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REVIVE
STRUCTURAL ENGINEERING

Structural Assessment Report

Site Address: 3017 Old Bronte Rd, Oakville
Description: Existing heritage building
Project No: 000-22-030
Visit Date: July 13, 2022
Site Rep: Boland Mohamed, B. Eng, E.I.T., Azad Kalemkarian, B. Eng, E.I.T.
Sent To: Mark Tribble Shelley Abair



1.0 Limitations of Liability

We completed a visual, non-destructive structural assessment review specifically of the noted items. No assessment method can eliminate the possibility of obtaining imprecise or incomplete information. Professional judgement is exercised in formulating our recommendations. We render advice, we cannot act as insurers, certification or provide warranty. Our review and recommendations are solely for the address noted above at the current time.

2.0 General

1. Revive Engineering Inc was retained to conduct an independent structural engineering assessment of the above-noted address. The purpose of this report is to document our observations of the buildings existing conditions and provide our recommendations.
2. We understand the building has been deemed historical and restoration is being contemplated. The existing building is in our opinion, unsafe, which in the past has served as a single-family dwelling.
3. As structural engineers we will not describe the historical significance, nor architectural elements, nor comment on the building envelope. Our focus is on the base building structural elements.
4. For the purpose of directional references within this report, the building is facing west towards the road. The building is a detached, two storey, classified as single-family dwelling, with a mix of crawl space and unfinished cellar/basement area.

3.0 Site Location

The site is located north-east of the corner of Bronte Rd and Dundas Rd on Old Bronte Rd.

