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STRUCTURAL APPRAISAL

of

**WESTWOOD COTTAGES
RABY STREET, MOSS SIDE**

for

**CORSTORPHINE & WRIGHT
ON BEHALF OF ONE MANCHESTER**

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Marston & Grundy LLP have been appointed by Corstorphine & Wright Architects on behalf of One Manchester to carry out a structural appraisal of six cottages at Raby Street, Moss Side, Manchester. We understand the existing houses are to be refurbished to provide affordable housing.

A purely visual, non-intrusive structural inspection of the accessible areas was carried out on 17th July 2019 and our comments, which relate to the proposed redevelopment works, are as follows.

General

The existing properties are formed of six, two-storey terraced houses which have shared grounds to the front and to each end of the block (Figs.1 & 2), with individual gardens to the rear separated by 2 m high brick walls. At the time of our visit the gardens appeared to be badly overgrown and with locked gates so no access to the rear of the properties was available.

The cottages are understood to be former alms houses and are Grade II listed. A stone memorial feature in the centre of the front elevation indicates the buildings date from 1876 (Fig.3). The structure is of solid brick walls with stone features, cills and copings, together with several brick features around the door and window openings. Access to each of the properties is by means of individual entrance porches which are located on either side of two projecting gables for the central four cottages, and at each end of the building for the end cottages. For the purpose of this report the units are numbered 1 to 6 as indicated in the Corstorphine & Wright floor plans included in Appendix 'A'.

Existing Structure

The building is of traditional construction with 225 mm thick loadbearing masonry walls supporting timber floor joists at ground and first-floor levels. The roof has a central ridge over Units 3 and 4 with various hips, valleys and gables. It has six large feature chimneys, each around 3 m high above the ridge (Fig.4). The roof is of timber rafters and purlins spanning onto the loadbearing walls, carrying a clay pan tiled roof. Each of the properties has a single storey lean-to kitchen outrigger to the rear. Access to the roof space was not possible during our inspection.

At the time of our visit the ground floors to the rear of Units 4 and 5 had been removed, preventing access to the stairs. As a result it was only possible to inspect

the front room to these units. Similarly the ground floor to Unit 6 was found to be completely rotten, preventing safe access to much of this unit.

The ground floors are of suspended timber joists spanning onto the external walls with timber beams at mid-span, spanning on to 600 mm wide x 102 mm thick brick piers beneath the floor. The sub-floor void is around 1.0 m deep and is accessible via personnel openings around 600 mm square in the supporting walls and in the party walls between each of the units. The first floors are also of timber joists spanning onto the loadbearing masonry walls.

Observations

The roofs were generally observed to be straight and true, with no apparent deflection of the ridges or purlins, when viewed externally. However signs of water ingress were observed in several locations and the flashings appeared to be sub-standard, along with visible holes to the felt membrane. In view of this we would recommend the roof timbers are inspected by a timber and damp specialist and an experienced roofing contractor is engaged to carry out a thorough inspection of the roof. Any defective items should be repaired or replaced as necessary.

Internally the accessible floors were found to be reasonably flat with no significant deflection or signs of movement. However in view of the rotten floors to Unit 6 we would recommend all the structural timbers are checked by a timber and damp specialist.

The main loadbearing masonry walls were found to be plumb, with no signs of significant settlement or bowing and the structure as a whole is considered to be structurally satisfactory.

Conclusions and Recommendations

The existing structure was generally found to be in good condition with substantial well-constructed walls and floors, with no signs of substantial settlement, deflection or significant movement. However in order to maintain the longevity of the building fabric we would suggest several maintenance items are addressed during the refurbishment works, as noted in Appendix 'B' and summarised as follows.

