HBL ASSOCIATES LTD.

STRUCTURAL REPORT

For

RIDGEFIELDS FARM

CELLARHEAD

ST9 0DG

On Behalf Of

Mrs S Shirley
Shirley's Transport Ltd
c/o Silver Springs
Leek Road
Wetley Rocks
Stoke on Trent
ST0 0AP

Revision Schedule

Rev	Date	Details	Prepared By	Reviewed By	Approved By
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1. Introduction.

1.1. We were requested by the owners, Mr & Mrs Shirley to prepare a structural assessment report on the existing farm buildings at Ridgefields Farm Cellarhead.

1.2. We understand that this was in preparation for a planning application for the conversion of the farm buildings into residential accommodation.

1.3. It should be noted that the inspection limited itself to the farm buildings and did not include the farmhouse itself which was outside of the planning application.

1.4. The site was inspected in the presence of Mrs Shirley who provided access to the outbuildings and was conducted in dry and bright weather conditions.

Figure 1-1

Figure 1-2

2. External Inspections

2.1. The extent of the existing buildings examined are shown coloured green in the plan below and take the form of a two storey section of barn with an internal staircase flanked on either side by a single storey outrigger to the rear and a smaller single-storey store and garage building to the front.

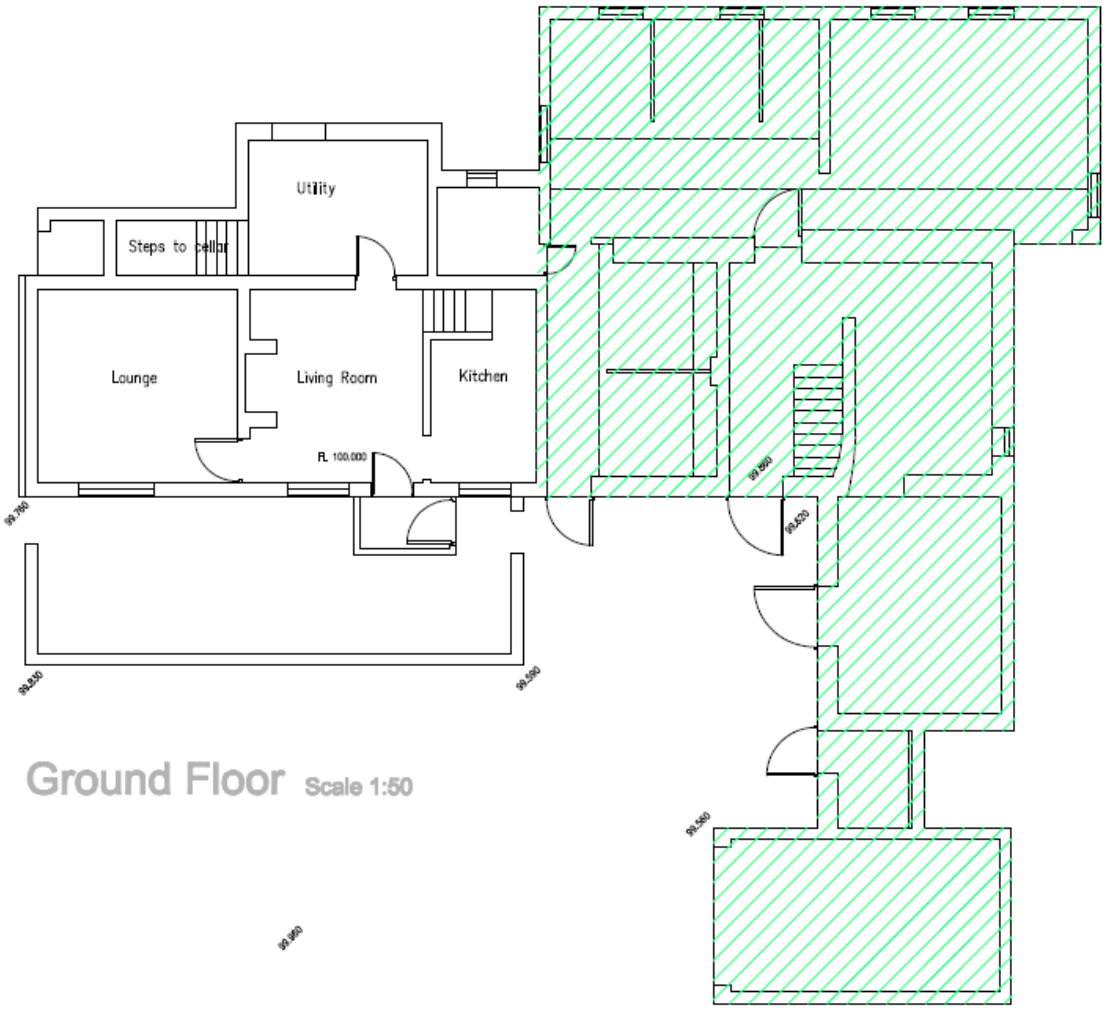

Figure 2-1

2.2. The buildings followed a common construction pattern of coursed stonework to all of the walls other than the garage building to the extreme front edge of the proposal which was part stone and part brickwork. All of the tiles on the single storey and two storey sections were recorded as Staffordshire Blue clay tiles supported on traditional rafters and purlin constructions in each case.