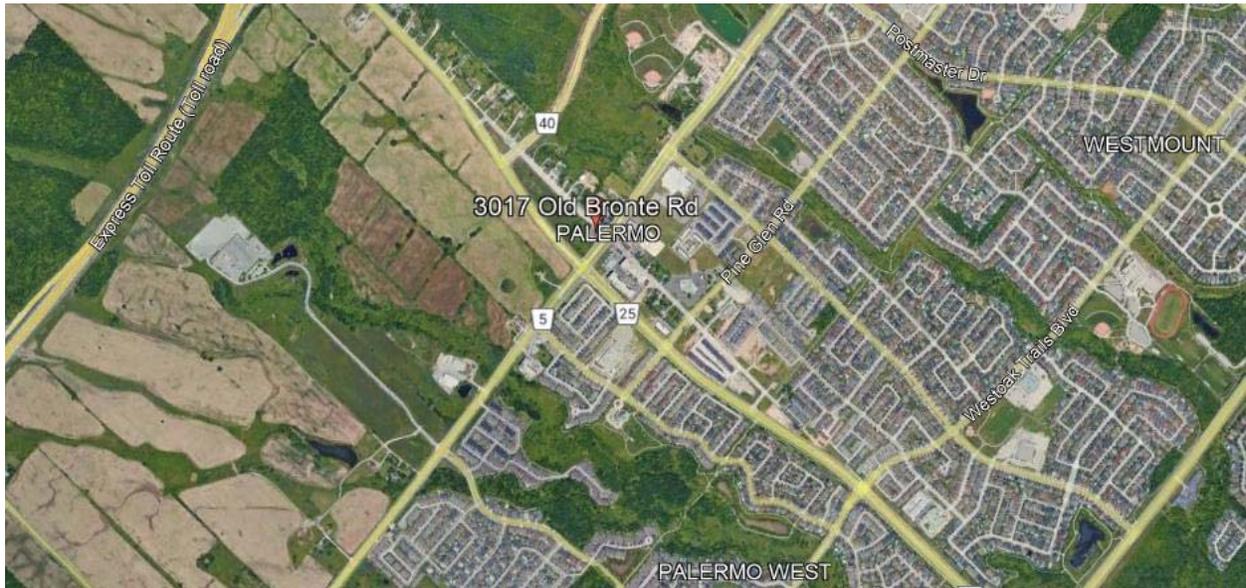


Figure 1: Google Earth Satellite View

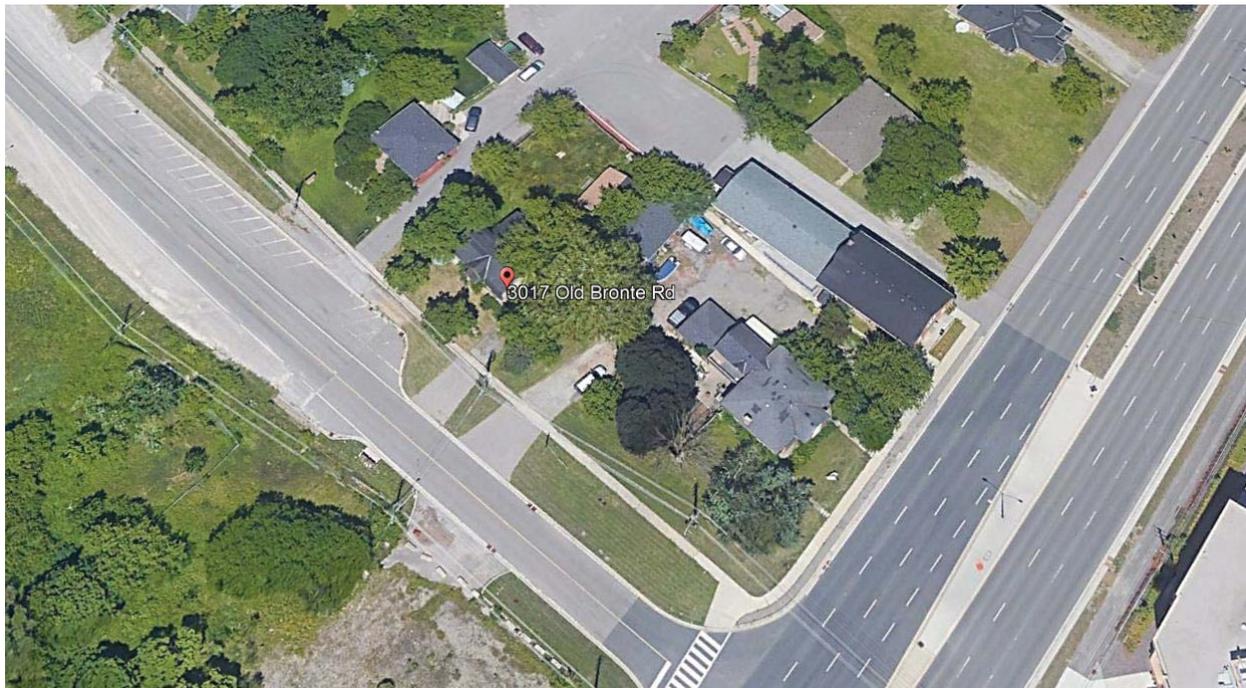


Figure 2: Google Earth Satellite View

4.0 Observations and Comments

During our assessment, the following was observed which supplements our photographs.

- 1) The perimeter soil grade was pulled back to expose the house foundation at the time of our arrival. The entire perimeter wood sills had signs of being in direct contact with organic soil.
- 2) The original historical house foundation consisted of fieldstone, that supported a heavy timber plate beam. Today the fieldstone is loose with missing sections and the timber plate beam is rotten with loss of section.
- 3) There is a partial cellar basement area that extends approximately 5ft below grade on the south side with a dirt floor. There are no signs of distress to these cellar walls. The instability of the surrounding main floor framing to the partial basement has caused the house to slant (lean) with a 25cm (10") drop vertically.
- 4) The exterior face of the perimeter walls was sheathed with wood plank boards and clad with asphalt type siding (no brick) and vinyl siding on the addition. The above grade vertical support consists of load bearing 2x wood studs. We observed areas where the walls appear to be hanging with loss of support below.
- 5) The main floor support system consists of 2x lumber joists with loss of support and acting like sleepers on grade in areas. We observed areas with complete loss of cross-sectional area and loss of strength due to rot.
- 6) In the main and second floor, drywall and floor finishes covered the interior structure. There was evidence of water infiltration. As structural engineers, we are not experts with mold or mildew, and cannot comment on the presence or not thereof. However, we observed areas above and below these two floors with wood rot which is caused from fungus growth.
- 7) The roof was constructed in two tiers (upper and lower), both tiers were constructed in a gable configuration. The roof was sheathed with plank board and surfaced with asphalt shingles. The roof framing consists of 2x rafters and heavy timber eave beams, with signs of rot and loss of strength.
- 8) The structural integrity of wood supporting elements were compromised as a result of long-term exposure to the weathering elements, causing deterioration, which was evident during our site attendance.

