



Gary Hoerty Associates

320110625P

34 Wellgate
Clitheroe
Lancashire
BB7 2DP

Tel: 01200 442301
Fax: 01200 442302
www.ghaonline.co.uk
www.ruralproperty4sale.com
email: info@ghaonline.co.uk

STRUCTURAL APPRAISAL REPORT

AT

Hubbersty Fold Farm, Commons Lane, Balderstone,
Blackburn, BB2 7LL

IN RELATION TO A PROPOSED PLANNING APPLICATION
FOR THE CONVERSION OF A TRADITIONAL FARM
BUILDING, INTO A FIVE BEDROOMED RESIDENTIAL
DWELLING.

Prepared by: Andrew Mitchell for and on behalf of Gary Hoerty Associates
Our Ref: Tho/509/1307/AJM
Date: July 2011
Client: Mr & Mrs A. Thompson



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 barn, prior to the submission of a full planning application for the conversion of this barn into a private residential dwelling, as in accordance with drawing numbers Tho/509/1307/01, 02 & 03 produced by Gary Hoerty Associates.

2.0 Methodology of conversion

- 2.1 The barn is to be converted by removing the existing traditional cut timber roof structure and replacing it with a new insulated roof of cut timber form, which is to be clad in slate externally and will incorporate internal ventilation. All existing non-load bearing internal walls and partitions are to be demolished.
- 2.2 A new concrete block lining wall is to be constructed around the existing external walls that are to carry the loads of the replacement timber first floor and roof structures. The concrete block lining wall is to incorporate a residual clear cavity and partial cavity fill insulation.
- 2.3 Any existing ground floor structures/slabs are to be broken out and removed to allow for the construction of a ground supported concrete floor slab, which will incorporate a damp proof membrane and insulation.
- 2.4 The scheme will incorporate the amendment and renovation of existing window and door openings and will also incorporate the insertion of new openings as well.

3.0 Situation and Description

- 3.1 The barn is situated adjacent to the main farm house at Hubbersty Fold Farm. The barn in question is orientated with the main front and rear elevations facing an easterly and westerly direction respectively, with the southerly gable wall facing the existing dwelling.
- 3.2 The proposed development relates to the conversion of a redundant traditional agricultural barn into a single five bedroom property. The barn is constructed in traditional form and materials with a slate roof, solid stone walls with windows and doors set within stone surrounds.

4.0 Detailed Description

Front (easterly) elevation

- 4.1 The barn is constructed with a dual pitch roof construction of equal pitches to the front and back with the roof on the easterly elevation clad in a mixture of natural grey and blue slates with similar ridge tiles fixed in a mortar bed.
- 4.2 The front wall of the barn is constructed in a natural solid stone masonry detail with random coursing and natural stone quoins to the external corners. It is considered that the barn has been extended as there are stone quoins part way along the main front wall, which would traditionally be located at an external wall corner, indicating that barn has been extended from this point.
- 4.3 The front wall of the barn features a range of door and window openings, all formed within natural stone surrounds, which also include a large cart opening which is fitted with a steel plated sliding door and is formed with stone quoins and a timber lintel across the opening.
- 4.4 Adjacent to the northerly corner of the front elevation is an open sided storage area formed with solid stone walls and a mono-pitch roof structure clad in grey slate. It is clear that the roof has been altered and was previously arranged with a dual pitched roof, as noted by the cement fillet remaining on the wall surface of the main barn. The roof structure remaining is of a traditional cut timber form with timber rafters and purlins. Adjacent to this storage building are the remains of a dilapidated single storey structure, formerly used as a pig sty, with the roof missing and approximately 50% of the external walls missing.

Side gable (northerly) elevation

- 4.5 The gable wall is constructed with natural solid stone masonry with stone quoins to the external corners, which features a range of window and door openings. The wall also features three smaller apertures at first floor level.

