

ING Design Limited. Railway House, Railway Road, Chorley.

Structural Report on Existing Building.

33, Thomas Street, Manchester.

Job No: 22119

Document Control Sheet

Property 33, Thomas Street, Manchester

Report Title Structural Report on Existing Building

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1 Executive Summary

1.1 ING Design Limited were appointed by Hannah Kera to undertake a structural inspection of an historic property at 33, Thomas Street, Manchester.

1.2 The purpose of the inspection was to assess the current condition of the existing building structure with respect to its proposed use as apartments and a restaurant.

1.3 The inspection took place on Wednesday 20th April 2022.

1.4 The building is a historic terrace property dating from c.1884.

1.5 This Report is presented to Hannah Kera and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this report.

1.6 Notwithstanding anything to the contrary contained in the Report, ING Design Limited is obliged to exercise reasonable skill, care and diligence in the performance of the services and ING Design Limited shall not be liable except to the extent that it has failed to exercise reasonable skill, care and diligence, and this report shall be read and construed accordingly.

1.7 This Report has been prepared by ING Design Limited. No individual is personally liable in connection with the preparation of this Report. By receiving this Report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

2 External Observations:

2.1 Photographs 1, & 2 show general views of the external front and rear elevations. From the photographs the general external condition of the property appears to be in good order.

2.2 It was not possible to get better views of the general external roof condition.

3 Internal Observations:

3.1 Photograph 3 shows a general view of the internal roof structure. The second-floor ceiling which encloses the existing roof space is damaged and badly sagging. Photograph 4 shows some of the damaged roof timbers which have led to the deterioration of the ceiling. Photograph 5 gives an indication of the sag in the second-floor ceiling.

3.2 Photographs 6, & 7 show the inside face of the front and rear elevations at second floor level. These photographs show the main roof beam system which is supporting the 4 timber purlins. Photographs 6, & 7 also indicate the deteriorating and missing inner face of the masonry below each window at second floor level.

3.3 Photographs 8, & 9 show the displacement of the second-floor structure adjacent to the rear and front elevations respectively.

3.4 Photograph 10 shows the inside view of the front elevation at first floor level. Photograph 11 shows the deflection of the first-floor structure and photograph 12 shows the displacement cracking in the internal dividing wall at first floor level.

3.5 Photograph 13 shows a general view of the first-floor room at the rear of the property. The deterioration of the inner masonry on the rear elevation below the bricked-up window can be seen. Photograph 14 shows the deflection of the first floor at the rear of the property.

3.6 Photographs 15, & 16 indicate the deflection of the ground floor ceiling beam which is carrying the internal dividing wall at first floor which features in photograph 12.

3.7 Photographs 17, 18, 19, & 20 show various aspects of structure in the basement of the property. Numerous items of attempted structural remedial strengthening which all appear to be inadequately constructed. On the left side of photograph 18 can be seen the front edge of the existing fireplace, masonry oven. The masonry structure of the 'oven' is practically falling apart.

4 Conclusions:

4.1 The building is an old historic property c.1884 which appears to be suffering from poor maintenance and inadequate repairs.

4.2 The timber suspended floors are sagging beyond an acceptable, useable, and safe limit. This is most likely due to ongoing and historical deterioration of the timber and in some part due to inadequately supervised alterations.

4.3 At first floor level there is an internal dividing wall which is unstable due to the deterioration of the floor and the supporting beam below. The wall has cracked, and areas of the masonry are loose.

4.4 The roof timbers appear to be in a reasonable state of repair with obvious exceptions where timbers have broken leading to the sagging second floor ceiling.

4.5 The remedial strengthening attempts in the basement are dangerous and should be replaced with adequate alternatives.

4.6 Sections of the external walls inner face masonry have collapsed, probably due to the floors sagging and thus removing the lateral support or due to the window lintels sagging allowing the masonry to settle and become loose, or a combination of the above.

4.7 We have used our reasonable endeavours to provide information that is correct and accurate and have discussed above the reasonable conclusions that can be reached based on the information available.

5 Recommendations:

5.1 It is our recommendation that the internal structure of the property should be fully refurbished to ensure its continued longevity and safety.

5.2 The second-floor ceiling should be removed, and the roof timbers repaired or replaced before a new ceiling is installed. The repairs can take the form of replacing damaged timbers with new or possibly reclaimed timbers, or the repairs can be made obvious by installing steel splints and bolts if this approach is more acceptable to the conservation officers.

5.3 All the timber suspended floors, and supporting beams are to be refurbished and repaired where necessary to make the property safe and fit for purpose. As the property is a listed building, we would suggest the use of reclaimed timbers and possibly second-hand historic steel sections where available and suitable. The existing timber floor joists could be retained if additional support is provided. The additional support would need to be in the form of new beams. These could be either reclaimed timber or historical steel sections.

5.4 The cracked and unsafe internal dividing wall at first floor level should be carefully taken down to facilitate the repair of the first floor and supporting structure. The supporting beams cannot be safely repaired or replaced if the first-floor wall remains unstable. The wall should be rebuilt using all the bricks recovered during its dismantling and new lime based mortar.

5.5 The attempted remedial strengthening works in the basement are to be removed and new suitably designed alternative remedial strengthening is to be installed. This will take the form of installing new beams to support the existing suspended timber ground floor. The new beams could be historical steel sections obtained from architectural salvage yards or other sources of second-hand steelwork. The existing concrete foundations are too high and

obstruct the effective use of the basement. These need to be broken out and replaced with more suitable foundations as required by the strengthening works.

