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STRUCTURAL APPRAISAL REPORT

320110675P

AT

Aspinalls Farm, Kenyon Lane, Dinckley, Blackburn, BB6 8AN.

IN RELATION TO A PROPOSED RE-SUBMISSION PLANNING
APPLICATION FOR THE CONVERSION OF TWO
TRADITIONAL FARM BUILDINGS, INTO TWO FOUR
BEDROOMED RESIDENTIAL DWELLINGS.

Prepared by: Andrew Mitchell for and on behalf of Gary Hoerty Associates
Our Ref: Sim/477/1208/AJM
Date: August 2011
Client: Messrs Simpson



Chartered Surveyors ■■■ Planning & Development ■■■ Land Agents
Valuers ■■■ Property Agency ■■■ Property Management



1.0 Brief

- 1.1 The purpose of this Structural Appraisal is to advise the client and local planning authority as to the structural condition of the above mentioned barns, prior to the submission of a full planning application for the conversion of the barns into two private residential dwellings, as in accordance with drawing numbers Sim/477/1208/R01 & R02 as produced by Gary Hoerty Associates.

2.0 Methodology of conversion

- 2.1 The barns are to be converted by removing the existing ground floor structures and constructing new insulated concrete ground floors, which incorporate a damp proof membrane. The external walls are to be upgraded with the construction of a concrete block lining wall that will carry the loads of the first floor and roof structures and is to be tied to the inner face of the existing stone walls, with steel ties at appropriate centres. The existing roofs are of a traditional timber form with timber rafter and purlins supported off the main external walls and traditional King and Queen post trusses. The roofs are to incorporate ventilation and insulation and are to be clad externally with natural blue slate.
- 2.2 The scheme will incorporate the amendment and renovation of existing window and door openings and will also incorporate the insertion of new openings.
- 2.3 It is proposed that an existing lean-to structure to the southerly facing wall is to be demolished and replaced with a smaller lean-to. Although the structure is to be demolished, comment has been made as to its condition, to indicate any signs of movement within that area of the development site.

3.0 Situation and Description

- 3.1 The proposed development relates to the conversion of two traditional agricultural barns into two separate four bedroom properties. The barns are constructed in traditional materials comprising stone walls, with windows and doors set within stone surrounds. Roofs are clad in natural blue slate and profiled asbestos/fibre cement sheeting. The barns are abutted on the southerly elevation by a single storey lean-to structure built with concrete block walls and roof clad in profiled asbestos/fibre cement sheeting. It is proposed to demolish this lean-to structure as part of the application to convert the barns.
- 3.2 The barns are orientated with the main front wall facing a northerly direction, with the ridge of the two barns running in an east / west direction. The barns are of similar size and proportion however the barn nearest to the existing modern agricultural buildings of the farm, is wider than the adjoining barn, with the rear wall set back from the rear wall of the adjoining barn.

- 3.3 For the purposes of this report the barns have been described as barn numbers 1, which refers to the barn closest to the modern agricultural buildings of the working farm and barn 2 which is the barn nearest to the field at the rear of the barns, (see existing site plan within appendices).

4.0 Detailed Description

Front (northerly facing) elevation

- 4.1 The barns are formed with dual pitch roofs with equal pitches to the front and back. The roof to barn 1 is clad in natural blue slate with surface water drained from the roof via black PVCu guttering fixed to a timber fascia board, which drains into a black PVCu downpipe. The roof to barn 2 is clad externally in an asbestos/fibre cement roof sheeting, with surface water drained via asbestos guttering and downpipes. The roof to barn 1 is of a shallower pitch than the adjoining barn, with the separating wall between the two barns extending above the plain of the roof to barn 1.
- 4.2 The walls of the barns are constructed with a solid stone masonry with stone quoins to the external corners and at the line of the separating wall between the two barns. The front wall features a range of window and door openings which include two large cart openings, with the larger of the two openings formed with an arched timber lintel. The wall also features window and door openings that have been blocked up and are proposed to be re-opened as part of the proposed conversion.

Side (westerly facing) elevation

- 4.3 The gable wall is built with solid stone masonry, faced externally with coursed stone with quoins to the external corners. It is clear that the wall has been re-pointed with the tell tale ribbon/strap pointing visible. The verge detail of the roof and the external walls is detailed with a strip of asbestos/fibre cement roof sheeting dressed over the wall and roof covering. The wall features a range of window and door openings, including an owl hole beneath the ridge, which are all formed and supported with stone heads and sills. The two doors at ground floor level were partially covered by stone stored up against the wall.
- 4.4 A section of the separating wall between the two barns is built above the rear section of roof to barn 2, leaving part of the separating wall exposed. The wall is rendered and the abutment between the roof of barn 2 and the wall is dressed with a mortar based flashing/fillet.
- 4.5 The wall of the lean-to structure is formed with concrete blockwork, with the verge of the wall and roof covering detailed with a strip of asbestos roof covering dressed over the roof and wall surface. It was noted that the wall features a blocked up personnel door opening.