5.0 Discussion and Recommendations

We have the following discussion points and recommendations:

- 1) It is in our opinion that the building should be de-constructed. This statement is blunt and, in our opinion, the most practical and economical.
- 2) We recommend a perimeter safety hoarding fence be installed that is either on the property line or at least 10ft away from the house, to ensure the public cannot enter the unsafe building.
- 3) A question to be considered is whether the existing building should be shored and repaired? We shore material that is sound and have strength. We shore a building to ensure workers during construction are safe. We shore a building to ensure it does not cause any surrounding damage to the public or neighbouring buildings. In our opinion, temporary shoring is not required if the public is protected with a perimeter safety barrier.
- 4) Rotten wood needs to be removed and replaced with either new wood or resin epoxy. When load bearing lumber is rotten resulting in a loss of strength and cross-sectional area, repairing rotten wood become impractical and not possible.
- 5) In regard to possible foundation work, the ground floor framing has extensive rot, which in our opinion, becomes difficult to impossible to find sound supporting material, in order to life the building.
- 6) In a wood framed historical building that needs to be saved and restored, the structural members of significance are typically the heavy timber beams. The heavy timber beams reviewed during our assessment were rotten with loss strength and loss of material.
- 7) In our opinion, restoration is uneconomical and impractical due to the combination effect of deterioration (rot and loss of material) and instability (lack of foundation material).
- 8) An effective historical solution is to photograph, survey and document the historical significance then deconstruct.

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6.0 Photographs



Photo 1: Front of house (facing west for this report)



Photo 2: Front corner with rear addition visible (south-west)

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Photo 3: Rear of house (East side)



Photo 4: Rear corner of house (North-East)

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Photo 5: North-East corner.



Photo 6: North-East corner.

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Photo 7: North side



Photo 8: North side.



Photo 9: Wood sill on field stone.



Photo 10: Front side, stud walls are resting on a deteriorated sill plate.



Photo 11: Under the main floor framing.



Photo 12: South-West corner at grade under the main floor framing.



Photo 13: View of partial cellar.



Photo 14: View of cellar.



Photo 15: Ground floor showing excessive differential settlements.

