



FRANKHAM

VISUAL STRUCTURAL SURVEY

For

**WATER TOWER
BUILDING/OUT
HOUSE AND GARDEN
WALL**



At

BOUGHTON MOUNT

For

PREPARED BY:

**FRANKHAM CONSULTANCY GROUP LIMITED
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FIVE ARCHES BUSINESS ESTATE
MAIDSTONE ROAD
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PROJECT REF: 316289

ISSUE DATE: AUGUST 2018

FILE REFERENCE 316289-FCG-S-Report -FIN-V1.0

**GEN2 PROPERTY
LIMITED
SESSIONS HOUSE
COUNTRY ROAD
MAIDSTONE
ME14 1XQ**

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1.0 COMMISSION

The Frankham Consultancy Group was, commissioned by Gen2 Property Limited to undertake a visual structural survey of a Water Tower building and associated garden wall. The aim of the survey was to establish the existing structural condition of the building elements and provide advice on the potential for redevelopment. The survey was undertaken by Mr M Andrews, Senior Structural Engineer on the 15th August 2018.

2.0 PARAMETERS OF SURVEY

Water Tower and Out Buildings

The survey to the Water Tower was visual and undertaken from the ground floor, the walls and ground floor are covered with pigeon guano, there is no obvious means of safe access to progress up the tower. The site does not have a current electricity supply and there are limited windows to allow natural daylight into the building.

There is no access to the attached out building due to metal guards to windows and doors.

Garden Wall

The survey to the garden was very limited due to the overgrown vegetation on the site, which has covered large areas of the wall and cut off access routes around the wall.

3.0 GENERAL CONSTRUCTION

Water Tower and Out Building

The original building consisted of a two storey stone wall structure, which supports a series of timber trusses and rafters that in turn, support a slate tiled roof. Internally, the stone wall has been finished with a lime mortar.

Historically a section of the roof was, removed and a brick tower constructed from the original eaves level to support a metal water tank. The brick tower has been finished with a stucco mortar to simulate the original stone walls below.

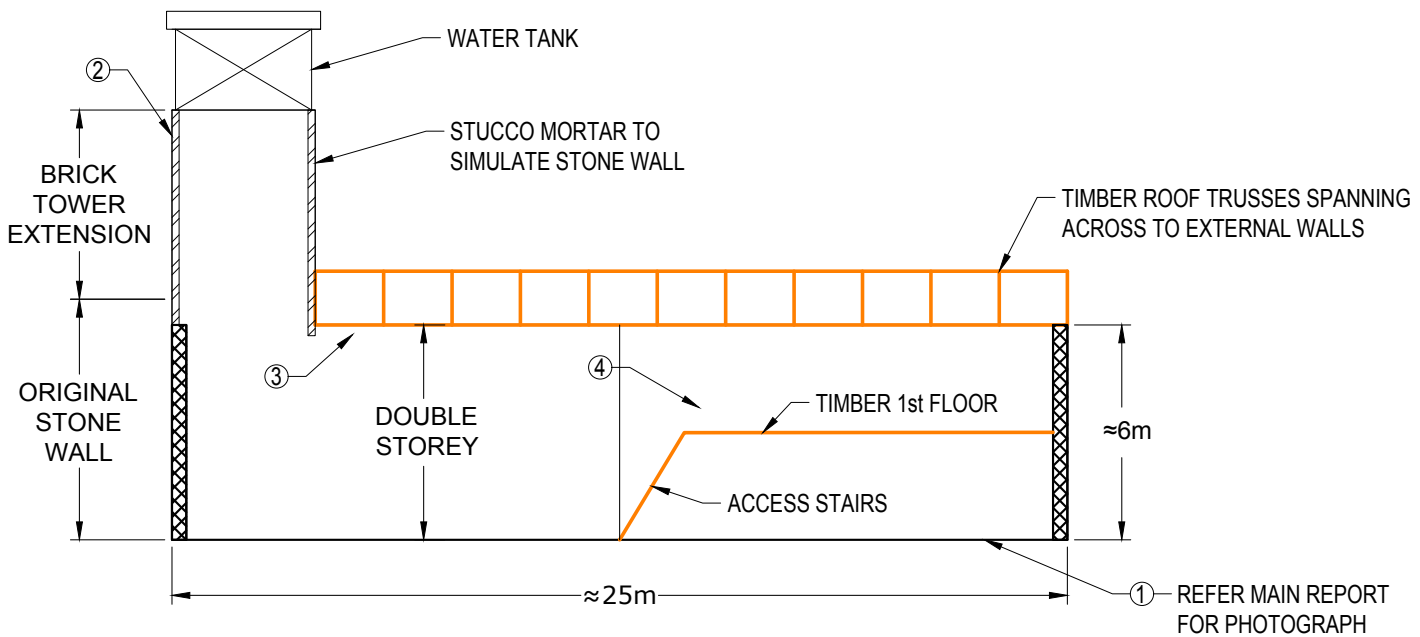
The original building adjacent to the Tower is double storey and the roof trusses are exposed.