Rear (southerly facing) elevation

- 4.6 The roofs to the barns are clad in asbestos/fibre cement roof sheets, (barn 1) and a natural blue slate covering, (to barn 2). Rain water is drained from the roof of barn 1 via black PVCu guttering, fixed to a timber fascia board and drains into a black PVCu downpipe. There are no rain water goods to barn 2
- 4.7 The barns are abutted by a single storey lean-to structure, which is built with concrete block walls and roof clad in asbestos/fibre cement sheets. The abutment of the roof to the lean-to, and the rear walls is detailed with a lead flashing
- 4.8 The lean-to covers a large portion of the southerly wall to both barns. The exposed section of wall to the westerly barn has been rendered, with sections of exposed brick and stone work. The exposed section of wall to barn 1 is of solid natural stone and is formed with stone quoins to the external corners. The wall features three window openings of equal proportions all supported with stone heads.

Side (easterly facing) elevation

- 4.9 The gable wall of barn 1 is formed with solid stone masonry with stone quoins at the external corners. The wall features a range of window and door openings formed with stone heads and sills. It was also noted that there had been some alterations made to the wall, with a blocked up window opening at first floor level. The wall of the lean-to structure is constructed in concrete blockwork and features a gated loading bay opening and a blocked up personnel door

Internal

- 4.10 Internally barn 2 is open to the underside of the roof and is presently used for general agricultural storage purposes. The barn is open to the underside of the roof, which is formed with a traditional cut timber structure, with timber rafter and purlins supported off the main external walls. The roof timbers are also supported off two King post trusses built into the external walls.
- 4.11 The walls within the barn are exposed back to the stonework and feature a range of window and door openings which are supported internally by timber lintels, including a large cart opening to the southerly wall leading into the rear lean-to. The southerly wall also features a number of window openings which have been blocked up
- 4.12 The separating wall between the two barns is built in coursed brickwork taken up to the underside of the roof and has a number of openings in which provide access to a loft area within barn 1, above the ground floor bottling area.

- 4.13 The loft area is accessed via a ladder from within barn 2 and is formed with a timber first floor and the roof exposed to the underside of the roof slope. The roof is formed with a traditional cut timber form with timber rafter and purlins supported off traditional timber Queen post trusses. The roof structure has been recently re-roofed as there is a breathable membrane installed over the rafters and a timber wall plate fixed to the structure with galvanised steel restraint straps. The stonework to the main external walls is exposed and the walls feature a range of window openings, all supported by timber lintels.
- 4.14 The ground floor area of the barn is currently used as a milk bottling area related to the existing framing business and is accessed through a cart opening on the front northerly facing elevation. The room is formed with a solid ground floor structure with walls tiled and plastered and painted above. The external walls feature a range of window and door openings.
- 4.15 The lean-to structure to the rear of both barns is sub-divided in two, with a concrete block partition built along the line of the separating wall between the two barns. The areas within this space are linked by a sliding door, with the opening supported by a steel lintel. Through out, the lean-to is formed with a solid concrete ground floor structure, with the external walls exposed back to the coursed block work. The roof of the lean-to, to the rear of barn 2 is formed with steel rafters clad with profiled sheeting, whilst the roof to the rear of barn 1, is formed with timber mono-pitch trusses.
- 4.16 The useable floor space of the lean to extends into to the rear of barn 1, below the first floor loft storage area. The rear external wall of the barn is taken down to ground floor level, which further sub divides this area. This section of wall features a cart open and two blocked up window openings. The main external walls through out feature a range of window and door openings formed with timber lintels.

5.0 Observations

Front (northerly facing) elevation

- 5.1 Externally the roofs over both barns are in a reasonable condition with little evidence of any changes within the roof or ridge lines. The roof coverings above both barns are also in a reasonable condition, with little evidence of any slipped or missing slates or any disintegration to the profiled roof sheeting. The rain water goods to barn 1 appear to be in a reasonable condition with no missing sections of guttering or downpipe. The guttering also appears to have adequate cross falls to the black PVCu downpipe. Whilst the guttering to barn 2 is in place, it is in a tired condition and would need to be replaced as part of the scheme. The downpipe to which the guttering is connected is in a poor condition with a large section missing, which is causing damp staining and splash back onto the adjacent wall surface.

- 5.2 The external wall to barn 1 is in a reasonable condition with little evidence of any significant structural cracking or any signs of outward deflection. There are some localised areas of re-pointing required, where mortar has blown and come out of the joint. The window and door openings also appear to be in a reasonable condition with little evidence of any significant structural cracking around the openings or any signs of dropped lintels & sills. It was noted that there is some minor cracking within the mortar around the openings which would need to be re-pointed as part of the scheme.
- 5.3 The front wall to barn 2 shows signs of structural movement to the westerly end of the wall, with a section of the wall bowing outward. The stonework to the effected area of wall appears to have been re-pointed with a vertical crack running to the eaves also having been re-pointed. It was noted that in some localised areas the mortar between stone blocks had blown and come away from the wall, which requires re-pointing. The large cart opening appears to be in a reasonable condition with little evidence of any significant structural movement; however the arched timber lintel is showing signs of decay and some insect infestation. It would be worthwhile to either treat this lintel or replace it with a new timber or stone lintel.