5.6 All the areas of damaged masonry are to be repaired and made good. It is anticipated that lime mortars will be required by the conservation officer. Reclaimed bricks should be used throughout.

5.7 The existing 'oven' in the basement must either be rebuilt or enclosed. The condition of the masonry structure of the 'oven' is in such a poor condition that it will present a hazard to any construction operatives working in the confined space of the basement.

6 Appendix A:



Photograph 1 – Front elevation of property.



Photograph 2 – Rear elevation of property.



Photograph 3 – General view of internal roof structure.



Photograph 4 – View of broken roof timbers.



Photograph 5 – View showing sag in existing second floor ceiling.



Photograph 6 – Internal view of rear elevation at second floor level.



Photograph 7 – Internal view of front elevation at second floor level.



Photograph 8 – Showing displacement of second floor at the rear elevation



Photograph 9 – Showing displacement of second floor at the front elevation.



Photograph 10 – Inside view of front elevation at first floor level.



Photograph 11 – Showing the displacement of first floor at front of property.



Photograph 12 – Showing movement cracks on internal wall at first floor level.



Photograph 13 – Showing internal view of rear room at first floor level.



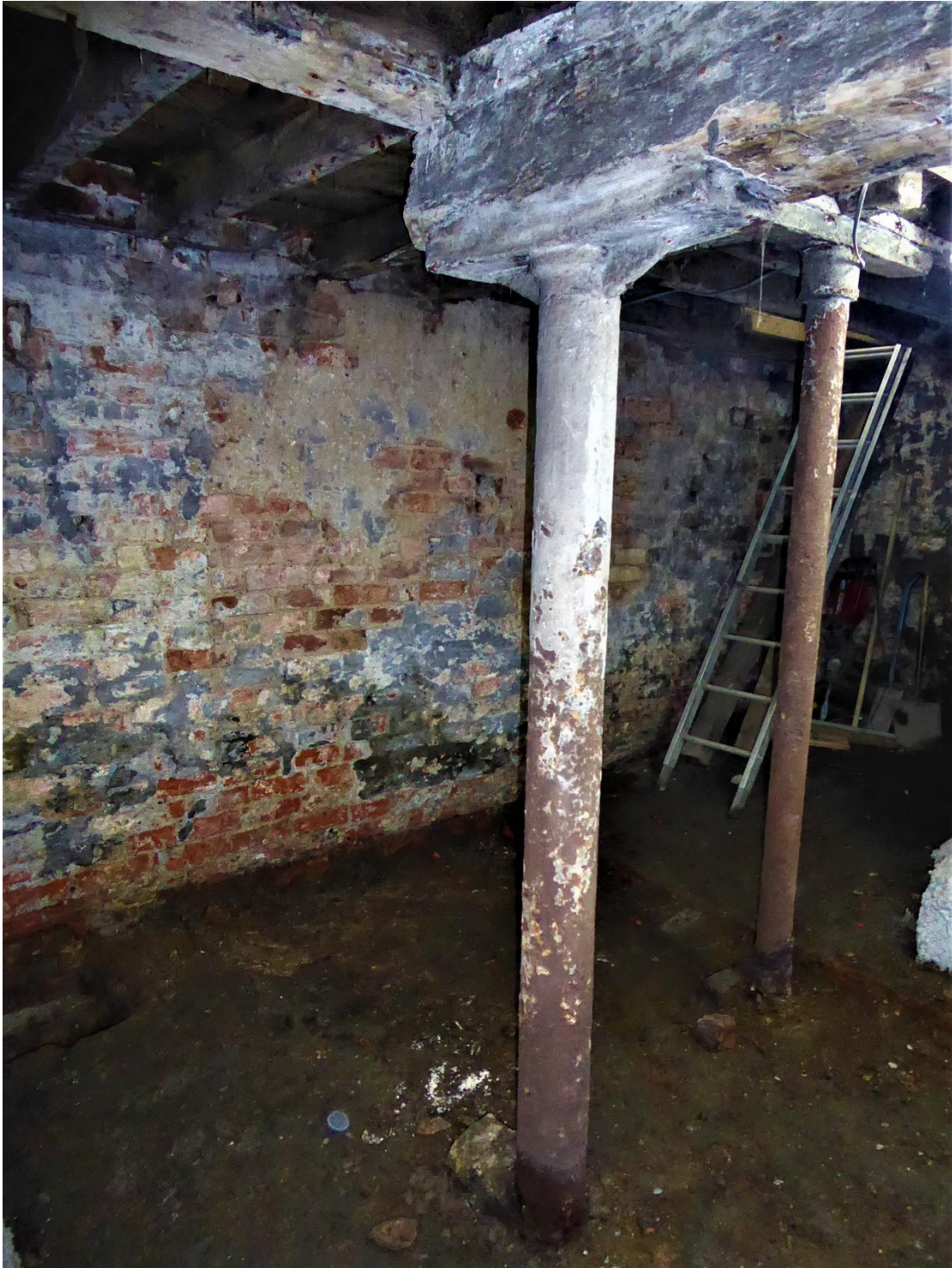
Photograph 14 – Showing displacement of first floor at rear elevation.



Photograph 15 – Showing deflection of supporting beam at ground floor ceiling level.



Photograph 16 – Showing deflection of supporting beam at ground floor ceiling level.



Photograph 17 – Showing original cast iron columns in basement.



Photograph 18 – Showing modern masonry piers in basement.



Photograph 19 – Showing poor construction of masonry piers in basement.



Photograph 20 – Showing more remedial strengthening to ground floor.