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OUTBUILDING AT MEADOW VIEW, EARSHAM STREET, WINGFIELD

STRUCTURAL APPRAISAL

JA/R/19/179
15th August 2019

General Description

The property comprises a historic, duo-pitched, brick-walled single storey outbuilding of approximately 27m^2 internal floor area presently used as stores, with a modern approximately 12m^2 timber-framed extension projecting from the south gable.

Set on fairly level ground, the north gable faces onto a grass track, offsetting a drainage ditch and field. The east elevation faces a turfed lawn area, the south faces a gravel driveway to the neighbouring property and the west faces agricultural grassland. There are no significant trees nearby.

The general structure of the building is shown on drawing '1902-01' prepared by Roger Adcock Architectural Design Ltd. This report should be read in conjunction with Adam Power Associates drawing 'R/19/179 – SK-01'.

Element	Description	Recommendations
Roof Structure	The clay pantile roof to the north and central bays is supported on a softwood timber roof comprising 3" x 2" rafters supported on 3 ½ " x 3" purlins. The purlins span between the gable and internal walls, taking intermediate support from collars varying in size from 3" x 2" to 6" x 1 ½". The rafters spring from 3" deep wall plates,	There are areas of localised decay to the north and central roof structures, due to moisture ingress, particularly at the dividing wall. The purlins to the central bay have detached from their end bearings on the internal wall and presently take support by cantilevering off adjacent collared principal rafters. The wall plate to the north bay is over

Element	Description	Recommendations
	restrained by gable and eaves ties across the building. A 5 ½" x 5 ½" eaves beam supports the roof to the central bay over the main opening in the east elevation. The south bay roof comprises a modern softwood raised tie truss arrangement of 6" x 2" rafters and ties.	spanned and has caused a slight bowing in the west wall. The guttering is missing and rainwater from the roof presently discharges directly onto the walls and ground. The eaves beam shows signs of slight decay due to exposure to the elements however the internal section is sound and the damage is cosmetic. Repairs and strengthening would be possible to bring the roof up to current standards however it is understood a new roof structure is proposed to these areas that will negate the need to carry out these works. Reinstate guttering, linked to suitable drainage discharging away from the building. The south bay roof is clearly adequate to support additional loadings relevant to a conversion and improvement works are not necessary.
Walls	Internal and external walls to the north and central bay comprise 9" solid brickwork. The gable walls reduce to 4" above eaves level, with a continuous 9" x 9" thick pier extending centrally up to the ridge line. The north bay walls are coated internally with cement render at low level. The south bay walls comprise 6" timber frame, bearing off a facing brick masonry plinth.	The wall structures are generally in good condition where visible. There are areas of moderate localised cracking both in the internal and external walls which should be repaired using Helifix bars (SK-01). There are areas of localised spalled brickwork and eroded mortar beds to the external walls, most prevalent in the central bay. Remove vegetation from external walls and check condition of concealed areas. Areas of damaged brickwork should be repaired or replaced with reclaimed bricks and mortar beds repointed. There is an outward bow of approximately 40mm in the north bay wall on the west elevation, likely due to the over spanned wall plate. This does

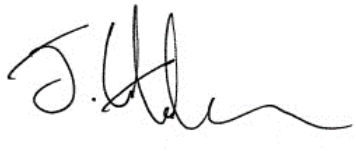
Element	Description	Recommendations
		not present a problem structurally, and future movement will be prevented by the introduction of a new roof designed to modern standards. The north and central bays are not toothed together and have subsequently prised apart. Tie the central bay external walls back into the north bay external walls and internal dividing wall using Helifix bars (SK-01). The south bay timber frame is in good condition and no improvements are necessary.
Ground floor	There is an exposed concrete floor to the north bay. The central bay has a mixture of uneven brick weave flooring, and crude concrete oversite. The south bay has a modern, level concrete floor slab throughout	The floor slabs to the north and south bays are in good condition where visible and no improvements are necessary. A new floor slab will be required to the central bay.
Foundations	Trial holes were excavated on the north and central bays, exposing 400mm deep straight brick footings, founded on moist, firm, mottled slightly sandy clay subsoil.	Shallow foundations in clay subsoils are susceptible to movement through seasonal variations in moisture levels in the clay causing heave and shrinkage. There is a risk of movement of the existing foundations if prolonged drought conditions were to cause desiccation/shrinkage of the clay soil. The existing footings to the north and central bays have performed satisfactorily to date. **It is acceptable to leave the existing foundations as they are because they bear onto the clay subsoil, however there is a degree of risk to this as explained above, which would have to be accepted by the client.** The south bay footings were not surveyed however this area is of modern construction and has clearly performed in a satisfactory manner to date.

Summary.
The existing outbuilding structure is in good condition. Provided that the work is carried out carefully using skilled labour, repair methods and materials that are compatible with the existing, the building will be structurally sound and suitable for the proposed use.