Side (westerly facing) elevation

- 5.4 The main gable wall is in a reasonable condition with little evidence of any structural cracking or outward deflection. At the time of our inspection, a large amount of stone was stored against the wall, preventing a full inspection of these areas. An indicator of the effect of this though, is shown by the difference in colour of the stone, as shown in photographs 12 and 15 in this reports appendix. A section of the pointing to the wall in this area requires repair to prevent water ingress into the structure.
- 5.5 The verge detail between the roof and wall is in a poor condition with numerous sections missing and damaged which if left would allow water ingress into the structure however it is likely that this will be rectified as part of the scheme.
- 5.6 The render to the separating wall between the two barns is in a poor condition with crazed cracking throughout indicating that the mortar has blown and is coming away from the wall surface. It would be prudent to re-render this section of wall as part of the scheme. The abutment between the wall and roof of barn 2 and the lean-to structure is also in a poor condition and would require upgrading/replacement with an appropriate sized lead flashing strip and cavity tray.
- 5.7 The wall to the lean-to structure is in a reasonable condition with little evidence of any significant structural cracking or signs of outward deflection.

Rear (southerly facing) elevation

- 5.8 The roofs over the barns to the rear elevation are in a reasonable condition with little evidence of any significant changes within the roof or ridge lines. There is also little evidence of any deterioration to the condition of the cladding sheets or evidence of any slipped slates. The rain water goods to barn 1 are in a reasonable condition with no missing sections of guttering or downpipe, to which there appears to be adequate cross falls. The roof to barn 2 is not served by any rainwater goods, which will need to be installed as part of the scheme. The lead flashing at the abutment between the lean-to and the rear wall of the barns is in a poor condition and is likely to allow water to penetrate into the structures, which if the lean-to was to be retained would require replacement.
- 5.9 The exposed sections of external wall to barn 1 appear to be in a reasonable structural condition, with little evidence of any significant structural cracking or any outward deflection. The heads of the three window openings also appear to show little evidence of any significant structural movement.
- 5.10 The render to the exposed section of wall to barn 2 is in a poor condition with cracking through out indicating that the mortar has blown and is coming away from the wall surface. It would be prudent to re-render this section of wall as part of the scheme or to hack off the render and expose the underlying wall structure.
- 5.11 The structure of the lean-to appears to be in a reasonable condition with little evidence of any significant structural cracking or outward deflection within the external walls or any signs of movement within the roof structure.

Side (easterly facing) elevation

- 5.12 The main stone wall is in a reasonable condition with little evidence of any significant structural cracking or any signs of outward deflection. The pointing to the wall in general looks to be in a fair condition, however the wall would benefit from localised re-pointing. The windows and doors are also in a reasonable condition and show little evidence of any significant structural cracking around the openings.
- 5.13 The wall of the lean-to structure also appears to be in a reasonable condition, with little evidence of any cracking or signs of outward deflection.

Internal

Barn 2

- 5.14 The roof structure over the barn is in a reasonable condition; however it would require upgrading in order to satisfy the requirements of the

building regulations for its intended use. There appeared to be little evidence of any missing sections of timber or bowing within the existing timbers. It would be prudent to make a closer inspection of the roof timbers as the works progressed in order to check suitability for re-use and to treat the timbers for any rot and woodworm.

- 5.15 The main walls within barn 1 are in a reasonable condition; however there was some structural movement noted within the northerly facing wall, which corresponds to the movement noted externally. The internal face of the westerly gable wall is damp and in particular to the lower section of wall, which is likely to be as a result of the stone being stored against the wall and preventing the free draining and ventilation of the wall. This stone should be removed to allow the natural draining and ventilation of surface water from the wall. There has been a large amount of structural movement within the brick separating wall between the two barns. Cracking is noted to at the abutment between the brick wall and the front stone wall and in particular around the access into the loft storage area to barn 1. Due to the level of existing movement, this wall need to be demolished and a new party wall structure constructed as part of the works
- 5.16 The existing ground floor structure is in a poor condition and would require replacement with a new insulated concrete structure

Barn 1

- 5.17 The roof to the barn is in a reasonable structural condition and it would appear that the roof has been replaced relatively recently. The existing roof timbers are in place together with a breathable membrane; however the roof would require upgrading in order for it to satisfy the building regulations for its intended use.
- 5.18 The walls within this area are also in a reasonable condition with little evidence of any significant structural movement. There was cracking noted in various locations, however this maybe as a result of the settlement of the roof structure after the re-roofing works. The cracking noted within the brick separating wall is also noticeable from the loft area of barn 1. The wall does not show signs of any outward movement. It would be advisable to re-build sections of the wall as a consequence of the cracking.
- 5.19 At ground floor level within the milk bottling room, the barn appears to be in a reasonable structural condition. The solid floor appears to be level with little evidence of any subsidence or cracking within the slab. There is also little evidence of any cracking within the main walls.

