

ENGINEERING REPORT 9682

**GARAGE CONVERSION
1 STRAITS LANE
READ
BURNLEY
BB12 7PE**

CLIENT: ROGER HINDLE FINANCIAL SERVICES LTD

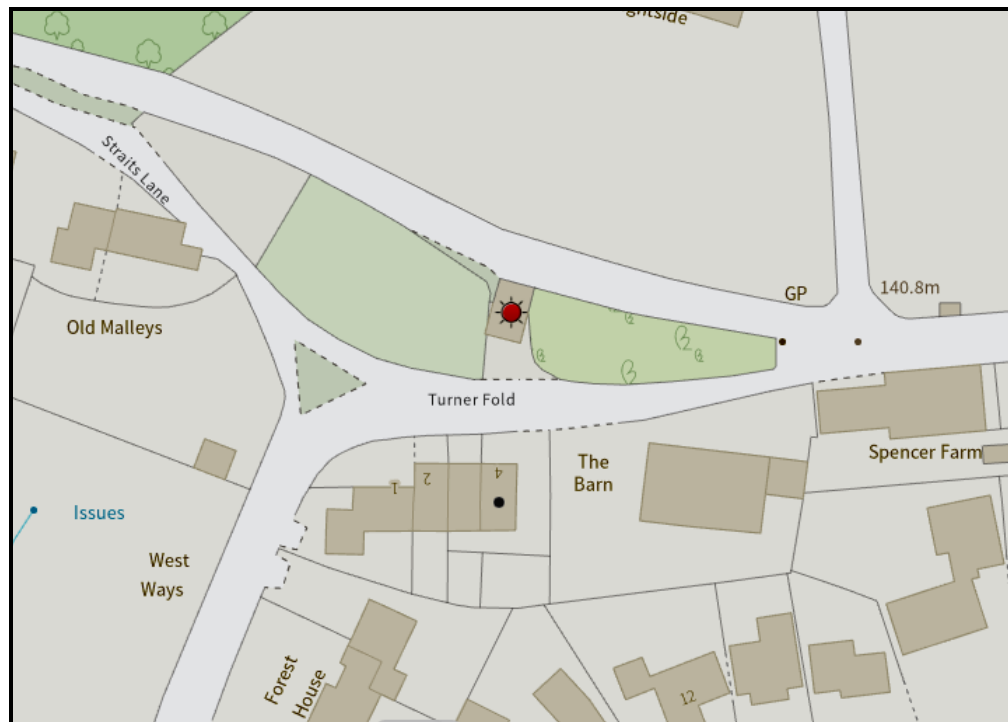
04.10.2024 MP/CH



1.0 INTRODUCTION

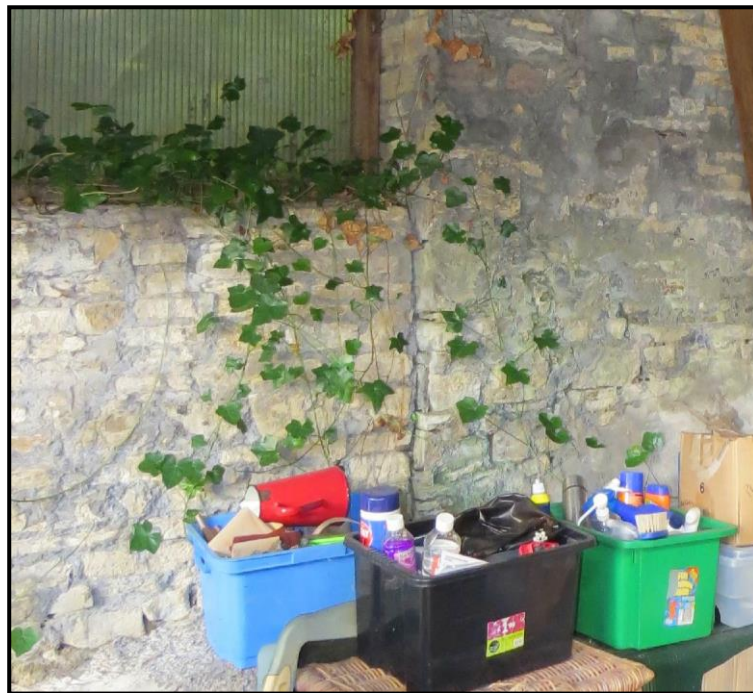
The purpose of the report is to comment on the structural condition of a single storey garage unit accessed from Turner Fold with regard to any structural issues in converting the existing unit from a garage to a residential unit.