Rear (westerly) elevation

- 4.6 The pitched roof of the barn is clad with a mixture of natural blue and grey slate, with similar ridge tiles bedded in mortar. The rear wall of the barn is constructed with natural solid stone masonry with stone quoins at the external corners. Stone quoins sighted part way along the rear wall, as noted on the front elevation, can also be seen to the rear elevation, further evidence that the original barn has been extended. It is considered that the original/principal barn has been further extended over time, with the construction of a mono-pitch/lean-to, with the wall constructed in line with that of the adjoined barn extension.

- 4.7 The rear wall also features a range of window and personnel door openings all formed with a natural stone surrounds.

Side (southerly) elevation

- 4.8 The gable wall is constructed with a solid stone masonry detail with stone quoins to the external corners. The verge detail of the wall and the roof covering is detailed with a cement fillet. The wall features a single window opening at first floor level which is formed within stone surrounds.

Internal

- 4.9 The barn is sub divided into two principal areas, with a solid brick cross wall taken up to the underside of the roof covering. The brick internal wall runs from the front to the rear wall, along the line of the apparent extension. The principal barn is in an open plan arrangement and is open to the underside of the roof and is presently being used for general storage purposes. The adjoining and extended barn is further sub-divided with internal brick partitions and is thought to have been used for milking purposes. There is evidence of a timber first floor structure which has now collapsed, leaving the barn exposed to the underside of the roof covering.
- 4.10 The roofs above both barns are formed with a cut timber structure, comprising timber rafter and purlins, supported off traditional timber trusses. Perpendicular to the rafters are timber cross battens which the roof slates are fixed to. The internal faces, of the external walls, are constructed with a mixture of stone facings and coursed brickwork. The ground floor structures are constructed with a mixture of stone sets and concrete slabs.
- 4.11 It is clear from the internal inspection that the lean-to structure at the rear of the original barn, is an extension as there is a steel lintel across the back wall at the eaves level, carrying a timber roof truss.

5.0 Observations

Front (easterly) elevation

- 5.1 The roof over the barns is in a poor condition, with several significant undulations across the pitch line of the roof. The roof looks to be in a dangerous condition and should be demolished and re-built as part of the scheme. The roof covering is also in a poor condition with a number of slates missing and the remnants of a timber gutter are visible which is in a poor condition. The condition of the gutter has led to damp staining on the external wall surface and increased the potential for penetrating damp. There are also some localised areas of vegetation growth at gutter level. This along with the gutter will need to be removed as part of the conversion scheme, and a new gutter system introduced.

- 5.2 The main external wall to the principal elevation appears to be in a reasonable structural condition with little evidence of any significant structural cracking or signs of ill alignment. The pointing to the external walls also appears to be in a reasonable condition, however there are localised areas that require touching up, in particular to the sides of each window and door. There is also little evidence of any significant structural movement around the window and doors, as the stone lintels across each of the openings is reasonably level, with little evidence of any cracking around the openings. There is also little evidence of any significant movement around the large cart opening; however it was noted that there is evidence of insect infestation within the timber lintels, as shown by the telltale flight holes. As part of the conversion scheme it would be prudent to treat the timber with an appropriate chemical treatment should the lintels be retained.
- 5.3 The open sided storage building that abuts the barn on this elevation is in a reasonable condition however it has been subject to some alterations and structural movement. 50% of the original roof has been removed with the remaining section intact and open to the underside of the roof. Whilst the remaining section of is in a fair condition structurally, the proposed scheme indicates the demolition of this structure as a new linked garage construction is proposed.
- 5.4 The external walls to this structure are of solid stone masonry. It was noted that in a number of locations the external walls to this structure have suffered some structural movement. There is a vertical crack and gap which corresponds on both internal and external faces of the wall, at the outside corner to the structure. The rear wall of the structure also shows some signs of ill alignment and diagonal cracking at the base of the wall. With the level of structural damage shown in the remaining walls it would be prudent to demolish the structure as part of the scheme for conversion.
- 5.5 The smaller out-building used formerly as a pig sty, is in a poor condition with nor roof and approximately 50% of the external walls missing. The remaining walls of this structure show signs of a large amount of structural movement. With the level of structural damage shown in the remaining walls it would be prudent to demolish the structure as part of the scheme for conversion.