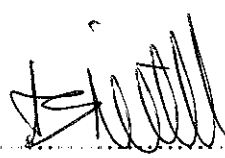
Lean-to

- 5.20 The rear lean-to is in a reasonable condition with little evidence of any structural movement within the concrete ground floor slabs. The main external walls also appear to be in a reasonable condition with little evidence of any significant structural cracking or mis-alignment

6.0 Conclusions

- 6.1 The main structural envelope of the buildings are in sound condition and free from any significant distortion or ill-alignment and does not appear to show signs that the structure is suffering from significant structural movement. The movement detected to the front wall of barn 2 is well within acceptable tolerances. Any future movement will be restrained by the construction of an internal concrete block lining wall to the remaining external walls. As mentioned in the report the brick separating wall in between the barns, will need to be demolished as part of the works to enable increased roof loadings to be safely carried and to reduce the amount of sound transmitted between the two properties.
- 6.2 The remaining items of dis-repair touched upon within the report are relatively minor and will not prevent the barns being converted and will be easily remedied during the implementation of a planning consent, should one be issued.

Submitted by:


A J Mitchell for and on behalf of Gary Hoerty Associates

Date:

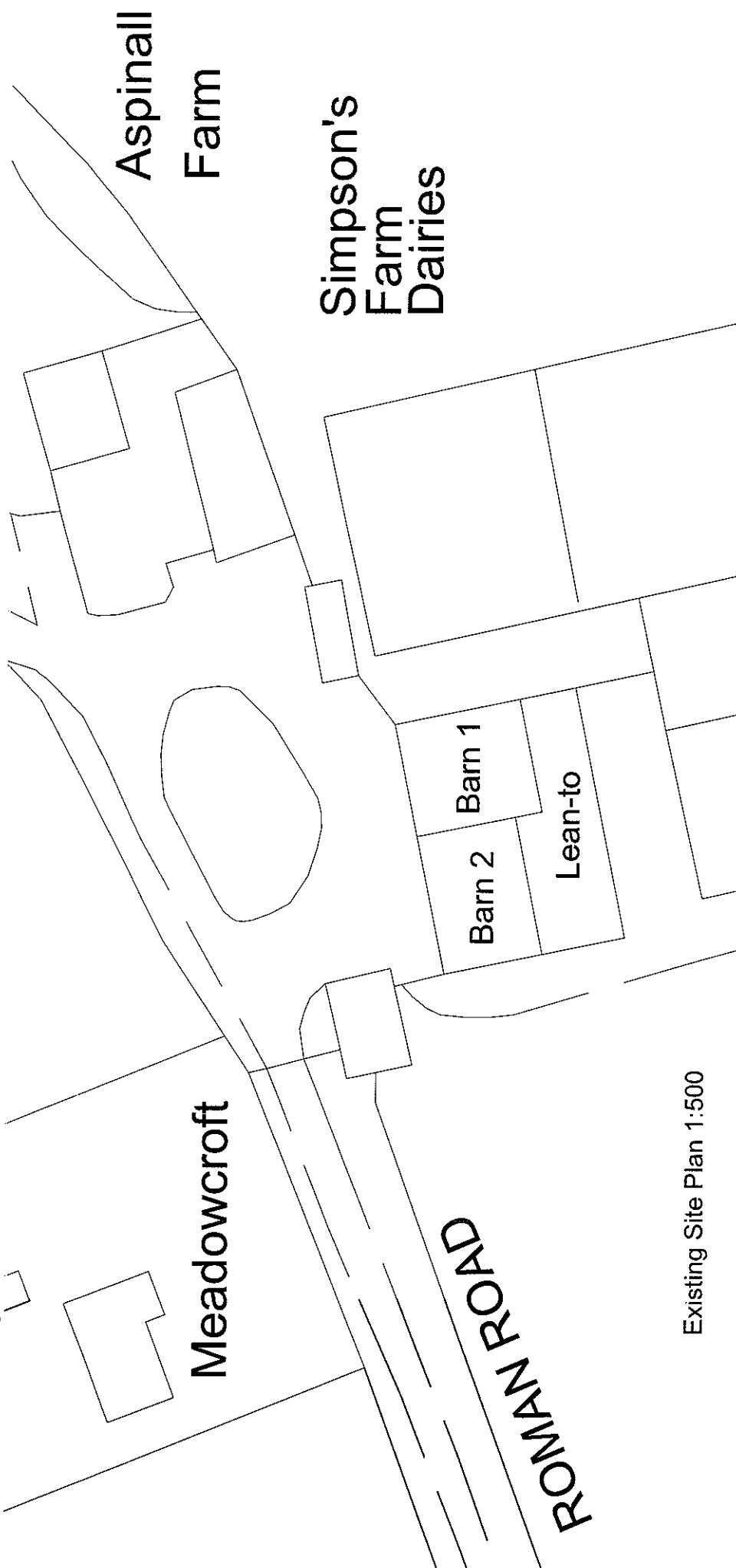
19/09/2011

7.0 Limitations and Scope of Inspection

- 7.1 The appraisal undertaken by the instructed firm involved a detailed visual inspection from ground level of all structural components of the barn in question. No destructive opening up or exposure of the masonry walls was undertaken and no trial holes or excavation of the foundations was carried out. The purpose of the inspection and this report is to assess the overall structural condition of the barn in contemplation of a scheme of conversion in accordance with the design and drawings prepared by Gary Hoerty