

# Davis

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### REPORT ON A STRUCTURAL INSPECTION

The Old Barn  
Malt Kiln Brow  
Chipping  
PR3 2GP

Project No. 9645

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#### **1.0 BRIEF**

We were retained by Ms. Michelle Platt to carry out a structural survey of the above barn. The reason for this report is to determine the amount of re-building required to the external walls in order to convert this building in accordance with Ribble Valley Borough Council's policy on conversion of barns to dwellings. The report is limited to this aspect only.

We have confined our inspection to those elements of the building that are visible and have not investigated woodwork or other parts of the structure that are covered, unexposed or inaccessible. We are therefore unable to report that any such part is free from defect. The client's attention is drawn to the condition of inspection appended to the report.

#### **2.0 GENERAL**

The property is a stone built two storey barn with a single storey annex to the rear.

The ground is generally flat around the stone barn however the rear wall of the annex is acting as a retaining wall because the ground is some 1.2m. higher along the face of this wall.

The survey was carried out on the 12th. May 2023 and it was a sunny day.

To assist in the reading of this report there are photographs at the end of the report.

#### **3.0 OBSERVATIONS**

Notation: Left Hand (LH), Right Hand (RH), Front (F), and Rear (R) are relative to an observer standing and facing the building as shown in photograph 1.

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## EXTERIOR

### 3.1 Front Elevation

See photograph 1 for details of this elevation. The features of this wall are symmetrical about the central doorway.

Reporting on the front wall of the barn from the right-hand side gable wall. This wall is a stone-built wall in the order of 5m. high. It is constructed from random sandstone built as a solid wall some 400mm thick. There are quoins in the corner of the barn wall and there is a short panel of stone to a doorway. There is a stone lintel over the door and stone quoins to the sides.

At a point 3m. from the gable wall there has been water leaking from the roof and this has discoloured the wall and eroded some of the mortar. Then there is a panel of stone to a large barn door. This has sliding doors to the front and there is a concrete lintel over the doorway. There are quoins to the sides of the opening.

The stone above the doorway has received a coating of render. Then there is a large panel of stone wall to a doorway. This has a stone lintel over the door. The bottom edge of this has been damaged and some stone has been knocked off. (See photograph 28). There are stone quoins to the sides of the doorway. There are quoins to the vertical corner of the barn wall.

The wall is acceptably vertical.

### 3.2 Right elevation

See photograph 2 for details of this elevation. This side gable wall is constructed from random sandstone built as a solid wall some 400mm thick. It would appear that there was a single storey annex built up against this wall. This had an off-centre ridge creating an asymmetrical roof shape. The flashing to this roof has not been fully removed.

Reporting from the front wall there are quoins to the corner of the wall and then there is a panel of wall up to a ground floor window. This has stone cills and lintel. The stone lintel has cracked and has a timber post supporting the wall above. (See photograph 9). There are three voids in the wall at a height of 3m. and these have been partially filled with expanding foam. There is a void at the top of the wall just down from the ridge.

The wall has a slight bulge outward to the middle of the wall, in the order of 10mm. However, this is structurally acceptable.

There is a single storey annex built out from the rear corner of this gable wall. (See photograph 22). There is a large opening in the wall approximately 2.8m. wide. Then there is a brick pier, and this is constructed from concrete bricks and is 3.5m. high. To the right of this pier there is a brick wall constructed from concrete bricks and built as a solid wall 230mm. wide. There is a large window on this wall, and this has a concrete lintel over. There is a vertical butt joint in the wall close to the rear wall above the bearing of the lintel. (See photograph 28).



### **3.3 Left elevation**

Close access to the face of this wall could not be obtained as this was onto a neighbour's land.

See photographs 5 & 6) for details of this elevation. This side gable wall is constructed from random sandstone built as a solid wall some 400mm thick. There is a single-storey building built up against this wall and this belongs to a neighbour.

Reporting from the rear wall there are quoins to the corner of the wall and there is a panel of stone. For the rest of the wall, we cannot report upon because it is covered in Ivy.

### **3.4 Rear Elevation**

The lower part of the barn is enclosed by the rear annex. However, the upper wall of the barn can be seen in photograph 4. This wall is a stone-built wall constructed from random sandstone built as a solid wall some 400mm thick. There are quoins in the corners of the barn wall. There are no designed openings in this upper wall. There are no signs of any distress. (See photograph 4).

