

39 & 40 Chester Terrace

TECHNICAL NOTE 01 – FEASABILITY OF NEW OPENINGS IN DIVIDING WALL

3rd March 2021

Revision 01

Executive Summary

This technical note has been prepared to provide a preliminary assessment of the structural feasibility of adding new openings between 39 & 40 Chester Terrace at Lower Ground Floor, Ground Floor and First Floor levels.

Overview of Existing Structure

There have, to date, been no intrusive investigations and the below overview is based on a low level walkaround of number 40 with some access to ceiling spaces and access to the roof. Further to this there has been research into past schemes and the history of the building to establish construction. No access has been gained from 39 at this stage.

The primary form of structure is loadbearing masonry with timber floors and roofs. The main houses are five stories, including a basement level, with a sunken patio to the rear of the properties.

The central wall between the two properties, where the openings are proposed, is likely to be masonry possibly with a rubble core, as was common at the time. From the walkaround at number 40, it is believed that the joists span parallel to this wall.

There are no openings within these walls however there are chimney stacks over and evidence of fireplaces throughout both properties. As such it is believed there may be flues and voids within the structure.

Overview of Proposals

The proposals indicate 3No. single width openings within the dividing wall. These locations are as noted on the Architect's plans and are all shown to be in the eastern end of the wall, near the staircases in No. 39 and where there is no evidence of fireplaces on either side.

Structurally there are no significant issues with the openings nor their load. That they are all shown above each other suggests there may be some concentrated loading through the piers but the width of the openings, the thickness of the wall and position of openings within the length of the wall suggest this will not be significant. The local increase in loads at the base is negligible and sound workmanship in forming the openings will ensure suitable load path.

The lintels are assumed to be covered and as such, given the width, they have been designed as precast concrete lintels. The material properties are more consistent with the masonry wall, they are easily reversible, honest in their age and can be handled more easily than other options making for a simpler construction. The returns for the openings should be formed in sound masonry, preferably recovered from the wall, to form bearings for the lintels and tooth into the remaining masonry.

The methodology for the works will be designed by the Main Contractor's Temporary Works Designer and reviewed by Whitby Wood, but it is assumed that the walls would be needled with 2No. steel beams propped at either end. The propping should be back-propped down to lower ground floor level and propped from the slab, as it is unlikely the timber floor construction will be suitable for the support of the props. The openings can then be formed, the returns toothed in and lintels introduced before infilling over the lintels to ensure the masonry above is fully supported, dry packing if needed. The needles should then be removed and wall made good.

To properly inform the temporary and permanent works design some further investigative work should be undertaken in the locations of the doors; ideally this should be undertaken prior to the start of the main works. Initially this is assumed to be the local stripping of finishes to inspect the masonry behind, with some local cores through to establish the wall construction. Ultimately, the presence of any flues will not be known for certain without scanning; in order to minimise the risk associated with these it is suggested that a scan of the wall be undertaken.

Conclusion

Overall, it is felt that the proposals are relatively minor and that the key is to appoint a Contractor familiar with these types of works and to establish a safe methodology. Precast concrete lintels are proposed, with local needling and propping down to the lower ground floor slab. The presence of flues is not known but the locations are away from the fireplaces so appears unlikely but it is suggested that in order to reduce the risk associated with these a scan could be undertaken.