2.3. The floors were primarily concrete in the areas which were formerly livestock pens with blue brick floors elsewhere. No discernible floor slab was visible within the garage although this was somewhat overgrown and filled with debris at the time of inspection.

Figure 2-2

2.4. No trial holes were taken out to ascertain the nature and depth of the foundations, but it is reasonable to expect that should any foundations be present at all they would be fairly rudimentary in nature and certainly would not extend more than 300mm below the surface of the external ground. The soils in this area are known to be relatively firm and as such we would not foresee and particular issues with the revised loadings to the foundations.

2.5. Within the coursed stone walls the door and window openings were framed with cut stones lintels with a timber backing, with some minor movement being present in the form of repaired cracks over the primary entrance immediately adjacent to the farmhouse.

Figure 2-3

2.6. Some minor hairline cracking was present in the majority of the stone walls which followed the line of the mortar bed and perpend joints. The majority of the external stone walls appeared to be out of plumb visually, and this was confirmed by closer inspection using a 1.2m long spirit level. In the worst case, the stone work to the rear wall of the principal rear outrigger was noticeably leaning by approximately 40mm over this 1.2m length.

3. Internal Inspection

3.1. The existing ground floor was noted as being part concrete and part blue brick with the blue brick sections of floor in particular being uneven beneath your feet. Obviously neither of these floor slabs would have any insulating properties and will require renewal with a new insulating slab should the buildings be refurbished for residential use. The concrete slabs within the stock holding areas also incorporated reinforced concrete pen division partitions which will also require removal. These would be reinforced and tied into the floor slab and will require some considerable work to break out:

Figure 3-1

Figure 3-2

Figure 3-1

Figure 3-2

3.2. A number of the internal walls (in effect the vast majority of the internal walls) would not be tied into the external stonework and could be seen to be visibly pulling away at the interface between the internal and external walls.

Figure 3-3

Figure 3-4

Figure 3-7

3.3. The first floor was accessed via a single timber staircase adjacent to the main entrance and was seen to be comprised of conventional timber tongue and groove boards supported on irregularly cut floor joists. There was signage indicating that the first floor was unsuitable for use and even in the aid of a ladder used as a crawling board, the floor was showing some degree of deflection under a single persons weight. As such a full survey of the upper floor could not be carried out for safety reasons.

Figure 3-8

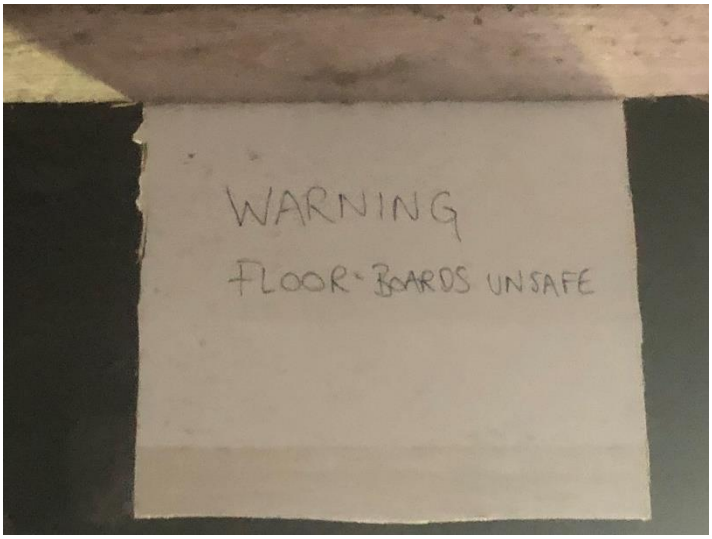

Figure 3-5

3.4. The floor was examined from below however and signs of rot and work infestation were present in the majority of the joists and boards which would suggest that the entire first floor structure would need to be stripped out and burned prior to replacement.

3.5. As a result of the first floors inadequacies, the underside of the roof was inspected from ground floor level where possible and from the head of the first floor access stairs.

Figure 3-6

3.6. It was noted that whilst the roof purlins appeared to be performing their function adequately, some degree of vertical deflection was present in the primary purlins and also in the rafters, this was visible both internally and externally.

3.7. Given the above and the lack of formal roofing felting it is envisaged that the roof would also require renewal if the buildings were to be adapted for residential use.

Figure 3-11

Figure 3-12

4. Conclusions and Recommendations.

4.1. The stone buildings that form the agricultural outbuildings to the original farmhouse were inspected throughout and were felt to be in a poor condition. The internal walls were not tied into the external stone walls which meant that both external walls could develop bulges and other out of alignment issues due to a lack or restraint internally, but also that the internal walls were completely freestanding and likewise lacked restraint at the end supports.

4.2. The first floor timbers were in very poor condition structurally and we would suggest that the first floor will require stripping out and renewing completely.

