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Planning, Infrastructure and Economic Development Dept.
City of Ottawa
110 Laurier Ave.
Ottawa, ON

March 4, 2021
Revised: August 13, 2021
Project No. 21113

Attn: Ashley Kotarba

RE: 1 Maple Lane and 1112 Lisgar Rd – Structural Condition Reports
Heritage Peer Review

Dear Ms. Kotarba,

At your request, John G. Cooke & Associates Ltd. (JCAL) has reviewed the two structural assessment reports commissioned by the owner of the above noted properties. The City of Ottawa requires an additional peer review of these reports as they recommend demolition of the building which is a Grade 1 building within the Rockcliffe Park Heritage Conservation District.

Terms of Reference:

The following documents were provided by the City of Ottawa for review by JCAL:

- '1 Maple Lane and 1112 Lisgar Rd Field Inspection Report', prepared by Remisz Consulting Engineers Ltd., dated November 17, 2020
- 'Building Evaluation and Assessment 1 Maple Lane and 1112 Lisgar Rd', prepared by Paterson Group Consulting Engineers, dated November 10, 2020
- 1 Maple Lane Heritage Survey and Evaluation Form
- 112 Lisgar Road Heritage Survey and Evaluation Form (1112 Lisgar Rd was formerly 112 Lisgar Rd)

Subsequent to the issuance of our initial report, the City of Ottawa requested for JCAL to carry out an onsite investigation of structural condition, and coordinate with Paterson Group to carry out additional environmental assessments. The site was visited on June 8, 2021 by Pamela Christison, P.Eng. and John Cooke, P.Eng of JCAL, and Mark St. Pierre, B.Eng. of Paterson Group, accompanied by an employee of the building owner who provided access and made required openings in interior finishes. The main purpose of this visit was to review the structure of the exterior walls, to determine the condition structurally and the possible presence of mold, in order to update JCAL's previous recommendation that saving of the exterior walls be considered.

Assessment of Previous Reports:

The report completed by Remisz Engineering focuses on the structural aspects of the building, while the report prepared by Paterson Group focuses on environmental aspects, including testing for asbestos in various materials. Both companies carried out site inspections in October 2020. Both reports conclude that the building should be demolished.

The existing building on these properties is a two and a half story duplex, with a basement. According to the Remisz report, the structure consists of timber framing on a concrete foundation wall, with an exterior stucco and wood finish, and a shingled sloped roof. They also note that the building has been left

abandoned, unheated, and unmaintained for several years. The report notes several areas of collapsed foundations below the sun porch, poor condition of shingles, and deterioration of the façade, though no photos are shown of the façade damage. It notes that the framing of the house was not accessible for review, however the owner anecdotally passed on that during roofing work 3 years ago, the roof framing was found to be 'very rotten'. It also notes significant deterioration of the interior finishes, including collapsed ceilings, buckling floors, and mold on ceilings and walls, along with moisture and freeze thaw damage expected to all timber structural elements and foundations. The main building concrete foundations are not included in the report, as they were mainly not accessible on interior or exterior. There is no distinction in the report between the two units within the building. The report concludes that the building is unstable and poses a major safety concern, partial repair is not feasible as there are no salvageable elements due to mold accumulation, and full demolition of the building is recommended.

The Paterson Report notes the same deterioration to shingles, the porch foundation, and the exterior stucco. On the interior of 1112 Lisgar, the report notes evident water damage, collapsed ceilings on the second and third floors, and significant mold growth through the dwelling. Similarly on the interior of 1 Maple Lane, the report notes water damage, collapsed ceilings on the ground and second floors, and mold throughout the dwelling. As part of their scope, Paterson collected 14 samples of various potentially asbestos containing materials. Testing was carried out on drywall joint compound, pipe run insulation, pipe elbow insulation, and exterior stucco finish. The results show asbestos present in the drywall joint compound, the pipe insulation and pipe elbow insulation. The report concludes that the condition of the building poses health and safety concerns due to: water infiltration causing collapse of building materials resulting in risk to enter the building, damage to wall components both interior and exterior due to frost penetration, significant mold growth leading to hazardous air quality, extent of moisture and mold requiring removal of a large portion of the building materials, likely long term effects on air quality within the building, and the presence of asbestos containing materials which are in poor condition. The report recommends demolition of the building.

