



**DAHL GROUP**  
ENGINEERING

Mr. Edward Burlew  
Via email: [elblb@yahoo.ca](mailto:elblb@yahoo.ca)

October 24, 2025  
File No.: DGE25178

**Re: Engineering Assessment – Building Exposed to Fire Loss Event**

Property Owner: Burlew, Edward & Heather  
Property Address: 16 John Street, Thornhill, ON.

Dear Mr. Burlew,

**Introduction:**

Dahl Group Engineering (DGE) was requested by Mr. Christopher Rizzo on behalf of the Owner, Mr. Ed Burlew, to attend the subject property to complete an independent evaluation of the structural damage that has occurred to the subject building due to a recent fire event. Our initial site inspection was completed by Steve Dahl, P.Eng., on October 14, 2025 in the presence of the Owner. Photographs were taken at the time of our inspection for the purpose of this report and our file documentation.

The report herein provides general information of the subject building and presents the findings of our site inspection based on the observed site conditions. The opinions provided are formed based on the condition of the building with respect to the observed damages, the condition of the building irrespective of the fire loss event, and a practical understanding of fire-damaged building remediation established over 15 years of experience in the industry of building assessments and remediation resulting from exposure to fire.

As discussed in this report, the findings of our initial site attendance yielded evidence that suggests the building is not salvageable as a result of the fire loss event. The rear addition above the main floor level and roof of the main portion of the building had been consumed by the fire. The interior finishes and contents (primarily organic, i.e. paper-based files) throughout the building had been exposed to extensive smoke and fire suppression related water damages. The exterior brick veneer on the original portion of the building had been exposed to significant smoke contamination and was noted to be in an aged and compromised condition, as discussed further herein. The foundation and main floor framing were found to be relatively undamaged by the fire loss event, however, were noted to be of archaic construction, aged and significantly deteriorated sporadically throughout the ‘original’ portion of building. These elements are considered grossly inadequate for the use in re-construction with respect to the current and applicable Ontario Building Code (OBC). A full demolition of the structure in a timely manner is recommended in order to mitigate risk of partial or full collapse given the inability to functionally shore the building in its current condition and in order to facilitate reconstruction of the building in a manner compliant with the current OBC.

**Background Information:**

The subject building is a one and half storey building that served most recently as a law office that, for the purpose of this report, has been considered to face south onto John Street in Thornhill, ON. The building at the time of our inspection consisted of an “original” portion (reportedly relocated from another site in excess of 125years ago) measuring approximately 23’ x 32’ and a more recently constructed rear addition measuring approximately 27’ x 19’. The original portion of the building contained a main floor

level, an attic loft storey and an unfinished crawlspace; the rear addition consisted of a main floor level and a full height basement.

The exterior walls and floors of the ‘original’ portion of the building were comprised of rough sawn lumber framing constructed in a ‘pole-barn’ configuration clad with rough sawn planking. The east, west and south walls of the original portion of the building were clad with aluminum siding over brick veneer backed by an air space and an apparent tarpaper-like material. The brick was noted to be in a state of disrepair whereby the mortar was loose resulting in the brick effectively behaving as a dry-stack assembly with minimal reliable integrity remaining. The roof of the “original” building was constructed of rough sawn lumber framing in a hip configuration clad with rough sawn planking; rough sawn ceiling joists existed near the midspan of the rafters (i.e. not providing compliant or adequate lateral restraint to the rafters). The interior of the building was finished with a combination of various finishes including modern drywall and lath and plaster. The foundation of the ‘original’ portion of the building consisted of a combination of brick and stone and mortar walls enclosing a crawlspace on a soil floor. Evidence of long term degradation and moisture infiltration through the foundation walls was evidenced by heavy efflorescence and compromised mortar/brick sporadically (but widespread) throughout the crawlspace.

The rear addition of the building was generally constructed of conventional sawn lumber framing atop a CMU foundation enclosing a basement finished with conventional drywall finishes.