Side gable (northerly) elevation

- 5.6 Externally the stone gable wall shows little evidence of any ill-alignment and there is little evidence of any significant structural cracking. It was noted however that the section of wall close to the corner adjacent the rear wall of the building, requires re-pointing which will give added structural stability and help repel water. There is also little evidence of any significant structural movement around the windows and doors as the heads of the openings look reasonably level.

Rear (westerly) elevation

- 5.7 The roof to the rear portion of the barn is in a poor and dangerous condition. There are a number of undulations within the pitch line of the roof and a large section where the roof has collapsed. As mentioned it would be necessary to remove the existing roof and replace it as part of the scheme. The rear portion of roof is served with a black PVCu gutter, which is in a poor condition with a number of undulations within the line of the gutter. The gutter is also not connected to a downpipe. This has led to some damp staining on the external surface which will have increased the likelihood of penetrating damp on the internal surfaces of the walls. As part of the scheme it would be necessary to remove the existing defective gutters and replace it with new.
- 5.8 The main external wall of the barn shows little evidence of any ill alignment. The pointing to the rear wall is in a poor condition and will require raking out and re-pointing as part of the scheme, which will help the structure repel water and give added structural stability. There is evidence of cracking within the external walls, however it is considered that any ongoing movement will be restrained by the construction of an internal concrete block lining wall. There is also little evidence of any significant structural movement around the windows and doors as the heads of the openings look reasonably level. It was noted that the stone jamb to a window at first floor level is damaged as the result of a metal hinge being inserted into the stonework. The hinge has also started to rust further damaging the stone.

Side gable (southerly) elevation

- 5.9 Whilst there is little evidence of any ill alignment within the wall, there are a number of cracks running from the ground level, to the verge of the wall and roof and continue around the sides of the window opening. The wall would also benefit from re-pointing to help the structure repel water and give added structural stability. There is little evidence of any ill alignment within the wall. The stone surrounds to the window opening have also suffered from movement, as the surrounds are out of square. The stone sill to the window has a crack within it to the left hand side. As part of the scheme it would be expected that the surrounds would be re-set to form a square opening and the sill to be replaced.

Internal

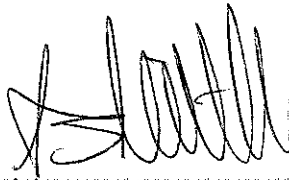
- 5.10 As noted externally the roofs over the barns are in an extremely poor condition and are considered to be in a dangerous condition. The roof timbers over the barn currently used for general storage are in a poor condition with many showing signs of bowing. A number of the timbers have suffered through an insect infestation as noted by tell tale flight holes of the insect which has reduced the structural size of a number of the timbers. There will also be a large loading placed onto the roof timbers from the heavy stone slate roof covering, which will further add to the structural problems. It is evident that

there have been remedial works undertaken as a steel purlin has been inserted. The roof over the extended barn is in a worse condition and has a large section of the roof collapsed. Given the current condition of the roofs, it would be necessary to remove the remaining sections of roof and construct a new cut timber roof, incorporating ventilation and insulation. The current traditional roof trusses appear to be in a reasonable condition and could be accommodated as part of the scheme. It would be necessary however to treat the timbers.