Onsite Observations:

Figure 1: Roof plan with areas of deterioration outlined [JCAL 2021]

1 Maple Lane Observations:

Previous renovations were carried out in this residence, however the roof has failed at the SE corner, leading to significant damage. This roof failure has resulted in decayed wood visible in the roof structure, exterior wall, third floor framing and second floor. Water damage and peeling finishes were also noted on the ceiling and exterior wall on the ground floor below this area of leaking. Mold was also noted on adjacent

walls in the second and ground stories. An opening was made in the second story wall at mid height, and the exposed wall stud was noted to be dry (see photo 1 through photo 4). On the third story where the upper portion of the sloped roof meets the third story knee wall, water damage is noted in the finishes (see photo 5).

Also on the third floor, in the closet located on the east side of the unit at the top of the stairs, water damage was noted on the sloped ceiling, and an opening was made in this location. Decaying timber particles filled the cavity, and damaged roof rafters were visible (see photo 6).

In the basement, excessive mold was noted on all ceiling and wall finishes, however the most significant structural issue noted is the condition of the concrete foundation walls. A large portion of the north and east foundations are visible for review, though they are painted, and typical on all walls the concrete foundation is spalling significantly as a result of water and salt damage. In spalling areas, concrete from the interior face was removed, and the concrete behind was noted to be soft with salt deposits which had built up within the wall. Up to several inches of concrete has spalled from the interior face in some areas. Large size smooth aggregate was noted in the concrete, as expected for the age of the building (see photos 7- 9).

On the exterior of the building, the stucco appears to be generally in fair condition except at the base of the wall. A small opening was made which shows mesh within the stucco, and the finish coats appear to be well bonded in this area. The lower meter of the stucco is in poor condition with debonding and cracking, previous poor quality patching, and peeling paint finish.

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<td>Photo 1: South second story wall overview, damages noted to floor, wall and ceiling finishes surrounding the area of significant water damage [JCAL 2021]</td>
<td>Photo 2: View into ceiling damage shown in photo 1- roof rafters decaying [JCAL 2021]</td>
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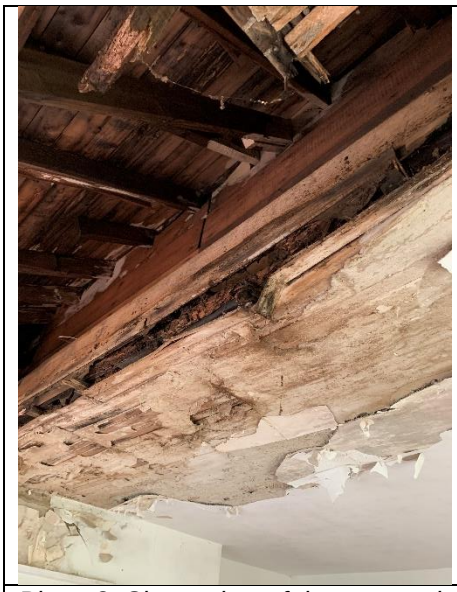

Photo 3: Closer view of damage and decay to edge of third floor framing [JCAL 2021]

Photo 4: Closer view of damage and decay to top of exterior wall [JCAL 2021]

Photo 5: Third story SE corner water damage to finishes [JCAL 2021]

Photo 6: Third story north sloped roof; damage noted within roof and on roof joists [JCAL 2021]

Photo 7: Concrete foundation damage and salt deposits [JCAL 2021]

Photo 8: Soft concrete in the interior of the foundation wall [JCAL 2021]