It is our understanding that on the above noted date of loss, a fire event occurred causing structural damage to the subject building. The fire apparently originated at the rear of the rear addition causing structural damages to the entirety of the addition above floor level, as well as to the entirety of the roof and each level of the rear structural wall of the ‘original’ portion of the building. Heavy smoke and water damage extended throughout the remainder of the building in its entirety.

### **Scope of Investigation:**

The investigation and evaluations completed by DGE are limited to building structural systems and elements (including fire and environmental separations). Any review and recommendations relating to building plumbing, HVAC and electrical systems are to be coordinated and completed by others, if considered necessary. Landscaping features including site grading have also been omitted from the scope of this investigation.

In completing this inspection, DGE completed the following:

- Observed and documented the general layout of the subject building as necessary for the purpose of our retention;
- Observed and documented damaged building elements to the extent possible in the absence of tear-out of interior finishes, demolition or removal of contents/debris.
- Undertook discussions with the Owner regarding the history of the building construction and the events preceding the date of our retention; and,
- Obtained photographic documentation of the building onsite.



This report does not necessarily address items that are unrelated to the structural adequacy of the building or that were concealed at the time of our investigation(s).

This report has been prepared to satisfy the requirement of the client(s) for which it was prepared.

### **Investigation, Observations and Evaluations:**

All photographs referred to within this report have been included as Appendix A of this report.

#### Photographs No. 1 to 10: General Exterior Views of the Front Building

Photographs No. 1 to 3 provide general exterior views of the rear addition portion of the building wherein the fire was reported to have originated. For reference purposes the rear elevation of the addition as shown in Photograph No. 1 faces north towards the rear of the property. The rear addition appeared to have been fully involved resulting in the walls and roof visible in these photographs to have been substantially consumed by the fire.

Photographs No. 4 to 10 provide general exterior views of the 'original' portion of the building. The fire appeared to have migrated through the rear (north) exterior wall and into the roof assembly. Several small sections of the exterior aluminum siding had either been dislodged by the fire event or subsequently removed for inspection of the substrate. The condition of the brick has been discussed further within this report.

#### Photographs No. 11 to 24: General Views of the Rear Addition

Photographs No. 11 to 22 provide general views of the building from within the rear addition. The framing in this area has been substantially consumed by the fire and requires complete replacement above the main floor level. The condition of the foundation walls could not be confirmed at the time of our inspection due to the presence of interior finishes; however, the exposed main level floor framing and sheathing has sustained significant mould-like growth, as well as water damage and smoke contamination. All interior finishes within the basement have been exposed to significant smoke and water damages necessitating replacement.

Due to the extent of damage sustained to this portion of the building, it cannot be relied upon to perform predictably and should be demolished immediately in a controlled manner to prevent risk of unintentional collapse and/or injury.

#### Photographs No. 25 to 52: General Views within the 'Original' Portion of the Building

Photographs No. 25 to 32 provide views within the main floor of the 'original' portion of the building. All interior finishes and contents, which largely consisted of paper-based file records had been saturated from fire-suppression activities and had sustained heavy smoke contamination. The floor and wall systems did not appear to be damaged by the fire directly at this floor level.

Photographs No. 33 to 41 provide views of the attic loft and roof framing of the 'original' portion of the building. The interior finishes and contents, which largely consisted of paper-based file records, had been saturated from fire-suppression activities and had sustained heavy smoke contamination. The majority of the ceiling finishes on this level had fallen onto the floor system



and remained in that position at the time of our inspection. The roof framing and sheathing had been heavily charred by the loss event and cannot be relied upon to perform predicably. As visible in Photographs No. 37 to 41, the primary wood post and beam structure, which appeared to be continuous from the main floor level to the roof connection had been heavily charred and compromised as a result of the fire. Heavy charring to critical roof connections (i.e. rafter to wall, ceiling joist to rafter) was observed and is also visible in these photographs. The extent of damage to the framing at this level necessitates removal and replacement of the framing.

Given the debris throughout this floor level, temporarily shoring the roof is not a viable approach as the debris would have to be removed in order to do so, and given the poor and unstable condition of the roof, ceiling and sections of the exterior walls, no manual construction or shoring work should be performed for risk of unintended collapse and/or injury.

