

January 26, 2021

Mr. Garry Alblas
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DEJONG DWELLING FIRE DAMAGE ASSESSMENT

Insured:	Jodi & Michael Dejong
Loss Address:	205 Forth Street Cobourg, ON
Date of Loss:	December 11, 2020
Claim Number:	001878252
JENSEN HUGHES File Number:	4T2008160

STATEMENT/BACKGROUND INFORMATION

In response to the December 14, 2020, request of Mr. Garry Alblas of Zorayan Claims, and on the behalf of Cumis General Insurance Company, JENSEN HUGHES (JH) conducted an investigation of a single-family residence, located at 205 Forth Street in Cobourg, Ontario.¹ Carriage of the file has been transferred to Mr. Edward J. Poon, P. Eng., with 9148566 Canada Inc. o/a EP. The dwelling is owned and occupied by Jodi & Michael Dejong, who reported the fire damage to the dwelling.

PURPOSE AND SCOPE

The purpose of this assessment was to determine the extent of the reported fire damage to the insured dwelling.

The scope of our assessment included the following:²

1. Examination of the site and single family dwelling.
2. Document and/or photograph pertinent observations.³
3. Preparation of this report to present our findings and to render a professional engineering opinion.

¹ The investigation/assessment was limited to visual observations of accessible elements of the structure(s) and/or property. Unless otherwise noted, no invasive or destructive actions were taken to penetrate concealed or finished areas to observe or document any damage or conditions not readily visible.

² When appropriate, tests or measurements were made in accordance with equipment manufacturers' recommendations and/or operating directions and ASTM or other applicable testing standards.

³ Selected photographs, taken or otherwise acquired during the course of this investigation/assessment, may be referenced and/or embedded in this report. Embedded photographs may have been cropped and/or otherwise modified to emphasize or identify a specific item or feature. All photographs associated with this assignment have been retained in the original or as-received format and can be made available upon request.

FINDINGS OF ASSESSMENT

An on-site field examination/assessment was conducted on December 15, 2020 by Edward J. Poon, P. Eng. with JENSEN HUGHES. Access to the property was provided by the insured. During the examination/assessment, the following pertinent observations were made and recorded.⁴

General

1. The structure is a one and a half storey, detached, single family dwelling constructed over a crawlspace area (Photograph 1).

JH Comment: For the purposes of this report, the front of the structure will be considered to face east.



Photograph 1 – East (front) elevation

2. The original dwelling construction was located on the east side of the dwelling. It was likely that an addition was constructed on the west side of the dwelling. The dwelling was likely over 100 years old.
3. A detached garage structure was located southwest of the dwelling. As asphalt paved driveway was located along the south side of the dwelling.
4. The dwelling was supported by foundation walls that enclosed a crawlspace area. The foundation walls were constructed with cast in place concrete or stone and mortar given the age of the dwelling. The interior face of the foundation walls was covered with spray foam insulation. The exterior face of the foundation walls were covered with a parge coating.
5. The floor assemblies were constructed with rough cut timber floor beams and timber columns. The timber floor beams were supported by the exterior foundation walls and intermediate timber columns. The timber columns were bearing on grade. It was unconfirmed if concrete spread footings were provided beneath the timber columns. The floor joists were comprised of 2x8 or 2x10 floor joists spaced at 400 mm and 500 mm on centre, respectively.

⁴ For the purposes of this report, unless otherwise noted, all sizes of materials are addressed as nominal, all moisture meter readings are direct unadjusted measurements, all compass directions are general and measured dimensions are approximate and limited in accuracy by field conditions.

6. The exterior walls were comprised of vinyl siding, ½" expanded polystyrene insulation, plankboard exterior wall sheathing, rough cut 2x4 wall framing with studs at 400 mm on centre and wood lath and plaster interior finishes.
7. The roof was constructed in a gable configuration with east and west facing roof slopes. The roof slopes were covered with asphalt shingles and did not extend significantly beyond the exterior walls to form soffits. An eavestrough and rainwater leader system discharged precipitation runoff from the roof slopes onto the exterior grade and away from the dwelling. A dormer was constructed on the west elevation.
8. A raised, covered porch was constructed on the east elevation, and a large, raised exterior deck was constructed on the west elevation. The roof framing was comprised of 2x4 rafters spaced at 600 mm on centre and 2x4 collar ties spaced at 600 mm on centre. The upper floor contained a vaulted ceiling finish and the roof space was insulated and contained a vapour retarder. The ceilings were finished with gypsum board.

