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Structural Assessment for Planning

Property Address:	Brockhall Farm Brockhall Village Old Langho BB6 8BB
Report for:	Mr and Mrs Willan
Inspection Date:	18th December 2019
The Surveyors:	Michael Holden FRICS FCABE RICS Number 0084831 Joe Holden AssocRICS RICS Number 6792345 William Holden MSc John Blackmore MSc
Report Reference	190-535.1*

**This report is provided as an amendment to the original report provided in 2020. We have not reinspected the property/site and have amended the report based on additional information provided to us from Zara Moon Architects who have carried out a measured survey and are the agents for the application. This report should be construed as a viability summary based on our original inspection in December 2019 only. We have provided additional indicative annotated elevational drawings (see Appendix C) as a basis to support the viability summary. Please note these are indicative only and detailed specifications would be required prior to the commencement of any works.*

CONTENTS

A: INTRODUCTION

Please note that this Report is solely for your use and your professional adviser', and no liability to anyone else is accepted. Should you not act upon advice contained in the Report, no responsibility is accepted for the consequences.

Objective
The principal objective of the Report is to assist you to:

- *make a reasoned and informed judgement on whether the fabric/structure of the building is suitable for redevelopment as per the proposed plans.*

Content
The general condition and particular features of the Buildings (outlined within the plans) are covered, but the Report focuses on the matters which we judge to be significant.

The overall opinion provides a summary of the findings of the inspection and outlines the suitability of the buildings for development.

The Report only covers the structure of the buildings outlined within the plans and their viability with the proposed plans.

Observations

The observations and comments made in this report are based on the following:

- *External and internal observations during two visits to site on; 17th October 2019 and 18th December 2019.*
- *Site and plot layout plans provided by Zara Moon Architects Ltd.*
- *As we understand, the planning submission is being compiled by Zara Moon Architects Ltd.*

Photographs of the existing buildings taken during the site visits are provided within the photographic schedule.

IMPORTANT NOTE: *We carry out only a visual inspection only. This means that we do not carry out any opening up or invasive works.*

We inspect roofs, chimney and other surfaces on the outside of the building from ground level and, if necessary, from neighbouring public property and with the help of binoculars.

As necessary, we inspect the roof structure from inside the roof space if there is access (although we do not move or lift stored goods or other contents).

We note in our report if we are not able to check any parts of the buildings that the inspection would normally cover. If we are concerned about these parts, the report will tell you about any further investigations that are needed.

VIABILITY SUMMARY

Below are our conclusions on the viability of the buildings for the proposed re-development.

It is hoped that this summary will help you to keep in perspective the detailed facts and advice which follow. So that you may use this Report to best advantage in reaching your decision on whether or not to proceed with the plans for re-development, you are most strongly advised to read and consider its contents as a whole. This report is for planning purposes only and should not be relied upon at any other stage of the development process.

Brockhall Farm comprises several farm buildings constructed circa 1900. The buildings are constructed using local and traditional materials and techniques. The main external walls (which comprise of Building 5 as per the below plan) are of 13-inch solid brick construction and appear to have largely stood the test of time with no significant structural movement. This is a testament to the robust original construction of the building which has been subject to stressful conditions over the course of its lifecycle due to its usage as a farm building. Minor historic settlement movement was noted to sections of the building, but this is common in buildings of this age and type and does not represent any significant ongoing structural movement.

There are a number of areas of weakness to the single-storey ancillary buildings which have resulted from poor workmanship, detailing and materials used as the alterations were carried out. However, these areas are still viable for re-development.

There are a number of crude structural alterations (where openings have been created for usage) to sections C and D (as per the below plan) and some stabilisation works are required. However, these alterations have caused no significant structural movement to the external walls and will not inhibit the development following necessary repair works during the design phase.

Damage has occurred to internal timbers where the roof coverings/valley gutters are defective and moisture penetration has occurred. Localised rebuilding works should be anticipated.

In our opinion, it will be possible to retain at least the minimum requirement for pre-planning stage of development.

Viability Summary (Refer to Survey Site Plan below)

This viability summary provides an overview of each building inspected and identifies the viability for development as part of the scheme:

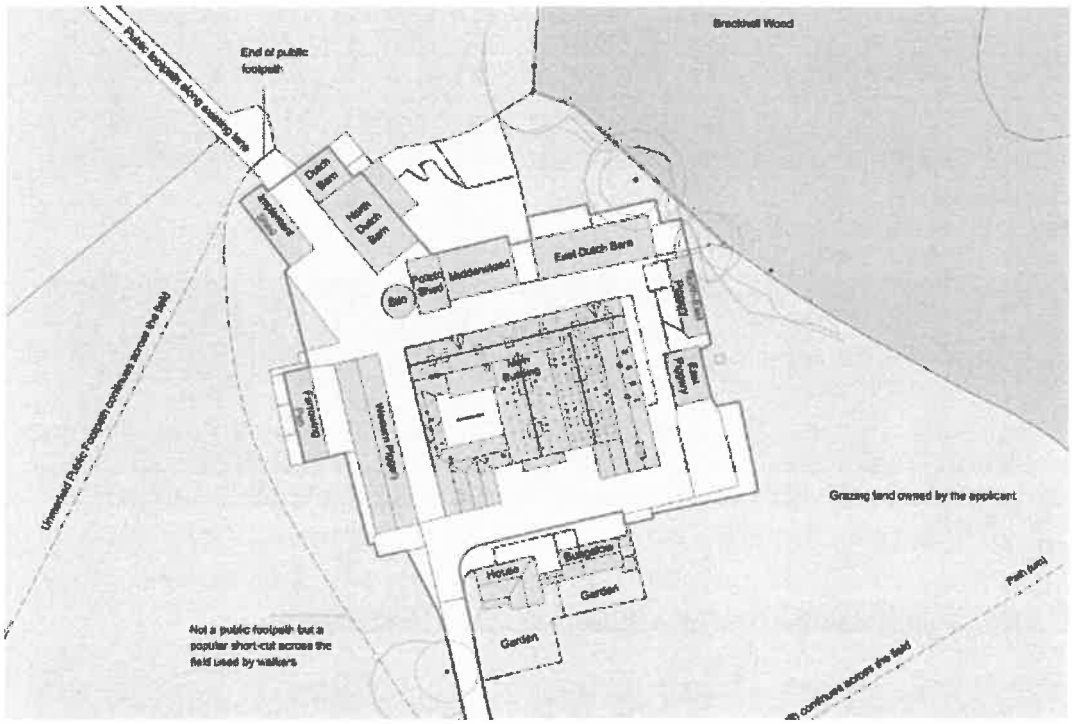
- Building 1 – Viable for development as garage.
- Building 2 (Silo) – Not Viable for development.
- Building 3 – Viable for development
- Building 4 – Viable for development
- Building 5 – Viable for development

The report concludes that the buildings meet the necessary requirements in order to conserve as much of the property as possible and comply with planning. Further investigations of the salvageability of slates and structural timbers within the buildings should be carried out. Some timber infestation was apparent however this infestation did not appear to be widespread.