Photographs No. 42 to 52 provide general views within the crawlspace of the original dwelling. Similar to the exposed framing within the building at the time of our inspection, the visible floor framing and sheathing had sustained significant mould-like growth and soot-containing water damage. The exterior foundation walls consisted of a combination of brick/stone and mortar and were observed to be in a deteriorated condition wherein several locations the stones were loose and the brick had reduced to fines (Photographs No. 49 to 52). Interior bearing conditions consisted of various materials including a wood stump and various shims. The presence of long-term moisture infiltration was noted throughout the crawlspace as evidenced by heavy efflorescence, which is consistent with a presumed lack of dampproofing around the perimeter of the building and an observed lack of impermeable ground cover throughout the crawlspace where a concrete slab floor was not present. The foundation cannot remain in its current condition from both the perspective of degraded structural condition and ability to resist water ingress.

#### Photographs No. 53 to 62: General Views of Exterior Cladding and Exterior Foundation

These photographs provide views of the exterior brick exposed from behind the aluminum siding along the west exterior wall of the 'original' portion of the building. Photographs No. 53 and 54 show the extent of smoke contamination behind the siding below the eaves. It is common for soot to be driven out of the soffits onto and behind exterior cladding when a fire occurs within an attic space. It is likely that similar smoke contamination exists behind the siding and brick around the remainder of the building where not specifically exposed to date.

Photographs No. 55 to 62 provide views of the exterior brick at the base of the exterior wall exposed by means of test cuts in the aluminum siding. The exposed brick was observed to be degraded and in poor condition. Within the small sample area of exposed brick near the base of the wall, the mortar was no longer bonded to the brick and could be easily removed by hand. The majority of the exposed brick contained step cracking with dislodged mortar and several bricks could be manually displaced. Exposure of the brick to smoke contamination was evidenced by soot on the mortar and the debris remaining between the brick and the siding. Abundant mould-like growth was also observed on the exposed plankboard sheathing and tarpaper behind the brick.

Visibility behind the brick was limited at the time of our inspection; however, no connection of the brick to the wall structure was observed in the exposed area. It is unlikely based on our



observations and the vintage of the building that the brick is adequately secured to the building. Wood strapping was observed on the exterior face of the exposed brick veneer (which must be replaced due to smoke contamination). In our opinion the strapping, albeit likely not intended to do so, is serving as tension strapping to the exterior face of the brick assisting in stabilizing the otherwise degraded and unbonded brick veneer system.

Based on the degraded condition of the brick cladding, the exposure of the brick cladding, tarpaper and exterior sheathing to water, smoke contamination and apparent fungal growth, and the apparent lack of mechanical fastening of the brick to the building, the current brick must be removed from the building.

### **Opinions and Recommendations:**

Based on the discussions presented in the preceding section of this report, it is our opinion that the building is not salvageable as a result of the fire loss event. The rear addition of the building had been largely consumed by the fire event. It is presently unstable and at significant risk of collapse under its own weight, only to be exacerbated by the forthcoming snow season. Complete demolition of the rear addition is required.

The entirety of the roof of the ‘original’ portion of the building is also in a severely compromised state and cannot be relied upon to perform predictably, as such, shall also be removed in its entirety. Shoring the roof for the interim is not a viable option as the widespread presence of saturated contents and building debris prohibit the installation of sound bearing and connections for prospective shoring framing/systems, and manual removal of the debris shall not be performed due to the risk to human safety in undertaking this work given the current condition of the building.

The structural framing members comprising the post and beam configuration of the north exterior wall of the ‘original’ portion of the building were heavily charred by the fire beyond the potential for in-situ remediation and reinforcement as it is a continuous structural system integrated to the floor level below (i.e. from the top of the main floor level to the roof framing). In modern construction, continuous lateral restraint of the top of the walls to which rafters are affixed is required (in a case where the ridge is not supported , such as this); however, in the era that this building was constructed it was common to extend the exterior wall studs/columns continuously from the main floor level to the roof framing above to create a knee wall at the loft level, utilizing the loft floor as lateral restraint for the vertically cantilevered wall system. In this instance the wall system, specifically the critical upper cantilevered portion, has been severely compromised by the fire resulting in the roof being further susceptible to lateral deflection and collapse, notwithstanding the compromised condition of the roof framing due to direct fire-related damages of its own. The north exterior wall of the ‘original’ portion of the building must be removed and replaced in its entirety.