Building Examination

Interior

9. There was significant smoke contamination and a smoke odour throughout the interior of the dwelling. The smoke contamination and odour was present throughout the crawlspace, the main floor and the upper floor. An example of the fire damage and smoke contamination to the interior of the dwelling is illustrated in Photograph 2.



Photograph 2 – Sample of fire damage and smoke contamination

10. The fire likely originated around the central stairway area that provided access to the crawlspace below and to the upper floor above. The structural framing surrounding the staircase contained significant charring (Photograph 3).



Photograph 3 – Fire damage concentrated around central stairway

11. The exposure to the fire consumed the top portion of the staircase that provided access to the upper floor (Photograph 4).



Photograph 4 – Staircase to upper floor partially consumed by fire

12. The fire migrated upward and resulted in fire damage to the timber floor beam and timber column that enclosed the central stairway (Photograph 5).



Photograph 5 – Fire damage to timber floor beam and timber columns above

13. The fire also migrated to the timber floor beam and timber column below the main floor. The central timber floor beam was oriented in the east-west direction and was continuous full length from the front of the house to the interior foundation wall that was the original depth of the dwelling (Photograph 6).



Photograph 6 – Fire damage to central floor beam above crawlspace

14. The fire damage also extended slightly beyond the crawlspace stairway to the adjacent 2x10 floor joists. The fire damage on the adjacent floor joists was relatively minor (Photograph 7).



Photograph 8 – Fire damage to adjacent 2x10 floor joists above crawlspace

15. The crawlspace area contained significant moisture from the fire fighting activities and the contents within the crawlspace area were still saturated. A review of the existing floor framing throughout the crawlspace area indicated that the floor had sustained long-term and ongoing deflection as intermediate beams and vertical supports had been placed throughout the crawlspace area. A review of some of the timber beams indicated significant deterioration of the timber and it was soft to the touch. The timber could be broken apart by hand (Photograph 9).



Photograph 9 – Existing, long-term deterioration of timber framing

16. Some of the roof framing above the western portion of the dwelling had also sustained fire related damage to some of the 2x4 rafters and interior knee walls (Photograph 10).



Photograph 10 – Fire damage to knee walls and 2x4 rafters on the western portion

CONCLUSIONS

1. The extent of damage related to the single family dwelling from exposure to the fire included the following floor and wall framing surrounding the central stairway area that provided access to the crawlspace area below and the upper floor above. The fire damage also extended to the dormer wall framing and 2x4 rafters on the west roof slope above the upper floor. The fire damaged timber floor beams and columns were all continuous as the original construction of the dwelling was similar to a barn style construction with rough hewn timber members and mortice and tenon connections.
2. There was extensive smoke contamination throughout the remainder of the dwelling interior, including smoke odour throughout.
3. The fire-related damage to the dwelling is repairable; however, due to the significant, long-term deterioration of the structural framing and associated reduction in structural capacity of the structural framing members, it is recommended that the dwelling be demolished to the top of foundation and reconstructed above grade.

DEMOLITION PROCEDURE

17. All demolition activities shall be completed in accordance with the requirements of the Ontario Health and Safety Act and Regulations for Construction Projects, the Ministry of Labour Requirements, the Ontario Building Code, and municipal bylaws.

Site Security

18. The dwelling shall be secured from unauthorized entry at all times. Access onto the property is restricted to authorized personnel.
19. The subject property shall be secured with a temporary chain-link fence (CLF) with a minimum height of 6 feet (1.8 m) along the front of the property (street). The temporary CLF shall also restrict driveway access to the property. Any vehicular or construction equipment shall be restricted to the driveway and to the dwelling footprint beyond.
20. The CLF shall be set back from the roadway to allow for parking of some vehicles until the demolition of the dwelling is completed. The roadway (Forth Street) did not contain any shoulder and contained a curb.

Stopped or parked vehicles along the west side of Forth Street would pose a partial obstruction to the roadway and a potential hazard. The Contractor shall ensure that no unauthorized personnel are permitted to enter the Workplace during demolition and operation of equipment or vehicles. Should temporary occupancy of the street be required during demolition, a street occupancy permit may be required from the municipality.

21. The Contractor shall be responsible for all access and egress from the Workplace at all times and shall be responsible for the control of authorized personnel.

Traffic Control

22. Traffic control measures shall be provided to direct traffic around the Work Zone. During the demolition process when construction equipment and dump trucks are utilized to dispose of debris, it is recommended that appropriate traffic control shall be provided by the Contractor in accordance with the Ontario Traffic Manual Book 7: Temporary Conditions.
23. The contractor shall confirm the requirement to notify emergency services such as police services, fire services and paramedical services.

