[redacted]

Engineer:	Date:	Revision:
JGS	08.03.21	001

Survey Date: 08th March 2021

[redacted]

Site Weather: Mild (AM). Tmp: 8-12'c

Report Reference:

Structural condition report on existing period stable for conversion into permanent living accommodation.

Project Addres(s):
An Teachin, Hawley Road, Dartford

Report By: Joe Sheehan
Report Created: 08.03.21

Appendix #1 – About the inspection

We inspect the inside and outside of the main building and all permanent outbuildings, but we do not force or open up the fabric. We also inspect parts of the electricity, gas/oil, water heating and drainage services that can be seen, but we do not test them.

To help describe the condition of the property, we give condition ratings to the main parts (the 'elements') of the building, garage and some parts outside. Some elements can be made up of several different parts. The condition ratings are described as follows.

3 - Defects that are serious and/or need to be repaired, replaced, or investigated urgently.
2 - Defects that need repairing or replacing but are not considered to be either serious or urgent. The property must be maintained in the normal way.
1 - No repair is currently needed. The property must be maintained in the normal way.
NI - Not inspected (see 'Important note' below).

Important note: We carry out only a visual inspection. This means that we do not take up carpets, floor coverings or floorboards, move furniture or remove the contents of cupboards. Also, we do not remove secured panels or undo electrical fittings.

We inspect roofs, chimneys, and other surfaces on the outside of the building from ground level and, if necessary, from neighbouring public property and with the help of binoculars.

We inspect the roof structure from inside the roof space if there is safe access (although we do not move or lift insulation material, stored goods, or other contents). We examine floor surfaces and under-floor spaces so far as there is safe access to these (although we do not move or lift furniture, floor coverings or other contents). We are not able to assess the condition of the inside of any chimney, boiler, or other flues.

We note in our report if we are not able to check any parts of the property that the inspection would normally cover. If we are concerned about these parts, the report will tell you about any further investigations that are needed.

We do not report on the cost of any work to put right defects or make absolute recommendations on how repairs should be carried out.

Appendix #2 – About the property

Type of property – Period outbuilding stables

Approximate year the property was built – 1900's (Assumed 100-150 years old)

Number of floors – 1

Structural Build up – The stable is a traditional build comprising of a clay tiled pitched roof at 125x47mm (approx). rafters, 170x47mm (approx). ceiling joists, 215mm thick double skin masonry wall + render (BF), 300mm+ thick ground bearing slab with a 1m+ deep store spanning under the main entrance to the rear flank wall.

Appendix #3 – About the property (ratings)

Rafters – 1
Overall, the rafters are in good condition with no obvious signs of distorting, water ingress, rot, or woodworm, at their current size and spacing, they pass all structural checks to support the load of the roof.

Ceiling Joists - 2/3
Overall, the ceiling joists are in good condition with no obvious signs of water ingress, rot, or woodworm. There are however some missing or broken joists and will need to be either fully replaced or on damaged joists, a new joist provided parallel to it and bolted together with M8 (8.8) bolts staggered @ 600mm crs.

Wall plate - 2/3
The wall plate is in relatively good condition in some areas, however there are areas where minor water ingress has occurred and will be more effective to replace the entire wall plate along the full extent of both flank walls.

Lintels -2
The timber lintels overall are in good condition and will not require replacing (Subject to final design check). On re-pointing/ re-building the wall, the lintels will need to be re-set with a nominal bearing of 100mm min.

Walls -2
Overall, the masonry is in good condition with no signs of bowing, excessive cracking or subsidence. There are visible render cracks on both faces but this does not reflect in the masonry behind it. Structurally the walls are in good condition and will need minor re-building + re-pointing in areas.

Foundations -2/3
The ground bearing slab currently is in good condition however in the proposed scheme it will undergo alterations to accommodate the proposed FFL. Refer to Appendix-4 for details.

