HBL ASSOCIATES

STRUCTURAL REPORT

For

Teanford Mill

Teanford

Staffordshire

ST10 4ER

On Behalf Of:

Mr J Wilshaw

The Mill

Breach Lane

Teanford

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1. Introduction

1.1. We were instructed by Mr Jake Wilshaw to undertake a structural appraisal report on the existing derelict mill building at Teanford Mill, Teanford, Staffordshire, ST10 4ER.

1.2. We understand that it is our client's intention to convert the mill into domestic accommodation and that this report is required to accompany the proposed planning application.

1.3. Mr Wilshaw has already converted the adjacent Mill in 2017 and is currently residing in the converted portion.

1.4. The site was visited on Thursday 30th July under dry but overcast weather conditions.

2. Limitations

2.1. The mill building under consideration has limited ground to the front and rear. Whilst the ground to the front of the mill is clear, the land to the rear contains a steel and timber lean-to which is currently used for timber storage. We understand that this steel and timber lean to is to be removed and as such the survey will be limited to the brick-built building.

3. Brief Description

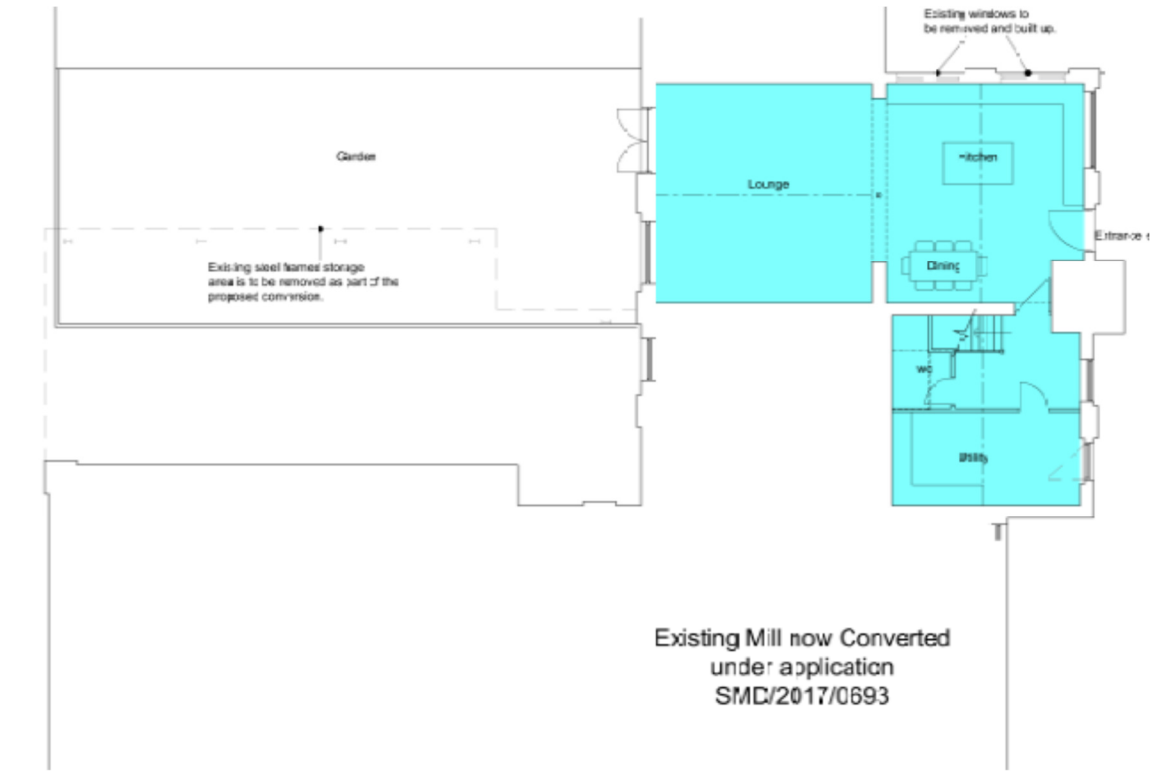
3.1. The existing brick building is a two-storey structure constructed in 13" (330 mm) external walls with timber internal first floor, concrete internal ground floor and an asbestos cement roof supported on timber purlins.