Associates. The history of the building and general observations of the locality suggests that there are no adverse ground conditions. There is no indication of any foundation damage from existing drains and surface water issues. Please note that our report was restricted to the main structural envelope of the barn, our inspection should not be read as a comment on dampness, timber decay or infestation and it is assumed that all such issues will be carefully addressed by others during the conversion process.

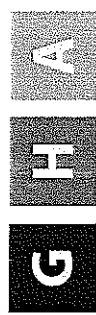
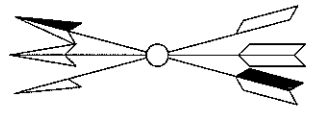
Appendix 1 – Site Plan

Proposed barn conversion at Aspinalls Farm,
Kenyon Lane, Dinckley, BB6 8AN~



Existing Site Plan 1:500

NORTH



GARY HOERLY ASSOCIATES

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Project No: Sim/477/1208/01

Title: Proposed barn conversion at
Aspinalls Farm
Kenyon Lane
Dinckley
BB6 8AN

Notes:

All work is to be carried out to the latest current British standard Codes of Practice and recognised working practices. All work and materials should comply with Health and Safety legislation. All dimensions are in millimetres except where explicitly shown otherwise. The contractor should check and certify all dimensions as work proceeds and notify the architect of any discrepancies. Do not scale off the drawings, if in doubt ask.

Client: Messrs Simson

Drawn: AJM

Date: 24.03.11

Scale: 1:500

Amendments:

Appendix 2 – Photographs

1. Northerly elevation of barns. Barn 1 to left and barn 2 to right



2. Northerly elevation of barn 1, with barn 2 adjoined to right



3. Detail of separating wall between barns from front elevation



4. Areas requiring re-pointing to front wall of barn 1



5. Altered opening to front wall of barn 1



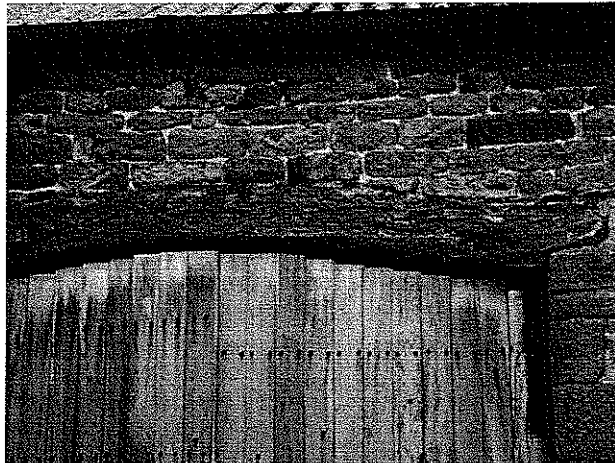
6. Front wall of barn 2



7. Re-pointing required to sections of front wall to barn 2



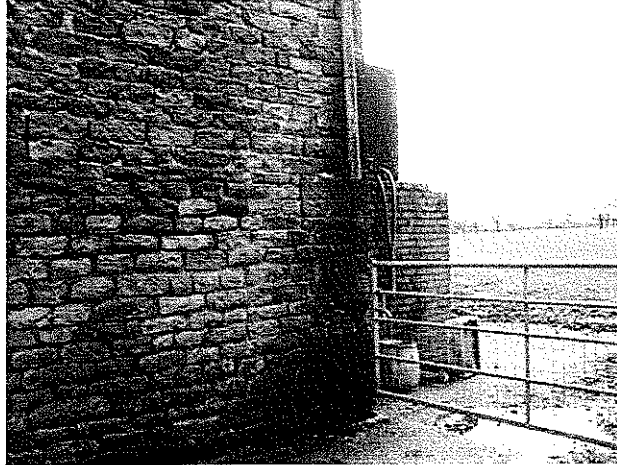
8. Arched timber lintel above cart opening to barn 2



