ROAR
ENGINEERING

City of Ottawa
Planning, Development &
Building Services Department
110 Laurier Avenue West,
4th Floor
Ottawa, Ontario

July 26, 2024

Roar File No.: 24R07019

Attention: **Ms. Ashley Kotarba, CAHP Heritage Planner**

RE: ***Risk Assessment and Discussion of Potential Salvage***

Homeowner: [redacted]
Date of Loss: June 23, 2024
Loss Location: 7 Crescent Road, Ottawa, Ontario

Dear Ms. Kotarba,

Please consider the following information regarding the status of the building structure and materials within the structure at 7 Crescent Rd, due to widespread and total fire loss which originated centrally within the subject dwelling.

I was retained by the Insurer to carry out Building Structural Evaluations, including:

Management of site related hazards, risk assessment, preparation of drawings for cost estimation purposes, provide structural advice and in support of the Fire Investigation Team (CEP Ottawa).

As an Engineer – Structural expert, former Builder, General Contractor and restorer of damaged structures, Certified Mold expert, and fire damage assessment expert please consider the following relating to the fire loss at 7 Crescent Rd, Ottawa - designed by Willam Teron and Associates in 1970, renovated in 1988. Roar understands this dwelling was an important landmark in the Rockcliffe Village area and is of significant interest to the Heritage Committee in Ottawa, and others.

info@roarengineering.com
+1 844.235.8565

Head Office:
7565 Danbro Crescent
Mississauga, ON L5N 6P9
+1 647.925.3500

Barrie Office:
18 Alliance Boulevard, Unit 6
Barrie, ON L4M 5A5
+1 705.315.0231

Vancouver Office:
256 East 2nd Avenue
Vancouver, BC V5T 1B7
+1 778.320.2471

Risk of the Current Structure

Environmental Concern

The current structure poses a significant risk of further spread of mold, asbestos fibres and potential flying building debris due to the substantial and total fire loss that occurred. As the structure further dries out following the thousands of gallons of water that were used to suppress the fire, more airborne debris could scatter from the building. Windy conditions will naturally cause the further scatter and spread of debris/ fibres which is beyond our control.

We are entering and soon approaching August which normally is a drier month, which could exacerbate those conditions.

We have completed our Abatement protocol as to how we will proceed with the demolition, including posted signage, all persons to wear full PPE, including full face shields with purified air supply, Tyvek suits, full hazmat protection while on the site. Demolition will proceed in an organized and systematic manner in reverse order of construction, to take apart hazardous components that are at risk of falling, all debris and dust will be wetted to alleviate the spread of dust, and debris will be placed in sealed containers to be transported to designated landfill approved areas.

A Notice of Project Commencement will be filed with the Ministry of Labour due to the hazards at the site. We detected asbestos containing joint compound within the drywall compound. The Insurer retained Pario Environmental (Ottawa) who performed the DSS report, and survey, Roar received a 20 Page Assessment and Abatement report, which we will file with our building permit application.

Structural Concerns

As the Engineer of record for this project, I have the responsibility and Duty to Warn, and to move the project forward in order to stabilize and make safe the site, while assisting the Fire investigation team with their task of investigating this fire loss for Causation.

The structure as it currently stands is teetering in locations, large steel beams are teetering within with the potential to fall down stories below, roof systems are hanging suspended in place, no longer able to support intended live and or dead loading conditions.

Wall structure could suddenly shift, and collapse or at least partial collapse of this structure including fireplace systems, tall masonry chimney systems all are at imminent risk of collapse.

Under normal conditions, I would receive a Building order from the building department to demolish the structure, and this would be carried out as expeditiously as possible. Often fire departments order excavators to fire scenes and perform this task as part of suppression and or to alleviate imminent risk of collapse. These are the real dangers of leaving such compromised structures standing for long periods following total fire losses. I

have discussed with the building officials, they are not in a position to authorize immediate demolition of the dwelling due to the restrictions on this property, which we all understand. This property is really dangerous, public safety has to be the priority; we need to expeditiously demolish this structure. Please. I understand the Heritage act is fully in effect in this case, and we must comply with the Act, Bylaws, and the Committee.

