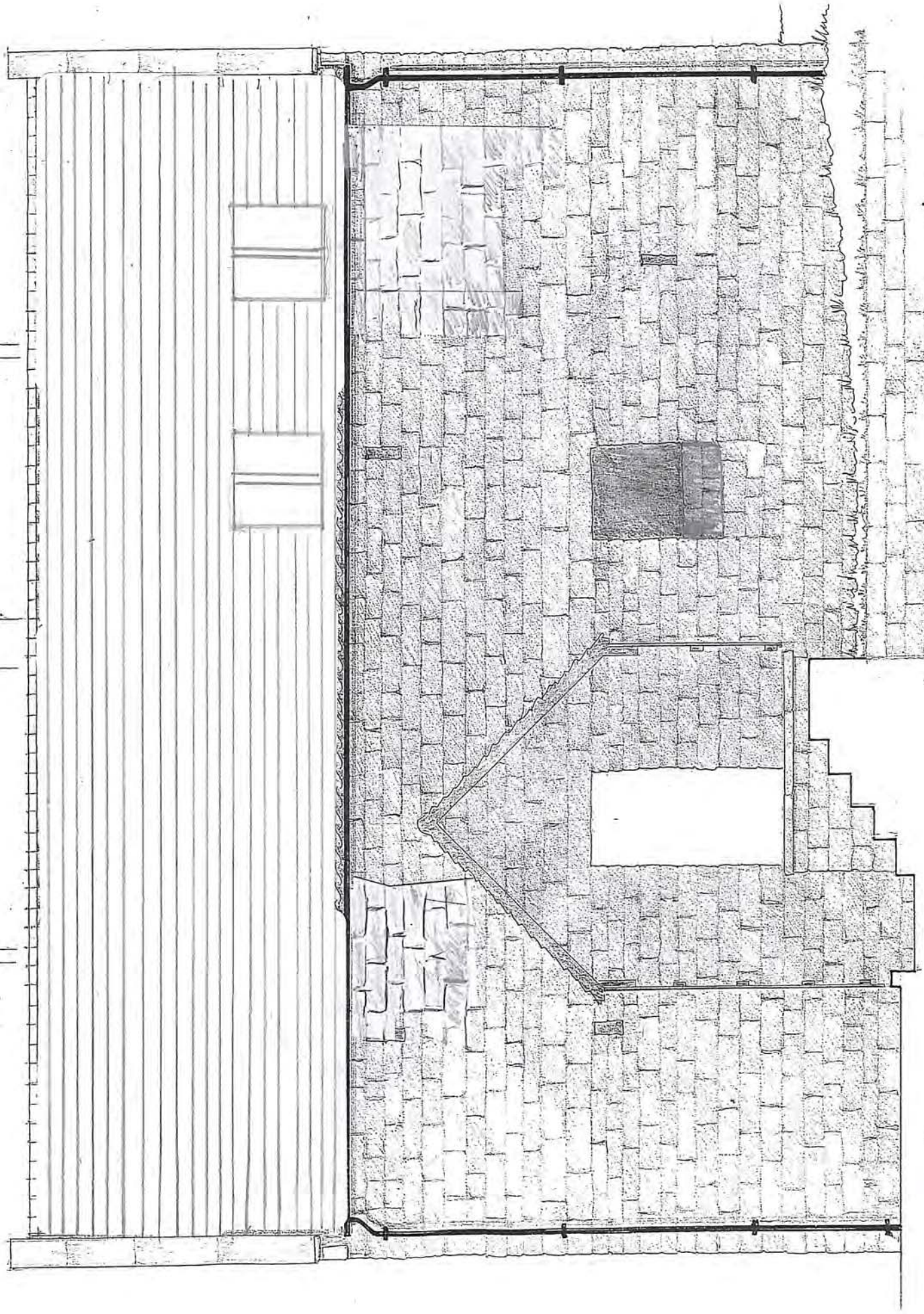


WEST ELEVATION 150.

