FINSLEY GATE MILL

BURNLEY

STRUCTURAL STABILITY ASSESSMENT

REPORT

For

ST MODWEN DEVELOPMENTS LTD

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1.0 Introduction

This report is intended to provide a description of the structural form and stability of the property known as Finsley Gate Mill, Burnley.

The structure has been condition surveyed on a number of occasions and defects in the structures have been recorded within these reports. This report is intended to provide an understanding of the structural form and phasing sequence of the building to ensure stability during and after demolition.
2.0 Structural Form

Although constructed in various phases, the structural form of the retained building on site is essentially the same.

The buildings comprise of a thick stonework outer wall which supports the inner timber floors and roof.

The smaller mill buildings have floors which generally span directly from load bearing wall to load bearing wall whilst the large mill building has a series of primary beams and columns internally which support the floor joists.

In each case the buildings rely on the timber floor decking to act as a diaphragm and transfer horizontal loads back to the outer masonry walls.

A similar condition occurs at roof level where the roof trusses and purlins support the roof slates, battens and boarding, which again provides diaphragm action.

The overall stiffness of the building relies upon the perimeter masonry walls as shear walls and lateral support to these walls is provided by the restraint of the floors and roof at each level.

In regard to this form of construction, each distinct ‘cell’ of the structure is therefore stable in its own right.
3.0 Build Sequence

The development of the Finsley Gate Mill site has occurred over several phases of building.

It is clear that the original mill structure was constructed as a standalone building with the large mill structure being constructed separately.

This is shown in the various locations in the structure where joints are evident between the properties and different materials have been used. The result of this phasing process is such that we consider that the original mill sections, which are to be retained, will remain stable during and after the demolition of the large mill structure.

In respect of the mill buildings relationship to the canal, the structure is located away from the face of the canal and is separated by a wide towpath and bank. Whilst portions of the mill walls, at low level, support the ground adjacent to the towpath, the demolition of the mill will be such that these walls will remain in place and demolition masonry will be provided behind the walls to make up the level differences to both prevent falls from height and reliance on retaining structures.

A similar scenario will also occur on other boundaries where there are retaining walls.

Therefore the demolition of the mill building will have no adverse effect on the stability of the canal, towpath or adjacent site boundaries.
4.0 Protecting the retained structures during demolition

It is essential that the demolition of the large mill structure takes into account the stability of the retained structures.

Whilst the stability of the existing buildings to be retained will not be compromised by any borrowed support provided by or taken from the large mill buildings, damage due to partial collapse of portions of the large mill building whilst demolition takes place must be a consideration.

As part of an agreed sequence of works with the chosen competent contractors, we highlight specific areas that will need to be considered.

- The contractor will need to remove the existing guttering and roof finishes locally at the interface between the roof of the retained mill and the upper wall of the mill to be demolished. This should be undertaken from within the retained mill structure.
- Existing roof coverings shall be repaired and reclaimed slates used to refurbish the roof. Where appropriate timber rafters and battens shall be replaced with new to improve strength and integrity of the roof structure.
- Existing floors shall, where damaged, be replaced. New boarding and timber joists shall be inserted as required.
- Any remaining services/pipes passing between the structures shall be severed and removed prior to demolition.
- It is expected that demolition will commence at the canal bridge end of the structure and the contractor will work their way in towards the mill to be retained. As the demolition approaches the mill to be retained the stair core in the end of the large mill building being demolished will provide stability to the partially demolished structure. The contractor will prior to demolition of the final bay at each level cut and remove the timber members which bear into the retained wall. This will prevent possible overturning and lifting of masonry in the retained wall due to the levering action of the joists, beams and trusses.
- Where openings within the retained ‘party wall’ are present these shall be securely protected to prevent demolition debris from falling through the voids and damaging the existing structure to be retained.
- Removal of walls which abut the ‘party wall’ to be retained where either keyed or mortared shall be carefully removed to ensure minimum of disturbance to the retained masonry walls.
- The staircases and walls within the shaft adjacent to the ‘party wall’ shall be carefully removed to avoid damage to the face of the wall to be retained. Where these flights or landings have been chased into the walls, they shall be cut along their length prior to demolition of the main element and temporarily supported. This will prevent damage to the retained wall.
5.0 Reinstatement works to retained structure

A drawing has been prepared indicating a scope of works to ensure that the retained structure is serviceable for future use. Details include localised repairs, cleaning of masonry and reinstatement of existing openings.