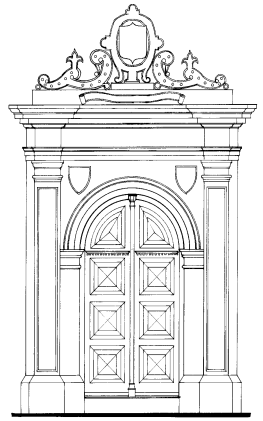


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INFORMATION SCHEDULE RELATING

TO

LISTED BUILDING CONSENT
REFERENCE 21/0317/LBC
CONVERSION OF AGRICULTURAL BUILDING TO
DWELLING

CONDITIONS NOS. 4, 5, 6 & 9

AT

UNDERDOWN FARM,
RAWRIDGE
UPOTTERY
DEVON
EX14 9QR

February 2024



Partners:

A. T. HAYES, BSc DipBldgCons MRICS IHBC
RICS accredited in building conservation
DR. S. M. HAYES MA PhD FHEA

1.00 Condition 4

Before any work is undertaken to remove any part of the building, the applicant shall take such steps and carry out such works as shall, during the process of the works permitted by this consent, secure the safety and the stability of that part of the building which is to be retained. Such steps and works shall, where necessary, include, in relation to any part of the building to be retained, measures as follows:-

- a) to strengthen any wall or vertical surface;*
- b) to support any wall, roof or horizontal surface; and*
- c) to provide protection for the building against the weather during the progress of the works.*

Details of any additional necessary repairs required as a result of the works, including methodology, specification or schedule shall be submitted to and approved in writing by the Local Planning Authority before continuing with the works.

(Reason - To safeguard the architectural and historic character of the building in accordance with Policy EN9 - Development Affecting a Designated Heritage Asset of the Adopted East Devon Local Plan 2013-2031.)

1.01 Existing Chert stone wall section above doorway on south west elevation.

Upper section of the existing southwest corner wall adjoining the corrugated sheet section on the south elevation, along with the attached 'buttress sections is suffering significant wash out of the lime mortar joints and bedding through the whole thickness of the wall from ground level to eaves level on the west side of the door opening. A missing lintol, over the doorway has resulted in significant cracking and dropping of the of the section of masonry above.



Exterior



Interior



‘buttress’ section

This eroded wall section is considered to be beyond an insitu repair and is to be carefully taken down and re-built re-using the existing stones bedded and pointed in 1:2.5 putty lime/coarse Chardstock sand/local earth mix. Finish to be flush with stone arises.

New green oak lintols of similar section to the existing are to be fitted over the door opening and the loose masonry re-bedded. The new stone work is to be bonded to the sound remaining section of wall. The existing cement mortar repair section above the door head is to be taken out and rebuilt using lime mortar mix stated above.

The roof is to be propped and supported during the repair works– see details in 1.02 below.

The work is considered essential to ensure the integrity of the building. The materials used retain the original stones, bedded and pointed in a traditional breathable lime based mortar similar to the original, as a conservation based repair.

1.02 Storm damaged west end wall

The severe storms at the end of 2023 and early 2024 have resulted in significant structural movement of the free standing west end wall of the building. The applicant’s insurance company is involved in a claim to rebuild this wall.

The wall is falling out westwards, from ground level to eaves and exhibits a significant bow outwards along it’s length with a number of vertical full height cracks. An area of masonry has fallen out on the south west corner. There are also stone losses at the base of the wall.

The roof truss support timber bearers are pulling out the wall head with the truss contact with the bearers now very linted.



West end wall



Collapsed masonry



Wash out at base



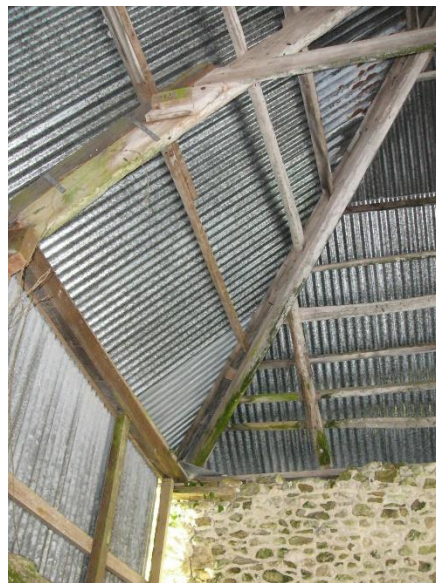
Mid wall movements crack



Movement cracks



Wall lean out



Hip truss bearing off wall head



Wall crack and truss bearings.