1 KUSS

WALL

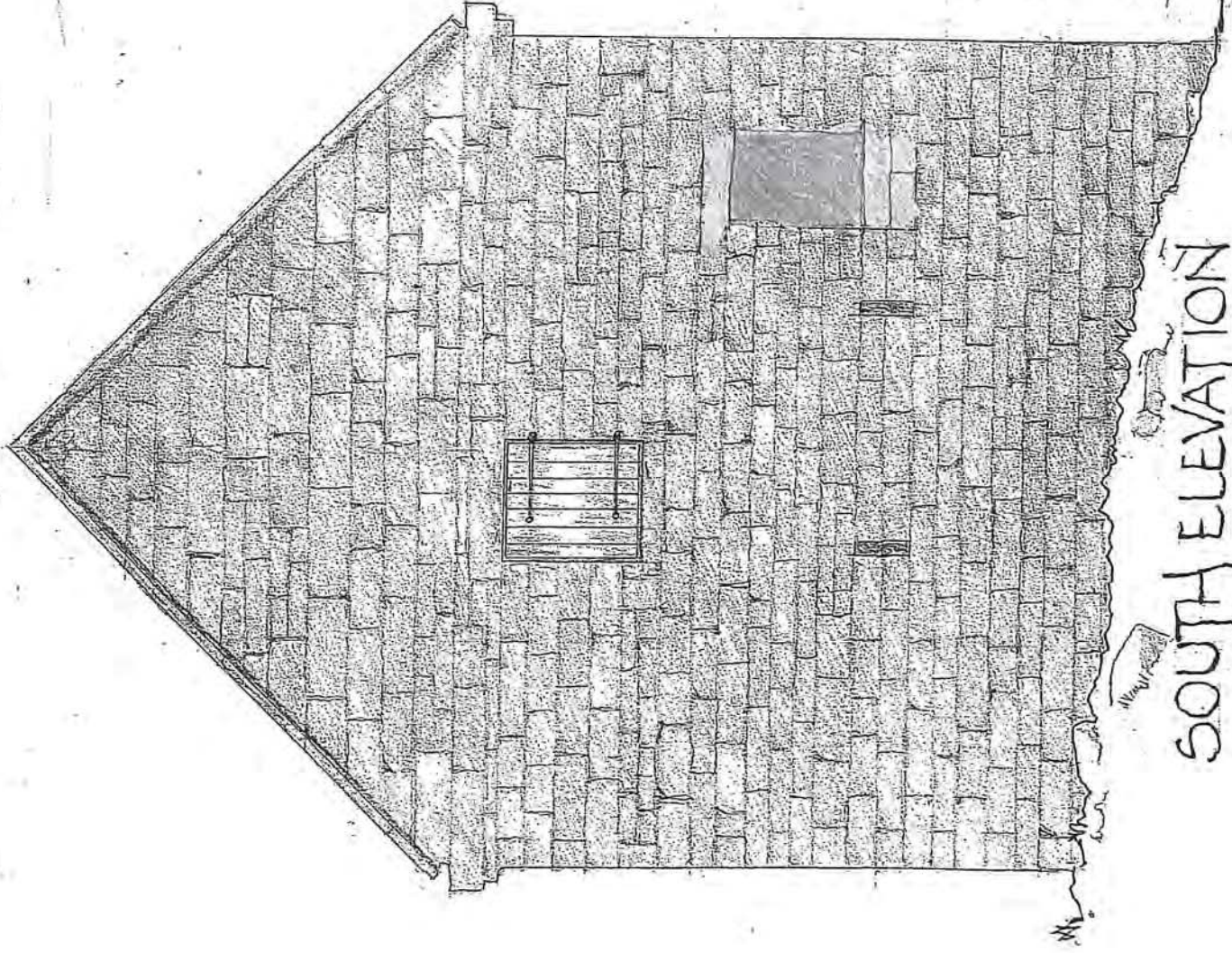
1 KUSS



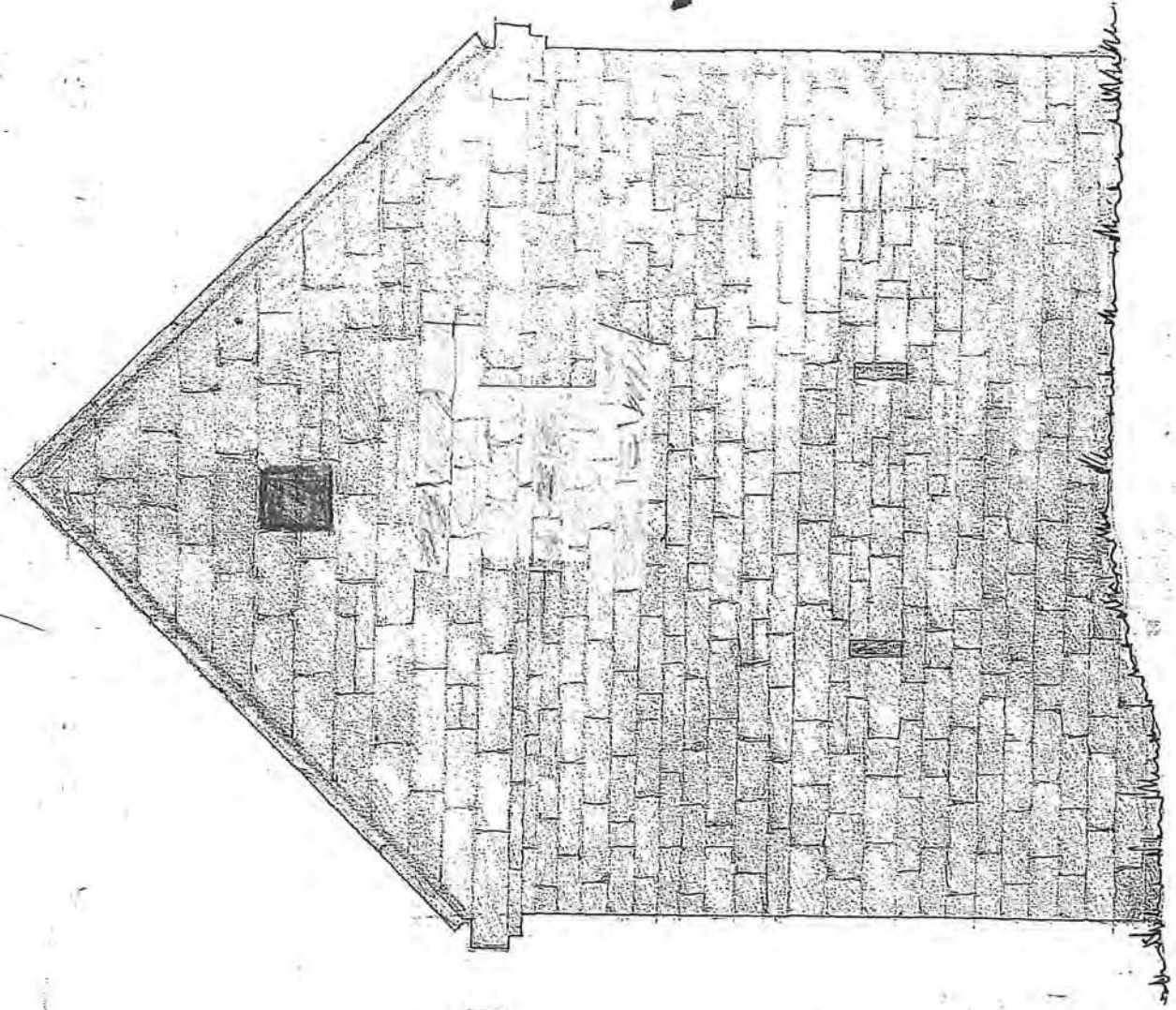
*Handwritten notes in German:*  
Die Wand ist aus Ziegeln gemauert.  
Die Fenster sind mit Holzrahmen versehen.  
Die Tür ist ebenfalls mit Holzrahmen versehen.  
Die Fassade ist mit Ziegeln verblendet.