- 5.11 The internal face of the external walls show little evidence of any ill alignment, however there are a number of locations where the walls are cracked, in particular to the corner of the rear westerly and southerly gable wall, and adjacent to the large windows on the rear wall of the main barn. The internal face of the external walls would benefit from being re-pointed and any on going structural movement would be restrained by the construction of an internal leaf of lining blockwork, with the existing stone walls tied to the lining blockwork. The internal brick wall is in a poor condition and is cracked in a number of locations, in particular adjacent to the front easterly wall of the barn. It would be prudent to demolish the brick wall and build a replacement wall of concrete blockwork. The internal face the external walls is also damp in a number of locations in particular at the eaves where defective gutter details allow rain water to penetrate into the structure. As part of the scheme it will be necessary to introduce a new gutter system which will alleviate this problem.
- 5.12 The existing ground floor structures are in a poor condition and will need to be taken up and replaced with the construction of a new insulated concrete slab, incorporating a damp proof membrane.
- 5.14 Internally the window and door openings are supported by timber lintels which will need to be replaced with appropriately sized reinforced concrete lintels as part of the scheme.

6.0 Conclusions

- 6.1 The main walls are in a reasonable condition however it is clear that the walls have in a number of locations suffered from structural movement. It is considered however that with some simple repairs, that would ordinarily be undertaken in a scheme of this nature, any on-going structural movement will be reduced without the need to demolish the external walls.
- 6.2 The existing roof structures are in a dangerous condition and will need to be demolished and replaced.
- 6.3 The existing ground floor structures are in a poor condition and would need to be upgraded in order to comply with the current building regulations. It would therefore be appropriate to replace the existing floors with new insulated concrete floor slabs, incorporating a damp proof membrane.



Submitted by:
A J Mitchell for and on behalf of Gary Hoerty Associates

Date: 29/07/2011

7.0 Limitations and Scope of Inspection

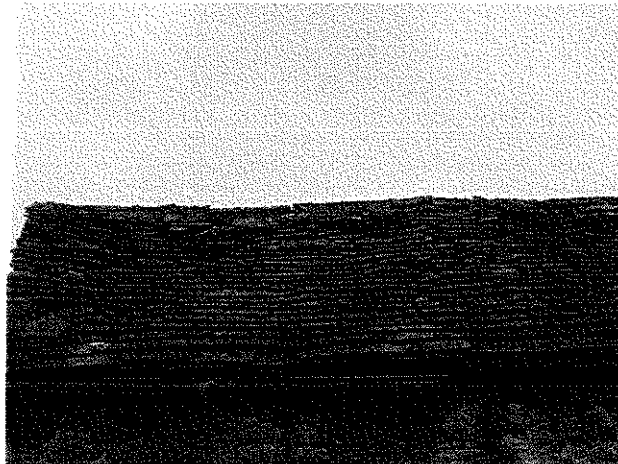
- 7.1 The appraisal undertaken by the instructed firm involved a detailed visual inspection from ground level of all structural components of the barn in question. No destructive opening up or exposure of the masonry walls was undertaken and no trial holes or excavation of the foundations was carried 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 – Photographs

1. Easterly and principal elevation



2. Poor condition of roof



3. Poor condition of roof



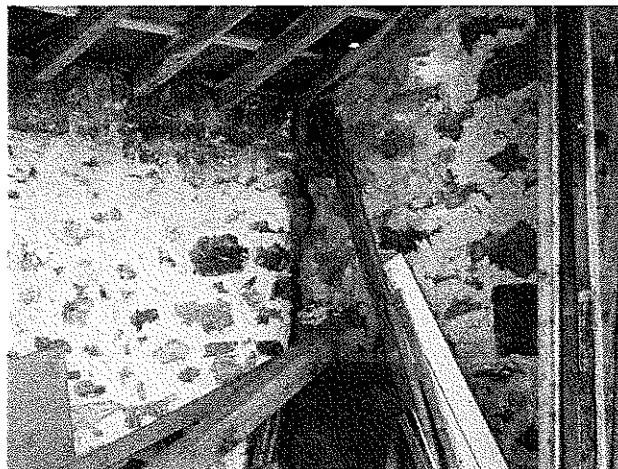
4. Existing openings on easterly face. Localised re-pointing required around openings