At the opposite end of the building there is a timber first floor which is accessed via stairs adjacent to the front wall. Refer to Sketch 316279/S/1 and Photographs 1-4.

The attached out building consists of a single storey stone wall structure with a mono pitched slate roof.

Garden Wall

The garden wall is a 425mm thick brick free standing wall approximately 4m high. From the areas of the wall available for inspection the wall seems in good order and there were no obvious signs of historic remedial works.



**TYPICAL CROSS SECTION THROUGH WATER TOWER
BUILDING**
(SCALE 1:200)

[illegible]

4.0 STRUCTURAL OBSERVATIONS

Water Tower and Out Building

The roof to the original building consists of timber trusses with a slate tile finish.

Where the roof timbers are exposed there are no signs of water ingress or decay to the roof structure.

The walls to the original building consist of 450mm thick stone blocks bonded with a cement type mortar. The wall was reviewed for distress particularly in the area of the water tank and no obvious sign of cracking was detected.

The water tower consists of brickwork that has Stucco render finish. There are large patches of render that have de-bonded and fallen away from the wall, there are also multiple cracks to the render and the writer suspects that further large areas of render has de-bonded and will also eventually fall away.

The brickwork tower internally has been painted white and could only be inspected visually from the ground floor. From this location no areas of distress was noted. Refer to Photographs 5-6.

The attached out building is covered with vegetation so a visual inspection of the wall was not possible.

The slate roof to the out building seems to be generally in good order when viewed from the first floor window of the main building but there are areas where the roof has rotted and the tiles have fallen away exposing the internal fabric to the elements. Refer to Photographs 7-8.

Garden Wall

As previously noted the survey to the garden wall was very limited due to the overgrown vegetation.

The wall is generally in good order. The defects that were noted was loose/de-bonded bricks to the head of the wall and damage to the mortar bed joints caused by the foliage of the adjacent shrubs. Refer to Photographs 9-10.

5.0 POSSIBLE STRUCTURAL DEVELOPMENT

Water Tower

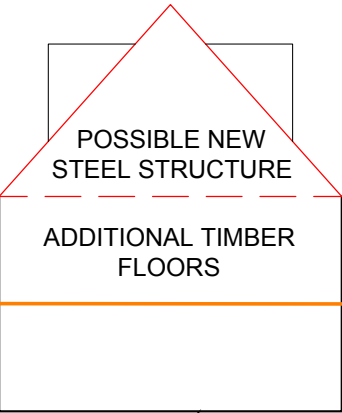
At this stage, the writer is not aware if any historic records exist of when the water tower modifications to the existing building were undertaken.

However, the addition of the water tower has shown that the existing building structure has the integrity to support additional dead and live loads.

The weight of the brick tower and water tank when filled, would have been quite substantial. To determine if the existing foundations are as-built or have been improved in some way, two trial pits would be required, one adjacent to the water tower and one remote from the tower, the foundation details could then be compared.

This comparison would confirm if enhanced foundations would be required for further developments, whereby a geotechnical investigation may also be required.

As an indication to the possible modifications available to the existing structure, we have provided indicative details of full or partial development on sketch plans S/4202 & 4203.