EAST ELEVATION

1:50



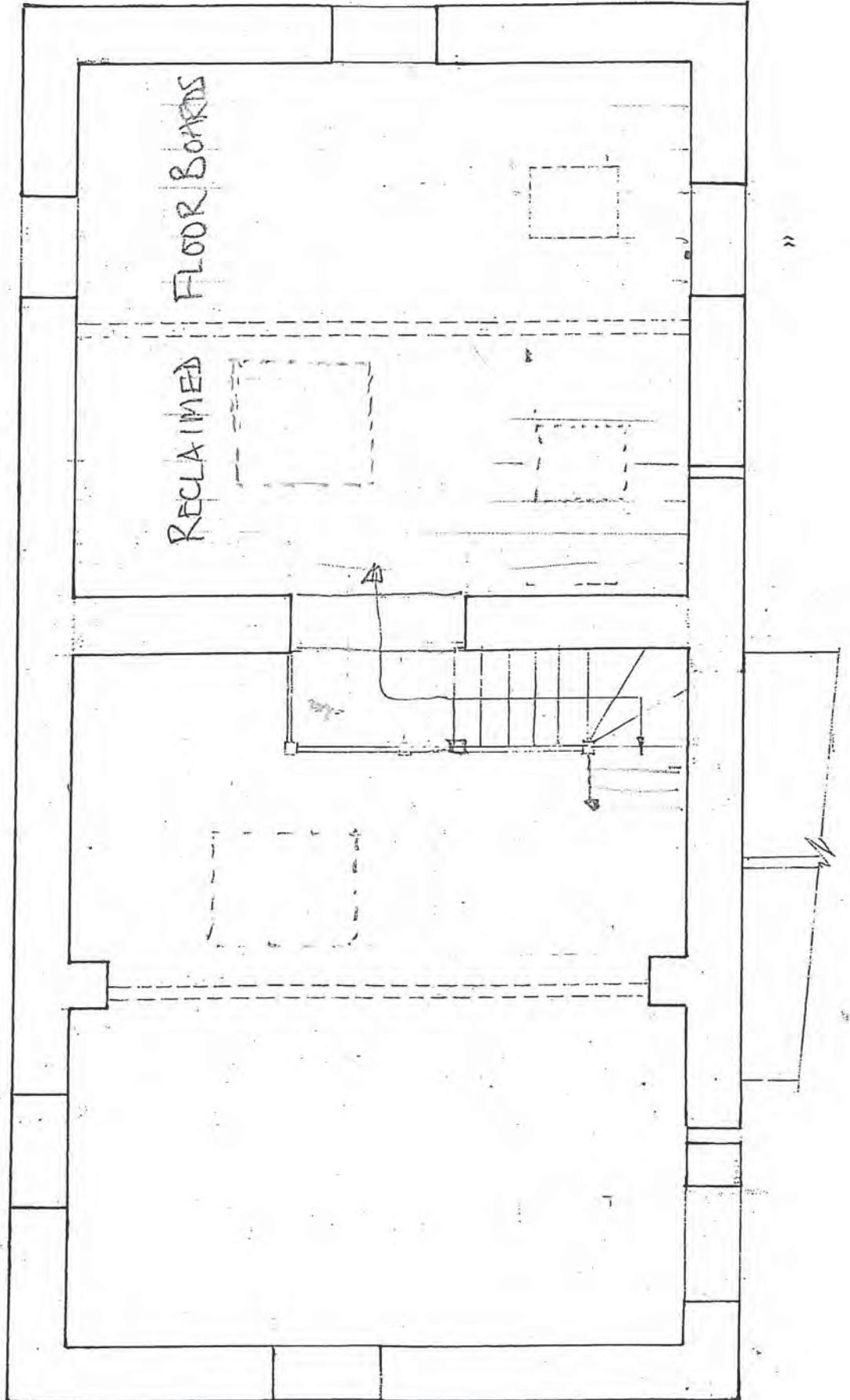
SOUTH ELEVATION



NORTH ELEVATION

1:50

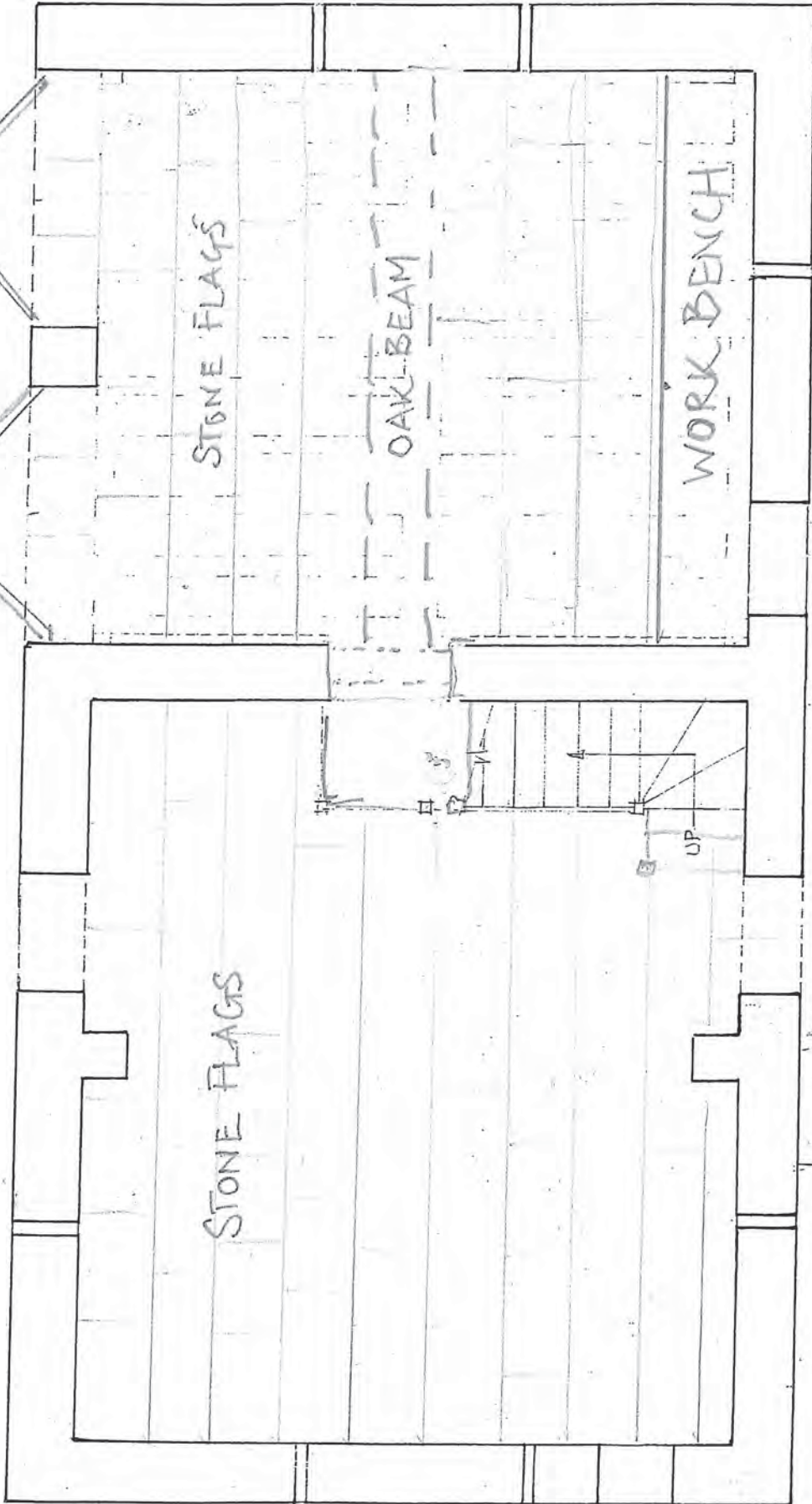
FIRST FLOOR



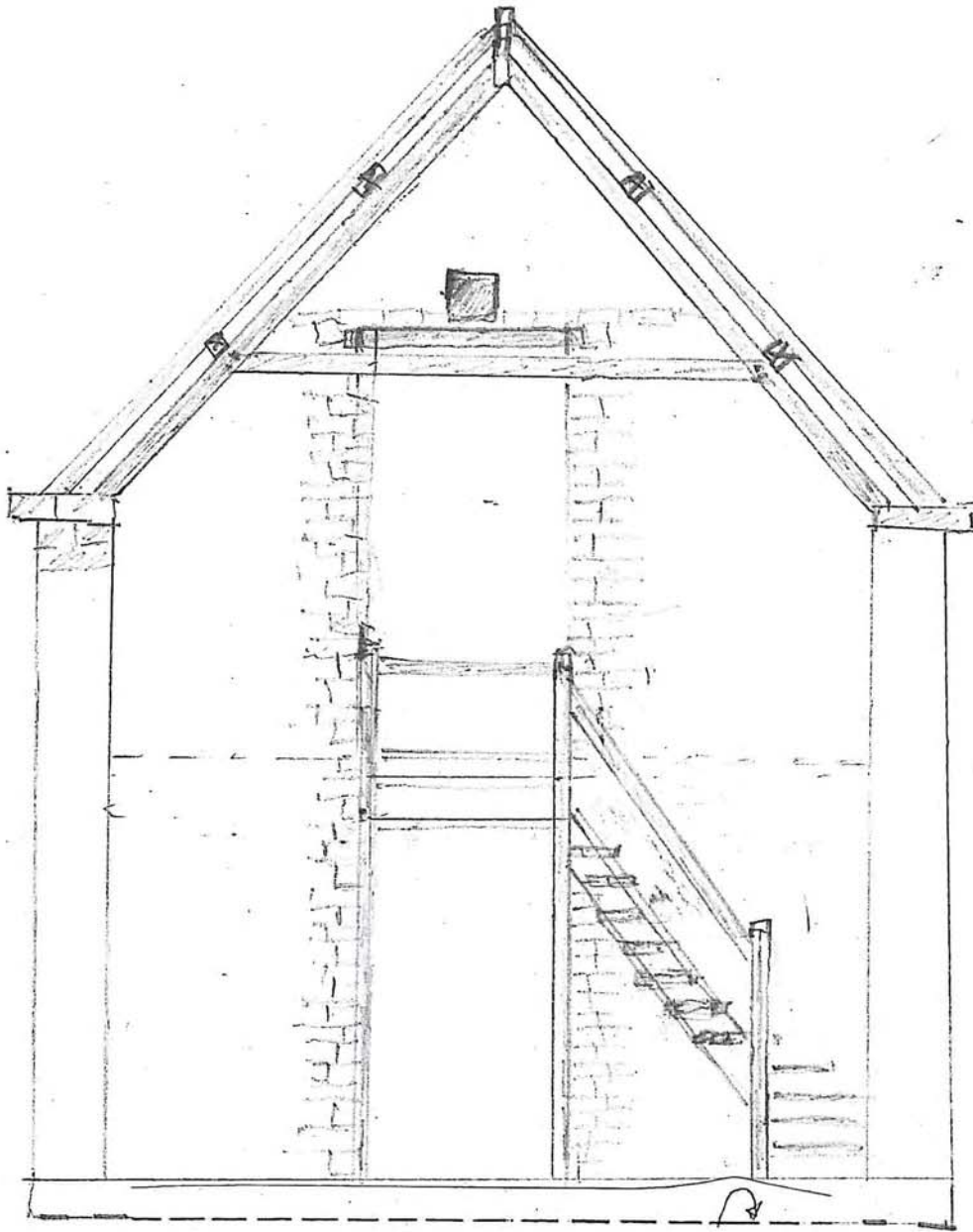
SCALE 1/50



GROUND FLOOR



SCALE 1:50



FLOOR LEVEL AT NORTH END

VIEW FROM SOUTH

1:50

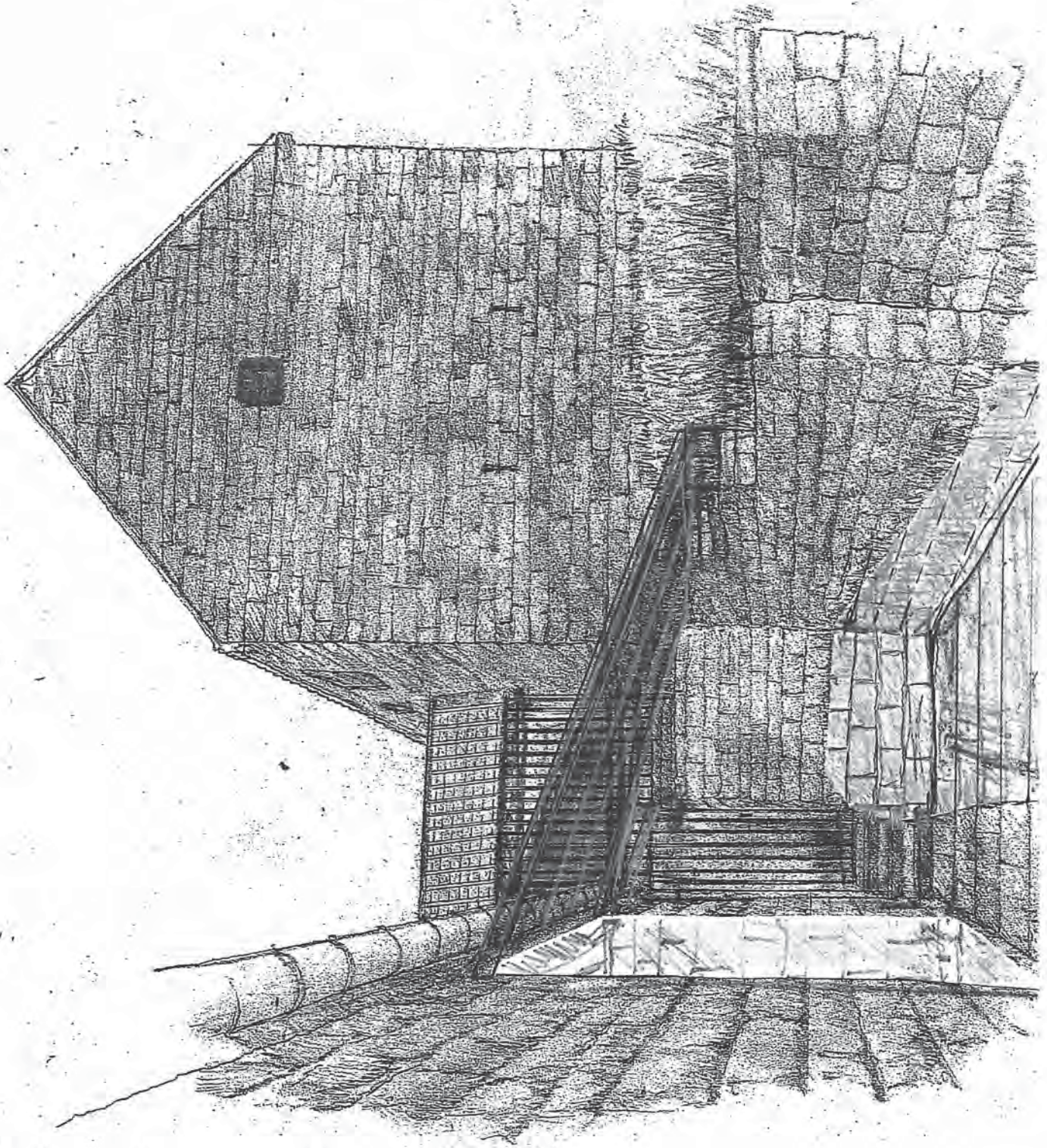


