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Conversion of Buildings at Plas Power Home Farm, Ruthin Road, Wrexham

Structural Appraisal Report

July 2019

Executive Summary

The inspection was made at the request of Cullis Architectural Design acting on behalf of Mr Carl Sheffield, the owner of the buildings. The report will seek to determine the condition of the buildings and their suitability for conversion into three dwellings. The report will form an update on the inspection carried out by Strutt Parker in February 2013.

The inspection was carried out during the morning of 26 July 2019.

The general condition of the buildings does not appear to have deteriorated since the inspection carried out in February 2013. However, the condition of the roof to the main building has deteriorated significantly with localised collapses apparent at the time of inspection.

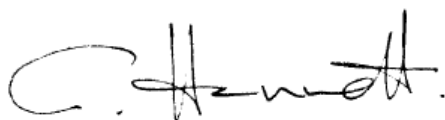
No significant cracking was apparent to external elevations that would be considered attributable to foundation inadequacies or settlement. Minor cracking is apparent internally that appears to have resulted from weather penetration.

The condition of the roof is significantly worse than that noted in the February 2013 report. Though it should be noted that some distortion to the roof was apparent at that time. Weather penetration over an extended period through poorly detailed intersections between pitched and flat roofs would appear to have contributed to the resulting deterioration. This has led to several collapses in the supporting timbers. Given the overall condition of the finishes to the roof, this defect will become more widespread if the conversion or repairs are not carried out.

It is proposed to convert the main building into three self-contained dwellings arranged over two storeys. A significant part of the rear outrigger will be demolished to free up room for gardens and improve views at the rear. The conversion will require the replacement of the roof to the remaining property so that additional headroom can be provided for the upper storey. Therefore, none of the original elements will be retained, though some of the supporting steel beams may be re-used. The external and internal walls are of solid brick construction and are considered to be of adequate capacity to support the proposed conversion.

The buildings are robustly constructed and are considered to be suitable for conversion into self-contained dwellings and detached garages.

Report Compiled by:



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Introduction

The inspection was made at the request of Cullis Architectural Design acting on behalf of Mr Carl Sheffield, the owner of the buildings. The report will seek to determine the condition of the buildings and their suitability for conversion into three dwellings. The report will form an update on the inspection carried out by Strutt Parker in February 2013.

The inspection was carried out during the morning of 26 July 2019. The weather during our visit was very warm and overcast.

The inspection comprised a visual condition survey of the buildings within and without making use of a ladder where appropriate. No intrusive investigations or excavations were undertaken at the time.

The buildings comprise a large building and a separate store/pens building alongside. The external elevations comprise brickwork to full height supporting pitched and flat roofs of varying construction. It is apparent that the main building has been extended and altered on several occasions in the past.

The report will seek to confirm the severity of defects identified and determine the likely causes. The report will also make recommendations for remediation if required.

Inspection

The overall condition of the buildings is considered to be fair with sections of the roofs over considered to be poor.

No evidence of significant cracking or distortion was apparent to the external elevations within the main building or to the adjacent store/pens. This would indicate that the foundations are adequate and have not been subject to undermining.

Minor cracking was apparent to internal walls adjacent to door and window openings. This would appear to have resulted from water penetration through roof finishes locally. The cracking does not appear to be indicative of foundation inadequacies or settlement and is not considered to be significant.

The roof over the main building comprises several different construction types – slated finishes over traditional purlin and rafter construction supported off intermediate timber trusses, wood wool slab flat roofs and corrugated sheeting off steel purlins and trusses. Generally, the roofs were intact. However, partial collapses are apparent within the traditional and flat roofs which are now allowing weather to penetrate into the building.

The traditional roof over the main part of the building has collapsed within a single bay near the middle of the roof. The partial collapse would appear to have been instigated by the collapse of a single truss supporting the roof. The end of the truss shows evidence of severe section losses as a result of rot caused by weather penetration over an extended period. The junction between the flat roof at the rear and the pitched roof appears poorly detailed allowing weather to penetrate. Similar defects are apparent to several of the remaining trusses supporting the roof which would raise concerns regarding the long term durability of the roof as a whole.



General view of roof over main part of building.



Collapsed truss supporting roof.

Further collapses are apparent to the roofs over the outriggers at the rear of the main building. Again this would appear to have resulted from weather penetration through a poorly detailed joint between the pitched and flat roofs.



Partial collapse of roof over outrigger.

The roof over the cow shed outrigger to the rear is in fair condition with evidence of weather penetration through finishes apparent within and around the edges of the room. The roof comprises asbestos cement sheeting supported off tubular purlins and fabricated tubular trusses at regular centres.

Surface corrosion is apparent to tubular elements, though no significant section losses are apparent.

This section of the building will be demolished as part of the conversion scheme.



Roof over cow shed outrigger.

The roof over the adjacent store is in good condition with evidence of very minor weather penetration through finishes apparent around the edges of the room. The roof comprises asbestos cement sheeting supported off tubular purlins supported by load bearing walls.

Surface corrosion is apparent to tubular elements, though no significant section losses are apparent.



Typical construction of store roof.

Discussion and Conclusions

The general condition of the buildings does not appear to have deteriorated since the inspection carried out in February 2013. However, the condition of the roof to the main building has deteriorated significantly with localised collapses apparent at the time of inspection.

No significant cracking was apparent to external elevations that would be considered attributable to foundation inadequacies or settlement. Minor cracking is apparent internally that appears to have resulted from weather penetration.

The condition of the roof is significantly worse than that noted in the February 2013 report. Though it should be noted that some distortion to the roof was apparent at that time. Weather penetration over an extended period through poorly detailed intersections between pitched and flat roofs would appear to have contributed to the resulting deterioration. This has led to several collapses in the supporting timbers. Given the overall condition of the finishes to the roof, this defect will become more widespread if the conversion or repairs are not carried out.

It is proposed to convert the main building into three self-contained dwellings arranged over two storeys. A significant part of the rear outrigger will be demolished to free up room for gardens and improve views at the rear. The conversion will require the replacement of the roof to the remaining property so that additional headroom can be provided for the upper storey. Therefore, none of the original elements will be retained, though some of the supporting steel beams may be re-used. The external and internal walls are of solid brick construction and are considered to be of adequate capacity to support the proposed conversion.

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