The report is based on a visual inspection only with no detail topographical information nor site investigation.



2.0 LOCATION AND HISTORY

- 2.1 The garage is constructed as a back to earth structure the exterior footprint in the order of 9 metres x 7 metres wide, aligned on an approximate North/South orientation with the front entrance on Turner Fold having a predominantly Southern aspect.
- 2.2 The rear section of the unit is constructed on a back to earth structure as a solid wall construction probably in excess of 100 years old and appears to have been an original barn or outbuilding. The current structure incorporates a full height vertical construction joint to both the Western (left) and Eastern (right) flank walls. (Photographs 007, 008).



Photograph 007 West elevation vertical joint to original stone barn

- 2.3 On the extension there is vegetation to both flanks on the rear elevation, no detailed inspection of the exterior of the original stone walls was possible, and observations to the structural integrity and profile of the walls were carried out on the internal inspection.

3.0 FRONT ELEVATION

- 3.1 The garage extends for a width in the order of 8 metres incorporating 1 metre wide pillars on either side of the roller shutter doorway, the pillars incorporate natural stone plinths 1200mm high with upper brickwork panels in garden wall bond for a further 1.8 metres to eaves level. (Photographs 001, 004).



Photograph 004 Front elevation

- 3.2 The pointing to both the stone and brick facing is good, and the vertical and horizontal profile of the pillars is good.
- 3.3 The fascia above the door opening is completed in a vertical 150mm wide boarding with softwood timber bracing beneath the timber door lintel. (Photographs 002, 003).
- 3.4 The asbestos sheet roof projects forward of the front elevation in the order of 600mm with a front gutter discharging to the downspout on the left hand (South West) corner.

4.0 WESTERN FLANK WALL

- 4.1 On the rear North West corner of the Western flank wall localised irregular coursing is evident (possibly resulting in the internal 1200mm x 1200mm brickwork buttress evident internally on the North West corner). (Photographs 005, 030, 031, 032).



Photograph 031 North West flank, localised disturbance to outer leaf



Photograph 005 Double panel window, Western flank wall

- 4.2 No access to the rear nor Eastern flank wall was possible.

5.0 INTERNAL INSPECTION – WESTERN WALL

- 5.1 The South West corner is constructed with a stone plinth approximately 1.8 metres high to the underside of the cill level of the double panelled Perspex window. The stone wall is seated on a variable section concrete plinth approximately 400mm – 500mm high x 600mm wide. (Photographs 005, 006, 027).



Photograph 006 Western flank wall, chainage 0 – 3 metres

- 5.2 The vertical profile of the wall is satisfactory, there is no evidence of any movement or separation between the original stone flank of the external front section to the garage. (Photograph 007).
- 5.3 The original stone section extends from chainage 3 metres to 9 metres with a wall thickness in the order of 450mm, with a generally satisfactory vertical profile to inner stonework.
- 5.4 In the North West corner (approximately chainage 7 – 9 metres) there is a 1200mm square x 2 metres high Accrington brick pillar, possibly added to provide additional lateral support to the external stonework on the North Western corner where some misalignment has occurred to the outer facing stone. (Photograph 031).

- 5.5 The buttress also provides support with 75mm diameter metal struts spanning between both flank walls. (Photographs 024, 032, 034, 035).



Photograph 024 Buttress support to steel struts



Photograph 035 Rear wall and return flanks

6.0 REAR WALL

- 6.1 The rear wall extends for a width in the order of 8 metres and a height of 9 metres, constructed in random coursed stonework with evidence of historical crack repairs, but no evidence of any recent structural movement. (Photographs 008, 009).

