

Our Ref: ET/nc/ss/6870/1

Date: 17 July 2023

James Forrest

By email: james@rhforrest.co.uk

Dear James

Structural assessment for conversion of a barn

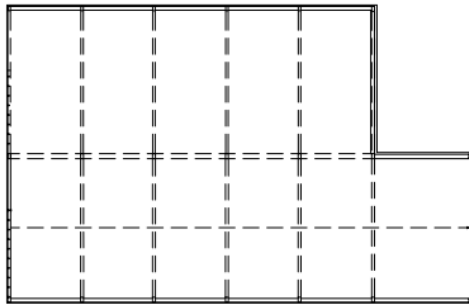
Further to your instruction to undertake an inspection of the former agricultural building at Clamp Farm, I include the following notes below regarding the structure, condition, and suitability for conversion.

Limitations

This report relates to the stand-alone barn to the west side of a small settlement to the west of Mill Lane. There is limited access to the exterior of the barn as the land to the south and east sides are part of the neighbouring property and therefore not accessible. It is assumed that finishes are to be replaced if conversion were to be carried out and that all landscaping would be renewed.

Description

This is a stand-alone barn structure formed in an 'L' shape with concrete portal frame supporting the majority of the barn with an additional galvanised steel portal frame section added to the west end forming an additional bay. The barn has a double pitched roof with concrete block fibre cement sheet and timber boarded cladding to the various elements externally. In addition there are large sliding steel frame doors on the western elevation.



Original Floor Plan
1:100



Front Elevation
1:100



Side Elevation
1:100



Rear Elevation
1:100



Side Elevation
1:100



Scale: 1:100

Client: Mr Farnell
 Job Title: Eten Farm, Stowmarket
 Drawing Title: Existing Plan and Elevations
 Drawing No: 1-100-01-01
 Date: 14/08/2023
 Scale: 1:100
 Status: Preliminary

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 Scale: 1:100
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Main structure

The structure for the main portion of the barn consists of a series of pre-cast concrete portal frames. These are a series of pre-cast sections which are bolted together on site and connected with pre-cast concrete purlins that run between the frames. These purlins not only form part of the main structural arrangement but also support wall and roof cladding materials. The structural arrangement consists of a symmetrical portal frame with an addition of further lean-to frame sections to the side on the north.



To the west end of the barn an additional bay has been added without the lean-to section. This is formed with a galvanised steel portal frame connected to the concrete structure with steel purlins.

The main structural elements of the building currently appear in good condition. There is some light surface corrosion to bolts that connect the concrete pre-cast units together. This does not appear to be to the degree where it has caused any compromising structural integrity. There is also some light surface corrosion to the steel sections for the steel portal frame as well as the steel purlin. Again this is not to the degree where it has compromised the structural integrity. The structural arrangement here is in good condition and still adequately performing its function. Whilst some light surface damage and deterioration to some of the structural elements has occurred this is not to the degree where it raises any concerns regarding the ongoing integrity of the structure.

Roof

The roof is a double pitched roof configuration finished with fibre cement corrugated sheeting which is fixed down to the steel and concrete purlin. The ridge is finished with pre-formed fibre cement ridge sections. The edge flashings to the roof finish on the east side are in aluminium.

The roof finish appears intact, watertight and in satisfactory condition.

Foundations

I have not carried out any excavations to expose foundations and therefore cannot confirm the details of the foundation arrangement that is present. I assume that there are concrete pads providing support to the main structural frame elements located beneath structural columns with concrete strip foundations supporting masonry walls between the structural frame elements.

I base my assessment on the condition of the foundations on the visible evidence above ground. There is no indication of any distortion or movement to the structure that could be attributed to foundation movement. I have seen no indication of misalignment, cracking or distortion to masonry walls between the main structural frame elements that would indicate any weakness or failure of the foundations. I concluded that the foundations currently present are adequate to take the structural loading applied given the sub-soil conditions present in this location.

Walls

The external walls at low level to all but the east elevation are formed by concrete blockwork walls up to about 1½ metres high. The blockwork is in thick dense concrete blocks bedded in cement mortar. On the east elevation there is a section of blockwork to the north east corner otherwise this wall is finished with timber framing and timber cladding.



The blockwork walls at low level all appear sound, intact and in satisfactory condition with no obvious evidence of any notable weakness or deterioration. Some minor impact damage has occurred in some places. I have not been able to see every part of the low level external walls in detail due to the presence of stored items, and therefore cannot confirm that every element is in good condition, although all wall appear intact and in reasonably good alignment.



The eastern gable wall is mostly formed in timber studwork between the concrete frame elements with timber weatherboarding forming the external cladding over the top. The reason for the variation in finish here compared to the other walls is not known. Currently the timberwork all appears intact and in satisfactory condition as illustrated above.

To all walls except the east end the external finish is formed by corrugated fibre cement sheeting above the concrete blockwork plinths. This all appears intact and in satisfactory condition. There are some areas where minor damage has occurred. This has not compromised the integrity of the building. Currently the wall finishes are all in satisfactory condition with only minor deterioration evident.



Floor

The floor throughout the interior of the barn is formed with solid concrete slab. This is actually a series of concrete slabs. It provides a level, sound floor structure that appears currently all intact. I have not seen every part of the floor in detail because of some stored items, but what I can see shows no sign of any obvious weakness or deterioration that has caused a compromise in its integrity. The floor is currently intact and in sound condition. I suspect the floor structure here is either fairly thick concrete or reinforced concrete as it would have been designed to take the loading of agricultural machinery.

Rainwater goods

On the north side of the building is a run of guttering formed by large pre-cast concrete sections with outlets to each end. The guttering elsewhere is formed by large diameter uPVC gutters leading to circular downpipes.

The rainwater goods appear intact. It was not raining during the inspection and therefore I cannot assess their effectiveness. The rainwater goods have become overgrown with ivy in some places.

Conclusion

This building appears structurally sound, intact and in satisfactory condition for conversion for re-use. It raises no major concerns regarding structural integrity.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Neil Cleveland', with a long horizontal flourish extending to the right.

Neil Cleveland BA, BSc. MRICS
For Whitworth