

MS07041/DS

Mr & Mrs Harriot
Broomhurst Lodge
Lymminster Road
Lymminster
West Sussex
BN17 7QQ

By e-mail

18th November 2024

Dear Mr & Mrs Harriot,

**Structural Appraisal of Existing Brickwork Barn at Broomhurst Farm, Lymminster for
Conversion to Domestic Accommodation**

Further to our correspondence regarding the proposed conversion at the above property, please find below a Structural appraisal of the brickwork barn with tile pitched roof, which is proposed to be converted into domestic accommodation, following our site visit on the morning of Thursday 31st October 2024. Attached are over marked Structural plan layouts & trial hole findings. The weather during visit was cool & overcast. Report to be read in conjunction with over-marked plan layouts attached.

Brickwork barn - Existing Structural Condition

The existing brickwork cattle barn building was set within the farmyard complex of barns to Broomhurst Farm approximately 150m to the west of A284 Lymminster Road. The brickwork barn was set on the south side of the barn complex adjacent to a previously converted brickwork and flintwork barn which it was linked to with a brickwork infill section of the barn. The intention is to convert both the brickwork barn and the brickwork link to the previously converted barn.

The brickwork barn was approximately 8m long and 6m wide and the infill link to the adjacent flint / brick barn was approximately 3m long and 6m wide. Both the barn and infill link were single storey buildings formed with 215mm thick brickwork walls and a concrete tiled pitched roof spanning the 6m width.

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The building duo-pitch roof was formed with 50 x 100mm timber rafters spanning onto timber purlins approximately 75mm wide x 180mm deep. The purlins spanned onto the gable masonry walls of the brick barn and the adjacent flint barn and onto 2No. evenly spaced timber king post trusses over the main brickwork barn to be converted. The condition of the roof timbers were generally very good with no significant deflections noted.

The brickwork walls to the barn and the infill link were generally in a good order formed with 215mm thick brickwork with lime mortar. The main brickwork barn had masonry piers around the perimeter at approximately 2.5-3m centres, which were generally in keeping with the original brickwork. The two central piers on the north / front elevation either side of the main opening appear to have been replaced / enlarged previously. Externally there was some vegetation growth noted on the north west corner pier, which would need to be removed and some re-pointing is likely to be necessary. The central pier on the west gable wall has some slight damage to the top 3-4 courses, which would need to be repaired. Internally, the low level brickwork requires some re-pointing and some damage / missing bricks would need to be replaced. There were timber plates embedded into the gable walls of the main brickwork barn at eaves level, these were in a reasonable condition, but it would be recommended to remove these to omit the risk of them rotting in future. Within the infill link, there was a couple of minor cracks noted to the north wall, which would need to be repaired / repointed.

A trial hole was excavated internally through the ground floor slab which showed a thin 75mm thick black colour concrete / dense asphalt over made ground.

Three trial holes were excavated externally around the building, which showed the footings were between 375mm – 650mm deep with corbelled out brickwork for the main brickwork barn and corbelled bricks with concrete under for the infill link brickwork (see attached section sketches of the trial holes). A soil sample was sent for testing the clay content and the attached result shows the subsoil is on threshold between low and medium plasticity clay.

Summary

We consider the existing brickwork barn is generally structurally sound and suitable for conversion.

The existing timber roof structure common rafters, timber purlins and king post trusses are in a reasonable condition, but they will need some adaption to allow for the proposed first floor accommodation within the roof space.

The existing 215mm thick solid brickwork walls are generally in a good condition with no significant cracking noted. There are some sections of brickwork that will need to be repaired due to some minor cracking and some re-pointing will be necessary but this is limited to small areas internally and externally. It would be recommended to remove the embedded timbers to avoid a future issues with the timber rotting. It is likely the wall will need to be lined internally to allow for insulation & plastered finishes.

The existing ground floor slab appears to be asphalt based slab and would need to be removed and replaced with a reinforced concrete slab suitable for accepting damp proofing and insulation. This new slab can also be utilised to support the first floor support walls and plastered wall linings to limit any underpinning required.

