

STRUCTURAL INSPECTION REPORT

Original Farmhouse, Yew Tree Farm,
Farnley Tyas
For John Radcliffe and Sons

Date 05/11/2021
Ref **4011/SIR002**

Report Details

Client	John Radcliffe and Sons
Report Title	STRUCTURAL INSPECTION REPORT
Project	Original Farmhouse, Yew Tree Farm, Farnley Tyas
Ref.	4011/SIR002
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Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review
1	Approval	05/11/2021	-		
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YEW TREE FARM, FARNLEY TYAS

STRUCTURAL INSPECTION REPORT – ORIGINAL FARMHOUSE (BUILDING 6)

Overview

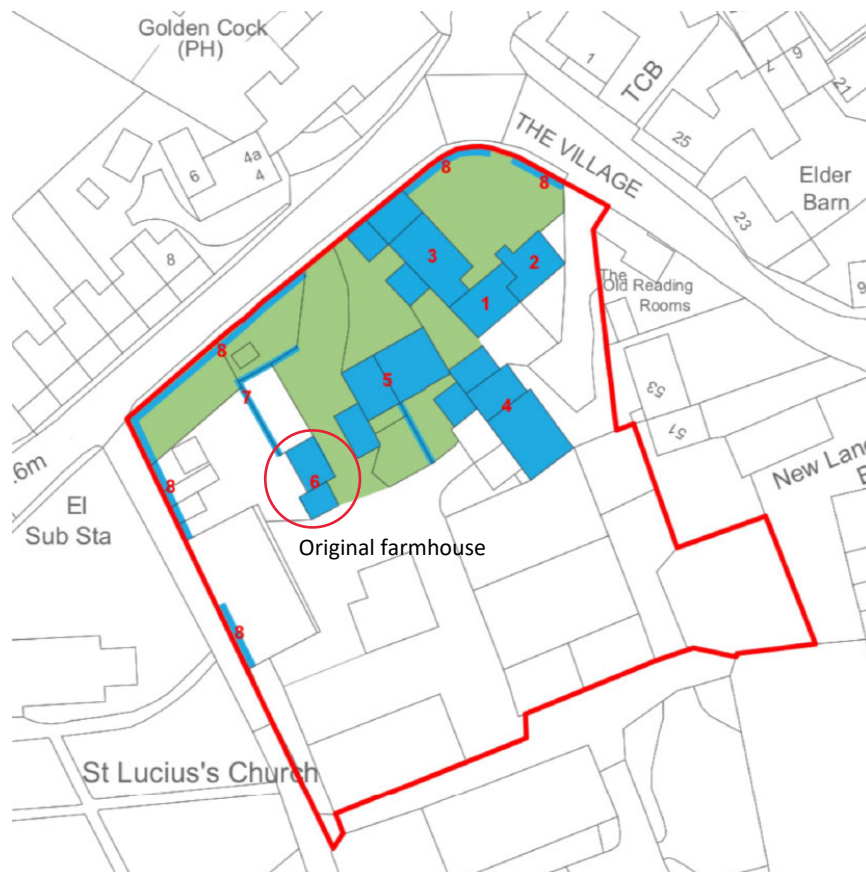
Yew Tree Farm is a complex of original stone built and modern agricultural farm buildings situated in the centre of the village of Farnley Tyas near Huddersfield, West Yorkshire.

Buildings 1 to 5 are understood to be subject to Grade II listing (see key plan below).

Building 6 (Original Farmhouse) is not listed and is the primary subject of this report.

The purpose of the inspection of building 6 was to assess the structural suitability of the retained building for conversion to a residential property to current standards given its age, construction, and structural condition. The consideration of the historical or architectural value of the buildings is outside of the scope of this report.

Building 6 is the most westerly of the farmstead buildings as identified on the key plan below.



General

Typically, with this type of historic development local to this area, external walls will be of coursed sandstone rubble with rubble and lime mortar infill. The more substantial buildings will have a good number of tie stones bridging between the inner and outer stonework and good quality quoins will be provided around major openings and on the corners of the buildings. These walls are intended to act as solid walls and with the rubble in place and quite compact they can be reasonably robust. However, this type of construction is also very susceptible to significant degradation over time particularly where water has been allowed to penetrate the rubble fill between leaves.

