

Annex 5 - Surveyors view on work required to retain existing structure



With regards to the steel frame there are a number of issues that need to be addressed should the building be renovated. The main items are as follows:

- A more detailed design check of the columns is required to establish if they meet present day standards for strength and serviceability. My opinion is that most if not all the columns will require strengthening. The columns along the Piccadilly elevation are mostly encased within the brickwork wall and would be difficult to apply a flange plate to either flange without removing the wall. It would be possible for a new column to be installed on the inside of the existing column making it redundant. The columns would need to be tied together at intervals to transfer the wind loading and would also need to extend down and fixed to the existing foundation. Also the ends of the roof trusses would need to be adapted in order that the vertical roof load is taken into the new columns. To provide stability across the width of the building a knee brace would need to be incorporated at the top of each column to provide a couple between the column and the truss in order to take the local wind loading on each column. If a new column is installed it would then be possible to incorporate vertical bracing in order not to rely on the masonry for stability of the frame.
- With the columns along the rear elevation being generally exposed it would be possible to strengthen them with flange plates as previously discussed. By cutting out the concrete floor slab and surround and extending the flange plates down to the foundation a detail could be determined to resolve the rusting flanges and web. Permanent vertical bracing would need to be incorporated to provide frame stability along this elevation.
- There is already an amount of roof bracing, between trusses but this is not complete and needs to be extended back to the columns at each end and up to the apex of the roof. This is to provide stability down the length of the building. The existing bracing would need to be checked to see if it complies to the latest standards. For the wind loading on the gables to be transferred through the roof bracing / vertical bracing the condition of all the timber purlins and their fixings would need to be checked. In addition the gable walls would need to be securely tied to the purlins.
- The gable columns also need to be checked and similar solutions noted above may need to be adopted.

Defects in the masonry will need to be repaired with a combination of rebuilding and or strengthening with resin fixed helical bars across cracks etc. A specialist contractor should be employed to carry out this type of repair as opposed to a general contractor.

All structural timber members need to be checked by a timber specialist to comment on their structural integrity particularly where a timber member is built into an external wall.

From experience, on renovations of this type the full extent of defect will only be found when work commences on site and a suitable allowance should be made to cover any additional work.

I hope this is sufficient for your immediate requirement but should you need any further assistance to develop details for the remedial works please do not hesitate to contact us.

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