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STRUCTURAL REPORT

SCHOOL HOUSE FARM, DESFORD ROAD, NEWBOLD VERDON, LEICESTER, LE9 9LG.

DEVELOPMENT SERVICES
21 JUL 2010
RECEIVED

MKC/SKC/2010/2017
8TH JULY 2010

M. K. CHADHA *BSc, MICE, MIStructE, MCIOB*

Our ref:-MKC/SKC/2010/2017 8th July 2010

SCHOOL HOUSE FRAM, DESFORD ROAD,
NEWBOLD VERDON, LEICESTER, LE9 9LG.

1.0 INTRODUCTION & BRIEF

This report was made at the request of Miss. L. Orgill, the owner of the above property in respect to check the existing Farm Buildings for possible conversion to residential use.

School House Farm, Desford Road, Newbold Verdon, Leicester, is situated approximately 12 miles West of the Leicester City Centre. It is a traditional single storey brick dwelling with a tiled roof and built around the turn of the twentieth century.

The brief for the report was to inspect for any major structural defects and to determine the structural remedial works necessary for the conversion into residential use.

2.0 SURVEY

The survey was carried out on the 2nd July 2010 and consisted of a visual inspection of the defects noted in the brief.

The references to the left and right are given in the report as being viewed from the front of the property.

We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible, and we therefore are unable to report that any such part of the property is free from defect.

3.0 FINDINGS

The main defects may be listed in the summary below:
(Refer to Photographs attached in the Appendix)

1) There is extensive cracking to the dividing walls particularly over the openings to the crosswalls.

2) The timber wall plates to the main roofs are not secured to the external walls at the eaves level.

3) In general, the gable end walls are not restrained at the roof rafters levels.

4) In places, there are roof rafters, the wall plates and part of the purlins which have rotted and appear to suffer from rot

5) Part of the roof coverings are asbestos sheets.

6) In places, the roof tiles are missing and are distorted.

7) There is presence of tall trees to the rear, side and the front of the property.

8) There is a king post truss to part of the cow shed to the rear but it only supported the purlins.

9) Part of the roof purlins had been propped by timber props onto the beam at ceiling level.

10) There are concrete plinths at floor level built of existing floor.

4.0 DISCUSSION

As it can be seen from the findings in section 3, the property has suffered defects mainly to the roof structure and part of the dividing walls. These defects are due to lack of maintenance over a considerable period of time. There is extensive cracking to the dividing walls which support the roof and brickwork over the openings which are supported by timber lintols. We understand that these walls are to be bricked up to form bedrooms etc.

There are some areas of the roof timbers (wallplate, roof rafters and the purlins) which have rotted due to leakage from the roof. These timbers would need to be replaced to take the required loadings to the Current Standards.

There is presence of tall trees particularly to the rear and tree to the side and the front which are in close vicinity of the external walls. We would advise that these trees be trimmed down or removed as they may cause damage to the existing foundations. As a general rule of thumb, the tree root spread is almost twice the height of the tree.

The remaining defects listed above appear to be due to local deficiencies in the structure and do not affect the overall stability of the building. In most cases, it will be necessary to break out and replace the defective element, but in situ repairs may be possible in some instances. The recommended remedial works for each specific defect are given in the recommendations below.

5.0 CONCLUSIONS

a) The present damage to this property is Moderate (Category 3-4 on the Building Research Establishment Classification of the building damage.)

b) The defects have been due to the existing use and lack of maintenance over a period of time.

c) There is a risk that the building could become unstable in medium to long term if no action is taken.

d) The remedial works listed in the recommendations should ensure a long-term life without major structural problems, providing the property is kept in a reasonable state of repair.

6.0 RECOMMENDATIONS

The following recommendations are based on the limited survey work described in the introduction. It should be remembered that further structural defects could be uncovered during improvement works, in which case additional remedial works may be necessary.

6.1.1 The gable walls should be strapped to the ceiling joists and roof rafters with 30mm x 5mm galvanised mild steel straps extending over a minimum of 3 joists screwed to each joists. These straps should be turned up at least 150mm and be fixed to the wall with at least two secure fixings per strap. These straps should be placed at maximum 1200mm centres and noggins should be installed in between the joists at the straps positions.

6.1.2 Provide 30mm x 5mm x 1200mm galvanised mild steel straps to all the crosswall corners secured firmly to the brickwork having minimum 600mm turned at right angles to fixing against the two walls at maximum 1000mm centres.

6.1.3 Additional purlins to the main roof should be provided by means of bolting to existing if possible. These purlins to be 225x75 class SC4 and to have a minimum end bearing of 100mm wedged tightly to the underside. Take down the existing roof truss and provide purlins spanning onto loadbearing walls or propped off the steel beams at the ceiling level.

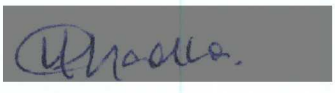
6.1.4 To all the cracks, rake out existing mortar to a minimum depth of 60mm and provide helifix bars across the cracking as found necessary and repoint in 1:1:6 mortar or similar to match existing.

6.1.5 The trees to the front, side and rear of the property to be taken down or trimmed regularly such that the tree root growth does not affect the existing foundations.

6.1.6 Remove existing concrete plinths from the floor and level off floor as found necessary..

6.1.7 Repoint all external brickwork.

6.1.8 Repair all roof coverings and replace the existing corrugated sheets with tiles to match existing. Rebed the ridge tiles and replace the missing tiles as found necessary.



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APPENDIX

SCHOOL HOUSE FARM, DESFORD ROAD, NEWBOLD VERDON.



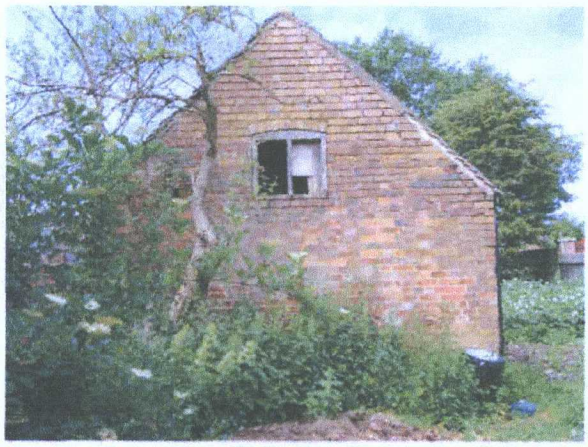
PART OF THE ELEVATIONS OF EXISTING COW SHED/ BARN

AND NOTE THE TALL TREES TO THE REAR



THE GABLE WALL





THE FRONT GABLE WALL – NOTE THE NEARBY TREE



NOTE THE CRACKING TO INTERNAL WALLS OVER OPENINGS



THE EXISTING KING POST TRUSS



NOTE THE ASBESTOS ROOF COVERING AND THE ROOF TIMBERS



NOTE THE SAGGING OF EXISTING LINTOLS OVER OPENING



NOTE THE CONCRETE PLINTHS BUILT OFF THE EXISTING FLOOR