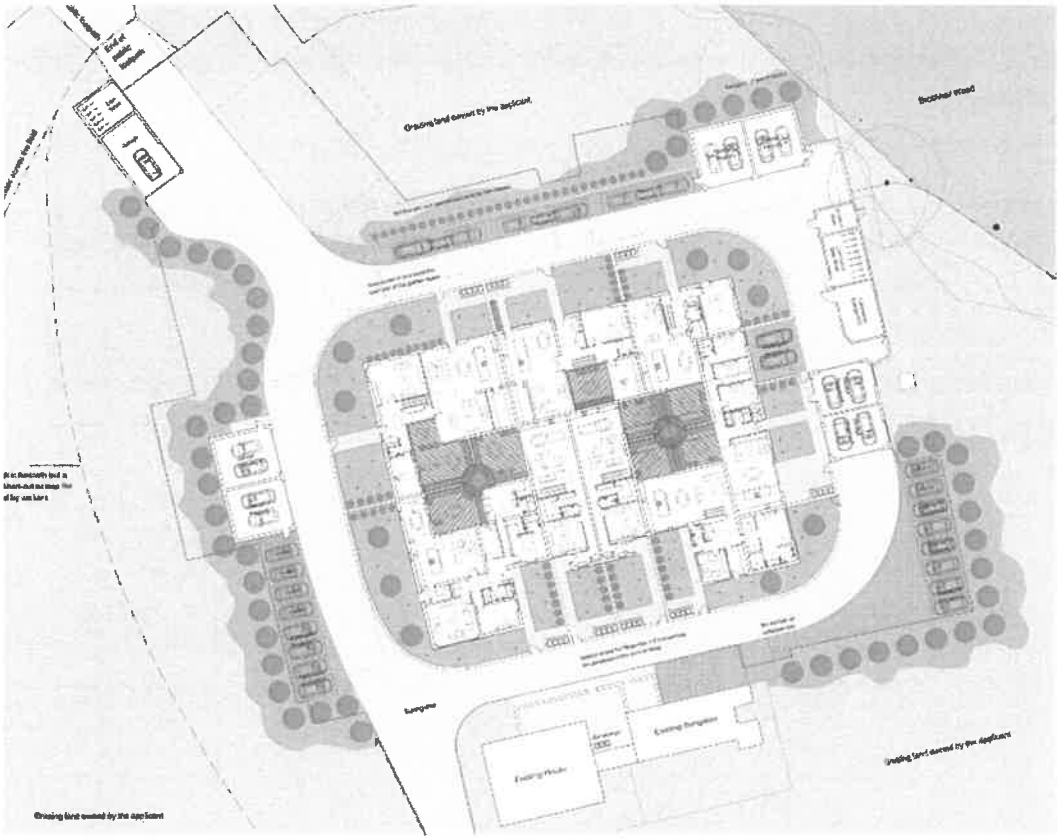
It is recommended that trial pits be excavated around the building to assess the appropriateness of the foundations prior to any development works.

Screenshots of Existing and Proposed Plans (Zara Moon)

Brockhall Farm Existing Site Plan (Zara Moon)

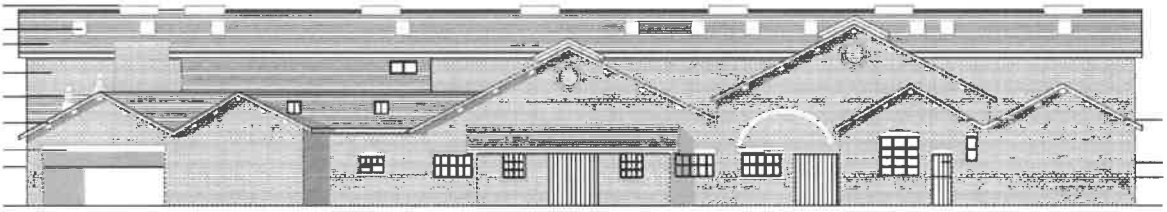


Brockhall Farm Proposed Site Plan (Zara Moon)

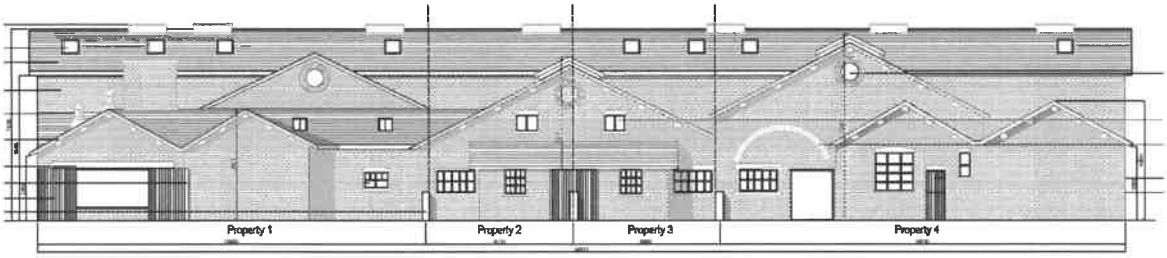


Job Ref: 190-535.1
Brockhall Farm, Brockhall Village, Old Langho, BB6 8BB

Brockhall Farm Existing and Proposed South Elevation (Zara Moon)