We wish to demolish this structure as soon as possible, I believe it is dangerous to leave the building in its current state for all the risk reasons cited within this report. I do not have the authorization to demolish this structure, until I have all of the approvals in place despite the risks involved.

We have neighbouring Embassy type nearby residents, and stately historical dwellings nearby on both sides of the property. The neighbour to the south has a play area for their small children in the rear of their residence, which is in close proximity to the subject dwelling.

The building in its current state is not safe for entry, remaining roof areas are falling into the building because of consumption of those structures. In one case a large fireplace hearth is overhanging and is at risk of sudden departure, with the potential to fall several floor levels below.

All of the floor systems are substantially compromised.

It would not be safe to attend this site on days where wind speeds are above 20 km/ hr.
I have warned all of the parties about my concerns, if something goes horribly wrong. The safest thing to do is to please allow us to take care of the structural and environmental hazards at this site.

SITE SPECIFIC HAZARDS

During fire suppression and overhaul a number of hazards arose under the control of the Ottawa Fire department (common at all fire scenes, this is not a criticism). There are a number of site specific hazards that can lead to tripping hazards and injuries around the building, water, smoke and fire damaged cedar $^{5}/_{8}$" T&G façade treatments were removed from the building and were found scattered on the ground. Nails are sticking out, the boards are scattered in jumbled piles, glass shards, and Acrylic glazing materials also appear on the ground around the dwelling all of which must be removed.

Cedar façade treatments are smoke, and water damaged or damaged by fire itself, those remaining materials are beyond salvage due to the risk of contamination, bacteria, asbestos fibres etc. covering those materials. Those materials are slated for disposal as part of the demolition.

There is no salvage of materials inside the dwelling, original wiring included Romex, which is all heat, smoke and water damaged, it will be removed with the building debris.

Metal housings from electrical boxes, distribution boxes, breaker panels, refrigerators, metals recovered will be wiped down and separated to be sent out for recycling.

SUPERSTRUCTURE MATERIALS

The superstructure materials have sustained smoke, and water damages, those materials will also be assumed to be covered with asbestos fibres, approximately 65% of the superstructure was consumed during the course of the fire, partial wall structures remain standing at isolated locations, which will be demolished due to the damaged state of those materials. It is not safe to marshal any part of those materials, as we would be transferring hazards to alternate locations, disposal is the only safe option in my opinion based on my site evaluation.

SURROUNDING TREES, BUSHES AND SHRUBS

All efforts will be made to protect mature trees, the Insurer decided to demolish the garage (which sustained no damage related to fire) in order to save a mature tree located in the middle of the courtyard, west of the front door entry).

There are small bushes which will likely become damaged within 10' of the dwelling, however every effort will be made to protect trees, hedges which separate neighbouring properties, fences will be maintained.

It is hazardous walking around the dwelling due to the heavily forested or overgrowth around the dwelling. We had to clear some branches of small bushes just to walk around the side of the dwelling (south side, and east side).

We are not planning to remove the interlocking paver driveway, the driveway has sunk, and has become infilled with vegetation; the driveway will be left in-situ and will be protected to the best of the contractor's ability.

SPECIAL GLAZING – FORMED ACRYLIC WINDOWS/DOOR SYSTEMS

Much of the original glazing was of acrylic, which included obtuse angled acrylic glazing systems which appear on the original drawings i.e. Drawing page 19 July 1970.

After walking around all sides of the dwelling, I have photographed all walls/ windows; all of the windows have either been melted/ consumed or have warped, deflected and or have been damaged due to overheating and smoke effects.

No windows can be saved, the fire department broke out the glass windows around the Solarium (former pool), in order to suppress the fire within the solarium area which was clad entirely with Cedar. The cedar is completely charred within this large area.

Door systems were damaged throughout, areas where pocket doors existed prior to the fire can not be accessed, as the stairs were completely consumed in fire including the main support for the central spiral stairway.

The basement stairs are intact although, they are covered in drywall, substantially impacted by smoke, and water damages. Stair systems are not safe for recovery or for salvage. The stairs to the basement were conventional.