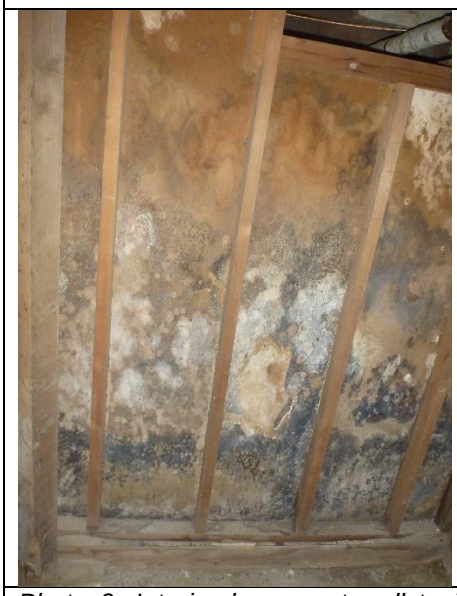

Photo 9: Interior basement wall typical condition with extensive mold. [JCAL 2021]

Photo 10: General poor condition of stucco at base of wall [JCAL 2021]

1112 Lisgar Rd Observations:

The interior finishes within 1112 Lisgar are generally in very poor condition, as noted in the previous reports, with extensive mold on all floor levels, along with areas of fully collapsed ceiling finishes.

On the third floor, openings were made in the valley with the sunroom addition, where water damage was noted in the ceiling finishes. The valley rafters were visually reviewed; water damage and mold was noted on some rafters (see photo 11-13). Water damage and mold on insulation was also noted in the closet in the room on the west side of the third floor (see photo 14). Openings were also made in the wall finishes at the south end of the house on the third floor; no damage or mold was noted on the wall studs in these locations (see photo 15).

On the second and ground floor below the leaking valley, extensive water damage is noted to the wall and ceiling finishes (see photo 16-18). Openings were made on the ground floor to determine the extent of

damage, and the spread of damage is much greater along the west wall at the ground floor level. In the wall opening made next to the west wall window on the ground floor, water damage and mold was noted on the wall exterior finishes and timber wall studs (see photo 19). Mold was noted on the underside of wallpaper on the ceiling on the ground floor room (see photo 20).

The basement conditions on the Lisgar side of the building are the same as on the Maple Lane side, as the two basement areas are interconnected. Mold was noted on all wall and ceiling finishes, and the exposed concrete wall spalling was as noted for Maple Lane (see photo 21 and photo 22). Mold was also noted on exposed ground floor joists in the area of west wall room with water damage (see photo 23). The foundation of the sunroom addition is not poured concrete, and is in very poor condition (see photo 24).

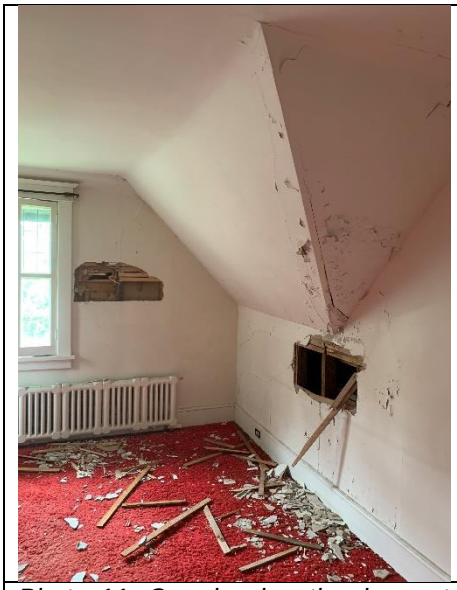

Photo 11: Opening location in west valley [JCAL 2021]

Photo 12: Roof water damage and mold within valley [JCAL 2021]

Photo 13: Water damage at base of valley [JCAL 2021]

Photo 14: West room closet water damage and mold [JCAL 2021]

Photo 15: Openings in southern room [JCAL 2021]

Photo 16: Second floor damage to ceiling finishes [JCAL 2021]

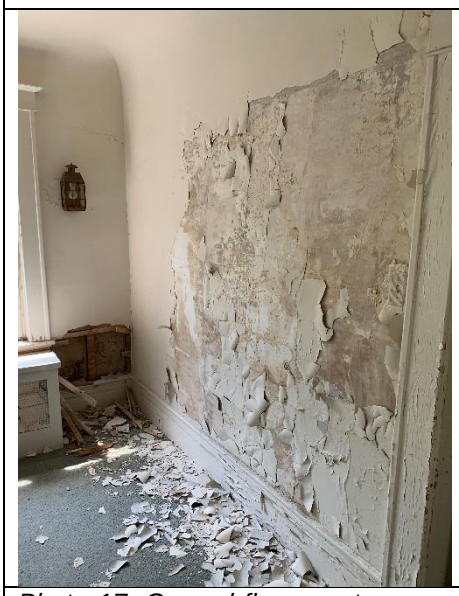

Photo 17: Ground floor west room water damage on interior wall [JCAL 2021]

