



M.H. Welch and Associates  
1099 Kingston Road, Suite 225  
Pickering, Ontario  
L1V 1B5

January 5, 2021  
File No.:

Attention: Mr. Mike Welch

Re: **Engineering Inspection of Fire Damage to a Residential Structure**

Insured:

Claim No:

File No.:

Date of Loss: December 29, 2020

Loss Location: 40 Peter St. S., Mississauga, ON

Dear Mr. Welch:

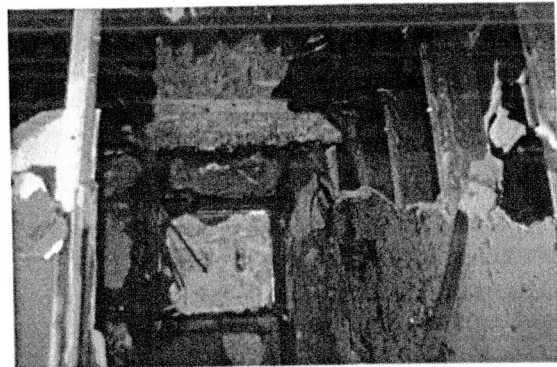
RocMar Engineering Inc. has conducted an independent structural engineering inspection and assessment of resultant fire damages sustained within / at the subject residential structure, located at the above noted address. As at this stage we are submitting a preliminary summary of our findings to date, based on current (observed) site conditions. Our field review, which was partially obstructed / limited due to remaining interior finishes and underlying building materials, was performed on December 30<sup>th</sup>, 2020.

Based on our evaluation conducted to date, the subject fire loss occurrence resulted in localized fire loss related structural damage to the second level floor system and the staircase service this space, as well as at interior and exterior wall framing components. The roof system above the direct area of the fire and heat penetration / break through (i.e., from the first level washroom situated within the middle third of the residence, adjacent the rear / south exterior wall system) has also sustained structural damage. Evidence of smoke migration and deposition at several locations throughout (and within) the building enclosure was confirmed. Moisture related damage to the interior finish and underlying building materials were also observed within the residence.

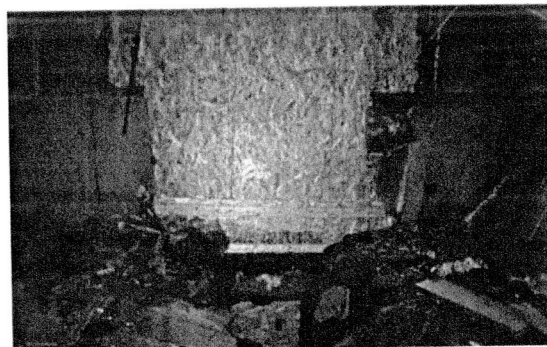


Given the identified site conditions, we note the following (not listed in any order of importance):

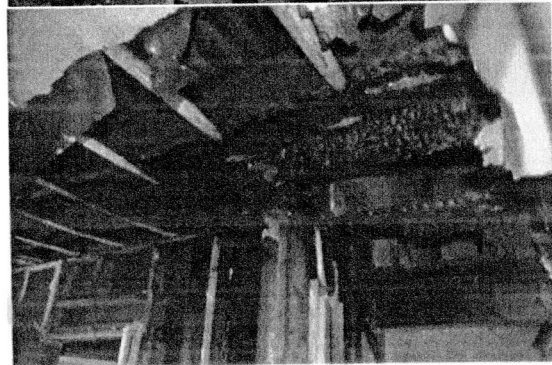
1. Fire loss related structural damages were primarily concentrated to the southern extents of the building and within the middle third of the residence, at framing members exposed to fire and heat migration. Interior and exterior wall framing items, and the second floor frame (as well as the stairs) sustained the majority of damages. The roof may have suffered some minor structural impairment.