Site Utilities

24. Utility locates shall be obtained by the demolition contractor prior to the commencement of any demolition. All locates shall be marked on site and maintained. Utility locates shall be updated on a monthly basis or as required.
25. Utility disconnection and cut offs shall be completed prior to any demolition. The property owner or authorized representative shall obtain written sign offs from all applicable utilities. The utilities may include, but are not limited to:
 - Hydro;
 - Natural gas;
 - Telecommunications
 - Municipal water supply and sewer service.
26. The hydro supply shall be disconnected, and the hydro meter removed from site prior to any demolition. Written sign off from hydro service is required prior to demolition.
27. The natural gas (if heated by natural gas) shall be disconnected. If the meter requires removal, it shall be completed by the utility company.
28. All utilities shall be disconnected from the dwelling prior to demolition.

Permit Requirements

29. A demolition permit will be required from the municipality of Cobourg prior to the commencement of any demolition.
30. The demolition permit shall be posted on site in plain view at all times.

Health & Safety

31. The demolition contractor shall maintain all applicable health and safety requirements in accordance with the Ontario Health & Safety Act and Regulations for Construction Projects, as well as, all Ministry of Labour requirements.

Protection of Adjacent Structures

32. The demolition shall be completed without damage to adjacent structures or properties.

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- 33. Any debris from the demolition shall be maintained within the subject property. Protective measures such as placement of tarps on the temporary CLF shall be provided to protect adjacent structures from airborne debris.
 - 34. The contractor shall take measures to control all debris on site, including all airborne debris such as dust.

Occupancy of Adjacent Structures

- 35. The detached garage structure may be maintained.
- 36. Due to the relative distance between the insured dwelling and adjacent properties, there are no concerns regarding occupancy of adjacent properties during the demolition.
- 37. Written notice shall be provided to the neighbouring dwellings with a minimum of 48 hour's notice prior to the commencement of demolition.

Demolition Methodology

- 38. All demolition shall be completed in compliance with all municipal bylaws, including noise bylaws.
- 39. The contractor shall not have any individual working alone in the Work Site at any time.
- 40. The Work Site shall be maintained with good housekeeping at all times in accordance with O. Reg. 213/91.
- 41. The dwelling foundation walls and concrete slab on ground shall be maintained. Should a portion of the foundation walls be damaged during demolition, the damaged portion shall be removed in compliance with O. Reg. 213/91 S. 223-235.
- 42. The dwelling superstructure shall be demolished to the top of foundation walls. The sill plate (if any) shall also be removed. Care shall be taken to maintain the anchor bolts (if any).
- 43. At no point during the demolition process shall any free-standing wall be left standing at the end of the workday. A free-standing wall is defined as any vertical components, regardless of type of material of construction, without lateral restraint or temporary bracing. Lateral restraint may be in the form of a floor assembly.
- 44. All exterior drains shall be flushed and capped after demolition.
- 45. The remaining foundation wall shall be protected from cold weather with insulation blankets. Temporary construction and heating may be required to protect the foundation walls from frost movement. The foundation area should be kept at a minimum of 5 °C or above.
- 46. If possible, the rear exterior deck shall be maintained.
- 47. If possible, the detached garage structure shall be maintained.
- 48. Protection for the asphalt paved driveway may be required during demolition.
- 49. Should it be more economically feasible to provide temporary shoring for the exterior walls and upper floor assembly while the dwelling interior is reconstructed and repaired, Jensen Hughes shall be notified immediately to provide demolition and temporary shoring drawings.

Demolition Supervision

- 50. On-site supervision of the demolition shall be conducted by a qualified person.
- 51. A site review and report is required to confirm the condition of the remaining foundation walls and concrete slab on ground for suitability of reconstruction.
- 52. The contractor shall notify the Engineer immediately should any unforeseen circumstances or conditions arise.

Reconstruction

- 53. Reconstruction drawings for permit application will be prepared at a later date.
- 54. Reconstruction of the insured dwelling may require foundation work if the structural framing configuration is revised; or, if the existing foundation does not contain the appropriate foundation structures. Exploratory work will likely be required to confirm the existing foundation (interior footings, if any) to support the floor framing.

JENSEN HUGHES reserves the right to supplement or amend this report should additional information become available. If you have any questions or comments regarding any element of our report, please do not hesitate to contact me at epoon@jensenhughes.com.

Respectfully written by:



Edward J. Poon, P. Eng.
Director, Canadian Forensic Operations
JENSEN HUGHES



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