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25/07/2022

Nicola Cook
West Lancashire Borough Council
Planning and Development Services
52 Derby Street
Ormskirk
Lancashire
L39 2DF

Dear Nicola

RE: 20218589 – The Grain Store, Boggarts House Farm.

With reference your recent pre-app response in respect of the above proposed application. We have reviewed your responses in respect of the building structure and have amended our report to further reflect our opinion on these aspects.

We summaries our opinion in respect of the structure as detailed in our report in response to your feedback as follows:

1.1.1 …the proposed works go beyond what is reasonably necessary for the building to function as a dwelling

Based on our inspection we are of the opinion that the works required will entail re-cladding of the external walls and roof coverings utilising the existing structural frame, formation of new first floor and upgrading of existing ground floor slabs in terms of damp and thermal performance.

1.1.2 "Very little of the existing building would be retained and I am not aware that there are any footings or load bearing flooring which would be able to take the weight of the new floors, proposed fenestration and external walls."

Based on our inspection and assessment we anticipate that the steel framed structure and concrete ground floors will be retained, which are the majority of the existing building structure.

The ground floor consists of a ground bearing concrete floor. The loading resulting from the agricultural use will far exceed the load resulting from proposed residential use.

There will be a requirement to incorporate insulation and a damp barrier within the ground floor construction and this could be achieved by insulating and damp-proofing over the existing concrete floor slab and providing a screeded floor finish over the DPM/insulation.

In respect of the foundations of the building we would anticipate that the steel columns to the frame have concrete pad foundations.

Given the nature of this steel framed building we would anticpate that the external walls will be constructed as clad walls supported by the steel frame with internal partitions formed off the existing concrete floor.

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1.1.3 I am concerned that the existing frame would not be able to support the installation of a first-floor s structure.

The new first floor would be of timber construction and would be supported via steel beams off the existing supported off the existing columns.

We have completed an analysis existing column within the existing building with the addition of the proposed floor loads.

The introduction of first floor beams to existing columns shortens the effective length of the column making them less slender and this increases the stiffness/stability of the building and existing steel frame against wind load.

We have completed preliminary calculations that indicate that the existing columns are adequate to support the load from the first floor.

1.1.4 Evidence would need to be submitted to demonstrate how the conversion of the building would be carried out using the existing building structure."

In summary our assessment of the building structure suggests the following.

1. The roof structure/frame will accommodate an insulated cladding system, services and finishes without the need for significant strengthening.

2. The building columns have capacity to support increased load from first floor timber floors and beams.

3. The installation of a first-floor structure supported off the existing columns will stiffen the structure and increase capacity against wind load and increase lateral stability.

4. The typical increased column loads would be accommodated with pad foundations of relatively small sizes in medium strength soils.

5. The ground floor appears to be a ground bearing concrete floor that would be adequate to accommodate domestic loading.

I hope these comments are of assistance.

Yours Sincerely

Nick Forman
Managing Director
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