Services – NI

Appendix #4 – Summary

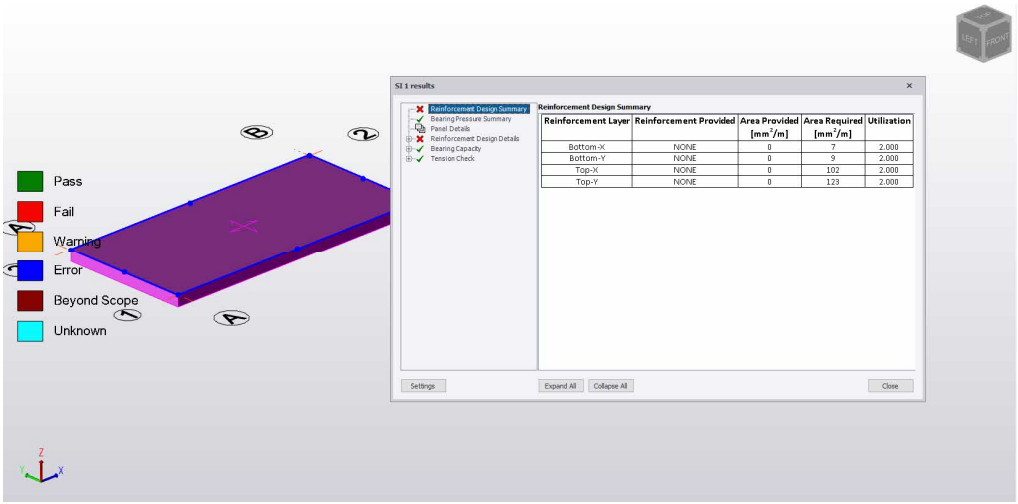
Aside from the noted above in appendix-4 there are no major concerns structurally in the scope of what the architect has set out for the future of the building.

Overall, the outbuilding is in good condition relative to its age and will require some but not excessive repairs in key areas of the superstructure to make the habitable space safe.

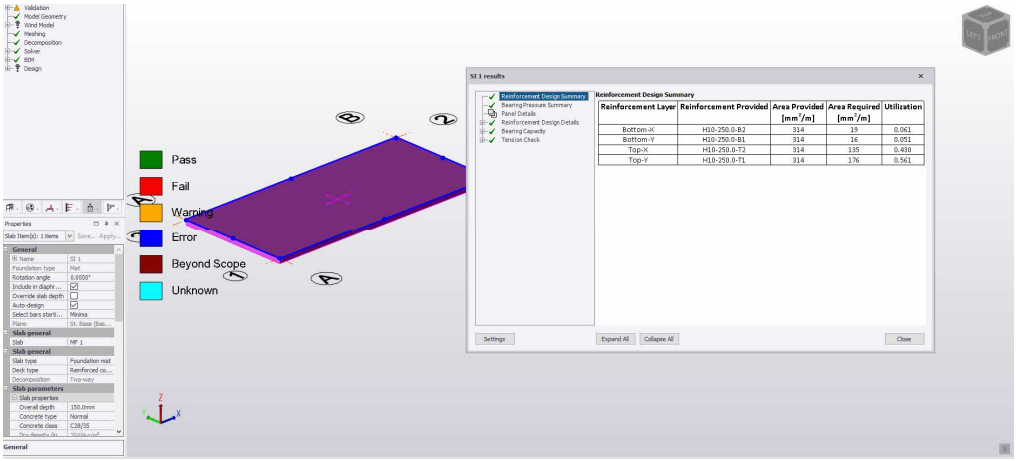
The 300mm thk (+) ground bearing slab has been assumed to not include any reinforcement due to its age. Due to the depth of the raft and the period of soil consolidation that it will have been subjected to, an allowable ground pressure of 50 kN/m^2 has been considered. Preliminary bearing pressure calculation indicates a bearing pressure of 43 kN/m^2 for the proposed scheme and therefore the soil is suitable for the proposed scheme. Preliminary design indicates that the current slab fails under the minimum reinforcing and spacing required to Eurocode – requires H10 bars minimum, and for a 300mm slab @ 200mm centres (A393 mesh) top and bottom. In the proposed scheme, an FFL equal to the existing SSL has been given and consequently the proposed SSL will need to decrease to compensate for this change, effectively decreasing the depth of the slab. To do so, the slab will be broken out internally, reinforcing bars will be placed in the perimeter foundation in order to lap with the new thinner in-situ slab that will be recast. Decreasing the depth of the slab, speculatively to say 150mm, would allow the H10 bars to be placed at 250mm centres.

As the building is a traditional build, introduction of new windows will be acceptable within proximity guidelines of corners + overall window span. The engineer carrying out the proposed works will need to take into careful consideration not to undermine the current foundations at the abutment of the new structure and will need to provide a soft joint between new and existing buildings to negate any settlement of the proposed structure and prevent cracking in the existing.