The Insurers Structural Engineer report is set out below;

Further to the site visit undertaken last week, please find my observations below.

The site visit was undertaken at Underdown Farm, Rawridge, Honiton, EX14 9QR, on 11 January 2024.

The purpose of the site visit was to assess the end wall of a historic grade II listed barn. Damage had been observed after storm Henk had passed during early January 2024.

The barn has two main components, the original enclosed barn and a later addition, providing a covered area to the west end of the barn. The floor of the covered area of the barn has a concrete floor slab, laid horizontally thus raising the floor level approximately 300mm above the drive level at the low end of the barn.

Failure of the later addition of the covered barn area is evident throughout. The main opening lintel shows sign of movement at both ends. The east end of the beam appears to have moved approximately 60mm from the end of the masonry formed bearing shelf. The west end of the beam shows signs of movement, as the timber sections forming the wall plate have dislodged and are falling out. The opening to the south side of the barn has been sealed with a corrugated steel-clad timber frame, which is attached to the timber lintel. The timber frame wall has been pocketed into the end masonry wall.

The west end masonry wall has moved significantly, circa 150-200mm at the southwest corner. This movement is evidenced by the timber lintel wall plate having remained attached to the opening lintel, and fully exposed from the underside, where the wall has rotated to the west.

From the north looking south along the west wall, the wall rotation is easily observed. The wall has hinged failure at the bottom outside of the wall. Further evidenced by the gap between the masonry and concrete floor slab.

From outside the west end of the barn, the bottom of the wall indicates typical construction, without a foundation. Two thirds towards the south of this wall, there are signs of a culvert passing under the wall, perhaps serving a natural spring. The culvert was not obvious and was clearly blocked, perhaps collapsed. Subsequently the ground immediately adjoining the wall was saturated and boggy underfoot. Further down slope there were reeds present indicating historical wet ground.

On the southwest corner of the barn, there were visible signs of recent masonry failure. During the visit masonry debris continued to fall from the wall in this area. The wall shows clear signs of failure on the internal and external faces of the wall. Vertical cracks were observed externally, at circa 2500mm spacings along the wall. Internally the cracks ran diagonally towards the top southwest corner of the wall, changing to more vertical alignment by the mid span of the wall.

The masonry wall was measured at 560mm thick, 7112mm long by 4422mm high. At this size the estimated mass of the wall would be in excess of 40 tonnes.

With the wall showing signs of moving, an exclusion zone was agreed on site to prevent personnel entry into the potential fall zone, by the tenanted family members from the neighbouring barn or visitors.

Timeframes were discussed during the visit. A time period of in excess of three months was estimated prior to commencing any remedial works. Should another storm event occur in the vicinity of the barn, the wall may fail, depending on storm direction and ferocity. There are two options whilst the remedial works are planned; do nothing or intervene.

Should the wall be left and subsequently fail prior to works commencing, this may leave approximately one third of the barn roof unsupported which could cause failure of the gable end masonry wall located to the west end of the original barn and detrimentally damage the roof above the original barn.

Should an intervention be explored, a temporary works system could be employed to provide temporary shoring to the wall. Complexity arises due to the exceptionally soft ground adjoining the failing wall. Temporary works shoring specialists such as Groundforce Shorco or Mabey Hire, would be able to provide assistance through assessment, designs and costings should there be an available solution.

Considering the various modes of wall failure, it would be virtually impossible to remediate the wall, therefore total demolition and reconstruction of the wall would be required. As failure may be linked to storm damage and exacerbated by ground conditions, it would be recommended that ground water management be installed to the east of the wall, prior to any new foundation or wall being rebuilt. It may be possible to provide temporary support to the barn roof during the works or it may be more efficient to strip the roof of the barn, this should be explored with the Contractor.