Please note that the above recommendations are indicative only at this stage and this report should not be considered as a complete schedule of the works required for the conversion.

I trust that this is clear and sufficient for your immediate requirements, but please let me know if you have any queries, or require further advice. I should be pleased to prepare detailed drawings and calculations to support any Building Regulations application in due course.

Yours sincerely,



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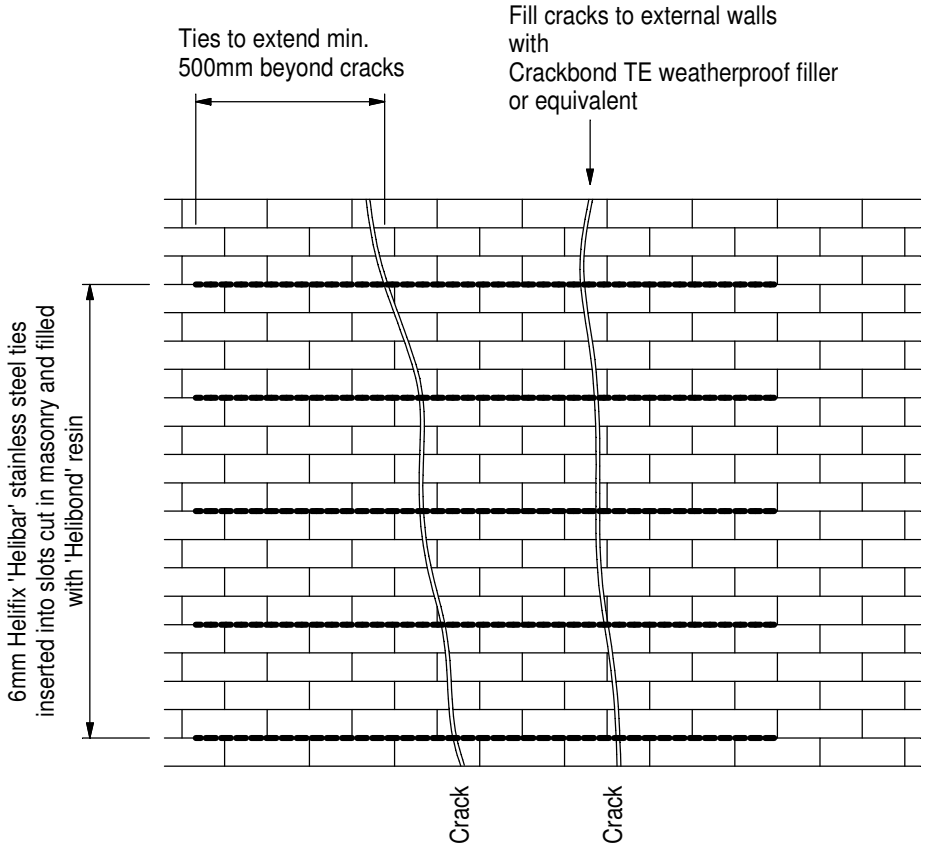
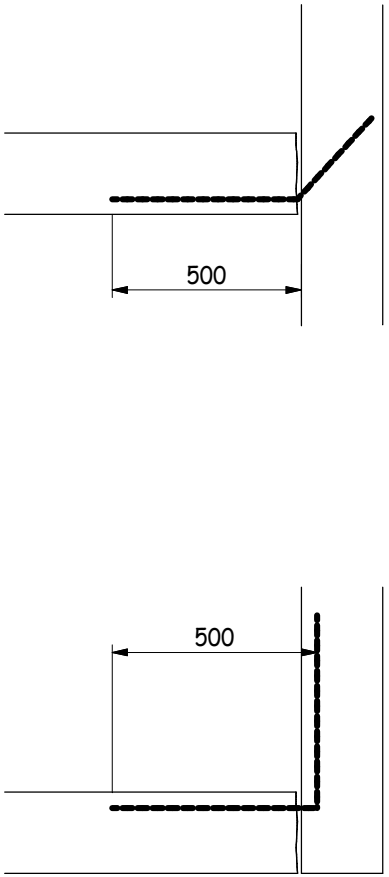


NOTE - Where cracks are less than 500mm from an external corner or an opening the bars should be bent at least 100mm round the corner and bonded into the return wall or bent and fixed into the reveal



Detail for Re-Connecting Corners

	Single skin or cavity wall	Solid wall
Tie bar vertical spacing	300mm	300mm
Depth of slot	30mm	40mm

Contact Details:

Helifix Ltd.
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www.helifix.co.uk

DO NOT SCALE DIMENSIONS FROM THIS DRAWING

In the event of any queries contact: Jason Albanie BSc IEng MICE

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Outbuilding at Meadow View, Wingfield
Brick Crack Repair Details

R/19/179 - SK-01

Rev.

Rev	Date	Desc