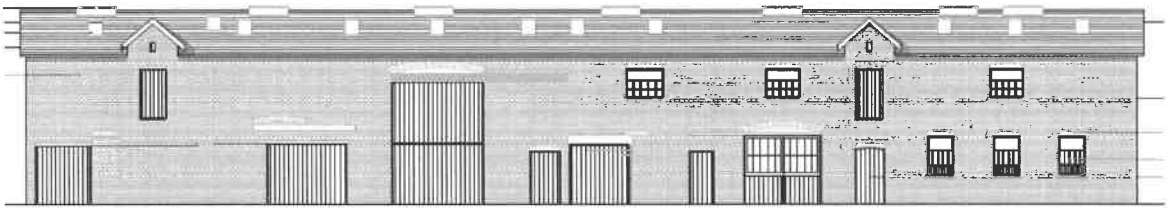


Existing South Elevation
Scale 1:100

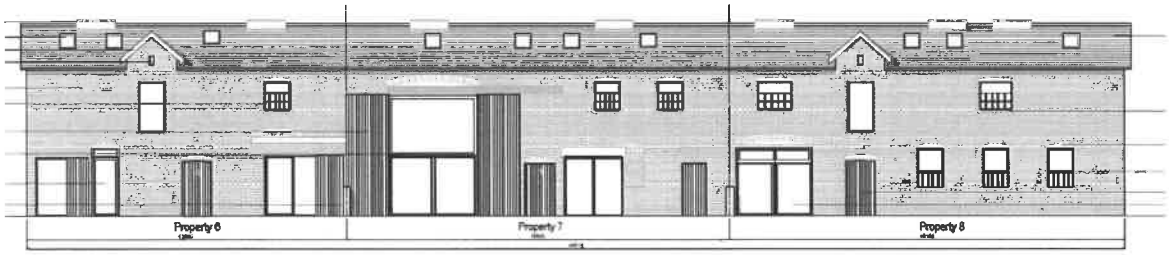


Proposed South Elevation
Scale 1:100

Brockhall Farm Existing and Proposed North Elevation (Zara Moon)

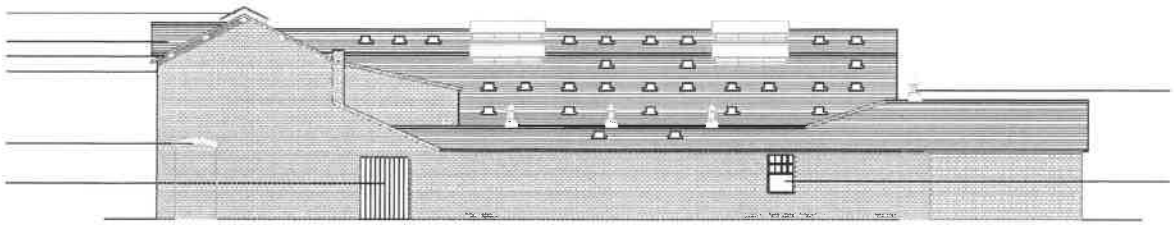


Existing North Elevation
Scale 1:100

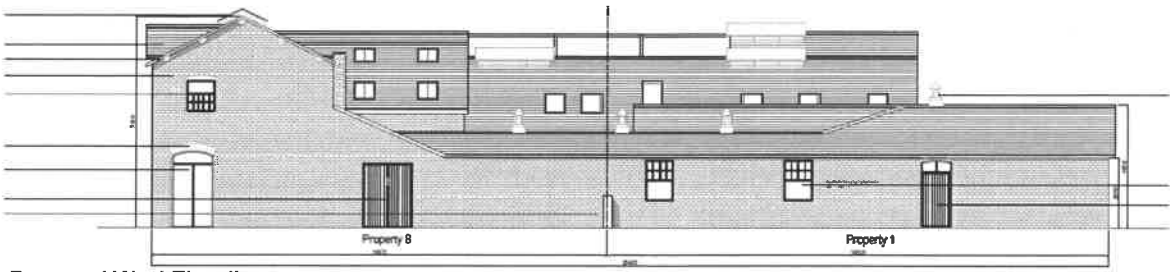


Proposed North Elevation
Scale 1:100

Brockhall Farm Existing and Proposed West Elevation (Zara Moon)