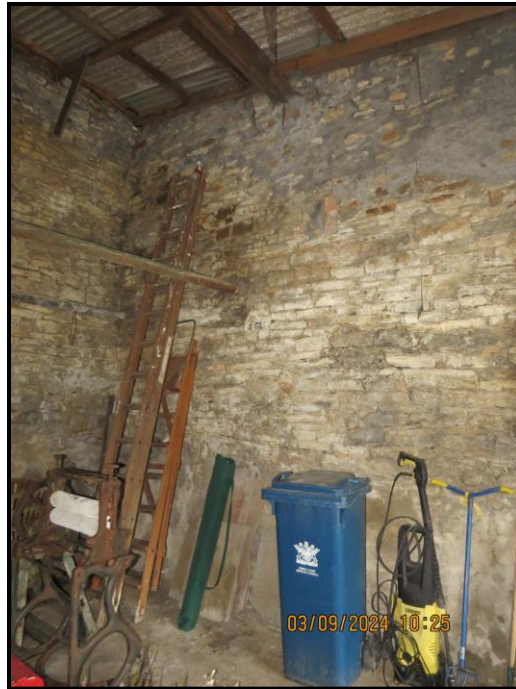


Photograph 008 Western flank and North West corner, original construction

- 6.2 There are no visual signs of any separation or lateral movement between the rear wall and the return Western and Eastern flanks. (Photographs 008, 010, 011).

7.0 EASTERN FLANK

- 7.1 The Eastern flank extends to the left hand window reveal, the window reveal (repaired) is a mixture of stone and brickwork. The overall profile of the wall is reasonable with some historic minor internal bowing, evident where the steel struts have been provided to give lateral bracing between the Eastern and Western flanks, at a height of around 2 metres above floor level. (Photographs 011, 012, 015, 023).



Photograph 012 Eastern flank wall lateral restraint



Photograph 015 Mixed plinth construction, chainage 0 – 3 metres (East)

8.0 ROOF

- 8.1 The roof to the unit is completed in small 6 Asbestos cement supported on a purlin/rafter roof construction with satisfactory profiles for the current loading. (Photographs 021, 022, 026).



Photograph 021 Roof – general arrangement



Photograph 022 Roof – general arrangement

9.0 CONCLUSION

- 9.1 The existing garage incorporates an extension to an existing stone barn or outbuilding, incorporating external walls in a mixture of natural stone (solid wall construction circa 450mm – 500mm).
- 9.2 The windows to the external section are of a modest construction and will no doubt be replaced during the conversion as will the Asbestos cement roof.
- 9.3 On the existing masonry wall localised loss of vertical alignment is evident.
- 9.4 Internally on both flank walls minor irregularities in vertical alignment are evident, necessitating in the past the provision of two number horizontal struts giving lateral restraint across the full width of the building.
- 9.5 In the conversion adequate bracing will be incorporated within the floor construction, providing full width lateral restraint to both Eastern and Western flank walls and also to the rear back to earth retaining wall.
- 9.6 The overall condition of the stonework is reasonable, and we presume that any localised structural defects in the conversion, will incorporate adequate restraints within the existing floor and floor decking to the unit in accordance with current good practice (lateral restraints, floor and roof, crack stitching with Helibond or other approved).
- 9.7 Depending on the final housing layout internal piers could be provided if required subject to further detail.
- 9.8 We do not consider that there are any significant structural irregularities within the existing structure which cannot be accommodated with modern good practice techniques and restraints. Further advice can be given if required.

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- 9.9 Anecdotally the original barn is in excess of 100 years old and the wall structure did not indicate any significant settlement patterns nor inadequacy of the sub-strata on which the unit is constructed. In this light we do not consider any major structural problems in satisfactory conversion subject to the final housing layout.
- 9.10 Should there be any queries in connection with this report please do not hesitate to contact the writer.

Michael Pooler M. Sc. C. Eng. M.I.C.E. F. Cons. E.

