



STRUCTURAL SURVEY

Barn at Kerswell
Cullompton
Devon
EX15 2ES

PREPARED ON BEHALF OF:

Scott Chappell

JOB REF:

201/22

PREPARED BY:

Shaun Watts

SURVEY DATE:

9 August 2022

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1.0 Introduction

1.1 Client

Scott Chappell

1.2 Property Address

Barn at Kerswell
Cullompton
Devon
EX15 2ES

1.3 Date of Survey

9 August 2022

1.4 Weather at time of Survey

When I inspected the property, the weather was hot, dry and sunny following hot, dry and sunny weather.

1.5 Brief

To undertake a structural survey of the detached barn to ascertain its suitability for conversion to residential accommodation.

1.6 Limitations

The survey is reliant by the owner of the property and no acceptance or liability to any third party is accepted as part of this instruction.

2.0 Property

2.1 General information

The building is of concrete strip foundations, timber framed walls, with timber boards and metal sheet cladding to the walls.

The building is provided with timber doors and shutters to the building.

The roof is provided with corrugated metal sheet cladding to the roof.



2.2 Services

The barn is currently provided with an electric supply that is situated within the curtilage of the land under the control of our client.

The building is not provided with a mains water supply; however, the mains water supply is in the adjacent field which will allow for a water supply to be easily connected to the building.

The building is not provided with any form of foul drainage and so would require a new septic tank or sewage treatment plant. The current owners however have sufficient land to allow for the provision of a new individual sewage treatment plant to serve this property.

The building can therefore be provided with all necessary services for use as a residential unit of accommodation.

2.3 Ground Floor

The ground floor is provided with a compacted earth floor finish, which appears to be in reasonable condition. The floor is relatively even and appears to have been well compacted by the previous agricultural use. There are no signs of movement or subsidence to the earth floor and generally it all appears to be in good order.

The existing compacted earth floor will require a degree of levelling up with hardcore and then provided with a concrete base. I can see no reason why the existing compacted earth slab would require any significant remedial works in this situation. The floor will however require some degree of updating with the provision of insulation to comply with current building regulations but this will require the provision of a new concrete slab, which can be laid directly on top of the existing compacted earth floor finish.



2.4 Walls

The walls are provided with a series of timber purlins, which have been used to support the corrugated metal and timber boarding to the walls, all of which appears to be in reasonable order. The mid rails are in the order of 75 x 50 mm timbers with the eaves beam being in the order of 100 x 50 mm timber. The purlins are supported on the main structural posts with metal angles and bolted connections, all of which appear to be in good order. There is some evidence of minor deflection to the purlins and generally they appear to be in good order and are suitable for retention in this location.

The lower section of the walls are provided with timber cladding, with the boards being in the order of 140 x 18 mm boards up to a height of about 1300 mm high. The upper section of the walls are then provided with corrugated metal sheet cladding which is fixed horizontally across the walls and appears to be in reasonable order at the time of the survey.

The base of the walls are sat on a 100 mm fair faced block work plinth which is laid level and is in good order, the block work plinth has prevented any significant decay to the base of the timber framing and cladding to the walls.

The timber frame and cladding to the building all appear to be in good condition with no signs of structural movement or failure. The structural condition of the building is therefore in good order to the main roof and wall elements with no structural repairs required at the time of the survey.



2.5 Timber Frame

The building is primarily a four bay timber framed building, with a central ridge running front to back on the building. The building is provided with five main frames, one to the front, one to the rear and three to the middle bays. The bays are provided with 100 x 100 mm timber columns with 100 x 50 mm timbers to the main roof structure all of which appears to be in good order, with no evidence of deflection or decay noted at the time of the survey. The bays to the front and back of the barn are also provided with timber wind posts which are in good vertical order.

There were no signs of any movement or distortion or damage to any of the fixings on the junction between the roof and the wall members. It is clear that the timber frame to the walls and roof is generally in good structural order.



2.6 Joinery

The external joinery is of metal faced gates, shutters and timber doors to the main structure to the individual elevations.

There is some evidence of wet rot attack to the base of the doors and the frames and to comply with current regulations, the existing joinery would need to be removed and replaced with more thermally efficient and suitable access arranged doors and windows. If required however, the current frames could be repaired to bring them up to a good standard of repair for use in regard to residential accommodation.

The building is not provided with any rainwater gutters to the building.