5. Open sided storage building and adjoined dilapidated structure



6. Structural crack at outside corner of open sided store building



7. Southerly elevation of main barn. Adjoining brick building to be demolished



8. Dilapidated building to easterly face of main barn



9. Cracking noted on rear northerly facing wall of open sided store



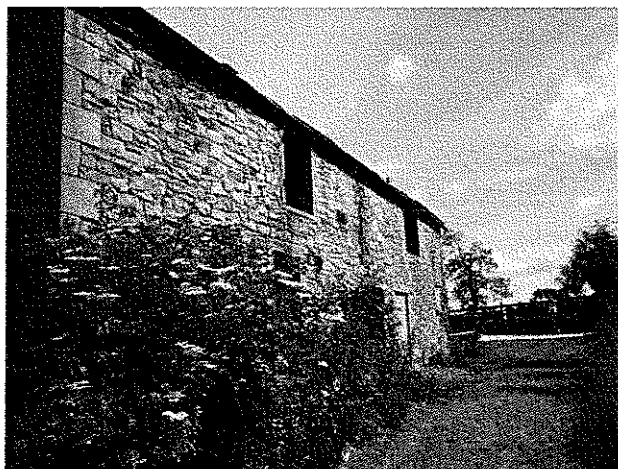
10. Northerly gable wall



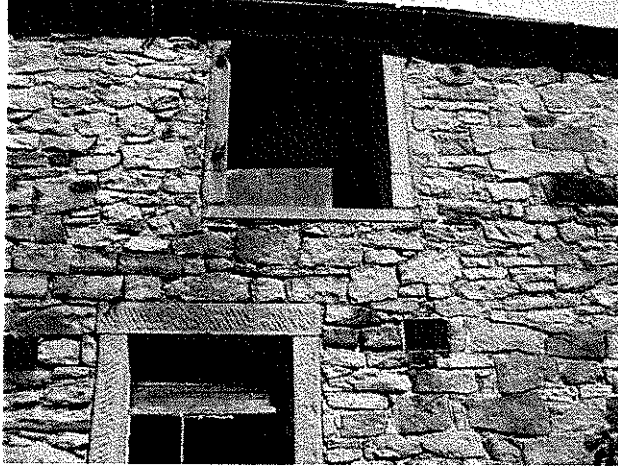
11. Section of northerly gable wall requiring re-pointing



12. Westerly elevation of main barn



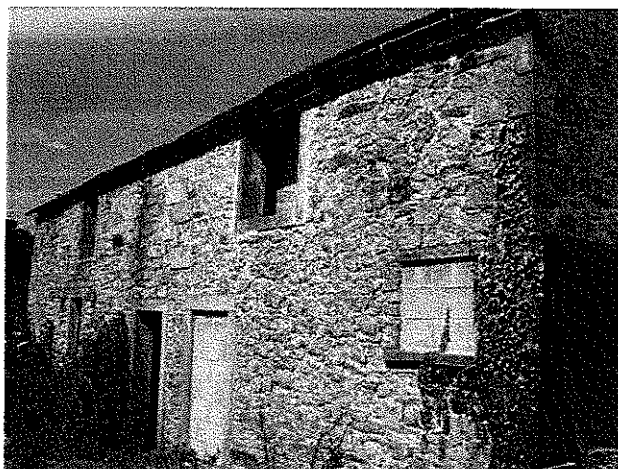
13. Window openings on westerly face. Localised areas of wall requiring re-pointing