It is proposed that the wall is taken down and rebuilt to the following schedule of works:-

- a) Install a designed bird cage scaffold inside the cart shed to support and strap down the existing roof structure. The scaffold is to be sheet wrapped to reduce window uplift on the roof structure and act as a temporary replacement for the wall.
- b) Wall to be braced with vertical planks and raking shores to facilitate a stone by stone demolition of the wall to foundation level. The walling stone are to be cleaned and stacked for reuse, ensuring any quoin stones are identified and set aside for reuse as quoins in the rebuilt wall. The work is to be carried out off the internal scaffold to avoid putting operatives at risk of a wall collapse.
- c) Excavate and cast new concrete foundations, including land drainage system to remove spring water from wall base.
- d) Construct new wall to same dimensions as original, re-using the stones removed in NHL 3.5 hydraulic lime mortar from the foundation to floor level and 1:2.5 putty lime/coarse Chardstock sand/local earth mix to eaves level. Finish to be flush with stone rises, with churn brush compaction.
- e) Re-bed truss blocks and wallplates.

The work is essential to avoid total loss of the end roof of the building. The materials used retain the original stones, bedded and pointed in a traditional breathable lime based mortar similar to the original, as like for like work. To be carried out by tradespeople with a proven track record of lime and local stone work.

2.00 Condition 5

A detailed Schedule of Works including any repairs and details of the works hereby approved shall be submitted to the Local Planning Authority and approved in writing prior to the commencement of the works.

(Reason - To safeguard the architectural and historic character of the building in accordance with Policy EN9 - Development Affecting a Designated Heritage Asset of the Adopted East Devon Local Plan 2013-2031.)

2.01 Schedule of repair to walls existing walls – Please refer to drawings number 2188/01 for items of repair and repointing of existing walls, not covered under Condition 4 above.

2.02 Schedule of work.

a) Roof work

Strip off metal roof sheets and timber rails, leaving existing roof trusses, purlins, hip rafters and ridge pole insitu, treat timber for active woodworm attack. Install new laminated timber A frame trusses between existing historic trusses, with new timber purlins to support roof structure. Lay new timber rafters between ridge, hips and eaves, bearing on new purlins and trusses. Existing trusses to be secured to new purlins for security.

Lay underfelt, slating battens and 500 x 250 natural slates to top of new rafters, complete with clay ridge and hip tiles in hydraulic lime mortar to match the adjacent buildings.

Install Conservation type rooflights to east end hip, with lead flashings as indicated on approved drawings.

All extract fan outlets and soil pipes to terminate on roof with flush slate vents.

Fix new half round powder coated heritage style cast aluminium gutters to wall plate on gutter brackets (no fascia board) and tubular downpipes to rain water gullies and drains at ground level.

Internally, fix insulation between and under rafters with plaster board, gypsum Onecoat and emulsion paint finish. U value to comply with building regulations.

b) Floor work

Remove existing concrete floor slabs, excavate and cast new concrete floors to levels indicated, comprising: GeoCell anti-capillary combined insulating hardcore base (Mike Wye or similar), complete with Radon sumps and pipe work through external foundation walls with vents. Lay Radon barrier and concrete floor slab complete with under-floor heating system. Lay new floor stone tile finishes. U value to comply with building regulations. Construct steps to low end as indicated on the approved drawings

Construct threshing floor timber section of timber joists with floor boards supported on timber framed perimeter walls raised off new concrete floor structure, complete with timber steps, as indicated on the proposal drawings.

To existing timber first floor at east end, treat for active wood worm, lift salvageable floor boards. Trim joists for new staircase. Relay salvaged boards, make up short fall with new boards to match. Fit sound deadening quilt between joists with plaster soffits to leave lower section of joists exposed.

Construct new timber first floor at west end comprising timber joists with floorboards to top, sound quilt insulation between and plaster board, gypsum Onecoat and emulsion paint finish underneath. Frame up floor for new staircase, landing and gallery.

c) Wall work

Clean down retained stone walls, carry out local repairs to eroded mortar joints and holes in putty lime mortar, finish to match the existing.