2.7 Roof

The roof is provided with a series of nine trusses with the truss being a mixture of a traditional and raised tie trusses. The trusses appear to be provided with timbers in the order of 100 x 50 mm timbers which appear to be in reasonable condition. The traditional trusses are provided with two sets of timbers which are bolted together and are in good structural order. There is no evidence of any movement to the roof, which appears to be in good order. The trusses

are then provided with a series of purlins which are supported between the trusses and also on the end structural gable walls. The purlins are in the order of 75 x 50 mm timbers and appear to be in relatively good condition, spaced at 600 mm centres and are in good structural order. There is some minor deflection and bowing to the timbers and this probably occurred shortly after the time of installation. The bowing could be due to the natural drying out of the timbers as there are no signs of any significant movement to the roof structure.

There is evidence of some wet rot attack to a couple of the timbers where they are situated adjacent to the outside walls. These timbers will need to be carefully removed and replaced with new timbers.

The roof is then provided with a metal profiled sheet covering to the roof externally and appears to be in good condition. There is evidence of some minor damage to the cladding to the roof but again this is not to be unexpected, given the age and previous use of the building. The cladding however generally appears to be in reasonable condition with no signs of significant damage or repairs required.

The trusses and roof timbers all appear to be in good order with no signs of any significant damage or decay.



3.0 Construction Method

3.1 Walls

Existing timber frame and timber and corrugated metal sheet cladding to have the existing external face of the walls repaired to leave them in a weather tight condition.

The internal walls are to be lined with elements of new timber framework to receive new insulated linings to meet current Building Regulations with a new vapour check and plasterboard with plaster finish internally.

3.2 Windows and Doors

The new windows and door frames will be fixed to the existing timber frame and timber walls using new DeWalt, or similar, anchor bolts. The anchor bolts will be pre-drilled through any new window or door frames and the wall structure, in accordance with the manufacturer's recommendations. The new window and door frames can then be fixed to the walls using new DeWalt, or similar, M10 150mm long anchor bolts which are designed for this particular application. This will not require the provision of any new structural elements of support or bracing to these frames.

3.3 Roof Type

Existing corrugated metal sheet roofing could be removed and replaced with modern metal roof sheets and timber structure to be retained.

However if required the existing roof coverings could receive internal insulated lining with ventilation gap over to meet the requirements of the current Building Regulations with vapour check layer and internal plasterboard and skim finish.

3.4 Floor

The existing compacted earth floor can be retained and provided with a new concrete floor, the existing earth floor could be levelled off using a slurry screed.

A new radon and damp-proof membrane will be laid over the concrete screed and sealed to the wall to provide a suitable vapour check.

Internal insulated timber floating floor to be laid over the new damp proof membrane to meet the current requirements of the Building Regulations.

3.5 Services

The barn is currently provided with an electric supply that is situated within the curtilage of the land under the control of our client.

The building is not provided with a mains water supply; however, the mains water supply is in the adjacent field which will allow for a water supply to be easily connected to the building.

The building is not provided with any form of foul drainage and so would require a new septic tank or sewage treatment plant. The current owners however have sufficient land to allow for the provision of a new individual sewage treatment plant to serve this property.



The building can therefore be provided with all necessary services for use as a residential unit of accommodation.

3.6 Health & Safety

All of the above works are to be carried out in strict accordance with the requirements of Construction (Design & Management) Regulations 2015.

4.0 Summary

In summary it can be seen the current building is approximately 75 years old and has been built to a reasonable standard to take loads required for agricultural use.

The floor is of a compacted earth floor which appears to be in good condition with no signs of movement.

The building will be required to be improved with additional thermal insulation but this could easily be fitted inside of the existing external walls that exist and any additional floor insulation laid directly on top of the existing compacted earth floor structure with a new floor finish laid on top of the insulation.

The timber frame is provided with a vertical timber board cladding material with no signs of movement and appears to be in a good structural condition. There are no signs of any structural movement to any of the main structural elements to the timber frame to either the walls or the roof and generally the property appears to be in good structural condition.

The building could easily be adapted, without any additional structural works, to comply with current regulations.

I therefore believe that the building is in good structural condition and is suitable for conversion into residential accommodation in this instance. There are sufficient services around to provide the necessary level of services for habitable accommodation use.

5.0 Conclusion

The building appears to be in good structural order with no signs of any significant structural movement to the external walls or timber frame structure to the roof. I therefore believe that the building is suitable for conversion to residential accommodation and is in a good structural condition in its current format.

The above information should be read in conjunction with the report and the photographs, to give a full and thorough understanding of the current condition of the property.

I certify that I have prepared this report.

Signed 
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Shaun Watts

Chartered Building Surveyor
Certified Historic Building Professional

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Date: 9 August 2022