Reporting now on the rear wall of the Barn which is enclosed by the annex. This wall is a stone-built wall in the order of 5m. high. The wall is constructed from random sandstone built as a solid wall some 400mm thick. Reporting from the left gable wall (as viewed) there are quoins in the corners of the barn wall. (See photograph 10). There is a small ground floor window close to the gable wall. This has stone jambs, cill and lintel. (See photograph 11).

Then there is a large panel of stone with no designed openings. Close to the far gable wall there is a doorway, and this has a stone lintel. There is a 2mm. wide crack in the rear wall running down from the left side of the lintel for 1.5m. (See photograph 12).

The rear wall of the barn is acceptably vertical and flat.

Reporting on the rear wall of the annex. This wall is constructed from a concrete brick, and this is of varying thickness. There are no designed openings to this wall. (See photograph 4). The wall has been water stained because of a leaking gutter. (See photograph 24). There is no cracking in this wall.

### **3.5 Roof**

The roof to the barn is a conventional double pitched roof with the ridge running from side to side. The front slope is clad with slates and a number of these have slipped. There are holes mainly to the right side of the roof. There is a slight deflection to the ridge, but this is not excessive. (See photograph 1).

The cladding to the rear roof is corrugated mineral fibre sheeting. (See photograph 23).



## INTERNAL

### 3.6 Area 1

This area is along the right side of the barn and runs full depth. There is a timber first floor over this area. This is supported on a number of cast iron posts supporting timber beams. These are supporting timber joists which form the first floor above. (See photographs 13 & 14).

There has been water dropping down from the roof and this has discoloured and allowed rot to form on some joists and a timber support beam. (See photograph 14). The floor boarding to the first floor in this area has rotted making access unsafe.

There is a window to the side and rear wall. There is a doorway to the front wall. There is a solid partition wall to the central area. There is no sign of distress to the solid walls of this area.

### 3.7 Central area to Barn

This is the area in the middle of the barn in between the two walled off areas 1 and 2. This area is vaulted up to the roof. There are partition walls to either side and at the rear there is a walkway to provide access to the first floor above areas 1 & 2. (See photographs 29 & 30).

There is a large barn door to the front wall, and this has a stone lintel over. (See photograph 18). There is a vertical crack 2mm. wide running down the front wall from the bearing of one of the roof trusses. This runs for 1.5m. There is a similar diagonal crack running from the same point but this only runs for 700mm. (See photograph 17).

There is a crack/gap running along the corner of the right gable wall and the rear wall. This could be due to there being poor bonding of the stones. (See photograph 16).

The first floor above the right side of the barn was not walked upon because of the flimsy nature of the floor joists seen in this area from the room below. There are voids to the left gable wall and these need to be infilled with stone. (See photograph 31).

The roof to the barn consists of two main timber roof trusses and these support three timber purlins to each slope. There are no missing members to these trusses. The purlins appear to be of a reasonable section size for the loading and the span.. (See photograph 19).

The roof above Area 1 has been leaking causing rot to the first floor structure. (See photograph 15).

### 3.8 Area 2

This area is along the left side of the barn and runs the full depth of the barn. There is a timber first floor over this area. This is supported on a number of timber posts supporting timber beams. These are supporting timber joists which form the first floor above. (See photograph 20). The beams and joists appear to be undersized for this floor.

There is a window to the side wall. The lintel is cracked and is supported with a timber post. (See photograph 32).

There is a doorway to the rear wall and there is a 2mm. wide vertical crack running down the wall for 1.5m. (See photograph 21).

There is a doorway to the front wall. There is a timber partition wall to the central area.

### **3.9 Annex to the rear of the Barn**

This is one large open area which has a rear wall running at an angle to the rear wall of the barn. This rear wall is a retaining wall and has a dado wall some 1m. high. This wall is likely to be 450mm. wide. From the top of the dado wall there are piers which continue up to the roof and these are supporting steel roof beams. Between the piers the wall is only 230mm. thick built as a solid wall. All of this wall construction is in a concrete brick. There is no sign of any cracking to this wall. (See photograph 26 & 27).

At the far end of the area there is a solid brick wall without there being any designed openings. This appears to be free from any distress. (See photograph 27).

The roof over this annex is a flat roof with timber joists. These are bearing on steel beams spanning from the rear wall of the barn out to the rear wall of the annex. (See photograph 26 & 27).