9. Re-pointed section of wall to front wall of barn 2, that has suffered structural movement



10. Missing down pipe section with damp staining to wall surface



11. Front wall of barn 2. Re-pointing noted to crack running to eaves level



12. Westerly gable wall of barn 2 and side wall of lean-to



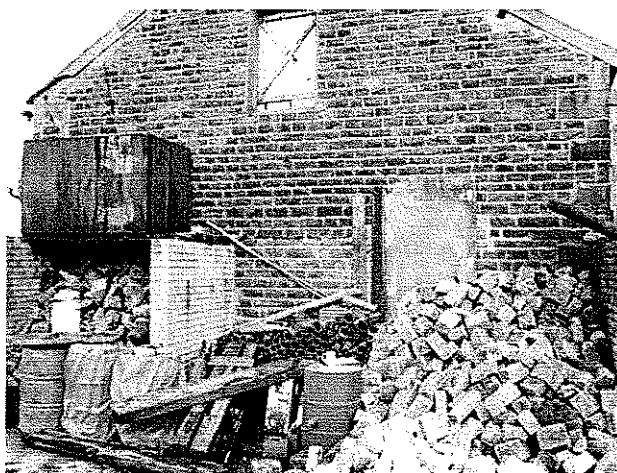
13. Westerly gable wall and rear southerly elevation. Barn 2 to the left & barn 1 to the right



14. Verge detail to barn 2 westerly gable wall



15. Stone stored against wall



16. Defective/blown render to separating wall. Rear wall of barn 1 & lean-to abutment detail



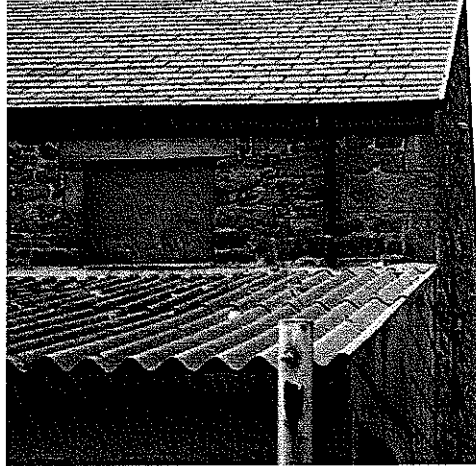
17. Poor flashing detail of barn 2 roof to separating wall. Defective render to wall of barn 1



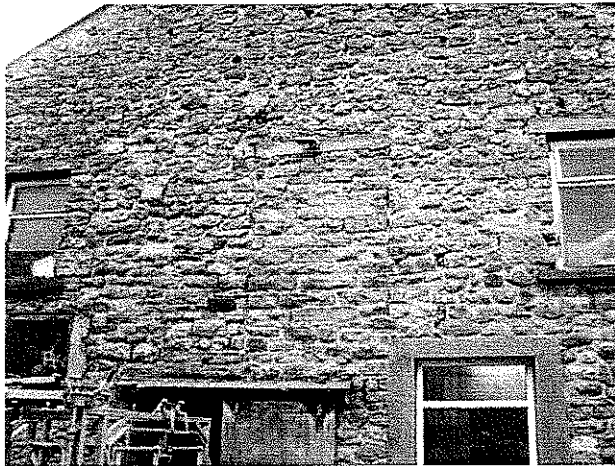
18. Southerly & easterly elevations of barn 1 and lean-to



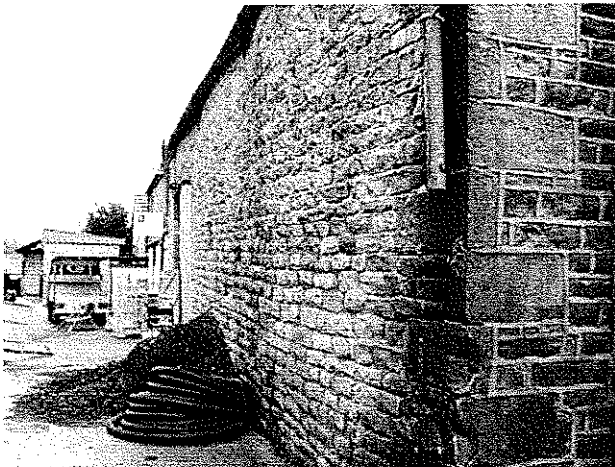
19. Rear elevation of barn 1 & lean-to. Area of wall requiring re-pointing



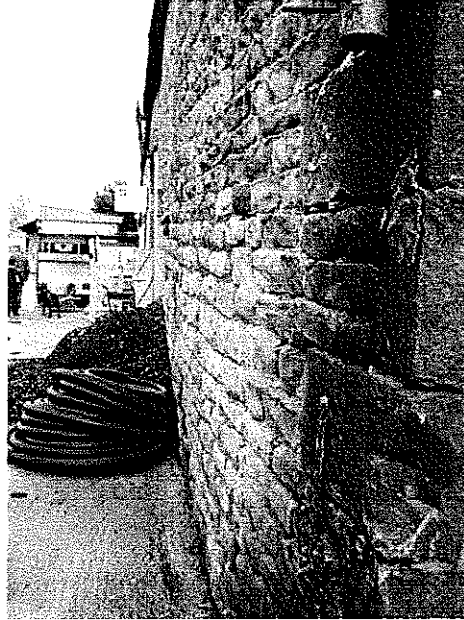
20. Gable of barn 1. Evidence of blocked up door/window at first floor level



