



**STRUCTURAL SURVEY**

Barn at Winswood House  
Burrington  
Devon  
EX37 9JN

**PREPARED ON BEHALF OF:**

Tanja Mitchell

**JOB REF:**

168/19

**PREPARED BY:**

Shaun Watts

**SURVEY DATE:**

11 November 2020

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## **1.0 Introduction**

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### **1.1 Client**

Tanja Mitchell  
Winswood House  
Burrington  
Devon  
EX37 9JN

### **1.2 Property Address**

Barn at Winswood House  
Burrington  
Devon  
EX37 9JN

### **1.3 Date of Survey**

11 November 2020

### **1.4 Weather at time of Survey**

When I inspected the property, the weather was cold, wet and windy following cold, wet and windy 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

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### 2.1 General information

The barn is of concrete pad and strip foundations, timber framed and blockwork walls, with blockwork and steel cladding to the walls.

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



## 2.2 Services

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

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 septic tank 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.

The ground floor is relatively level and is in good order with no signs of any movement or subsidence noted at the time of the survey. The compacted earth floors all appear to be in a stable condition and are suitable for retention.





## 2.4 Walls

The low level concrete block walls are, on average, 100 to 150 mm thick. The walls are of a block work wall which is faced both sides with a pointed finish to both sides. There are no signs of any significant cracking or movement to the block work where visible. There are some small cracks being in the order of 2 to 4 mm in width, which is not unexpected in a property of this style and age. The cracks will just require filling with a mortar to keep them in good order. The block work generally appears to be in good order and is generally in a good structural stable condition.

The side ground floor walls are set below ground level and are retaining the earth bank. The walls appear to be in good order with no signs of movement or cracking. There is evidence of moisture ingress through the walls, but this is to be expected with the makeup and design of a traditional stone wall.

The walls are provided with a series of timber purlins, which have been used to support the corrugated metal boarding to the walls, all of which appears to be in reasonable order. The mid rails are in the order of 100 x 50 mm timbers with the eaves beam being in the order of 150 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 walls are then provided with corrugated metal sheets to the high levels of the walls, which generally appears to be in reasonable order.

There is some evidence of rusting to the metal sheet cladding as expected with this method of construction. The metal sheets and concrete block could, if required, be retained and provided with insulated timber panels internally to comply with the requirements of the Building Regulations.

The timber frame and cladding to the barn 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.





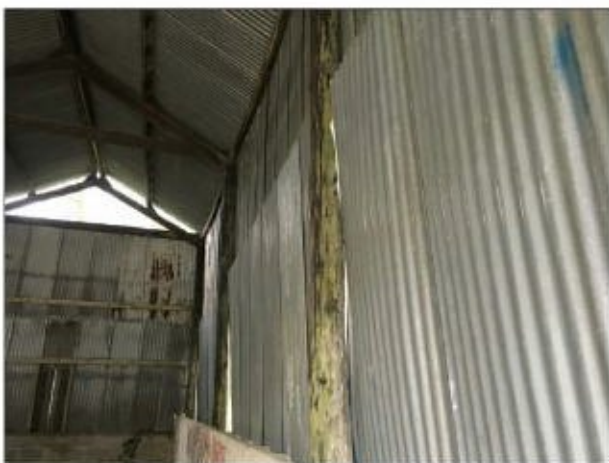
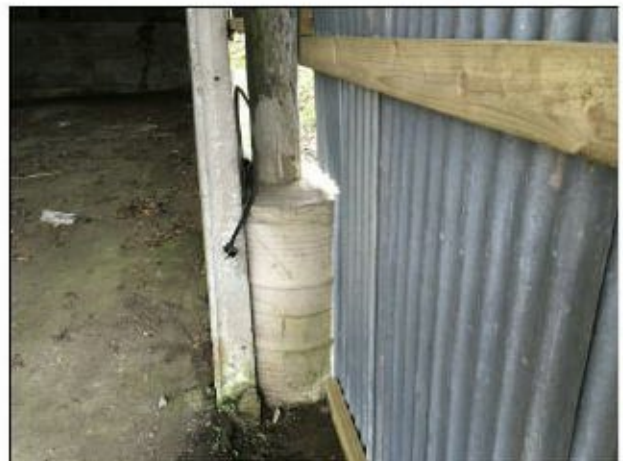


## 2.5 Timber Frame

The building is primarily a three bay concrete block work and timber framed building, with an offset ridge running front to back on the building. The building is provided with four main frames, one to the front, one to the rear and two to the middle bays. The bays are provided with 200 x 200 mm timber square columns to the left hand side of the building with 225 mm circular timbers to the main structure all of which appears to be in reasonable 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. The circular timber columns are provided with concrete posts to the base of the timber columns, with the concrete being in the order of 600 mm in diameter and 900 mm high. The concrete bases are in good order with no signs of any movement or rotation at the base of the columns.

There are no signs of decay or distortion to the frame and the frame appears to be in generally good structural condition

The timber frame and cladding all appears to be in reasonable 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.





## 2.6 Joinery

The existing roof on one side is provided with UPVC rainwater goods all of which were in working order at the time of the survey. The existing external joinery would be replaced as part of any conversion works but generally appears to be in working order at the present moment in time.

There are no formal doors or windows to the existing barn.





## 2.7 Roof

The roof is provided with a series of four trusses with extended diagonal members with the truss being of a traditional truss. The trusses appear to be provided with timbers in the order of 200 x 75 mm timbers which appear to be in reasonable condition. There is no evidence of any movement to the roof, which appears to be in good order. The main diagonal members are in the order of 280 x 75 mm timbers which are bolted to the main timber columns. The trusses and main diagonal members are then provided with a series of purlins which are supported between the trusses and also on the main diagonal members. The purlins are in the order of 150 x 50 mm timbers and appear to be in relatively good condition, with the timbers spaced at 1200 to 1500 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. The metal profiled sheet covering is provided to about 95% with 5% being provided with light panels of 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 rooflight panels have suffered from solar degradation on the house side and will need replacing. The cladding however generally appears to be in reasonable condition with no signs of significant damage or repairs required.







## **3.0 Construction Method**

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### **3.1 Walls**

Existing masonry walls and concrete block 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 masonry 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.

Existing roof to 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 a mains water supply and an electric supply that is situated within the curtilage of the land under the control of our client.

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 septic tank 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

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In summary it can be seen the current building is approximately 50 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 barn 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 metal cladding material and concrete block work 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

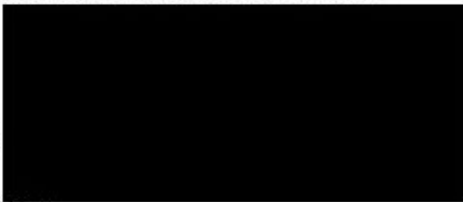
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The above information should be read in conjunction with the report and the photographs, to give a full and thorough understanding of the current condition of the property.

The barn 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.

I certify that I have prepared this report.

Signed



Shaun Watts

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Certified Historic Building Professional

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Date: 11 November 2020