Existing West Elevation
Scale 1:100



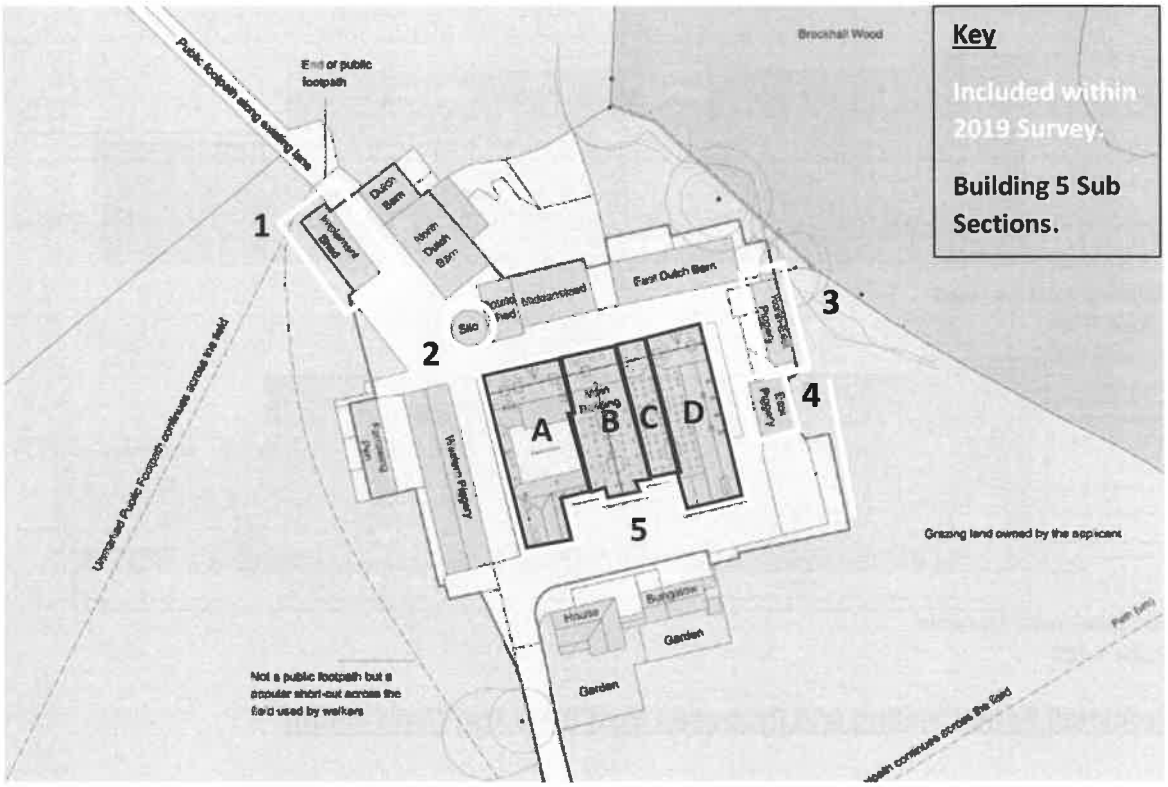
Proposed West Elevation
Scale 1:100

Brockhall Farm Existing and Proposed East Elevation (Zara Moon)

Existing East Elevation
Scale 1:100

Proposed East Elevation
Scale 1:100

Brockhall Farm Existing Site Plan (Zara Moon) with Key to reference in text below.



Site Overview (Google Maps)

B: THE BUILDINGS

Buildings 3,4, and 5 are of similar construction. Buildings 3 and 4 are single storey with building 5 being a mix of single and two storeys. These three building are of solid brick construction, with pitched slate roofs and solid floor slabs.

Building 3 is currently used as storage, building 4 as a garage and building 5 as the main farm building with a mix of cattle stalls, milking parlour, pig sheds and storage space.

Building 1 (See Indicative Site Plan) (See Images 2-5)

- Building 1 comprises a small steel portal framed structure with solid brick infill panels with cladding present to the gable walls.
- The roof is pitched and comprises metal trusses supporting a suspected asbestos panel roof. This cannot be confirmed without laboratory testing.
- Reinforced concrete sill/lintels are in place to support window openings.
- This building could be converted into habitable accommodation within the original frame i.e. with the insert of a timber frame. Any other form of reconstruction such as cavity wall is thought to be more problematical (i.e. demolition would be needed etc). The building is considered to be viable for development as part of the scheme as a garage.

Building 2 (See Indicative Site Plan) (See Images 7-12)

- Concrete agricultural haylage store. This building consists of reinforced concrete panel walls supporting a concrete roof.
- This building is not viable for development and should be demolished as part of the development scheme.

Building 3 (See Indicative Site Plan) (See Images 13-18)

- Building 3 comprises of pitch slate roof supported by timber trusses, 9-inch solid brick walls and a concrete floor slab.
- Stepped cracking was noted to the rear walls which is reflected internally. This crack is a result of a drainage issue and underpinning works to the rear wall are required.
- This building is considered suitable for re-development provided the rear wall is underpinned. The rest of the structure appears to be robust.
- The king post roof trusses are salvageable. Some insect flight holes were noted and bearing ends may have to be repaired but the majority of the king post trusses will be able to be saved and re-used.
- Roofing slates will be should be salvaged and used are part of the development.

Building 4 (See Indicative Site Plan) (See Images 19-24)

- Building 4 comprises of pitch slate roof supported by timber trusses, 9-inch solid brick walls and a concrete floor slab.
- There is some evidence of minor lintel-related movement however this is not significant and easily repairable.
- The roof trusses are salvageable. Some insect flight holes were noted and bearing ends may have to be repaired but the majority of the trusses will be able to be saved and re-used.
- Roofing slates will be should be salvaged and used are part of the development.

Retaining wall adjacent to Building 4 (See Indicative Site Plan -Yellow) (See Images 25-26)

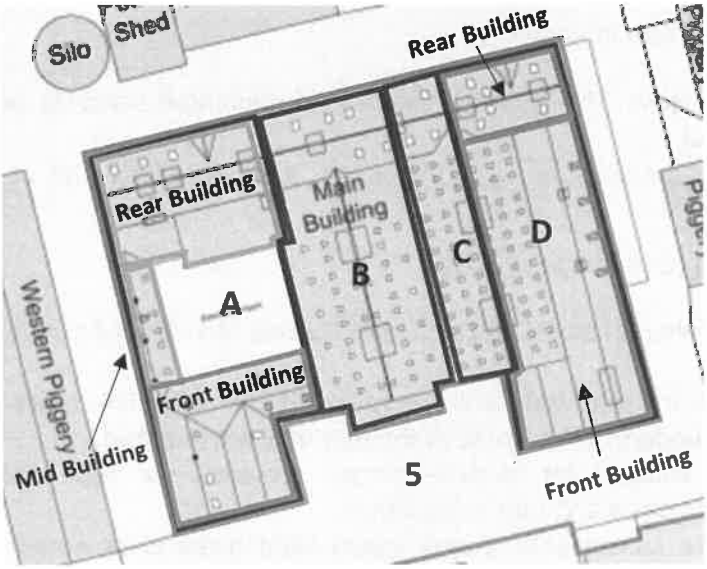
- There is a brick built retaining wall located adjacent to Building 4 (see indicative site plan highlighted yellow). This wall is approximately 25m in length and varies in height 1-2m.
- The wall is covered with vegetation which limited our inspection.
- Consideration should be afforded to the condition of this wall when carrying out development works as this wall retains large sections of the courtyard and Building 4.
- Some repair/strengthening works are required where sections of this wall have become unstable.

Building 5 (See Indicative Site Plan)

Building 5 is located centrally to the site and is understood to be the main building for residential development.

The plan below is indicative of how the report is structured to comment on Building 5 and should be referred to.

Building 5 Indicative Site Plan



Key

Building 5 Overview

Building 5 Sub Sections

Building 5 Report Sub Section Breakdown

Building 5, Section A (See Building 5 Indicative Site Plan) (See Images 27-48)

Building 5 Section A comprises the Western most block of the main farm building. This section of building currently comprises garage sections with additional storage, a courtyard, ancillary buildings, access to the dairy production facility and a rear barn. This section describes the three main parts of Building 5.