FULL POSSIBLE DEVELOPMENT TO WATER TOWER BUILDING

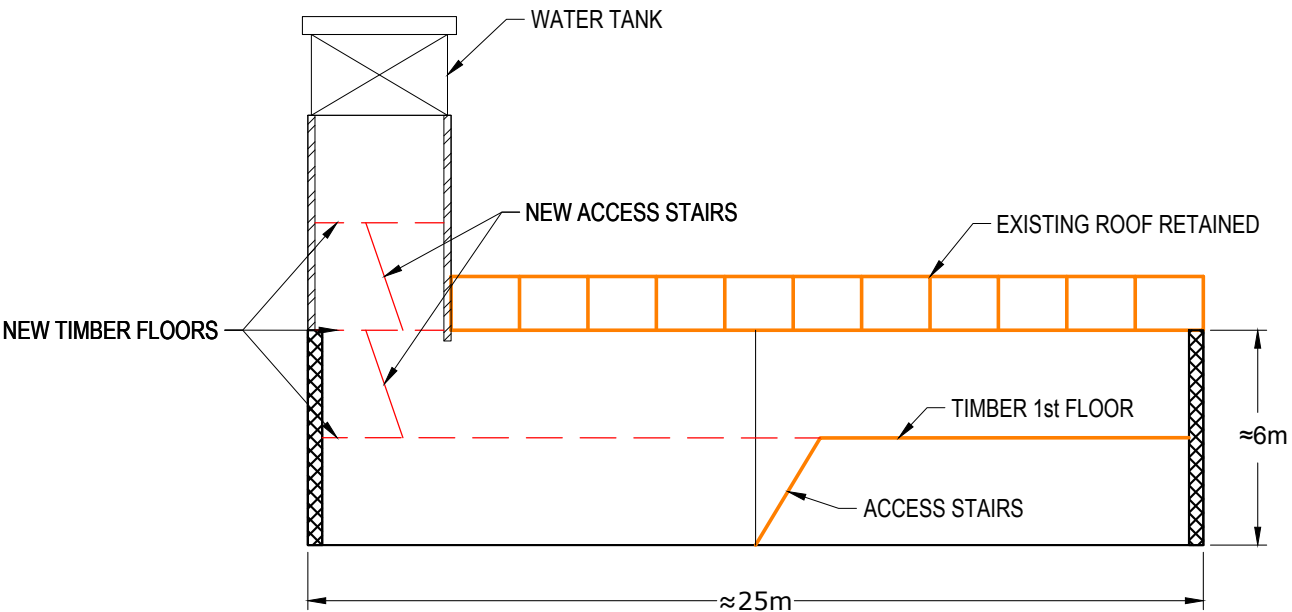
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PARTIAL DEVELOPMENT TO WATER TOWER BUILDING

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6.0 **PHOTOGRAPHS**



Photograph 1 – Original two storey stone building.



Photograph 2 – Addition of brick water tower.



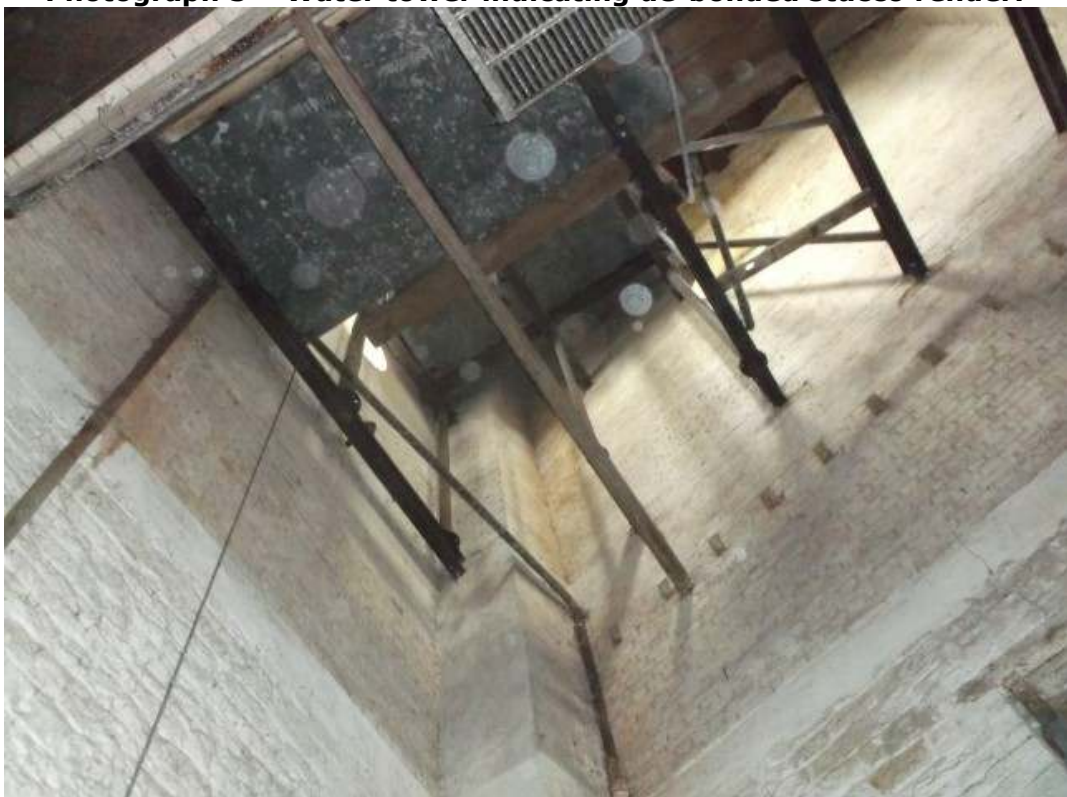
Photograph 3 – Double height structure adjacent tower.



Photograph 4 – Typical first floor room.



Photograph 5 – Water tower indicating de-bonded stucco render.



Photograph 6 – Internal brick wall to water tower.



Photograph 7 – General view of slate mono pitch roof to out building.



Photograph 8 – Local damage to out building slate roof.



Photograph 9 – Garden wall with damage at the head.



Photograph 10 – Root damage to garden wall bed joints.