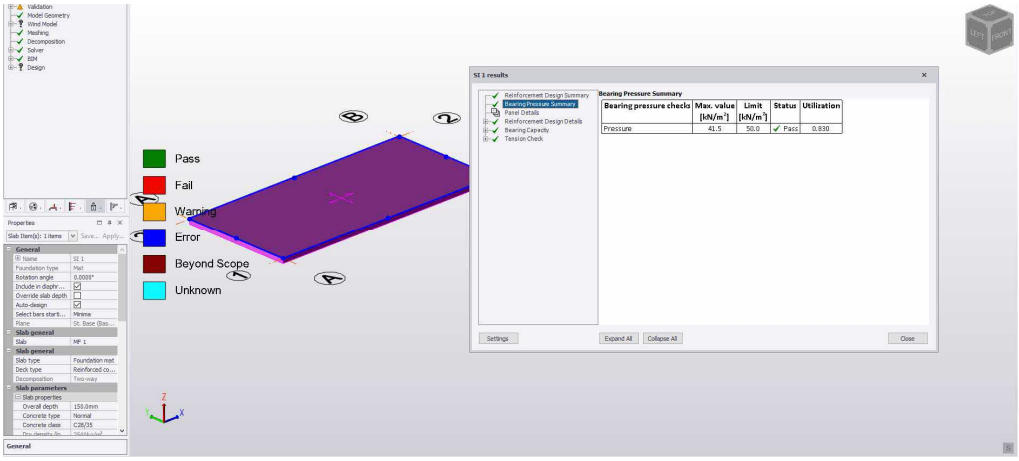
Existing slab failure:



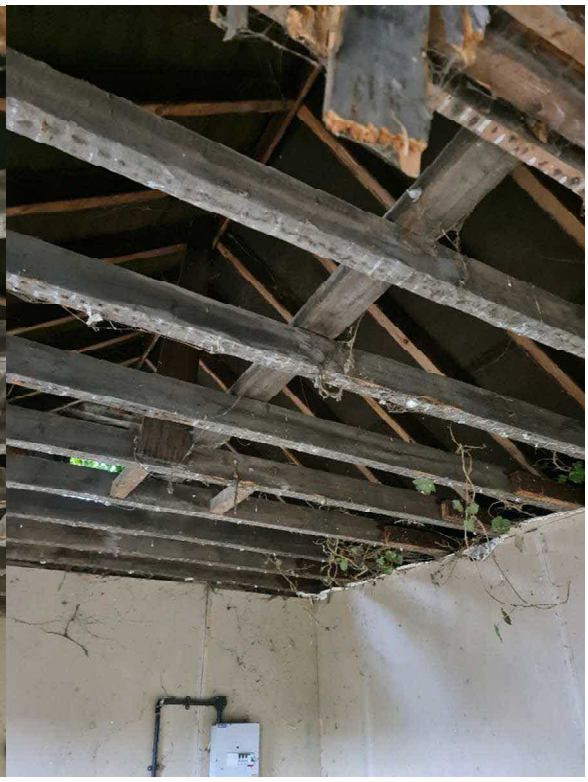
150mm thk slab passing with H10's @20 mm crs:

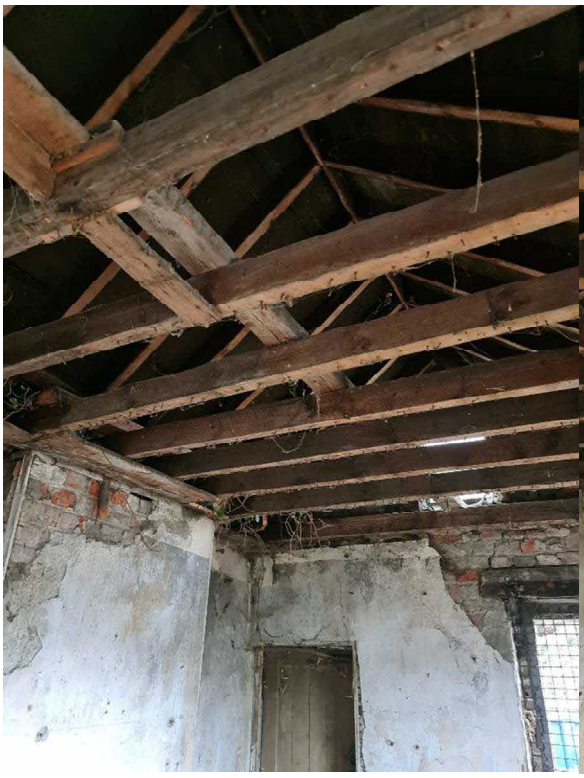


Ground bearing pressure pass:



Appendix #5– Photo Evidence





END OF REPORT