21. Mis-alignment of section of front wall to barn 2



22. Mis-alignment of section of front wall to barn 2



23. Interior of barn 2



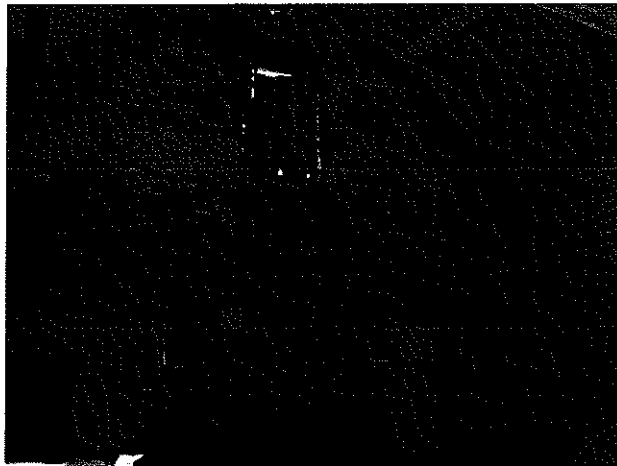
24. Blocked up openings to internal face of rear wall in barn 2



25. Blocked up openings to internal face of rear wall in barn 2



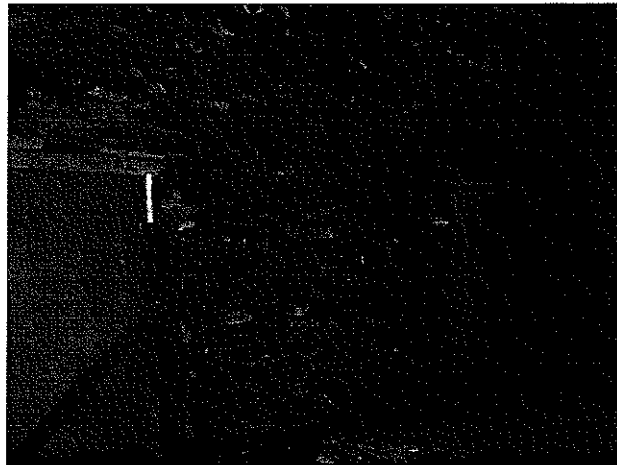
26. Internal face of westerly gable wall of barn 2



27. Internal face of westerly gable wall of barn 2



28. Damp to lower section of gable wall to westerly wall



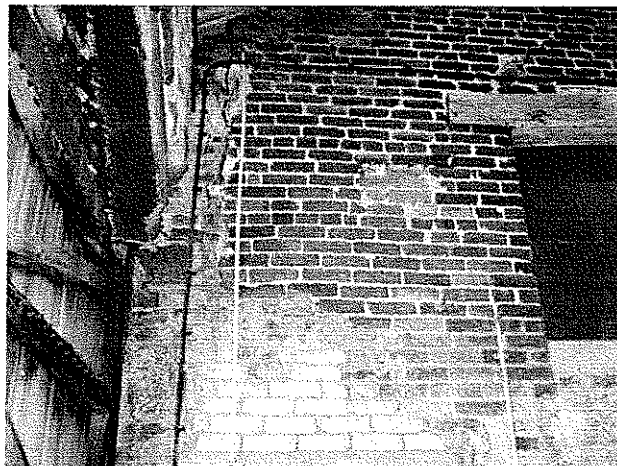
29. Cracking at join between stone and brick work sections of separating wall



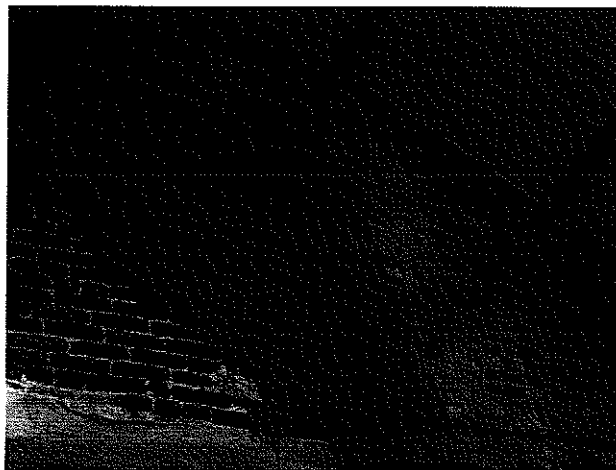
30. Stepped cracking to separating wall adjacent to timber lintel of access into loft store