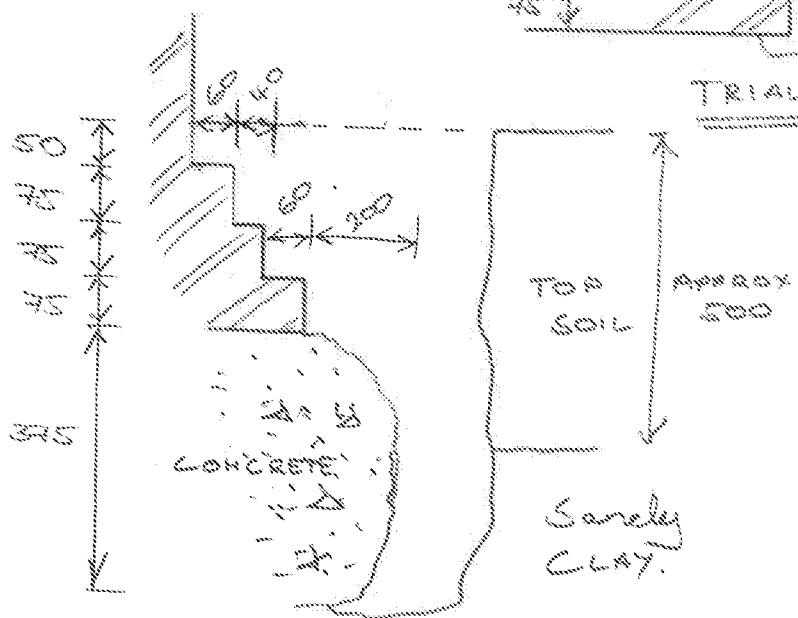
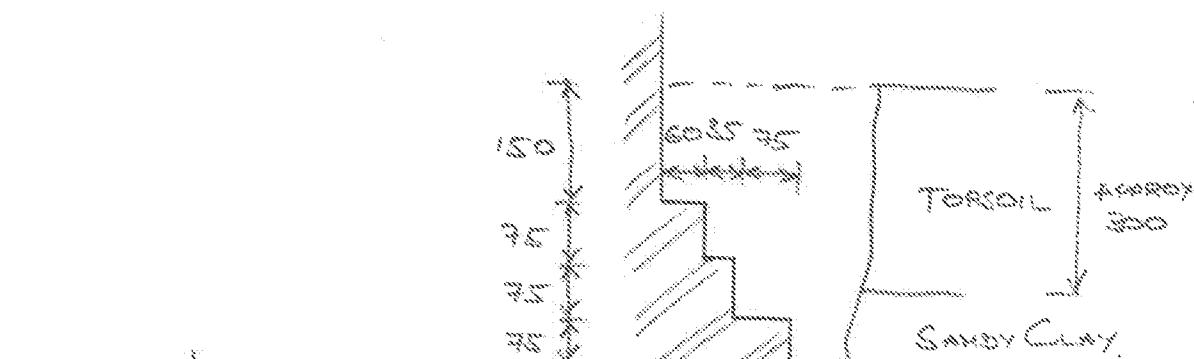
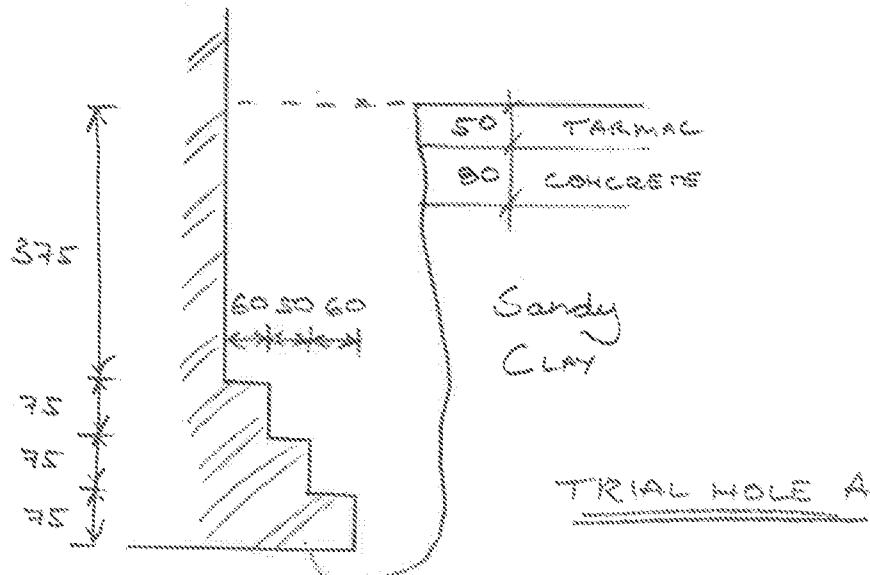
The existing foundations are between 375mm and 650mm deep, which are a little shallow compared to current requirements for foundations bearing onto low to medium plasticity clay subsoil (750mm to 900mm depth). Given there are no trees in close proximity to the existing barn and that the plastered finishes can be supported off new internal floor slab bearing onto new internal foundations, it is likely only small areas of underpinning would be necessary.

Please do not hesitate to contact us if you have any queries or require any further information.

Yours Sincerely

D C Simmonds MICE CEng BEng (Hons)
Director
McCarey Simmonds Limited

JOB TITLE		DATE
Broomhurst Farm, Lymminster		November 2024
ITEM	JOB NO.	SHEET NO
Trial holes	MS07041	
PREPARED BY	CHECKED BY	
DS		



ASHDOWN SITE INVESTIGATION LIMITED

Soil Classification Summary

Site Name:	Broomhurst Farm, Lymminster	Job No:	LT16902
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Test Method: Classification Tests BS1377: Part 2: 1990: Method 4.4, 5.3 and 5.4

Sheet No. 1

* Consistency index based on natural moisture content and not the equivalent moisture content