October 2024

PHOTOGRAPH LIST

- 001 Front elevation
- 002 South West corner
- 003 Fascia detail
- 004 Front elevation
- 005 Double panel window, Western flank wall
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- 007 Western flank wall, chainage 2 – 7 metres
- 008 Western flank and North West corner, original construction
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- 012 Eastern flank wall, lateral restraint
- 013 Construction joint between original barn and extended garage
- 014 Masonry plinth construction, chainage 0 – 3 metres (East)
- 015 Masonry plinth construction, chainage 0 – 3 metres (East)
- 016 Masonry plinth construction, chainage 0 – 3 metres (East)
- 017 Eastern flank wall
- 018 Not used
- 019 Not used
- 020 Not used
- 021 Roof – general arrangement
- 022 Roof – general arrangement
- 023 Lateral strut support to Eastern wall
- 024 Buttress support to steel struts
- 025 Not used
- 026 Roof and door head
- 027 Western wall
- 028 Double panel Perspex window
- 029 Eastern flank wall, lateral restrain
- 030 North Western flank, localised disturbance to outer leaf
- 031 North Western flank, localised disturbance to outer leaf
- 032 Internal buttress, North West corner
- 033 North Eastern corner
- 034 Rear wall and flank return
- 035 Rear wall and return flanks
- 036 Roller shutter door

- 007E West elevation, vertical joint to original stone barn
- 013E Vertical construction joint, front of original construction (East elevation)



001 Front elevation



002 South West corner



003 Fascia detail



004 Front elevation



005 Double panel window, Western flank wall



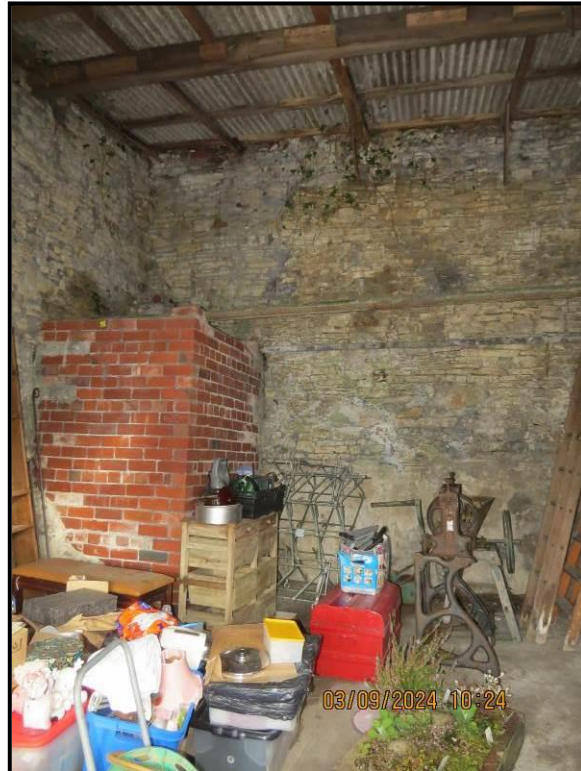
006 Western flank wall, chainage 0 – 3 metres