31. Structural movement and cracking noted within separating wall adjacent to front wall



32. Stepped cracking to separating wall adjacent to timber lintel of access into loft store



33. Cracking and mis-alignment within front wall to barn 2



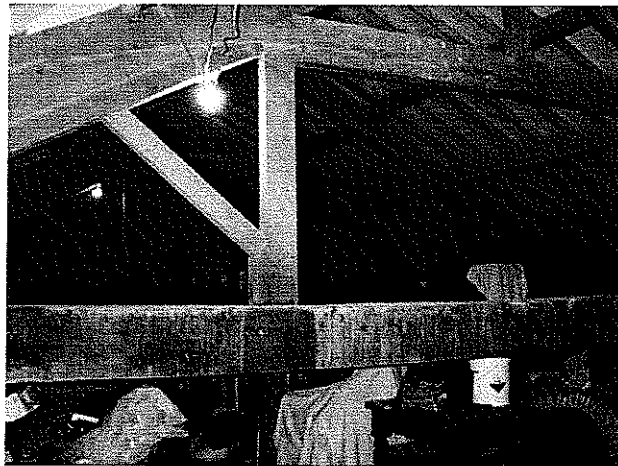
34. Roof trusses sat on stone piers to rear wall within barn 2



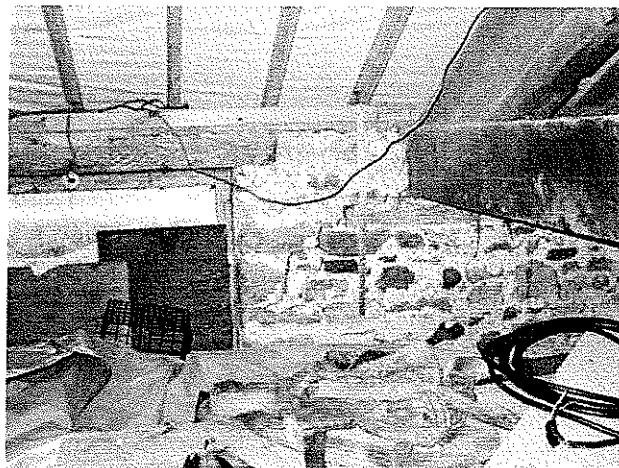
35. Cracking at join between stone and brick work sections of separating wall



36. Loft and roof area within barn 1



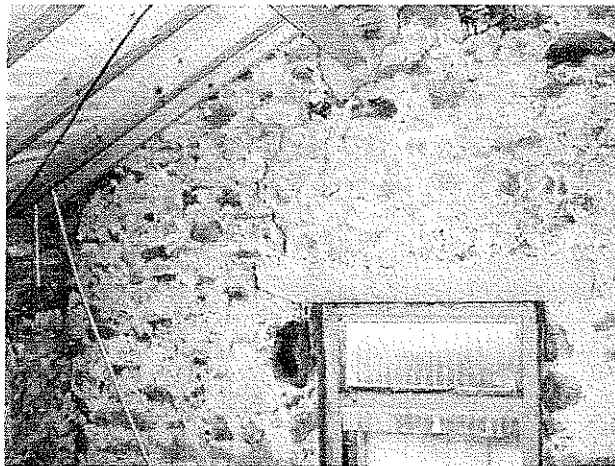
37. Cracking to internal face of external wall to barn 1 noted within loft area



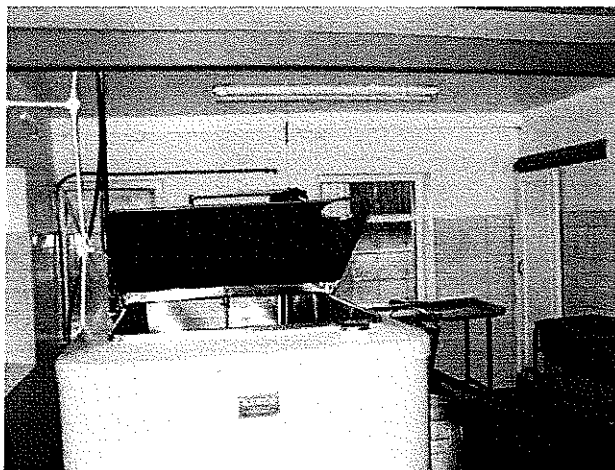
38. Cracking within brick separating wall



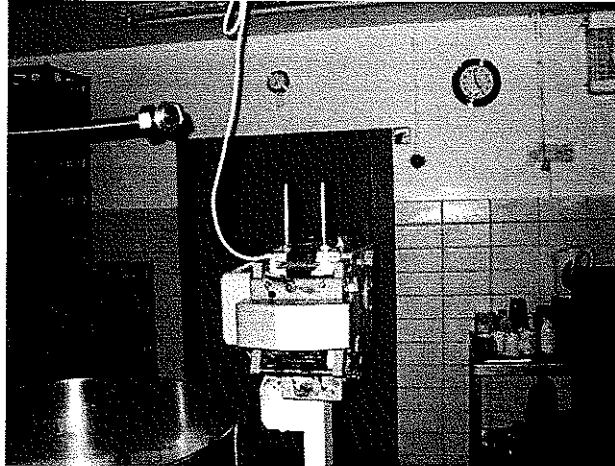
39. Cracking to internal face of external wall to barn 1 noted from within loft area



40. Milk bottling room within barn 1



41. Milk bottling room within barn 1



42. Inside of lean-to to rear of barn 2