In order to address water damages, smoke contamination and mould growth within the building, all interior finishes at all levels must be removed. All exterior cladding including the brick veneer must also be removed in order to remediate the aforementioned conditions as well as the brick being unfit to remain given its aged and dilapidated condition.



The foundation and framing of the ‘original’ building where not directly exposed to fire-related damage, as noted previously in this report, are in an aged and, specifically with respect to the foundation, dilapidated condition. It is our opinion that the foundation and main floor framing are not suitable for use in a reconstruction effort for the building given that these elements are of archaic construction, show signs of age related deterioration and are grossly inadequate with respect to the requirement of the current Ontario Building Code without additional investigation (removal of all finishes, perimeter excavation, etc) and significant upgrades.

In order to perform any additional investigation, the portions of the building deemed to be unstable or unpredictable as outlined herein will require mechanical demolition as manual and selective demolition will create an unnecessary risk to human and material wellbeing in attempting to do so. Furthermore, in performing the mechanical demolition of the necessary building portions, inadvertent damage to the remaining archaic building systems is likely to occur thus necessitating demolition of the few remaining framing members in either case. It should be noted that no distinguishable architectural feature will remain following the required fire-related demolition (i.e. rear addition entirely, ‘original’ roof, ‘original’ loft, ‘original’ rear exterior walls, all exterior cladding, etc.)


Based on our review of the building, property and associated factors, it is our opinion that the most effective approach to reconstruct the building is to replace the building in its entirety. It is further recommended that the building be demolished promptly given its condition in order to mitigate the risk of unintended collapse and the corresponding risk to human safety.

**Closing Remarks:**

We trust you find all in order with our assessment of the subject building and our recommendations accordingly. Please note that an appropriate permit must be obtained prior to performing any works outlined within this report, which remains the responsibility of the Owner.

If you have any questions or require anything further at this time, do not hesitate to contact the undersigned.