## Staircase between Building “A” and “B”

We rebuilt the staircase between the two buildings in 2012 and it has remained open ever since. As you can see from the photos (in the pre-planning application) rain (and snow) frequently blows in, so I'm proposing a Yorkshire boarding 'door' on either side – as in the sketches – to hinge off the wall of Building “A”. Because light is such an issue with these buildings, these doors are supposed to stay open most of the time, and closed when it rains. However if this remains ineffective, I propose some kind of glazed solution behind the Yorkshire boarding, though of course this will remain invisible.



FROM THE SOUTH



FROM THE  
NORTH

## Building "D"

The intention is to erect a roof over this flat roofed dry stone barn, and build a chimney on the South wall to serve a possible future biomass boiler below.

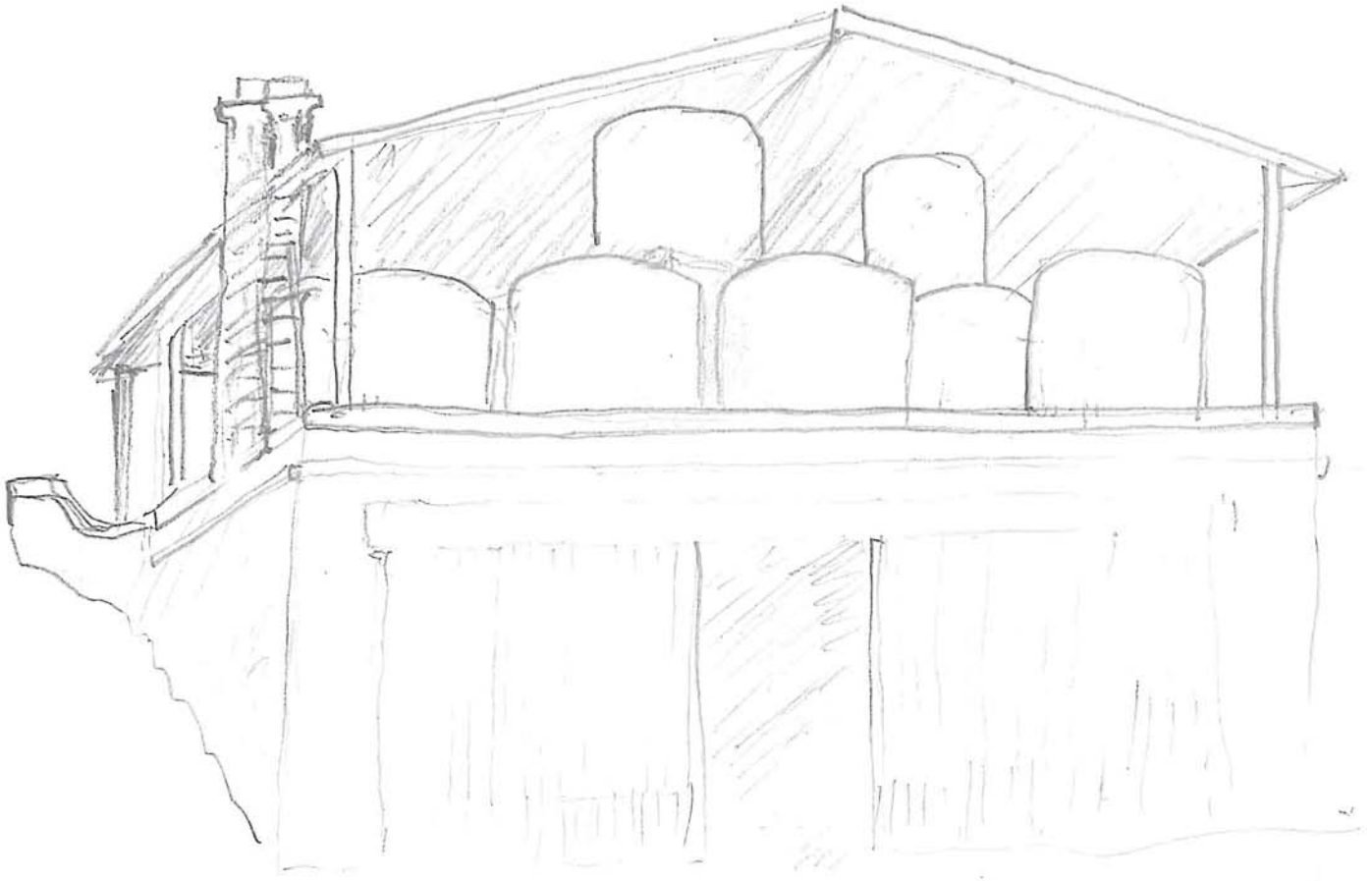
The upper storey will be used for hay and straw storage to be accessed from above, and the lower level will continue to house a quadbike, farm implements and tools and also serve as a log store.