Remove the modern concrete columns and steel beams at the lower end of the main building. Make good beam pockets in walls with chert stone in putty lime mortar.

Raise new external wall plinths to both sides of former cart shed opening comprising concrete foundation, insulated cavity wall with chert stone facing in NHL 3.5 hydraulic lime mortar up to internal floor level.

Construct new timber frame external wall to north west corner of building of insulated timber structure stud framing, faced externally with timber shiplap weatherboarding, and internally with plaster board, gypsum Onecoat and emulsion paint finish. U value to comply with building regulations.

Raise new masonry partition off foundation to underside of east end first floor structure to support existing edge beam, and finish with plaster and emulsion paint. Raise partition above to ridge height as indicated on the drawings, of timber frame construction, clad in plasterboard, plaster skim and emulsion finish. Install sound deadening quilt to framework.

d) Joinery

Install timber double glazed windows, doors, screens, etc., to be agreed by Condition 7

e) Services

Install new surface mounted electrical installation to avoid chasing stone walls.

Install new surface mounted plumbing systems to avoid chasing stone walls. Heating to be via underfloor system to avoid surface mounted radiators.

3.00 Condition 6

All stonework repointing shall be carried out using a lime based mix, the specification of which shall be submitted to approved in writing by the Local Planning Authority. The colour, texture, type of bond and joint, and finish shall match original work, and a small trial area shall be prepared in a non-prominent location for inspection and approval by the Local Planning Authority prior to commencement of the works.

(Reason - To safeguard the architectural and historic character of the building in accordance with Policy EN9 - Development Affecting a Designated Heritage Asset of the Adopted East Devon Local Plan 2013-2031.)

- 3.01 The mortar for bedding and pointing shall be 1:2.5 putty lime/coarse pale cream colour coarse sand/local earth mix to match the existing as close as is practicable. Finish to be flush with stone arises. Pointing is to be compacted with churn brush or similar, to open up surface texture and ensure proper compaction of lime mortar before carbonation.

A trial area will be carried out as part of the west wall rebuilding.

4.00 Condition 9

No development shall commence until a scheme detailing the steps proposed to relocate and restore the cider press and including any interpretation of the existing cider press and associated cider making relics within the barn has been submitted and approved in writing by the Local Planning Authority. The scheme shall include measures to protect the structure from adverse weather conditions during its re-location and shall be implemented in accordance with the agreed works.

(Reason - In the interests of the architectural and historic character of the building in accordance with Policy EN9 - Development Affecting a Designated Heritage Asset of the Adopted East Devon Local Plan 2013-2031.)

- 4.01 The existing cider press comprises a pair of substantial timber base rails and a single heavy square section timber headstock. A pair of cast iron posts link the head and base timbers, sandwiches between the base rails. The lower parts are square in section, the upper half turned with substantial screw threads.

Iron capstan wheels for timber capstan bars are fitted above the head stock to adjust the clamp pressure of the press. The top bearing of the wheels are attached to the timber cross bar for stability.





Missing pieces are the timber juice collection bed and the cider apple press racks.

The Cider press is clearly not in its original position and may not have been installed in this barn. It is thought that the cider house formed the west most barn of the range attached to the adjacent farmhouse. This press is thought to date from the late C19th to a standard design, see photograph below.



Photograph of similar Devon cider press in operation.

The cider press is to remain in its current safe position until the garage is constructed, to where it will be temporarily relocated until the barn conversion is complete. Once restored as above the press will be relocated in the new dining room as a feature.

Initial holding repairs whilst the press remains insitu are to clean down the timber and apply a woodworm treatment to stop the current common furniture beetle attack and to spray the metalwork with a light oil to reduce further corrosion.

The press is to be boxed in timber cladding to protect from damage and theft.

Restoration will involve the re-bolting of the lower beams to secure the press uprights, clean and oil the metal components. The reinstatement of the missing beds and rack. However, it is not the intention to make to press work, rather one of preserve 'as is' as a relic of the farming past.

Report prepared by

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