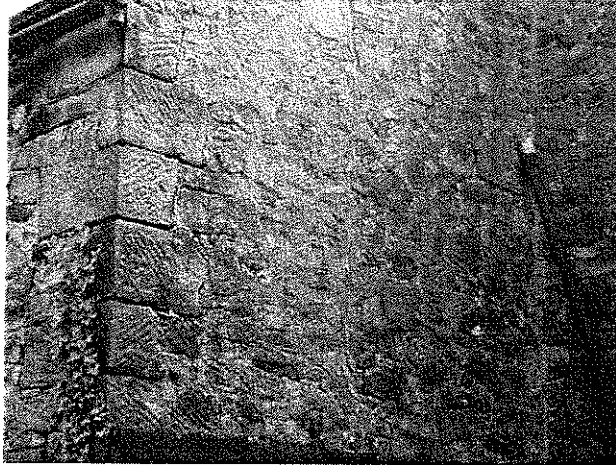
14. Stone quoins to westerly elevation indicating extension to original barn



15. Westerly elevation from southerly side



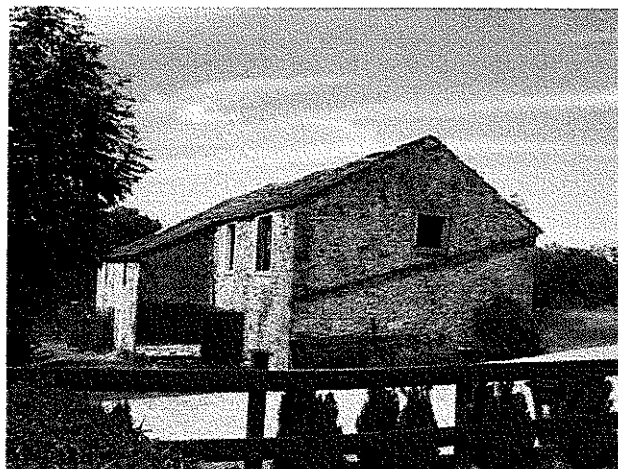
16. Cracking within mortar to rear wall



17. Cracking in rear wall adjacent to corner of southerly gable wall



18. Barn from southerly position



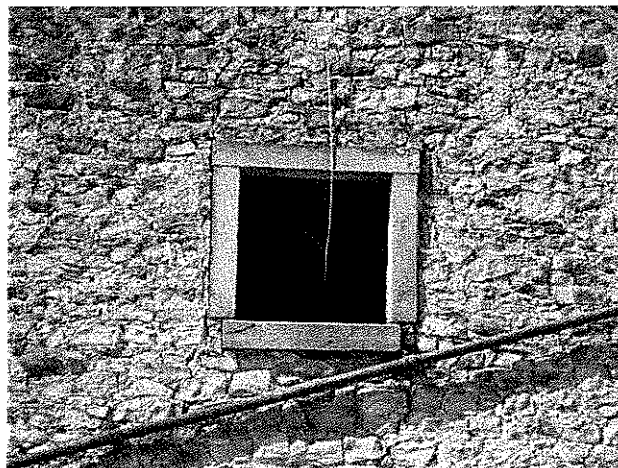
19. Southerly gable wall



20. Verge detail on southerly gable wall, requiring repair as part of scheme



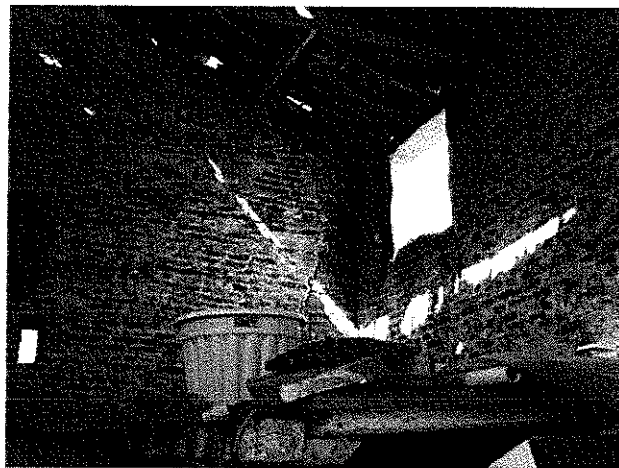
21. Window on southerly gable showing signs of structural movement. Cracking around opening