When assessing the suitability of this type of building for conversion, appropriate consideration needs to be given to current building regulations standards and also the efficacy and longevity of common remedial solutions. For instance, whereas most walls can be suitably stabilised, with care, using remedial wall ties combined with bed-joint reinforcement, in some instances, particularly where existing mortar joints have been washed away by water ingress over many years, these techniques can fail, and rebuilding can prove the only suitable method of ensuring the restoration of structural stability.

Roof structures will generally comprise of king or queen post trusses at regular intervals supporting square section purlins organised on slope with timber rafters supporting Yorkshire stone roofing. Generally, original roof structures rarely survive fully intact, and replacement timbers can often be undersized and poorly organised for the support of the substantial weight of Yorkshire stone roof constructions. In addition, structural timbers are often found to be distressed due to damp penetration and timber infestation.

Localised foundation settlements are also a common feature of this type of building due to poor quality or absent foundations.

To ensure the integrity of traditionally constructed buildings of this type, lateral restraint to the external walls is required to be provided by the roof structure, floor structure and internal masonry walls. As the buildings age and become open to the elements due to failures in the building fabric, restraint systems from roof and floor structures can commonly degrade to a point where the structural stability of the building is severely compromised.

In this instance, collapse of the first-floor structure along with a compromised roof structure has significantly reduced the overall lateral stability of the building.

Building Description

The original farmhouse building is a two-storey stone-built structure with a dual pitch roof. External inspection of the building confirms a York stone roof. Attached to the southern gable, there is a single storey dual pitched roof outbuilding of similar construction, and a temporary farm canopy structure is attached to the north.

The two-storey element of the building is approximately 8m long by 5.5m wide on plan and approximately 5m to eaves. The roof pitch is approximately 20 degrees.



Structural Defects

The general structural condition of the building may be characterised as very poor due to a complete lack of suitable maintenance. There is considerable evidence of structural deterioration in the building fabric and there is a significant reduction of overall structural stability.

Deflection of the roof suggests structural defects in supporting timbers.

External Walls



External walls exhibit widespread damp penetration with associated loss of mortar joints and deterioration of masonry facings (particularly at eaves level). Localised settlement cracking suggests foundation issues at the south-eastern corner of the building.

Along the full length of the rear elevation self-seeded tree have been allowed to establish and mature with potential consequences for the integrity of existing foundations which are likely to be shallow and susceptible to the shrinkage potential of underlying natural strata.



Roof

Whilst it was not possible to inspect the roof structure from within the building due to safety concerns, it is anticipated that the structure will be consistent with the age of the property and will comprise timber purlins spanning between internal queen or king post trusses and external gable walls.

The roof covering has been compromised and the structure shows signs of structural distress. The roof drainage system is absent with no functioning gutters and downpipes. The chimney stack has been removed externally and widespread water penetration is evident with associated structural deterioration.

Deterioration of the structural timbers must be anticipated along with associated loss of lateral restraint to the external walls.

First floor

Safe internal inspection of the building is not possible. However, a partial inspection revealed a section of completely collapsed first floor construction and evidence of widespread structural deterioration due to water penetration.

The collapse of the first floor has removed essential lateral restraint to external wall constructions and has significantly impacted on the overall integrity of the building structure.



Collapsed first floor and ceiling structures



Conclusions & Recommendations

The building structure has suffered significantly as a consequence of a lack of maintenance and exposure to the elements over a significant period. This process is ongoing and has led to the collapse of the first-floor structure over a significant portion of the building footprint. Whilst works have clearly been carried out to attempt to make the chimney stack stable, the building remains in an unsafe condition.

The collapse of the first floor and the associated loss of lateral restraint to the external walls render the building unsafe and consequently it should be secured against entry immediately.

Safe entry into the building to carry out a more comprehensive survey is not possible and should not be permitted.

The controlled demolition of the building is therefore recommended under a contract which should include all necessary CDM measures.

APPENDICES

Appendix A – Limitations

The discussion, conclusions and recommendations contained in this Report are based on a single cursory visual inspection of the property from ground level, without the facilities for high level access and inspection. No opening up works to reveal the detailed nature and condition of the structural fabric was undertaken. The scope of the report does not include the consideration of damp and infestation issues.

The discussion, conclusions and recommendations contained in this Report represent the professional opinions of Bright Young Consulting Limited (BYC), based upon the information listed in the Report, exercising the duty of care required of an experienced Engineering Consultant. BYC does not warrant the accuracy of the information or data forming the basis of the report and will not be responsible for any opinions which BYC has expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

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