1. The wall to external corner of outrigger to Unit 1 has been partially demolished. This should be rebuilt and the roof structure made good (Fig.4 refers).
2. Several floorboards have been removed (Fig.5) and are to be replaced.
3. Damp to ceilings, particularly in Unit 2 (Figs 6 to 9) should be investigated by a suitable roofing contractor and a damp survey undertaken. Repair or replace the roof and carry out any damp treatment as necessary.
4. Cracking was observed over some of the internal door openings (Fig.10). This is likely to be as a result of movement of the timber lintels, which should preferably be replaced in concrete.
5. Cracking was also observed to the brickwork over some of the brick arches to the front entrances to Units 3 and 4 (Figs 11 & 12), although there is no evidence of significant arch spread. The brickwork should be repointed and any loose bricks replaced.
6. The pointing was generally found to be in poor condition, particularly at low level (Fig.13) and the brickwork should be repointed generally.
7. Cracking was noted to the underside of the pitched roof to Unit 3 (Fig.15). The cracking is consistent with roof spread of the sloping section of the roof and we would recommend galvanised steel BAT straps are installed to rectify this.
8. The missing floor joists to Units 4 and 5 (Figs.16 & 18) should be replaced.
9. The stone copings over the front entrances have slipped in several of the units (Fig.17). These should be re-fixed using proprietary stainless steel dowels and frame cramps.
10. Similar movement was observed over the entrance to Unit 5, although the arch appears to have dropped slightly (Fig.18). We would therefore recommend the brickwork is rebuilt locally prior to re-fixing the copings.
11. The rotten flooring to Unit 6 (Fig.22) should be replaced, along with any rotten floor joists.
12. The outrigger roof to Unit 6 was found to be damaged (Figs. 23 & 27). This should be repaired locally and the roof repointed.
13. Several areas of perished brickwork were apparent, particularly to the high level pediment of Unit 6 (Fig.24) and to the end elevation of Unit 1 (Figs. 28, 31 & 33). Any perished or missing bricks should be replaced in order to avoid further deterioration due to weathering.

Appendix A

Architectural Drawings

Appendix B

Photographs



Fig 1
Front Elevation



Fig 2
Side Elevation



Fig 3
Chimneys from rear



Fig 4
Outrigger wall to Unit 1
Rebuild wall, replace rotten rafters



Fig 5
Missing Floorboards to Unit 2
Replace



Fig 6
Water Tank Unit2 blocking hatch
Replace



Fig 7
Damp To Unit 2 ceiling
Check roof flashings etc



Fig 8
Damp To Unit 2 ceiling
Check flashings



Fig 9
Damaged felt to Unit 2
Repair



Fig 10
Cracking over GFL door to Unit 2
Replace lintels in concrete



Fig 11
Damaged brickwork to Unit 3
Rebuild



Fig 12
Damaged brickwork to Unit 4
Rebuild



Fig 13
Damaged pointing to Unit3
Repoint



Fig 14
Roof leak to Unit 3
Repair roofing



Fig 15
Roof spread to Unit 3
Install ties



Fig 16
Missing floor joists to Unit 4
Replace joists



Fig 17

Coping slipped to Unit 4

Rebuild and tie in with frame cramps



Fig 18

Dropped arch to Unit 5

Rebuild



Fig 19

Missing floor to Unit 5

Replace



Fig 20

Roof leak to Unit 6

Check flashings to chimney



Fig 21
Missing floorboards to Unit 6
Replace



Fig 22
Rotten floor boards to Unit 6
Replace boards and check joists



Fig 23
Damaged roof to Unit 6
Reroof lean to at rear



Fig 24
Perished brickwork to rear pediment of Unit 6
Replace perished bricks



Fig 25
Missing bricks to Unit 6
Replace



Fig 26
Damaged brickwork and copings to Unit 6
Rebuild



Fig 27
Tiles missing to lean to roof of Unit 6
Replace lean to roof



Fig 28
Perished bricks to Unit 1
Replace and repoint



Fig 29
Copings slipped to Unit 1
Refix generally with stainless steel fixings



Fig 30
Poor quality pointing to Unit 1
Repoint



Fig 31
Perished bricks to Unit 1
Replace



Fig 32

Poor quality pointing to Unit 1

Repoint



Fig 33

Perished brickwork to Unit 1

Replace



Fig 34

Failed pointing to ridge tiles to Unit 1

Repoint ridge