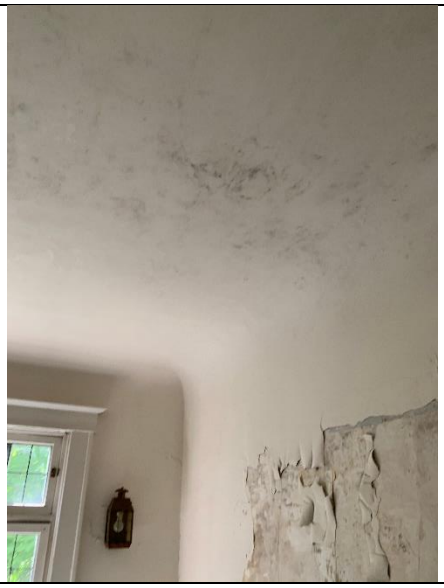

Photo 18: Ground floor west room mold on ceiling finishes [JCAL 2021]

Photo 19: Ground floor wall opening- water damage and mold noted [JCAL 2021]

Photo 20: Mold noted on underside of ground floor ceiling wallpaper [JCAL 2021]

Photo 21: Typical extent of mold throughout basement [JCAL 2021]

Photo 22: Typical extent of mold throughout basement [JCAL 2021]

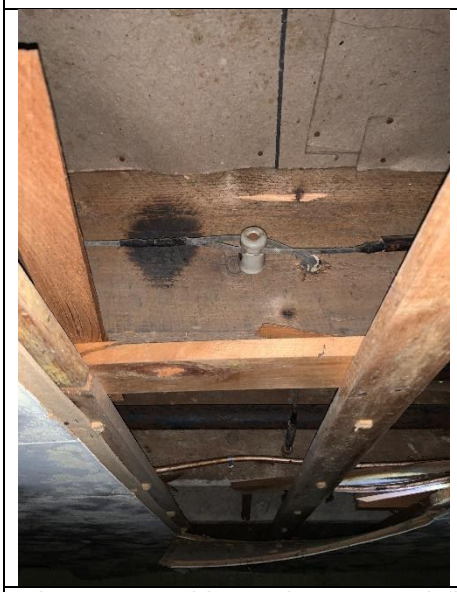

Photo 23: Mold noted on ground floor structure [JCAL 2021]

Photo 24: Foundation of sunroom addition in very poor condition. [JCAL 2021]

Conclusions:

Neither report mentions the heritage aspects of this property. This building is considered a Grade 1 property, meaning it contributes to the heritage character of the Heritage Conservation District. As such, greater consideration should be given to demolition of this structure. The heritage character statements provided to JCAL from the City of Ottawa note that the main contribution of this building are from its large lawn, hedges, large mature trees, age, massing, and style including irregular plan. The building was constructed in 1925, during the residential development of the Keefer Estate into the Connaught Commons subdivision. The building itself does not have a heritage designation under Part IV of the Heritage Act.