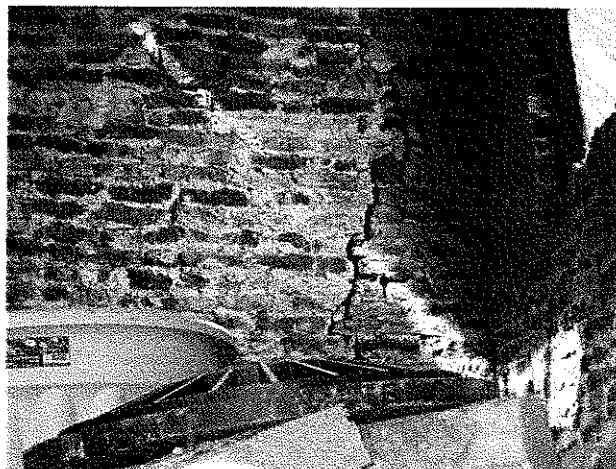
22. Cracked window sill to window on southerly gable



23. Cracking to internal brick wall



24. Cracking to internal brick wall



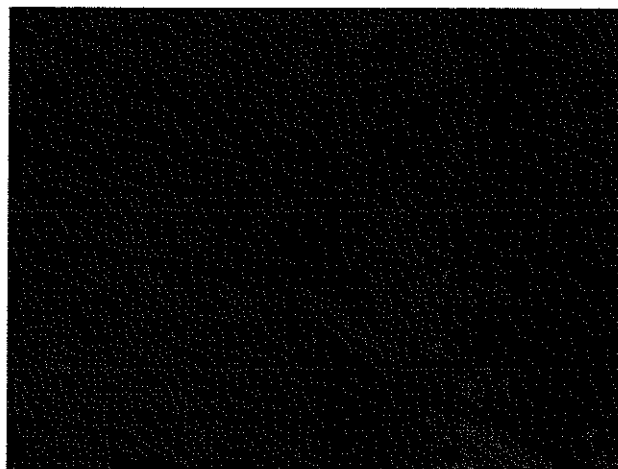
25. Internal brick wall



26. Cracking to internal face of westerly rear wall within main barn



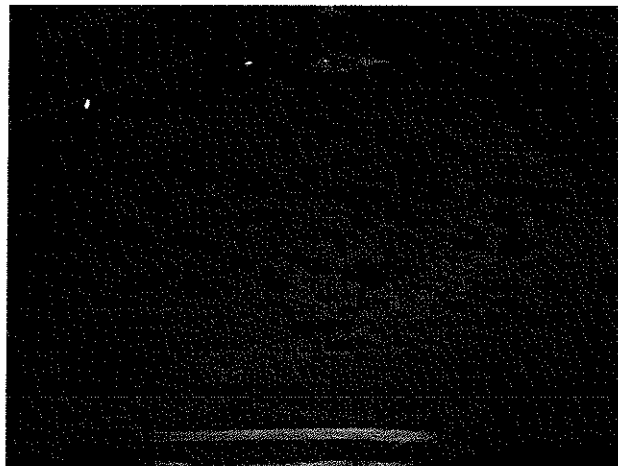
27. Cracking at internal face of outside corner



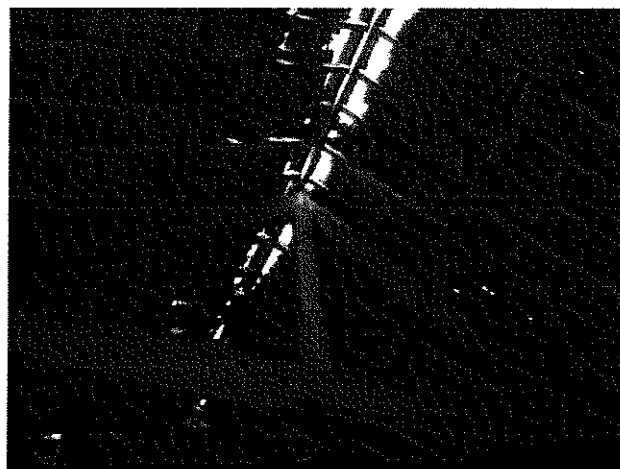
28. Further cracking to internal face of external walls within main barn