Building 5, Section A, Front Building (See Building 5 Site Plan) (See Images 27-36)

- Comprises of 13-inch solid brick construction with a pitched slate roof supported by a rafter purlin method of construction.
- Evidence of rebuilding works to the front parts of this building.
- Large steel lintel installed to the front wall garage section and some cracking is visible above (Image 31). This is easily repairable and is not significant.

- This section of building has suffered from the effects of water ingress over the years and the condition of embedded timbers (trusses etc.) have been affected by beetle infestation and rot/decay.
- Overall, this front section of building is viable for the development.

Building 5, Section A, Mid Building (See Building 5 Site Plan) (See Images 37-42)

- Comprises of 13-inch solid brick construction with a pitched slate roof supported by a truss rafter method of construction.
- The Western wall fronting the track appears to be robust and no significant structural movement was evident.
- The internal walls and stalls are of a lower standard (half brick/4 inch) and should be removed during the development phase.
- Overall, this external walls to this section are robust and are viable for the development. These external walls are key in terms of the planning proposal.

Building 5, Section A, Rear Building (See Building 5 Site Plan) (See Images 43-48)

- This section is two-storey and comprises of 13-inch solid brick construction to the rear. This section of the building is robust with no significant structural movement noted. Steel props were noted internally. There was no evidence of significant lintel failure and this section is considered viable for development.
- The front section (See Image 45) (which houses the milk parlour) is of a lower standard. This building appears to have been constructed at a later date and the external walls are not of a standard in keeping with the original buildings. However, this section is still viable for development with necessary works.
- Overall, this main external walls to the original section are robust and are viable for the development. These external walls are key in terms of the planning proposal.

Building 5, Sections B and C (See Building 5 Indicative Site Plan) (See Images 49-54)

Building 5 Sections B and C consist of the middle-blocks to the main farm building. This section of building currently comprises cattle stalls and storage for haylage.

- The front of Sections B and C are single storey and are of 13-inch solid brick construction with metal trusses supporting slate roof coverings.
- The rear of Sections B and C comprise of two-storeys and is also constructed of 13-inch solid construction with timber trusses supporting slate roof coverings.
- Due to the fact that the rear section of the building is two-storey and has contained significant amounts of storage/haylage over the years, we see no issues with the bearing capacity with the current structure.
- Localised rebuilding works have been carried out over the years where openings have been created and lintels installed.
- Damage was noted where the central valley gutter exits the wall. Localised rebuilding works should be anticipated (Image 53).
- There is no evidence of any significant ground movement or structural movement.
- Large steel lintels have been installed to the rear wall amongst original brick arches.
- Minor cracks were noted above brick arches however this is insignificant movement in relation to the planning proposal and should be repaired as part of the development.
- Crude access points have been created where load bearing internal walls have been opened up. Not all openings have been provided appropriate lintels to support the above

load and there is a risk of failure. These should be repaired as part of the development scheme.
- The first floors to the rear two-storey section are of timber construction with herringbone struts in place. The floors appeared robust.
- Overall, the main external walls to the original section are robust and are viable for the development. These external walls are key in terms of the planning proposal.

Building 5, Section D (See Building 5 Indicative Site Plan) (See Images 55-66)

Building 5 Section D consists of the right blocks to the main farm building. This section of building currently comprises cattle stalls and storage.

- The front of Section D is single storey and of 13-inch solid brick construction with timber trusses supporting slate roof coverings.
- Damage has occurred to internal timbers where the roof coverings/valley gutters are defective and moisture penetration has occurred. Localised rebuilding works should be anticipated.
- Bearing ends of the timber trusses have been strapped due to deterioration from moisture penetration. The trusses will require close examination to determine their suitability for re-use.
- There are minor areas of cracking above brick arches however these do not represent significant structural movement. Localised rebuilding works should be anticipated. (See Image 66)
- The rear of Sections D comprises of two-storeys and is also constructed of 13-inch solid construction with timber trusses supporting slate roof coverings.
- Due to the fact that the rear section of the building is two-storey and has contained significant amounts of storage/haylage over the years, we see no issues with the bearing capacity with the current structure.
- There is no evidence of any significant ground movement or structural movement.
- Crude access points have been created where load bearing internal walls have been opened up. Not all openings have been provided appropriate lintels to support the above load and there is a risk of failure. These should be repaired as part of the development scheme.
- Structural steelwork has been installed to the rear building. The steelwork appears robust and there is no significant movement noted to the walls.
- Overall, the main external walls to the original section are robust and are viable for the development. These external walls are key in terms of the planning proposal.