This building has evolved on footings unearthed while rebuilding the long dry stone wall to the East of the main buildings. It is built over an existing stone land drain and to the North side there are stone steps leading to the upper level, and beside it is a tractor shed built on oak trusses reclaimed from the buildings above. Beyond that are two small dry stone buildings which house forestry tools, tree stakes, guards etc, and beyond that an enclosed nursery area for growing herbs and bringing on young trees.

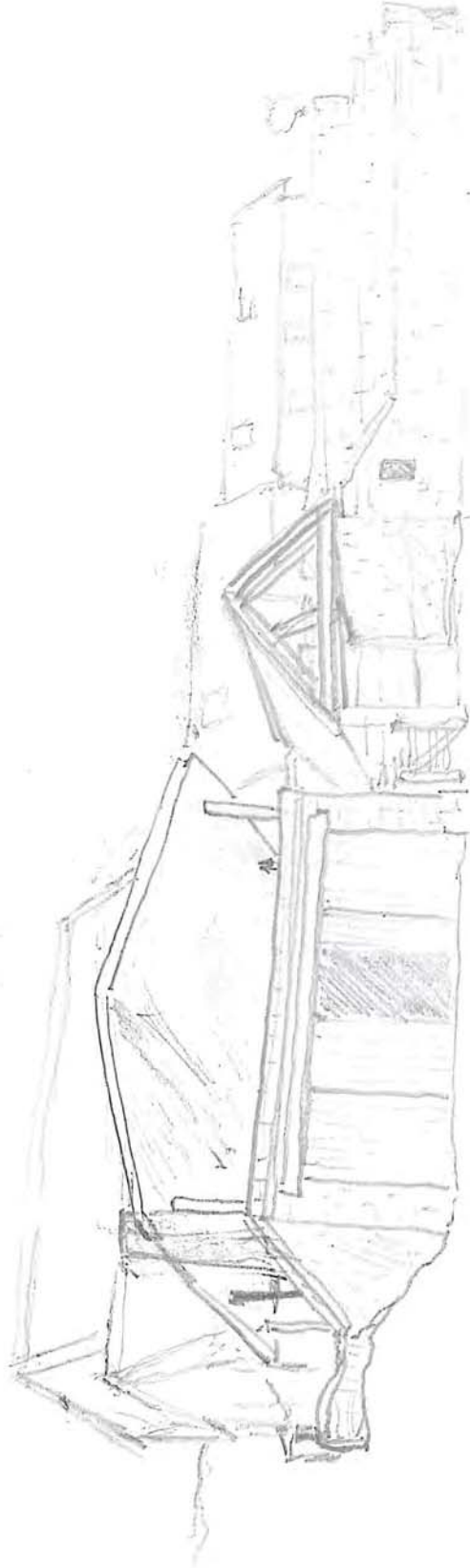
Building "D" is 90% dry stone construction, with a little 'stiffening' at both East corners. The larch beams supporting the roof were taken from trees felled in the dale. The sliding doors on the East side are of a Yorkshire boarding design.

The proposed roof design is of a simple welded steel frame construction, built on 4 x 75 ml steel posts on each side, and 2 further posts built off the ground 2m beyond the building on the West side, for added stability. The angle of the gabled roof will be 15 degrees, and covered with steel sheets, and will project slightly over the posts at either end. On the South side it is proposed to mount 8 PV panels and 4 solar heating tube panels. The PV will power low voltage lights and the pumps necessary to circulate the liquid within the solar tubes, with a storage tank in the building above. At the moment it is proposed not to enclose the area between the roof and the dry stone wall below, but if wind turbulence becomes a problem, we might be obliged to enclose it with Yorkshire boarding.

Because I have found it difficult to draw this, I enclose several sketches to give an idea of how it will look from different angles.