2. To date, structural impairment caused by the subject fire loss occurrence was noted at roughly ten (10) 2x8" second floor joists running the full depth of the building (i.e. within the north / front and south / rear spans); the underlying load bearing and non-load bearing interior partition wall frames; the staircase serving the second level; the rear / south exterior wall system at the second level; and the sill plate at the first level two wythe solid masonry exterior wall assembly;



We note that the structure around the basement stairs, which appeared to have been relatively recently installed, has been compromised. This pre-existing condition has been mitigated with temporary installation of steel jack poles. The first floor joists also fail to maintain a sufficient overlap on the masonry foundation walls. The structure of the first floor deck no longer meets current building codes. The entire first floor deck will require a corrected engineering design and replacement complete. These pre-existing conditions are outside the scope of the fire loss.



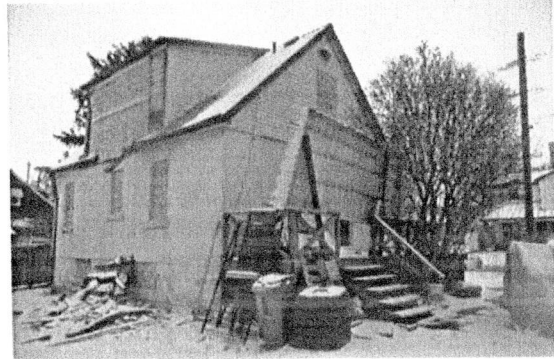
3. Smoke propagation has extended into the first floor masonry walls which are compromised and will be difficult to seal. These will also require replacement complete.

Proper window and door headers will be required to conform to current building codes.

4. To facilitate content listing and provide a temporary safe site condition, installation of temporary shoring will be required at a few locations within the residence

Where floor members have been compromised install adjacent sister members, depth to match existing, supported at either end by 2x6" struts with 2x6" bearing pads that run perpendicular to the first floor joist span, or install a temporary 2x6" wall frame with double top and bottom plates, braced laterally (i.e., with a diagonal member spanning the top and bottom plates, or sheathing on one side of the wall system).

Where floor joists have been consumed, reinstate the floor system by installing full span members, depth and spacing to match existing, carried on the exterior wall system and the existing load bearing interior partition wall frame.



Where subflooring has been consumed or compromised, install minimum 1/2" plywood overlay sheeting.

At the staircase, install new stringers, spliced from sound material and which extends to the second level floor frame, complete with new treads. At the splice location, install 2-2x4" struts to pick up this joint, extending direct and continuous to the basement floor slab.

All the temporary framing members must be adequately anchored, fastened, tied and braced to provide the necessary strength and rigidity;

5. Adversely affected (i.e. moisture and smoke / soot damaged) interior finishes (viz., gypsum wall board), trim components, and underlying wall, floor, and roof assembly components must be removed and replaced. For loss quantification purposes, we recommend that project reserves include and allowance to removal and replacement complete. Provision to control heat loss, air leakage and condensation must be provided in a manner that restores the residence to pre-loss performance conditions, without creating an unhealthy interior living environment (viz., compromising provision for adequate roof ventilation, amongst other requirements).

We note that based on our initial evaluation, construction of the roof system, which appeared to be relatively recently installed with spray applied polyurethane insulation placed directly against the roof deck, was deficient. The smoke / soot damaged and adversely affected spray foam insulation and framing members will require removal complete. Reinstatement / replacement to pre-loss configurations will not be permitted.

6. As at this stage, our environmental division – RocMar Environmental Inc., has been retained to retrieve bulk material samples for the purpose of carrying out our designated substances survey. All work

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associated with the same must be performed as directed. Refer to report R1-712.028E, dated January 5, 2021, which has been submitted under separate cover;

7. Adversely affect HVAC component, and any damaged electrical and plumbing facilities / fixtures will require replacement. Restore the systems to pre-loss conditions, and where necessary, replace with components of like kind, size, capacity and quality. Contractor to confirm if the existing HVAC system is deemed to require replacement.

This completed our initial review and analysis of the above-noted matter. Additional information included subsequently uncovered field condition, may influence the opinions expressed. If additional information becomes available, please forward the same for our review and consideration.

Your truly,

Rocco A. Mazzone, MBA, P. Eng., BSS

Consulting Engineer

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cc.



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