RAILING SYSTEMS

The railing systems had wood caps, and acrylic/ glass side rails, all of which were smoke, water, fire damaged or damaged beyond recognition in many cases. The railings were unique, however are damaged and will be disposed like the other building debris.

CONCRETE/ FIREPLACES AND FLOOR TILE SYSTEMS

Due to the high temperature conditions within a fully involved fire loss, floor systems in several areas had been removed, leaving exposed plywood on the floor, and wood systems within, fire travel was significant due to the large fuel load within the dwelling. This allowed the fire to spread from compartment to compartment, creating inferno and flashover conditions throughout the dwelling centrally.

Fireplace systems/ brick, and hearth areas were substantially heat damaged due to overheating effects of a fully involved fire loss (sustained temperatures were well above 1500 deg F within the dwelling, likely closer to 2500 deg F within the most heat damaged areas).

At this temperature even stone, brick, tiles, and fireplace facades become damaged beyond any type of salvage and or potential restoration.

ROOF SYSTEMS AND FLASHINGS

The roof systems consist of flat roofs, with a 2 ply Torch Down Bituminous Membrane, the roof membranes were not original, and were largely consumed during the course of the total fire loss. Most of the former roofs have been consumed, only a few substantially damaged partial roof areas remain.

Flashing systems, troughs, and downspouts were of aluminum (no copper), 3” downspouts were measured and appear of recent vintage.

Those materials largely were destroyed due to the fire loss, however, we will attempt to recover for recycling purposes remaining components located on the site.

RAILING AND BENCH SYSTEMS OVER THE SOLARIUM ROOF SYSTEM

The railing and bench systems are largely decayed, much of the remaining railings were broken during the emergency response, I documented the details of the railing and bench systems for reconstruction or for cost evaluation purposes. It is not possible to salvage the original components as the materials are too fragile and decayed.

WATER METER, HYDRO METER, GAS METER RECOVERY

We will attempt to recover remaining water, and Hydro meter components, the meters were both damaged by heat and significant smoke and water effects.

The gas meter was removed by Enbridge and is in their possession at our request. Following the fire the gas remained on at the dwelling, we requested Enbridge to attend and isolate the service at the street.

Currently we have most of our sign offs complete for the demolition of the dwelling and are expecting the final few signatures shortly.

If you can assist us in expediting the Heritage and Planning committee approval, we will be grateful, and appreciative. An Engineer's duty according to the Professional Engineer's Act and Code of Conduct is to protect the public, I am trying to fulfil my duty as the Site Engineer of Record.

We greatly appreciate your efforts and for the Committee members involvement in this process, and for reviewing our submission, please assist us in moving this process forward for the Safety of the Public, and all those involved who are still evaluating this site.

Partial and Controlled Demolition would assist the Fire Investigation personnel immensely and would allow them to proceed in a safe manner without the risk of falling debris. They need further timely access into the structure, in which controlled and incremental demolition would permit.

In the fire investigation field, a timely investigation is always best. This is in concert with the Environmental and Structural safety aspects of this site as well at this time.

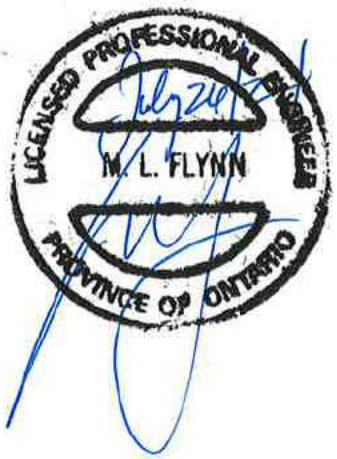
Please reach out if you require anything further, and please notify me when there are any updates in obtaining approval from the Heritage Committee for the proposed demolition. Thank you for your time, and for your consideration regarding our submission to the Heritage Committee for Demolition approval.

I have attached a few select photographs to portray the unsafe condition of the property.

Should you have any questions please do not hesitate to call.

ROAR ENGINEERING INC.

Yours truly,



Michael Flynn, P.Eng., CFEI, CFII, CMR

APPENDIX A

PHOTOGRAPHS

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