4.3. The roof structure, whilst in a better condition than the first floor, showed signs of deflection and beetle infestation in the purlin ends where visible, again we would strongly recommend that the roof structure is stripped out and reconstructed.

4.4. Given the amount of internal stripping out that will be required i.e. the roof, first floor and the majority of the internal walls we feel that only the external walls to the primary outbuildings may be realistically retained and some of these external walls will require some work as the rear wall and side wall to the main building in particular showed signs of outward movement and bulges in the region of 40mm over a 1.2m straight edge.

4.5. We would be cautiously optimistic that enough of the stonework could be retained so as to satisfy the planners, i.e. so as to justify the planning application on the grounds that wholesale demolition would not be required, however given the poor quality of the stonework we would recommend that each of the walls is reviewed on an individual basis once the roof and first floor is taken away. The ground floor will obviously require removal which potentially could destabilise the base of those walls that were planned to be retained.

4.6. In addition to the above, a number of points need to be considered where the new construction needs to be brought up to the standards of the current building regulations and these would include the following:

4..6.1. Replacement of the existing windows in UPVC or hardwood double glazing units.

4..6.2. Replacement of the ground floor slab with a suitable threshold and insulation either beneath or below the slab to bring the floor into line with building regulations.

4..6.3. Stiffening of the existing stone/timber lintels above the door and window openings on the external walls. We would suggest that at least the lintels to the inner parts of the walls are removed and replaced in either pre-cast concrete or in a steel box section.

4..6.4. Renewal and removal of the existing first floor in the central section of the building. This is fundamental to the redevelopment of these buildings and we would suggest that this is carried out using posi-joists to allow free passage of any planned service runs and to dispense of the need for internal load bearing walls.

4..6.5. Removal of existing roof and replacement in new timber structure, again reinforced to bring it in line with current building regulations.

4..6.6. We have not been provided with any information regarding drainage, and whilst it is assumed that foul water drainage can be achieved by connecting into the system that serves the existing farmhouse, we would strongly suspect that surface water drainage discharges onto the adjacent ground. As we have no information with regard to the nature of the foundations we need to note a potential issue here with regard to discharge of surface water drainage immediately adjacent to foundations, and would suggest that further investigation is carried out to establish whether a surface water system is in place. If not it would be worth considering prior to any building regulation application the design of a formal soakaway system for the surface water if mains connections are not available.

5. Summary

5.1. To conclude we are of the opinion that the building under consideration is in a poor condition structurally and that whilst wholesale demolition should not be required, the removal of the roof, first floor, ground floor and internal walls will leave the remaining external walls in an unstable condition until such a time that rebuilding work commences. Even then, there are sections of these external walls that will inevitably require partial removal and reconstruction in order to bring them into line and to tie them into the new internal structure.

6. Standard Limitations

6.1. During our inspection of the premises as presently existing, which will normally be carried out in a single visit, we shall check all visible exposed and accessible elements of construction in order to identify defects and shortcomings which are likely to adversely affect the use of the property or give rise to expenditure in the future.

6.2. We shall consider the condition and durability of the building fabric in relation to the type and age of the property, the need for repairs or special maintenance and, where appropriate, comment on the suitability of the structure for its proposed use.

6.3. We shall, where possible, lift loose laid floor coverings and inspect cellars and roof voids where appropriate, but we shall not empty the contents of any fitted cupboards, move heavy furniture or lift carpets or floorboards and our report will specifically exclude all covered, and unexposed or inaccessible areas and buried elements of construction such as foundations and built-in steels and timbers.

6.4. Apart from any balconies and roofs to which external access may be available, our external inspection will be carried out from the ground level. Our report will include a summary of our findings in respect of any outhouses, boundary walls etc. which will be inspected briefly during our visit.

6.5. In accordance with our professional indemnity insurance cover we have to state that "we have not inspected woodwork or other parts of the structure which are covered unexposed or inaccessible and we are therefore, unable to report any such part of the property is free from defect".

6.6. We will not arrange for exposure works to be carried out to the superstructure or below ground, or carry out tests for high alumina cement concrete, calcium chloride, asbestos or the use of woodwool slabs as permanent shuttering, but where appropriate, will seek further instructions for these to be carried out for an additional charge.

6.7. With regard to service installations, incoming mains, waste and drains, we shall report on any matters which come to light during our inspection as requiring further investigation by specialists, but we shall not arrange for tests to be carried out unless specifically instructed beforehand.

6.8. Although where appropriate, we will be happy to examine any lease or title documents, planning or any consents or fire certificates which are made available prior to our inspection, we shall assume in such cases that solicitors will be advising in detail upon these matters and that they will also check on the responsibility for the maintenance of all boundaries and rights of way and the existence of any easements or necessary rights of light, drainage etc.

6.9. We require to be informed, prior to the undertaking of any excavation or boring work, of the positions of any underground services or plant beneath the site.

6.10. Whilst reasonable care will be taken during the execution of field work we cannot accept liability, either direct or consequential, for the damage to any service not clearly identified to us.