C: PHOTOGRAPHIC SCHEDULE

Image 1 – Building 1 Overview

Image 2 – Right Gable

Image 3 - Front elevation

Image 4 – Rear elevation

Image 5 – Left Gable

Image 6 – Internal

Image 7 – Building 2 Overview

Image 8 – Roof covering

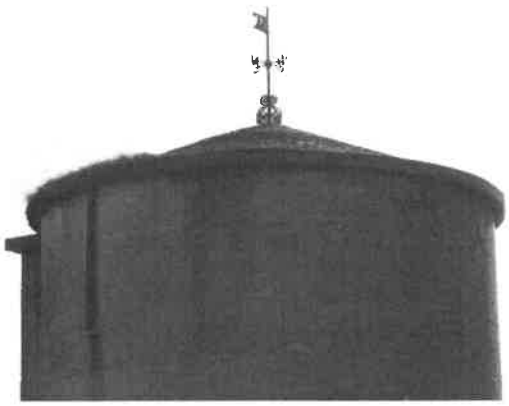


Image 9 – North East Elevation

Image 10 – East elevation

Image 11

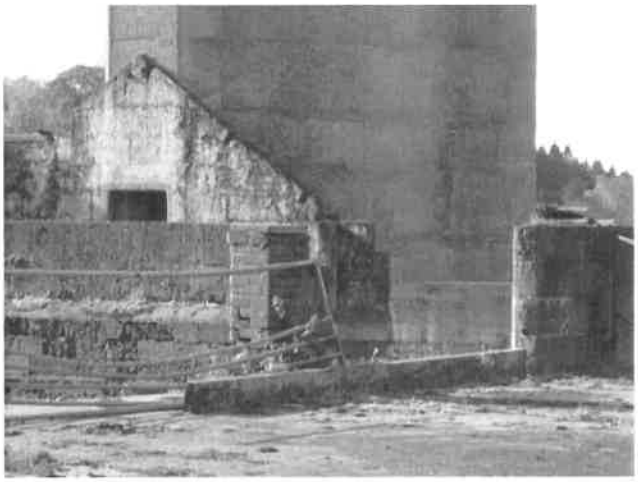


Image 12 – Internal

Image 13 – Building 3 Overview

Image 14 – Rear

Image 15 – Left gable

Image 16 – Right gable

Image 17 – Crack to rear

Image 18 – King post truss

Image 19 – Building 4

Image 20 – Rear elevation

Image 21 – South east corner

Image 22 – Front and left elevations

Image 23 – King Post Truss Roof Structure

Image 24 – Minor movement

Image 25 – Retaining Wall

Image 26 – Retaining Wall

Image 27 - Building 5, Section A, Front Building

Image 28 – Left Gable elevation

Image 29 – Roof Structure

Image 30 – Water ingress

Image 31 – Cracking noted above lintel

Image 32 – Water ingress

Image 33 – Water Ingress

Image 34 – Water Ingress

Image 35 – Minor movement/Water Ingress

Image 36 – Water Ingress

Image 37 – Building 5, Section A, Mid Building

Image 38 – Roof Structure

Image 39 – Eastern elevation

Image 40 – Western elevation

Image 41 – Western elevation

Image 42 – Western elevation

Image 43 – Building 5, Section A, Rear Building

Image 44 – Rear elevation

Image 45 - Front elevation

Image 46 – Former stack

Image 47 – Surface corrosion

Image 48 – Internal prop

Image 49 – Building 5, Section B and C

Image 50 – Rear Elevation

Image 51 – Rear Section

Image 52 – Front Section

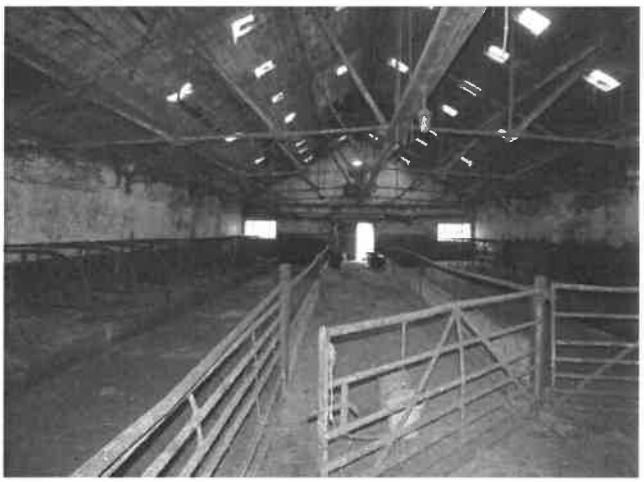


Image 53 – Minor damage to front walls

Image 54 – Front Elevations

Image 55 – Building 5, Section D

Image 56 – Eastern Elevation

Image 57 – Eastern Section

Image 58 – Rear Section

Image 59 – e.g. crude access points

Image 60 – Front Elevations

Image 61 – e.g. crude access point

Image 62 – Rear elevation solid construction

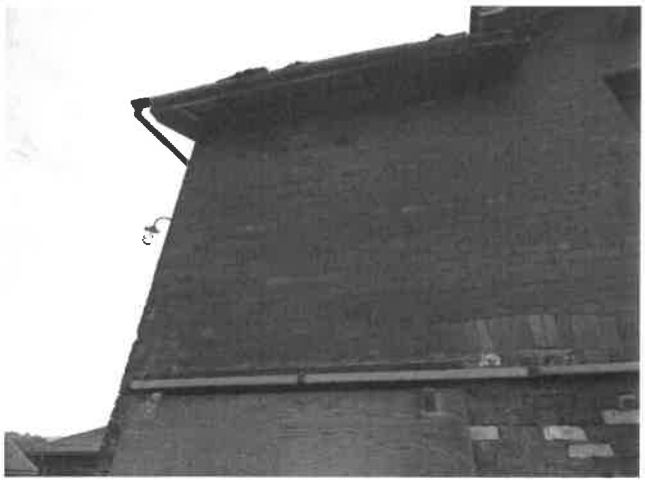


Image 63 – Rear building

Image 64 – Cast Iron prop to front building

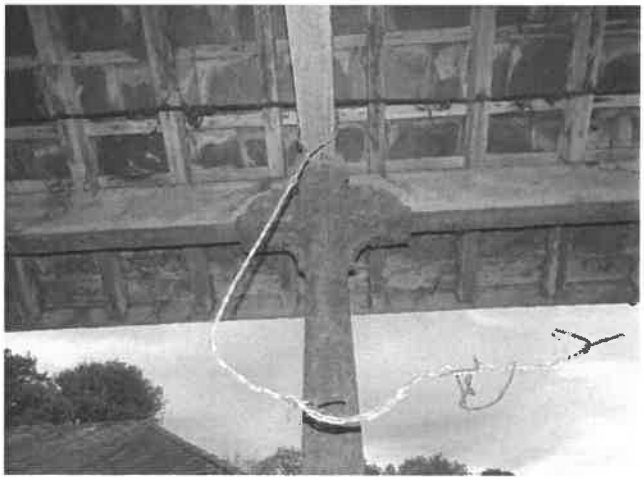
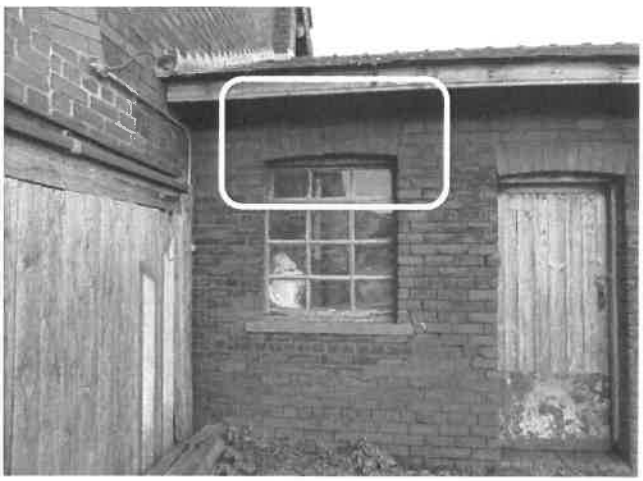