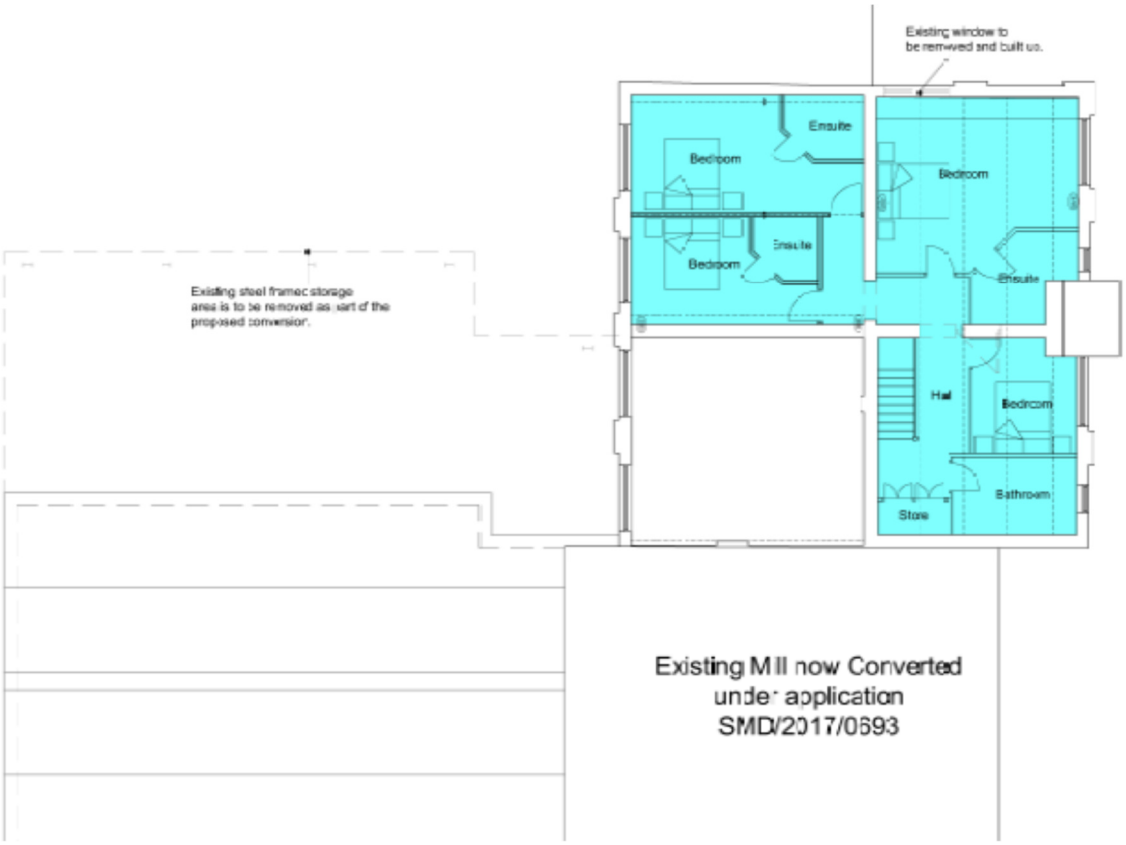
3.2. It is our understanding that the original roof structure was pitched and set at a somewhat higher level than the existing. This re-roofing exercise was carried out more than 35 years ago, presumably for maintenance purposes.

3.3. The existing and proposed floor plans as extracted from Hewitt & Carrs planning application drawings are shown on the following pages:


Existing Mill now Converted
under application
SMD/2017/0693


A
A
B
B
Existing Mill now Converted
under application
SMD/2017/0693


Existing windows to be removed and built up.
Garden
Lounge
Kitchen
Dining
Entrance
WC
Utility
Existing steel framed storage area is to be removed as part of the proposed conversion.
Existing Mill now Converted under application SMD/2017/0693


Existing window to be removed and built up.
Bedroom
Ensuite
Bedroom
Ensuite
Bedroom
Ensuite
Hall
Bedroom
Bathroom
Store
Existing steel framed storage area is to be removed as part of the proposed conversion.
Existing Mill now Converted under application SMD/2017/0693

4. Observations

4.1. Externally only the front and rear elevations are available for inspection (other than the short return on the right hand side front corner) as the mill building forms half of a terrace of buildings with the second mill building to the left and a residential cottage to the right.

4.2. The front elevation currently comprises of 2 doors and 2 windows at ground floor level and two large and two small windows at first floor level. In between these openings are stiffening piers of brickwork such that the overall wall thickness including the piers is 18" (440mm).

4.3. Centrally on the front elevation is a substantial chimney structure which has been truncated at eaves level. This provides further stiffness to the brickwork on the front elevation. The brickwork to this front elevation appears reasonably plumb and free from any large-scale structural movement.