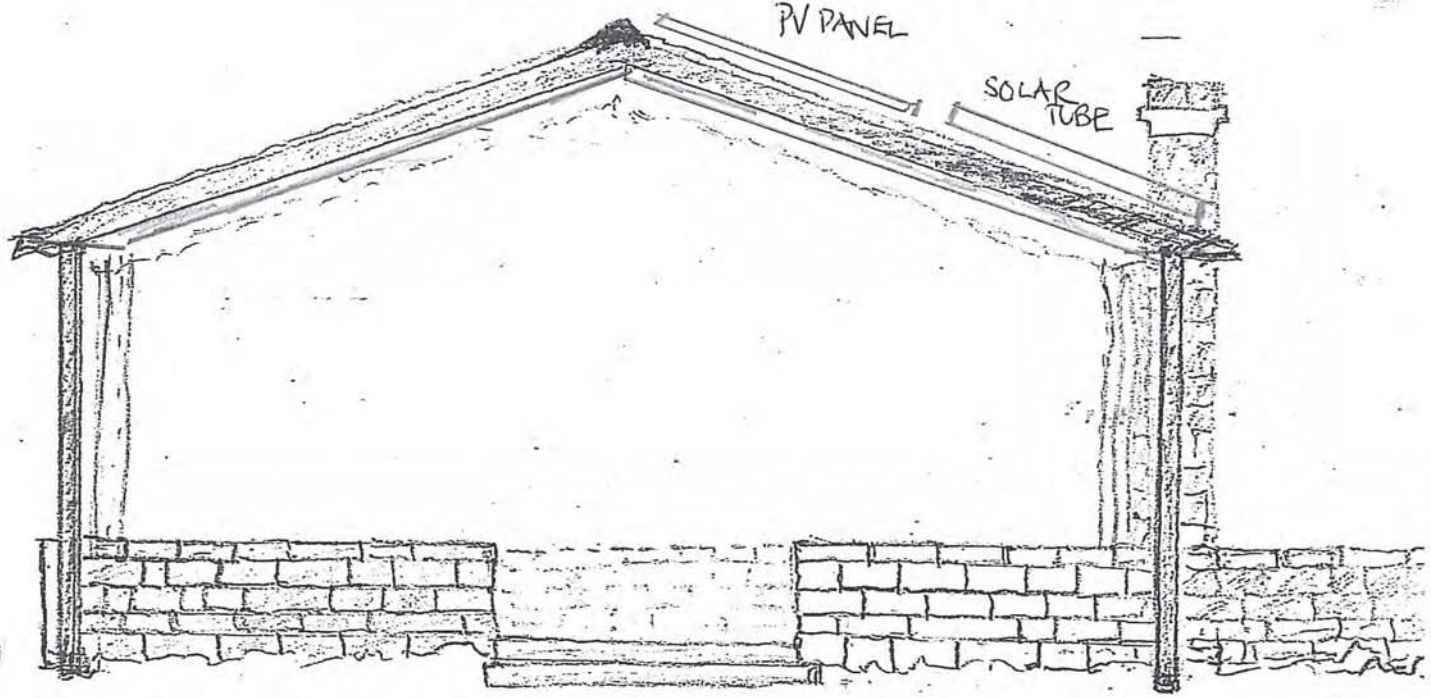


View of Building D - dry store shed  
with proposed roof and round bales  
from the East.



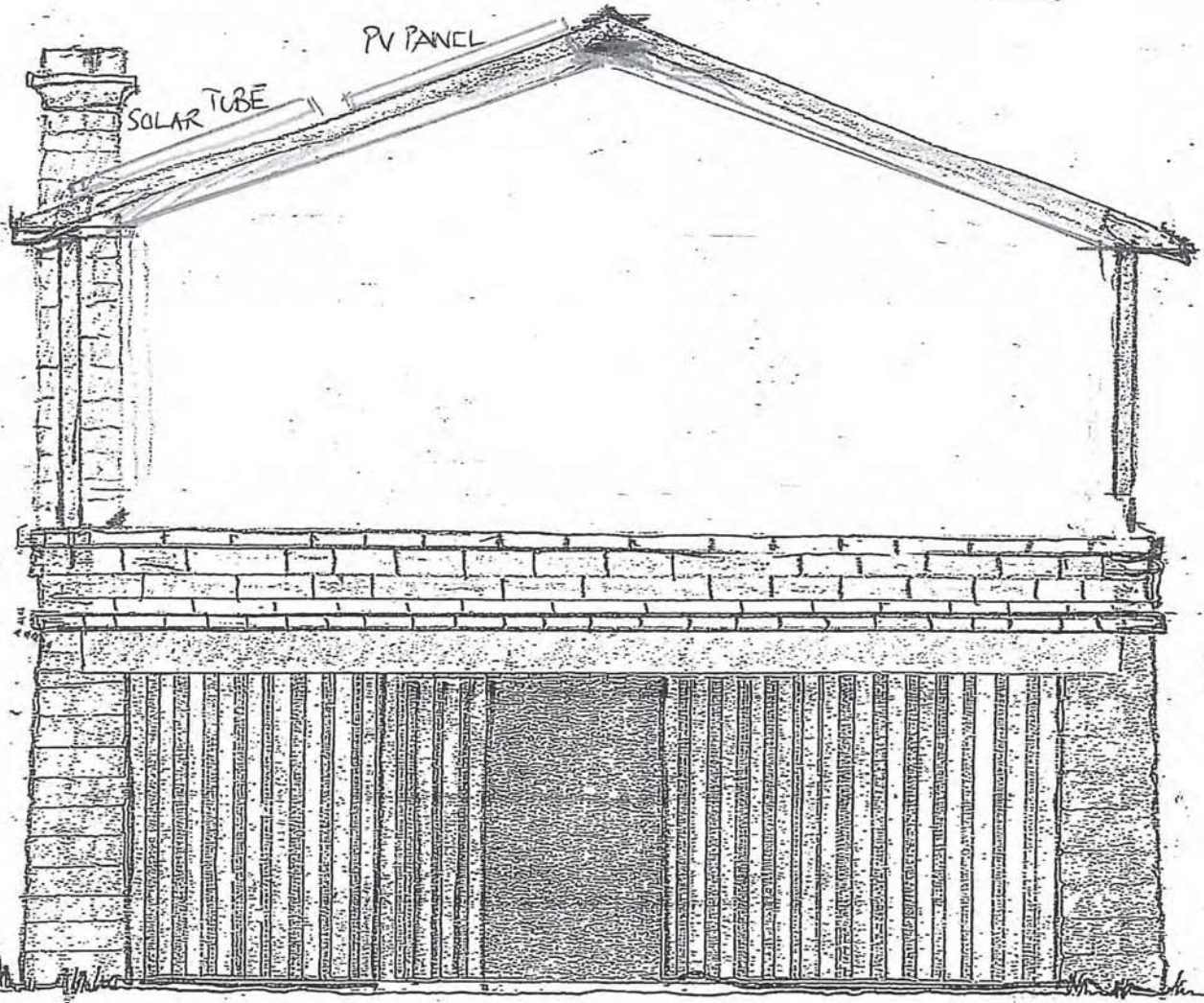
Proposed shed roof and existing trachon shed roof  
from the East.

WEST-FACING GABLE



PV PANEL

SOLAR TUBE



EAST-FACING GABLE