Yours truly,

  
Steve Dahl, P.Eng



# **Appendix A**

**Site Photographs**  
**Date Taken: October 14, 2025**





**Photograph No. 1**



**Photograph No. 2**





**Photograph No. 3**



**Photograph No. 4**





**Photograph No. 5**



**Photograph No. 6**



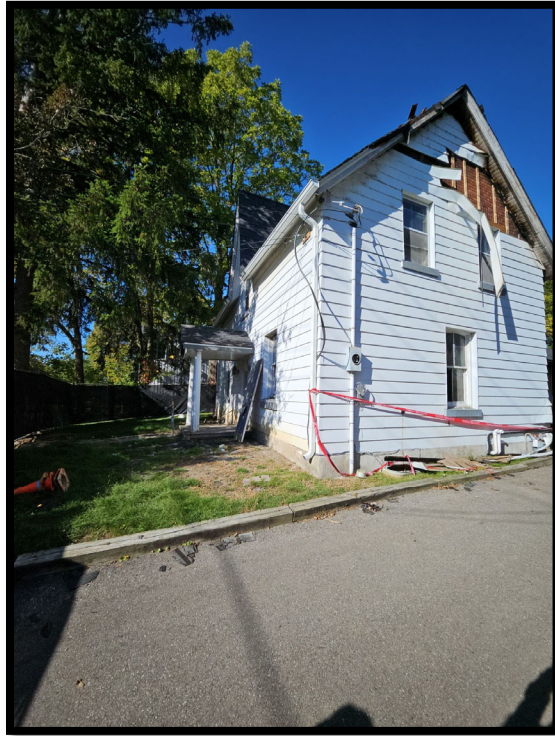


**Photograph No. 7**



**Photograph No. 8**





**Photograph No. 9**



**Photograph No. 10**





**Photograph No. 11**



**Photograph No. 12**





**Photograph No. 13**



**Photograph No. 14**





**Photograph No. 15**



**Photograph No. 16**





**Photograph No. 17**



**Photograph No. 18**





**Photograph No. 19**



**Photograph No. 20**





**Photograph No. 21**



**Photograph No. 22**





**Photograph No. 23**



**Photograph No. 24**





**Photograph No. 25**

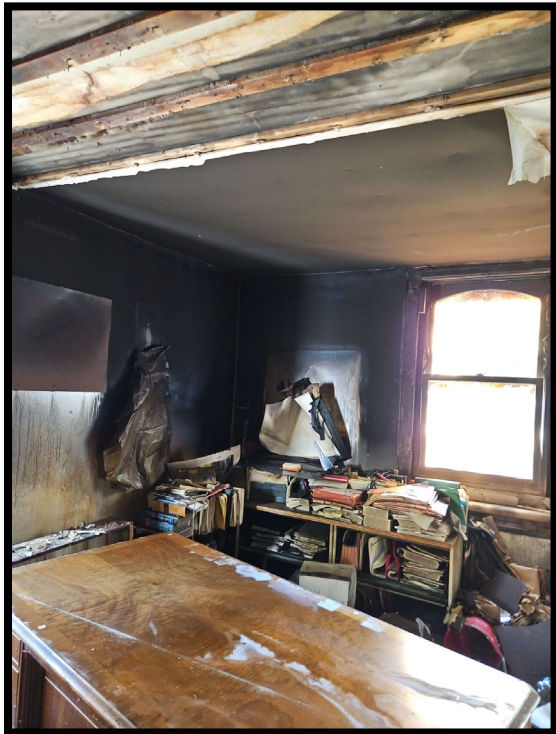


**Photograph No. 26**





**Photograph No. 27**



**Photograph No. 28**





**Photograph No. 29**



**Photograph No. 30**





**Photograph No. 31**



**Photograph No. 32**





**Photograph No. 33**



**Photograph No. 34**



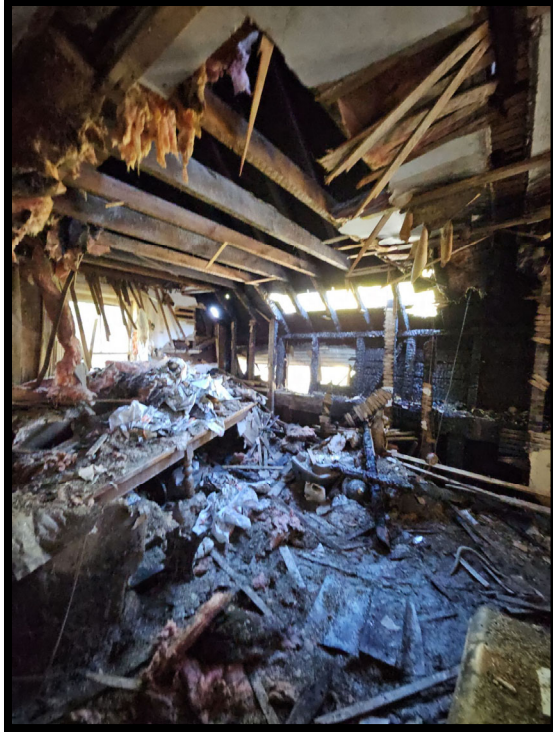


**Photograph No. 35**



**Photograph No. 36**





**Photograph No. 37**



**Photograph No. 38**





**Photograph No. 39**



**Photograph No. 40**





**Photograph No. 41**



**Photograph No. 42**





**Photograph No. 43**



**Photograph No. 44**





**Photograph No. 45**



**Photograph No. 46**





**Photograph No. 47**



**Photograph No. 48**





**Photograph No. 49**



**Photograph No. 50**





**Photograph No. 51**



**Photograph No. 52**





**Photograph No. 53**



**Photograph No. 54**





**Photograph No. 55**



**Photograph No. 56**





**Photograph No. 57**



**Photograph No. 58**





**Photograph No. 59**



**Photograph No. 60**





**Photograph No. 61**



**Photograph No. 62**