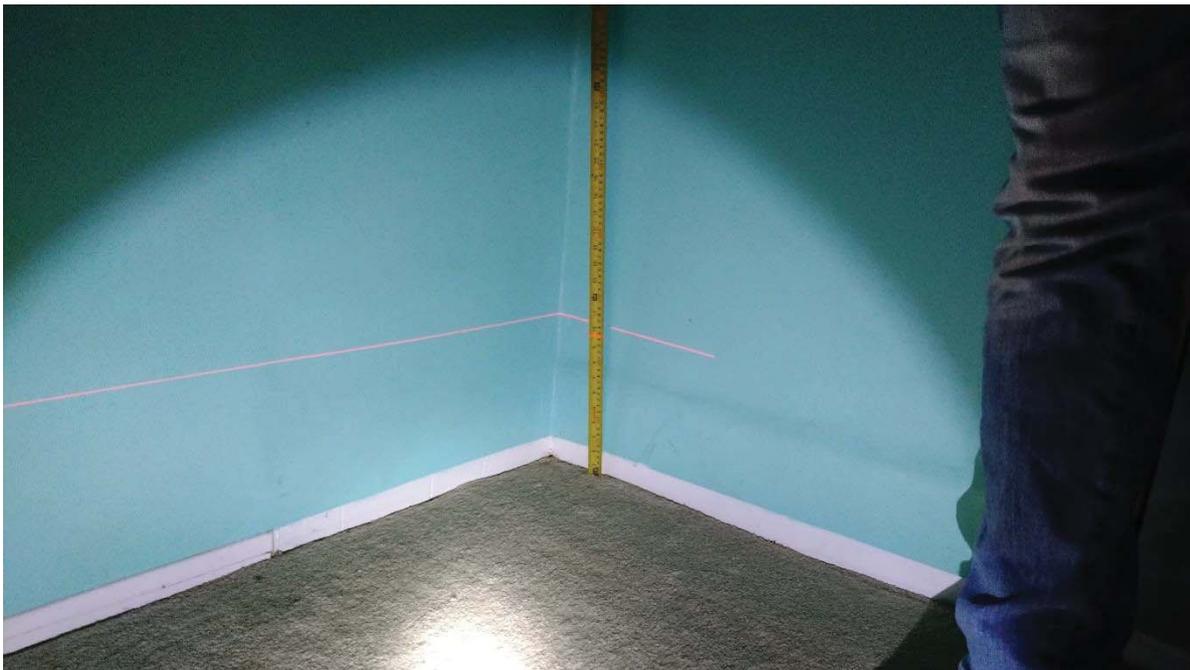


Photo 16: The second-floor slopes toward the back with roughly a 10" drop.



Photo 17: View of roof ridge



Photo 18: View of Eave beam



Photo 19: Eave beam has loss of strength due to rot.



Photo 20: Rot of the exterior studs.



Photo 21: Rot of the perimeter sill beams.



Photo 22: Rot of the perimeter sill beams.

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7.0 Closure

At this time, we have not been requested to prepare a comprehensive scope of repairs, complete restoration drawings, or apply for a building permit.

We trust the above information is suitable for your needs. Please contact us anytime.

We can be reach by email: **Info@Revive.Team**, or by phone: **905-606-0039**.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Reid', with a horizontal line extending to the right.

Matthew S. Reid, M.A.Sc., P.Eng
Revive Engineering Inc.

To whom it may concern this letter is in regards to a historical property on **3017 old Brontë Road** **Oakville Ontario**

Hello

Mark Tribble owner and operator of Mark Tribble construction Inc. has been in the heritage home restoration business in Oakville and surrounding area for 45+ year. I have restored many fine and not so fine houses over my career .

I was asked by the owner of 3017 old Bronte Road to take on the project of a complete restoration of the house in question , we began the process of removing the organic materials and hard scraping (sidewalks etc.) so as to reveal the foundation which would allow us to make a plan of attack to repair the stone foundation at the front of the house as well as the north and south elevations , the now exposed stone foundation is in a crumbled mess which shows damage to the foundation wall due to frost heaves and the deterioration of all mortar joints.

The thought was that the Stonewall would be rebuilt utilizing the existing stone with a fresh mortar and topped with a non-shrink hydraulic grout to the underside of the sill plate. A more thorough investigation revealed the decay is 80% of the existing or non-existing sill plate. The house where not supported on both the north and south sides has sagged from deterioration enough to allow the floor Joists, posts , beams , to become embedded in the dirt beneath and those to are now decayed and dry rotted away there is virtually no support beneath the entire north gable wall which has sagged approximately 6 inches. A large colony of carpenter ants have entered the main beam on the centre of the building and from the evidence of sawdust , dry rot dust , they have been active for sometime .

As we moved our investigation to the rear section of the house (the original portion)the grade has at sometime being packed up against the structure by approximately 18 inches which accelerated the decay and rot of the non-existing sill plates and floor joists beyond. There is not any structural integrity to any of the framing of the building at this east and north elevation the building is leaning at a dangerous degree with a collapse potential . The rear section of the building is buried in the dirt . In my experience the building is in nonrestorable , unrepairable, Unmovable ,condition. Not only is it non restorable but I feel it is a liability that could in fact shift and collapse.

The building has also been in habited by raccoons and other rodents for unknown amount of time , the droppings and urine is evident throughout also bat droppings which are extremely hazardous to humans is evident. Also the house has a scattering of asbestos throughout. The foundation of the house has sunk into the ground approximate 6 inches there is no existing sill plates or wooden foundation left in Rebuildable condition all foundation and floor Joists would have to be replaced before any thoughts could be put into cribbing and safely securing the house , the cost to do so would be unproportional to the return value of the building

Having been in the restoration business for 45 years I have never come across a house in this bad of repair , I personally would not enter this house and even attempt to do any work on the superstructure due to the dangers of collapse and the liabilities of the pre-noted situation .

Perhaps Following the demolition of the building some salvaged lumber could be utilized and repurposed in the rebuilding of a more realistic rebuild of an other century home in our area .

Sincerely Mark Tribble construction