007 Western flank wall, chainage 2 – 7 metres



008 Western flank and North West corner, original construction



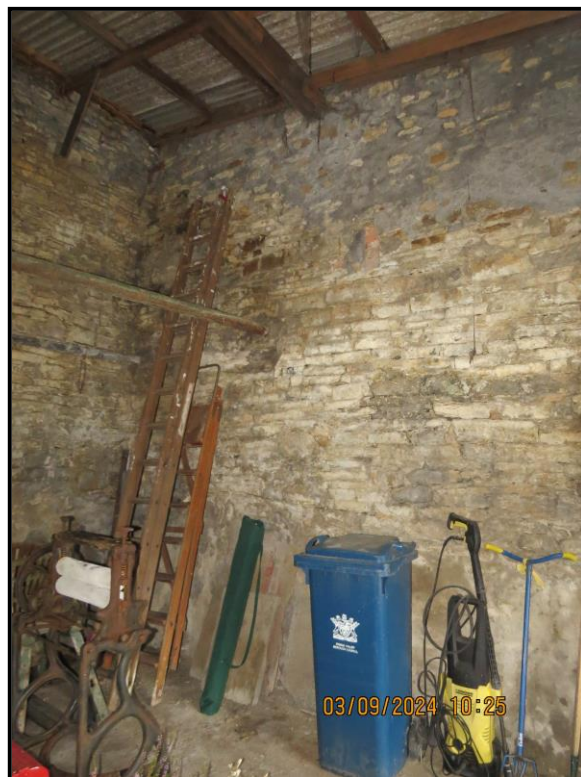
009 Masonry buttress, North West corner



010 North East corner, rear/flank



011 Eastern flank wall, lateral restraint



012 Eastern flank wall, lateral restraint



013 Construction joint between original barn and extended garage



014 Masonry plinth construction, chainage 0 – 3 metres (East)



015 Masonry plinth construction, chainage 0 – 3 metres (East)



016 Masonry plinth construction, chainage 0 – 3 metres (East)



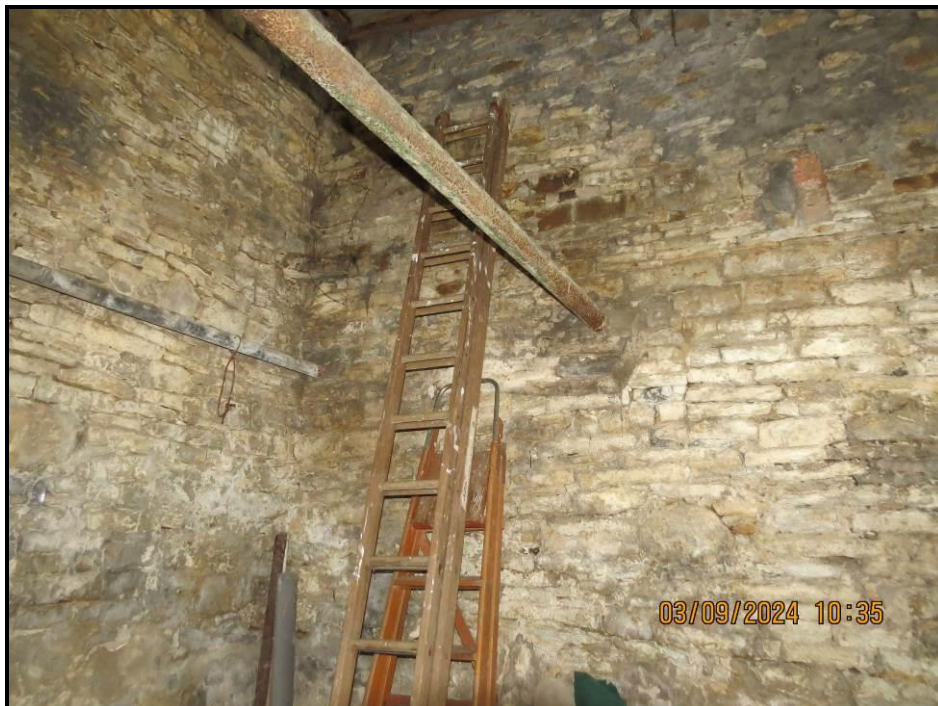
017 Eastern flank wall



021 Roof – general arrangement



022 Roof – general arrangement



023 Lateral strut support to Eastern wall



024 Buttress support to steel struts