### **4.0 DISCUSSION**

The intention is to convert this building into a dwelling. The existing building is of stone-built construction, and this appears to be well constructed. There are some voids in the walls, and these will need the stone replaced and then pointed. There are some cracked stone lintels and these need to be replaced with similar stone.

The crack in the rear right corner above the first floor is due to poor bonding along the line of the crack. This needs to be improved by adding larger stones across the line of the crack.

There are holes in the roof and the slates need to be re-positioned.

The rear annex is free from any significant problems.

## CONCLUSION

The barn is in a good structural condition.

There is some minor maintenance work required to the external wall of the building.

There are no walls requiring re-building.

This amount of rebuilding is in accordance with Ribble Valley Council's policy on conversion of barns to dwellings. The report is limited to this aspect.



**John Davis B.Sc.(Hons.), C.Eng., F.I.Struct.E., M.I.C.E.**

15<sup>th</sup>. May 2023



### CONDITIONS OF STRUCTURAL INSPECTION

Instructions to carry out a structural survey are accepted on the basis of the following conditions.

1. The report is confined to the structural elements of the property. This will include foundations (if visible) walls, columns, floors and roof members. The report will not refer to non-structural items such as doors, window frames, plasterwork, fitted furniture, decoration or services.
2. Any structural elements which are covered, unexposed, or inaccessible will not be inspected and therefore we are unable to report on these elements.
3. The inspection carried out may not reveal all defects in the property. Defects in concealed areas such as foundations and underfloors, and walls covered by wallcoverings and plaster will not be revealed. Where there is evidence to suggest a more detailed investigation then such a recommendation will be made. Further investigation will incur further costs and may involve lifting of floorboards, digging of trial pits and breaking out of brickwork.
4. The building will be inspected externally from ground level.
5. Internally all exposed surfaces of rooms will be inspected. The Engineer will not move or disturb finishings, fittings, fitted carpets, furniture or any other items which cannot easily be moved. No responsibility will be accepted for defects which are concealed.
6. The roof space will be inspected but high or low confined areas will not be inspected.
7. Outbuildings (including detached garages) will only be briefly inspected. Sheds and greenhouses will not be inspected.
8. The grounds and boundaries will not be inspected. External ground levels will be reported on if they have potential for causing distress to the house structure.
9. Easement, planning and other topics in connection with statutory authorities are not within the scope of this report.
10. Potential flooding and other natural problems are outside the scope of this report.
11. Advice can be provided on extensions or modifications to the property but this is outside the scope of this report.
12. This report is provided for the sole use of the named client and is confidential to the client and their professional advisors. Responsibility for the report is to the client alone and we accept no responsibility to any other person.
13. The report remains the property of Davis Consultants and permission to use it for litigation or any other purpose is withheld until full payment is received. Payment is due by the person named in this report irrespective of any claims against third parties.
14. This report has been produced in order to satisfy planning conditions regarding the structural suitability of the building for conversion to a dwelling. It is not intended to be used as a complete report on every structural aspect of the building.





**PHOTOGRAPH 1**



**PHOTOGRAPH 2**

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**PHOTOGRAPH 3**



**PHOTOGRAPH 4**

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**PHOTOGRAPH 5**



**PHOTOGRAPH 6**

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**PHOTOGRAPH 7**



**PHOTOGRAPH 8**

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**PHOTOGRAPH 9**



**PHOTOGRAPH 10**

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**PHOTOGRAPH  
11**

**PHOTOGRAPH  
12**







**PHOTOGRAPH 13**



**PHOTOGRAPH 14**

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**PHOTOGRAPH 15**



**PHOTOGRAPH 16**

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**PHOTOGRAPH 17**



**PHOTOGRAPH 18**

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**PHOTOGRAPH 19**



**PHOTOGRAPH 20**

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**PHOTOGRAPH 21**



**PHOTOGRAPH 22**

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**PHOTOGRAPH 23**



**PHOTOGRAPH 24**

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**PHOTOGRAPH 25**



**PHOTOGRAPH 26**

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**PHOTOGRAPH 27**



**PHOTOGRAPH 28**

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**PHOTOGRAPH 29**



**PHOTOGRAPH 30**

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**PHOTOGRAPH 31**



**PHOTOGRAPH 32**

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