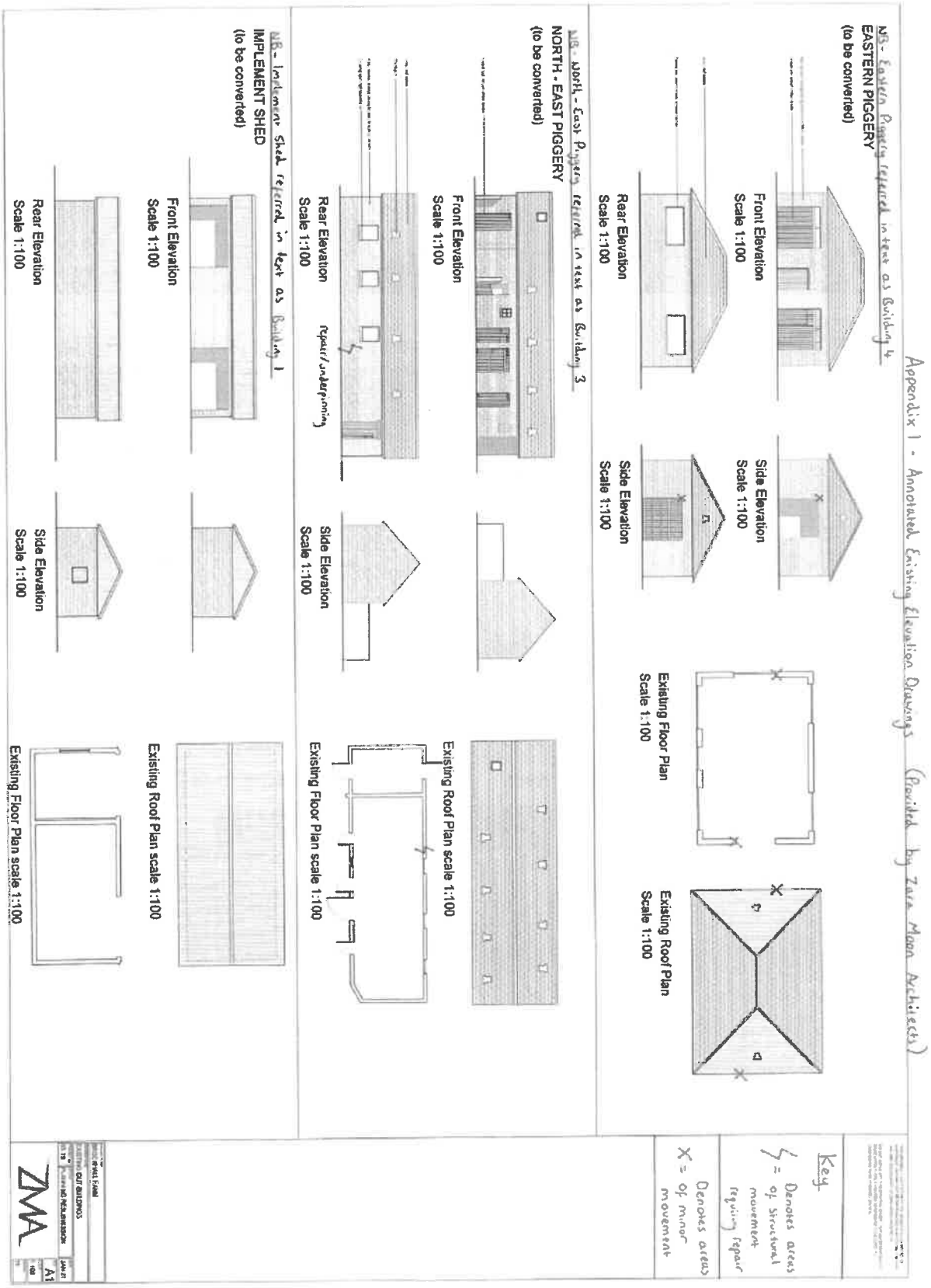
Image 65 – Timbers at risk from dampness

Image 66 – Cracking to defective brick arch



D: ANNOTATED ELEVATION DRAWINGS

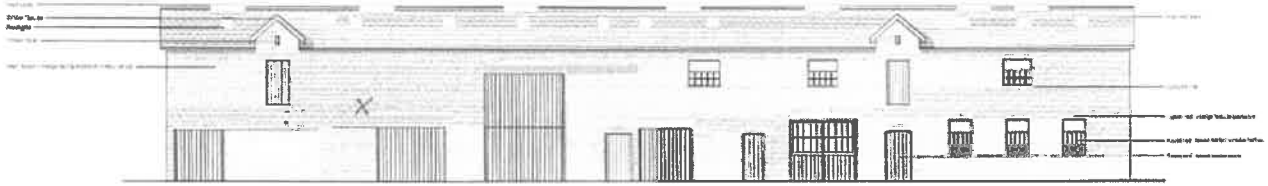
NB – Please note these are indicative only for planning purposes and detailed specifications would be required prior to the commencement of any works. The annotated elevation drawings do not consider patch repairs e.g., brickwork and items including repointing, roof structures, trusses etc.