4.4. The right-hand side return from the front elevation is also constructed in 13" (330mm) thick brickwork with a stiffening central pier, and with two large window openings at ground floor level and one at first floor level. Again, this section of building appears plumb and free from any large-scale signs of structural movement.



4.5. The original roof slope to the mill building is clearly visible when viewed externally as the gable to the party wall with the adjacent cottage is clearly visible.

4.6. The rear elevation follows a very similar pattern with 13" solid brick walls and single brick thickening piers between each of the openings such that the piers form an 18" buttress. Again, this rear elevation

is perforated by a number of door and window openings with at least one door and two window openings at ground floor and 4 no. window openings at first floor level. The extreme right-hand bay of the rear elevation when viewed from the back was obscured by stored timber and we could not verify the presence of a ground floor window. The brickwork of this rear elevation appears to be plumb and free from any signs of structural movement. The arch is still present over the ground floor doors and windows are also free from any deflection.



4.7. Rainwater downspouts are present on the rear elevation on the extreme left-hand end when viewed from the rear and approximately two-thirds of the way across the roof between the 3rd and 4th bays of brickwork. While this later downspout appears to empty to a gulley, the left-hand downspout discharges at a level approximately 2m above the ground and drains onto the ground itself. This could be considered an issue long term as this will locally oversaturate the clays beneath the foundations. Rainwater to the front elevation discharges down a single downspout to the front right hand corner when viewed from the front directly into a sealed gulley. A large combined mains and foul water manhole is present approximately 4m from this downspout and it is assumed that the downspout drains into the sewage system via this manhole.

4.8. Internally, the ground floor comprises a good quality concrete ground supported floor slab which is set down approximately 100mm from the external ground level. We understand from our client that the previous use of the building was as a car maintenance workshop, and as such the floor slab being free of any structural cracking at all would mean it is perfectly suitable for reuse as a domestic floor as the loads would be far less than that imposed by its previous use.



4.9. The first floor is supported by primary timbers running from side to side across the building onto which the timber floor joists sit i.e. the floor joists run from front to back. This is the case up to the original rear wall of the building, where the left-hand bay of the ground floor ends. In the right hand bay however the ground floor continues on for a further bay and at this point the first floor joists reverse direction such that they run from side to side and sit on a primary timber beam that runs from front to back. On the line of this change of direction a substantial timber beam or beams are present supported by a cast iron circular column. The column is in good condition having been painted fairly regularly and is certainly free of any rust of signs of distress, but the primary timber beams have been plastered over and it was not possible to carry out a visual inspection. No cracking is present within the plasterwork or within the painted finish of the plasterwork. It is reasonable to assume that there is no movement present within them.

4.10. The first floor is accessed by a single dog leg staircase of rather flimsy condition, which opens out into 3 large open plan areas to match the ground floor plan. The floor throughout appeared to be solid comprising 1¼" (30mm) thick timber tongue and groove boards on floor joists of unknown size. Certainly, no deflection was present under normal foot traffic and it should be noted that this floor had been used for storage of building materials for a considerable period.



4.11. The first-floor walls appeared to be in good condition with no signs of structural movement or other cracking. The existing roof structure comprised asbestos or asbestos cement corrugated sheeting on softwood timber purlins at approximately 1500mm centres. This roof sloped up from the front and rear elevations to a central apex, and although the roofing material may be regarded as questionable there are no signs of any current water ingress present. The roof purlins whilst dilapidated and in many cases undecorated appeared to be free of visual signs of dampness or rot but we would recommend that a timber damp survey is carried out to confirm this. Joist hangers have already been installed for the new ceiling joists which will be independent of the roof structure i.e. they will run from wall to wall. No additional load will therefore be placed on the existing roof structure by the new ceilings.







5. Recommendations

5.1. The physical envelope of the existing former mill building is extremely solid and comprises of at least 330mm thick walls externally which thicken out to 440mm at the pier positions between the windows. The masonry to all the external and internal walls appears to be in good condition, plumb and free from signs of structural settlement or movement.

5.2. The first-floor structure appears to be in good condition being free of any dips or depressions and showing no signs of deflection when loaded.

5.3. The roof structure is comprised of asbestos sheeting laid to a relatively shallow pitch when viewed against the original slope angle of the roof which is visible on the adjacent cottage gable. Whilst this roof pitch can be maintained, along with the supporting timbers, the asbestos sheeting will need to be removed by a licensed contractor, disposed of properly, and replaced with a roof covering that is lighter, or at worst no heavier than this existing sheeting. It is possible to obtain lightweight fibre sheeting that gives the appearance of a tiled roof which is somewhat lighter than the asbestos sheeting present. We would suggest this as an initial alternative. It is noted that the proposed first floor ceilings are to be independent and span between load bearing walls and therefore add no additional weight onto the roof structure. We would strongly recommend that any insulation installed in this roof structure is placed upon this ceiling and not underdrawn beneath the existing rafters.