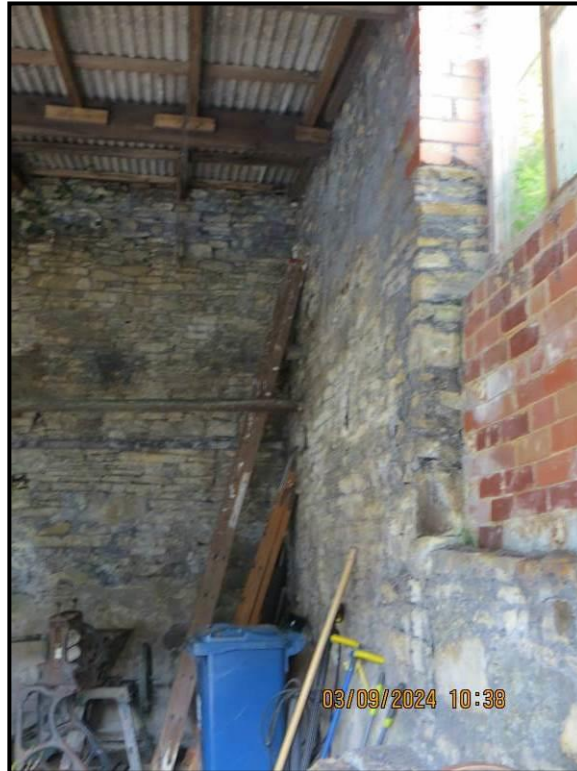
026 Roof and door head



027 Western wall



028 Double panel Perspex window



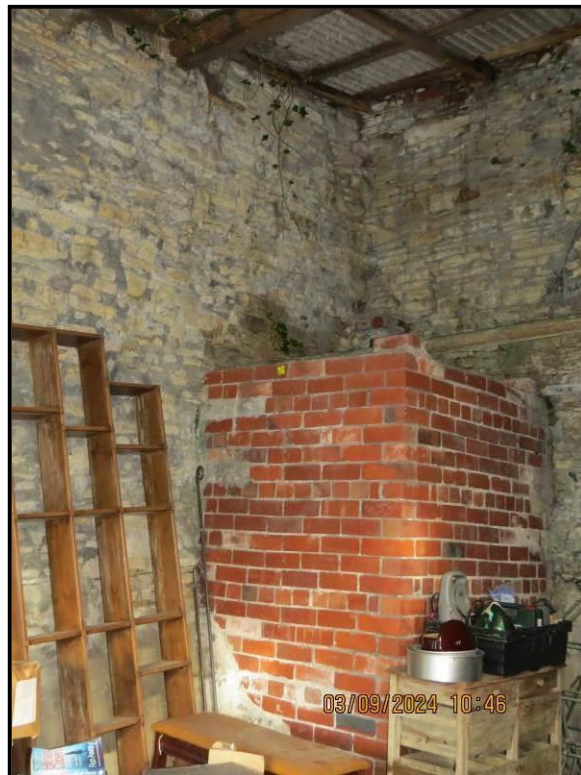
029 Eastern flank wall, lateral restraint



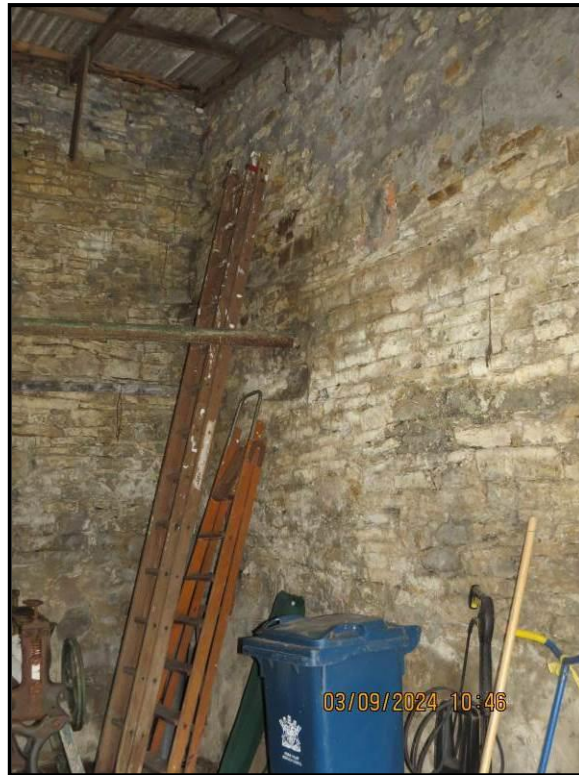
030 North Western flank, localised disturbance to outer leaf



031 North Western flank, localised disturbance to outer leaf



032 Internal buttress, North West corner



033 North Eastern corner



034 Rear wall and flank return



035 Rear wall and return flanks



036 Roller shutter door

007E West elevation, vertical joint to original stone barn



013E Vertical construction joint, front of original construction (East elevation)



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REPORT NUMBER: 9682

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