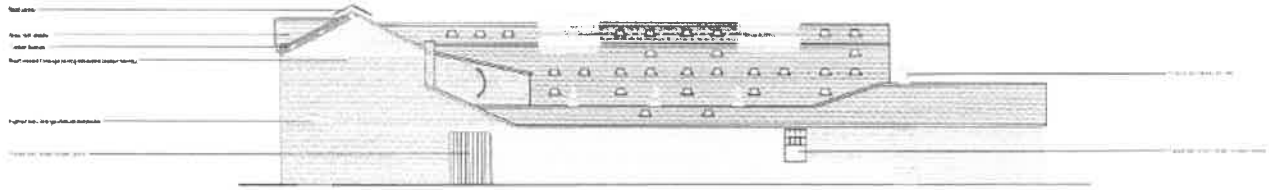
Appendix 2 - Annotated Existing Elevation Drawings (Provided by Zara Moon Architects)

NB - The main building has been referred in text as Building 5

Existing South Elevation
Scale 1:100



Existing North Elevation
Scale 1:100



Existing West Elevation
Scale 1:100

Existing East Elevation
Scale 1:100

Key-

X = Denotes areas of minor movement

) = Denotes Concave Wall

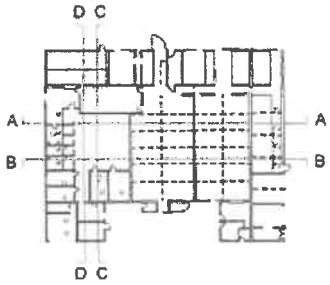
BROCKHALL FARM
EXISTING ELEVATIONS
PLANNING RESUBMISSION
A1
1:100
ZMA

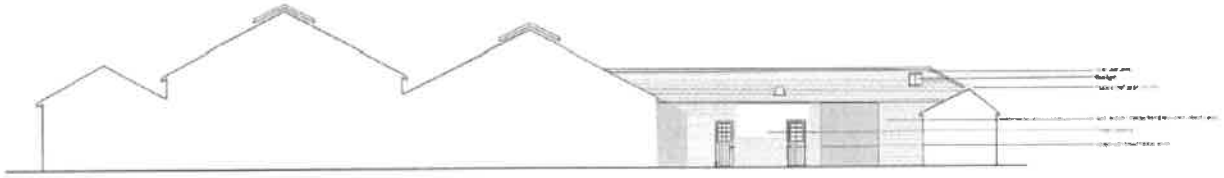
Job Ref: 190-535.1
Brockhall Farm, Brockhall Village, Old Langho, BB6 8BB

Appendix 3- Annotated Existing Elevation Drawings (Provided by Zorn Moon Architects)

NB- The main building has been referred in text as Building 5

Existing South Courtyard Elevation A
Scale 1:100



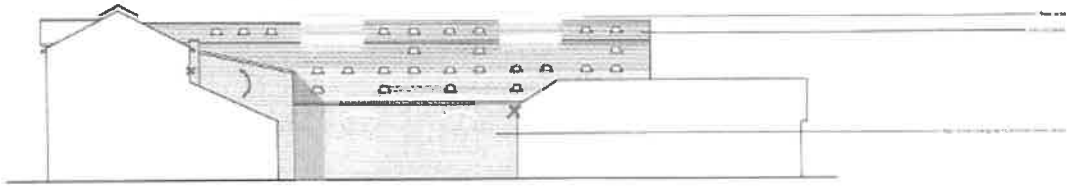


Existing North Courtyard Elevation B
Scale 1:100

Key

x = Denotes areas of minor movement

) = Denotes Concrete Wall



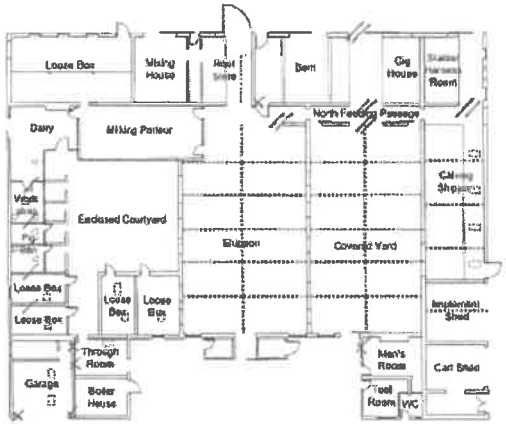
Existing West Courtyard Elevation C
Scale 1:100

Existing East Courtyard Elevation D
Scale 1:100

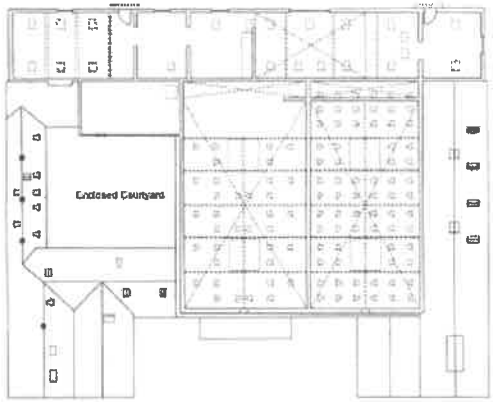
BROCKHALL FARM
EXISTING COURTYARD ELEVATIONS
01.10 PLANNING RESUBMISSION JAN 21
A1
1:100
ZMA

Appendix 4- Annotated Existing Elevation Drawings (Provided by Zora Moon Architects)

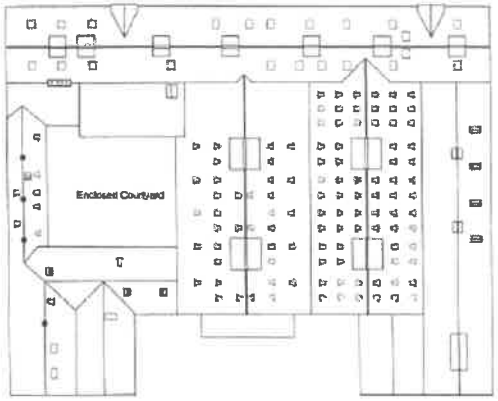
NB- The main Building has been referred in text as Building S



Existing Ground Floor Plan
Scale 1:200



Existing First Floor Plan
Scale 1:200



Existing Roof Plan
Scale 1:200

Key

X = Denotes areas of minor movement

// = Denotes crude opening

/ = Denotes single wall skin

N

BROCKHALL FARM

EXISTING FLOOR PLANS

PLANNING REQUIREMENTS

A1

ZMA

Job Ref: 190-535.1
Brockhall Farm, Brockhall Village, Old Langho, BB6 8BB

Signature of Surveyor..

Signature of Surveyor.....

Surveyors names and professional qualifications

Michael Holden FRICS FCABE
RICS Membership Number: 0084831

Joe Holden AssocRICS
RICS Membership Number: 6792345

Name and address of surveyor's organisation

For and on behalf of
Michael Holden Chartered Surveyors
11 Cannon Street, Accrington, BB5 1NJ

Date 17th March 2021