In our opinion, the structural report itself does not present enough information to adequately support the recommendation to demolish the building, considering its heritage nature. Based on the report, and supported by the better documentation of locations of deterioration throughout the two units provided in the Paterson report, JCAL agrees that the condition of the roof and floor framing, as well as interior finishes, warrants partial demolition. The collapsed foundation noted in the report is below the sunporch, which was a 1955 addition. The foundation appears to consist of wall board type material around the exterior, with the structure supported on deck blocks. This sunporch should be demolished. However, the condition of the exterior building walls is not well documented. The extent of damage of the stucco is not well shown in the reports, however if the stucco has been left unmaintained for years, there could be large areas of full replacement required. The condition of the main building concrete foundations is not included in the report, as they were not accessible. Based on the age of the structure, it can be assumed that the concrete will be weak, likely in the order of 20 MPa, with ungraded aggregate, and unreinforced. With the condition that the walls above have been exposed to, it can be expected that the concrete is saturated, resulting in activation and recrystallization of soluble salts within the concrete matrix. This salt slowly erodes the weak concrete, turning it to sand. This concrete will likely be difficult to repair with contemporary materials. It is possible that the structure of the exterior of the building could be saved to preserve the heritage value of the building size and plan, however this would require removal of the interior finishes, and would likely require partial timber framing replacement, exterior stucco repair, and concrete foundation repair. Based on the age and neglected state of the building, and extrapolating from the information in the report based on our previous experience, repairs are likely to be extensive, and the amount of material that could be salvaged would be minimal.

The Paterson Report makes a clear case for the extent of mold damage to the building, and the possibility of long-term air quality effects. There appears to be enough water infiltration consistently throughout both units, that even the exterior walls may well be saturated enough to allow mold growth. It is our opinion that the Paterson recommendation for demolition is warranted, based on environmental factors.

It is our recommendation that the demolition of the building is approved, however the hedges and mature trees be protected. The new structure should be in harmony with the current building footprint, and be a style sympathetic to the existing building, to maintain the landscape character of the property.

Update following onsite review:

Based on our onsite review, it is our opinion that there are large portions of the exterior walls and roof which cannot be saved due to the extensive water damage caused by the failures of the roof on both sides of the building. Apart from these areas which are beyond repair, there are extensive areas on the west wall and south wall which the exterior wall timber structure is believed to have mold present. There is also believed to be mold on the ground floor joists in the centre of the Lisgar Rd. house. All of these areas with potential mold growth would require all finishes to be stripped, and every timber element to be scrubbed clean,

followed by additional air testing being carried out within the house to reach a clean air test. Paterson Group noted that in their experience this procedure is possible, however it is very labor intensive and often requires more than one round of cleaning to achieve the clean air test.

Additional to the timber wall framing issues, there are significant issues with the building foundation. Damage was noted to the foundation on all walls around the building, and significant repairs will be required. As previously noted, the existing concrete will be challenging to repair, as current repair products are not compatible with older concrete. In some sections of wall, full replacement of the foundation wall is likely the best repair possible.

Balancing the structural work required to the roof, walls, floors and foundations and the additional mold remediation work, against the heritage value of the exterior walls, our recommendation is that the retention of the exterior walls is not realistic. Our recommendation remains as per our initial report, to approve the demolition of the building.

Disclaimer and Limitations:

This report is based on, and limited to, information supplied to John G. Cooke & Associates Ltd. by the City of Ottawa personnel. Only those items that are capable of being observed and are reasonably obvious to John G. Cooke & Associates Ltd. or have been otherwise identified by other parties and detailed during this review can be reported.

The work reflects the Consultant's best judgment in light of the information reviewed by them at the time of preparation. There is no warranty expressed or implied by John G. Cooke & Associates Ltd. that this review will uncover all potential deficiencies and risks of liabilities associated with the subject property. John G. Cooke & Associates Ltd. believes, however, that the level of detail carried out in this investigation is appropriate to meet the objectives as outlined in the request. We cannot guarantee the completeness or accuracy of information supplied by any third party.

John G. Cooke & Associates Ltd. is not investigating or providing advice about pollutants, contaminates or hazardous materials. Our comments are limited to the content of the environmental report provided for review.

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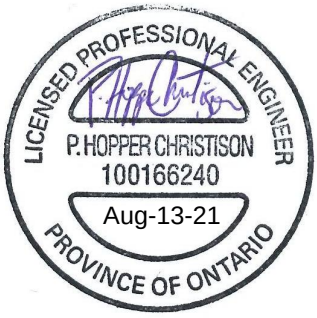
We trust this report covers the scope of work as outlined in our Terms of Reference. Should there be any questions regarding this report, or if we can be of any further assistance to you, please contact us.

Yours Sincerely,

JOHN G. COOKE & ASSOCIATES LTD.



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