5.4. As can be seen from above, the existing structure is in good condition and requires minimal work other than reroofing to bring it up to a habitable standard. There will be however an number of elements that will need to be addressed in order to bring the building up to building regulation standards for habitable purposes and whilst these are not intended to be comprehensive they will cover the major elements of work required:

- New electric and water feeds will require providing with rewiring being needed to the entire building.
- No evidence of outlets for wastewater were present and will require providing. We note that an inspection chamber is present in the driveway to the adjacent property which we understand is in the same ownership as the mill conversion.
- The existing ground floor is more than adequate structurally but is a little low for the ground levels. As such we would suggest that the provision of 100mm of insulation and a 75mm concrete or sand/cement screed above which will bring the floor up to the correct level and provide a threshold at any front and rear door openings.
- Similarly, new windows and doors will be required to the correct insulated standard. No doubt the planning authority will have some input into the style and material to be adopted but the existing lintels and archways are adequate regardless.
- Although the existing walls ae a minimum of 13” (330mm) in thickness it is felt that some insulation may be required to prevent the building up of condensation withing the building. We would suggest that this is best achieved using insulated plasterboard. An additional timber skin can be provided that would utilise conventional plasterboard but, in our opinion, this would be an expensive option and would decrease the size of the rooms and would also increase the depth of the already considerable window reveals.

- Whilst on site the client informed us that part of the large chimney structure may be required to be removed or adjusted in the first floor bedrooms and we would welcome sight of any building regulation level drawings that would enable us to assess whether any additional supports are required.

6. Conclusion

6.1. The existing mill is in good condition structurally and should be suitable for conversion to residential use with minimal structural changes. The changes would be limited to re-roofing (to remove the existing asbestos cement sheeting) and in the provision of an insulated screed to bring the ground up to the correct level. As such we see no reason why conversion into residential accommodation cannot take place from a structural viewpoint.

7. Standard Limitations

7.1. During our inspection of the premises as presently existing, which will normally be carried out in a single visit, we shall check all visible exposed and accessible elements of construction in order to identify defects and shortcomings which are likely to adversely affect the use of the property or give rise to expenditure in the future.

7.2. We shall consider the condition and durability of the building fabric in relation to the type and age of the property, the need for repairs or special maintenance and, where appropriate, comment on the suitability of the structure for its proposed use.

7.3. We shall, where possible, lift loose laid floor coverings and inspect cellars and roof voids where appropriate, but we shall not empty the contents of any fitted cupboards, move heavy furniture or lift carpets or floorboards and our report will specifically exclude all covered, and unexposed or inaccessible areas and buried elements of construction such as foundations and built-in steels and timbers.

7.4. Apart from any balconies and roofs to which external access may be available, our external inspection will be carried out from the ground level. Our report will include a summary of our findings in respect of any outhouses, boundary walls etc. which will be inspected briefly during our visit.

7.5. In accordance with our professional indemnity insurance cover we have to state that "we have not inspected woodwork or other parts of the structure which are covered unexposed or inaccessible and we are, therefore, unable to report any such part of the property is free from defect".

7.6. We will not arrange for exposure works to be carried out to the superstructure or below ground, or carry out tests for high alumina cement concrete, calcium chloride, asbestos or the use of woodwool slabs as permanent shuttering, but where appropriate, will seek further instructions for these to be carried out for an additional charge.

7.7. Regarding service installations, incoming mains, waste and drains, we shall report on any matters which come to light during our inspection as requiring further investigation by specialists, but we shall not arrange for tests to be carried out unless specifically instructed beforehand.

7.8. Although where appropriate, we will be happy to examine any lease or title documents, planning or any consents or fire certificates which are made available prior to our inspection, we shall assume in such cases that solicitors will be advising in detail upon these matters and that they will also check on the responsibility for the maintenance of all boundaries and rights of way and the existence of any easements or necessary rights of light, drainage etc.

7.9. We require to be informed, prior to the undertaking of any excavation or boring work, of the positions of any underground services or plant beneath the site.

7.10. Whilst reasonable care will be taken during the execution of field work, we cannot accept liability, either direct or consequential, for the damage to any service not clearly identified to us.