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<b>Project:</b>	60 Fife Road	<b>Project No.:</b>	TE-40480-22
<b>Address:</b>	60 Fife Road, Guelph	<b>Permit No.:</b>	n/a
<b>Client:</b>	Upbuilding Non-Profit Homes		
<b>Distribution:</b>	Howard Kennedy Ryan Taylor	Upbuilding Tim Welch Consulting Ltd.	howard.kennedy@gmail.com rtaylor@twinc.ca

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## Background

Tacoma Engineers has been retained by Upbuilding Non-Profit Homes to carry out a structural condition assessment of a masonry tower located at 60 Fife Road, Guelph. Upbuilding Non-Profit Homes is in the process of planning for some site developments, including the construction of new housing units that includes the possible removal of an existing building.

This report has been prepared in response to a request for a structural review of the tower to describe the extent of deterioration, a summary of repairs required to restore the tower, and the feasibility of isolating the foundations of the tower from the rest of the building.

A Heritage Impact Assessment (HIA) has been completed by Megan Hobson (CAHP) and has been provided to the undersigned as background documentation, as well as plans for the proposed development.

A site visit was carried out by the undersigned on June 7<sup>th</sup>, 2022 accompanied by Howard Kennedy of Upbuilding to complete the condition assessment.

## Scope

This report is based on a visual inspection from grade only and does not include any destructive testing. The masonry tower is connected to a larger residential building and does not have an accessible basement. No further structural analysis or building code analysis has been carried out as part of this report unless specifically noted. This report is not being prepared as a response to an Order, recommendations, or request by any regulatory body.

This section includes the assessment findings, discussion of results, and schematic recommendations. It should be noted that the building in question is listed on the municipal heritage register. The Standards and Guidelines for the Conservation of Historic Places in Canada<sup>1</sup> provide direction when a structural system is identified as a character-defining element of an historic place. They also provide direction on maintaining, repairing, and replacing structural components or systems. Refer to the General Guidelines for Preservation, Rehabilitation, and Restoration to further inform the development of more detailed remedial actions.

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<sup>1</sup> "Standards and Guidelines for the Conservation of Historic Places in Canada", 2<sup>nd</sup> Edition, 2010, [www.historicplaces.ca](http://www.historicplaces.ca)

## Observations

### General Construction

The tower is three-storeys tall and measures approximately 3.5m in interior diameter. The walls are constructed with multi-wythe masonry and stone banding, and the roof is constructed with wood framing and slate tile. A capped brick chimney constructed with buff coloured brick is visible from the exterior. The foundation was not accessible at the time of the review; however it is likely constructed with natural stone.

The exterior of the building is covered with a cementitious parging coat and significant alterations have been made to the interior to accommodate a multi-storey residential unit. The primary structural elements were not visible for review except for a limited view of the attic space through a small hatch.

### Conditions

The exterior masonry appears to be in fair condition globally. There are no major step-cracks or other signs of structurally significant settlement or deflection that would indicate that the primary structure is not performing as required. However, it should be noted that the application of the cementitious parging coat has resulted in a non-reversible change to the masonry.



**Photograph 1: Exterior parge coat (typical)**

The cementitious parging will have bonded to the underlying clay brick, and it cannot be removed without significant damage to the brick. A similar condition will apply to the stone

banding, in that the stone cannot be exposed without significant damage to the original masonry.



**Photograph 2: Deteriorating parge coat (typical)**

Cracking of the parging was noted in several locations, and conditions are expected to continue to deteriorate as water ingress will worsen and is expected to impact the underlying brick and stone by way of freeze-thaw damage. Limited repairs have been carried out at several locations around the perimeter of the tower with mixed results.

Access to the roof framing was limited. A photograph of the attic space was possible through a small hatch at the upper floor of the tower.



**Photograph 3: Roof framing (from hatch)**

Water staining is visible on many roof framing members. The stair visible in the photograph above leads to a roof hatch to the flat section at the top of the tower. It is not possible to comment on the condition of these members with the access available at the time of the review.

### **Discussion**

A comprehensive restoration of the tower would require the following:

- removal of exterior parging;
- repair of all damaged brick and stone units;
- repointing and repair of all original mortar joints;
- review and repair/replacement of all flashings, terminations, and sealants around windows, doors, and other penetrations; and
- comprehensive review and repair/replacement of slate roof and all associated flat roof work and flashings.

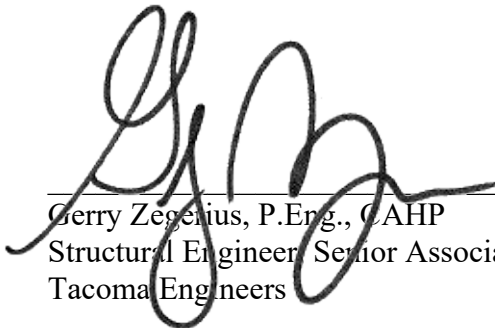
As previously noted, the presence of cementitious parging finishes will likely result in significant damage to the brick and stone should they be removed. The softer brick units and limestone banding will likely lose much of the exterior face and as such will be at risk of significant deterioration due to water ingress and freeze-thaw action. It is likely that the mortar will also require a complete cut out and repointing once the parging has been removed. It should be expected that much of the original building fabric would be negatively impacted by this process.

If the decision were undertaken to retain the tower in place and to isolate the tower from the adjacent foundations, the following actions must be taken, at a minimum:

- prepare a monitoring plan for the stability of the tower and the integrity of the masonry structure;
- install hoarding and bracing as recommended in the monitoring plan;
- excavate the exterior of the tower to confirm the construction of the foundation;
- investigate the connections of the foundations at the interface between the tower and house;
- separate the foundations using a combination of cutting and chipping with light hand tools (machine-mounted equipment is NOT permitted);
- carry out demolition work of the main building, taking care to separate structural elements and minimize impact to the tower; and
- reconstruct open sections of the foundations and exterior walls with compatible materials and methods (ie. matching brick, stone, and compatible mortars).

It is important to note that the tower is integrally connected to the main building and is reliant on the main building for much of its stability. The retention of the tower in the absence of the main building is likely to require additional foundation work and bracing to ensure its longer term performance and durability. Changes to these systems should be undertaken with care and must consider global stability issues and material compatibilities as part of the future design, should the tower be retained.

**Per**

  
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Gerry Zegecius, P.Eng., CAHP  
Structural Engineer, Senior Associate  
Tacoma Engineers



**Encl.** none