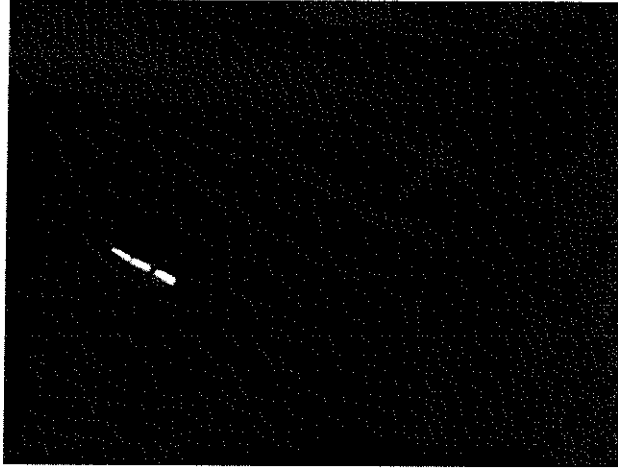
29. Cracking to internal diving brick wall, above opening



30. Poor condition of roof structure, with steel purlin showing



31. Decay within roof timbers



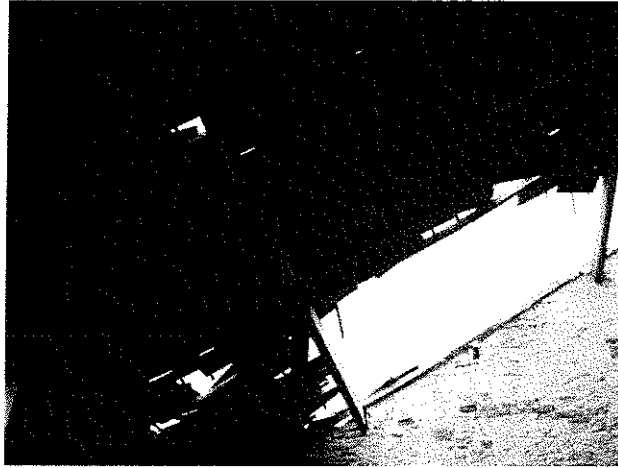
32. Collapsed section of roof



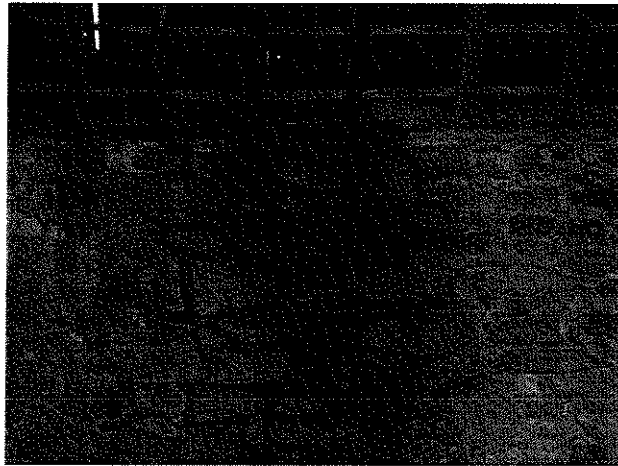
33. Timber lintel to opening on external wall



34. Collapsed section of roof & steel support to timber roof truss



35. Damp staining to internal wall face



36. Evidence of former structure noted by the outline of pitched roof



37. Cracked and damaged stone jamb to window on rear westerly wall

