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Executive Summary

12958 Hwy 27

KING, ON, L0G 1N0

Prepared by--

SOSCIA PROFFESSIONAL ENGINEERS INC.

Project number 24–162



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Executive Summary

Soscia Professional Engineers Inc. visited 12958 Hwy 27 in the Township of King, Ontario for the purpose of determining whether the existing dwelling is structurally stable and whether the dwelling is suitable for habitation.

The study was limited to a visual inspection of the building components and as found conditions. Destructive testing was not performed. The Ontario Building Code and the Occupation Health and Safety Act (OHSA) are used in assessing the building condition.

The subject site consists of a 2-storey building, with brick/stone foundation walls. The building and roof were not entirely sealed, allowing water infiltration, which has caused apparent water damage at the basement level.

The structures appear to have been original and not maintained in a manner conducive to preservation. As a result, the dwelling structure show signs of significant degradation, raising concerns about their structural integrity.

The building structural framing was found in extremely poor and unserviceable condition, with significant structural deterioration. The following issues were observed as per our structural assessment:

- The structural beams in the basement are split and compromise the structural integrity posing safety hazard.
- Major vertical cracks were found in the foundation wall
- The presence of temporary shoring supports indicates that the existing structural system lack sufficient support.
- Main Support beams were found to contain termite infestation.
- Floors uneven and out of level
- Deflection and cracks were observed in the ceiling.
- Signs of damage visible on the existing structure due to removal of a prior addition.
- Railings were found to be too low and do not meet code requirements.
- Clear evidence of long-term water infiltration into the basement.
- Walls out of plumb.



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The exterior walls consist of a face sealed envelope assembly. They do not provide the required resistance for vapor diffusion; they do not provide the necessary resistance to air transfer and do not provide the required resistance to heat transfer. In consequence of no air barrier, no vapor barrier and no thermal insulation the building assemblies and materials have deteriorated. There are signs of deterioration of plaster in the dwelling. This deterioration will lead to the development of mold, rot, and corrosion, all of which are detrimental to individual health and are in strict contravention of both the Ontario Building Code and the Occupational Health and Safety Act.

To make the building habitable, a complete reconstruction is necessary, starting with excavation and progressing through foundations, above-grade framing, and finishes. Excavation is required to facilitate foundation repairs and the preparation for a new slab on grade. The foundations need to be entirely rebuilt, including new footings, foundation walls, and a new slab on grade, all adhering to the Ontario Building Code (OBC) requirements. Above-grade framing will involve constructing new exterior walls, lintels, and solid load bearing brick, along with an engineered floor joist system for both the ground and second floors. The roof will need to be reconstructed with new trusses, sheathing, and shingles. Finally, the finishes must be redone to include new insulation, vapor barriers, drywall, painting, and all other finishing touches in accordance with OBC standards. Overall the repairs needed to make the house habitable are extensive.

This structure does not meet the structural requirements of a dwelling as defined in the Ontario Building Code. In addition, based on the structural condition identified in this report, the dwelling must be fully shored and braced to withstand the centrifugal forces should relocation be contemplated. Prior to any shoring/bracing, this dwelling will require an Environmental hazard assessment for identifying and removal of any Asbestos, mold or other health related concerns. However, even with these measures, the risks to structural integrity remain high and transporting the structure would pose significant health and safety hazards to the public. The reconstruction and repair required to make it safe for transportation would be costly and may not eliminate all risks to the structure, and is therefore, not recommended.



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Based on our findings we are of the opinion that this building is not habitable. The building does not meet the minimum acceptable standards for public health and public safety, structural sufficiency, environmental integrity and energy conservation. We recommend demolition of 12958 Hwy 27 in the Township of King.

We further conclude that the non-compliance with the Ontario Building Code, and the Ontario Occupational Health and Safety Act overrides any historical and cultural value that this dwelling is said to contain. We recommend that this house undergo demolition because of its inhabitable condition.

If you have any questions, please do not hesitate to contact us.

Regards

Yours truly,

Sandro Soscia, P.Eng.

SOSCIA Professional Engineers Inc.



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BUILDING CONDITION ASSESSMENT

12958 Hwy 27

KING, ON L0G 1N0

1.0 INTRODUCTION

1.1 Terms of References

Soscia Professional Engineers Inc. was authorized by property owner to conduct a building condition survey of the building and property located at 12958 Hwy 27 in the City of King. Soscia Professional Engineers Inc. personnel were to carry out a visual walk-through survey of the building and property to review various elements and services of the building. The purpose of the building survey was to determine whether the existing dwelling is structurally stable and whether the dwelling is suitable for habitation.

1.2 Scope of Work

Our scope of work was to include visual assessment and review of:

- Review of the roof and building envelope (visual only),
- Review of the building structural components(visual only),

The objective of the survey was to review the condition of the various building elements and components to assess their present condiPREtion in reference to compliance with the latest edition of the Ontario Building Code and Occupation Health and Safety Act.



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1.3 Brief Description of Building

The property at 12958 Hwy 27 is located in the Township of King, on the south of King Rd and West of Hwy 27.The subject site consists of a **2-storey residential** and not maintained in a manner conducive to preservation. This 2-storey brick structure rests on composite brick/stone foundation and the exterior walls are load bearing. All vertical supports in the basement are of temporary shoring without foundation pads, no permanent supports structures are existing.

The exterior walls are a face sealed envelope assembly and does not provide the required resistance for vapour diffusion, does not provide the necessary resistance to air transfer nor provide the required resistance to heat transfer. The buildings have suffered significant degradation, which may raise concerns regarding their long-term stability and integrity.

2.0 METHODOLOGY

The survey of the building components was carried out on November 29nd, 2024. Soscia Professional Engineers Inc. personnel were on-site to review the components outlined in the Scope of Work (report Section 1.2). Access was provided throughout the building. Our general approach to the project consisted of the following:

- Discussions with the client.
- Visual examination of accessible components.
- Preparation of a report summarizing our findings.

The observations of exterior cladding and structural framing were made from ground level by unaided visual observation. The visual review was conducted to evaluate each item specified in the report format outline, in an effort to determine obvious areas of concern with respect to the general characteristics of the building. For each item under review, the report describes:

- Description,
- Observations of existing conditions
- Compliance with OBC and OHSA of Ontario.

Representative photographs were taken of typical deficiencies.



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3.0 STRUCTURE

3.1 Building

3.1.1 Description

The building at 12958 Hwy 27 is a 2 storey conventionally framed dwelling with rubble foundation wall and brick exterior. The structure is not properly sealed which allowed deterioration of all building components. The building is not maintained in a manner conducive to preservation.

In general this structure is in a very poor condition and is in **noncompliance** of both the Ontario Building Code and the Occupational Health and Safety Act of Ontario.

3.1.2 Observations

1. **The structural beams in the basement are split, severely compromising the structural integrity of the building. Immediate attention is required.**

2. **The main support beams have significant termite infestation, severely weakening their structural integrity and compromising safety. This could result in immediate collapse. The extent of infestation throughout the dwelling is not known. Immediate attention to this matter and therefore we recommend demolition.**

3. Major vertical cracks were found in the foundation wall, indicating that the foundation is not capable of adequately supporting the weight of the structure which may lead to significant stability issues.

4. The basement does not contain permanently fixed columns or foundation pads, which are essential for ensuring the stability of the building. This absence may lead to shifting or settling of the structure over time. This matter requires immediate attention. We recommend demolition.

5. The presence of temporary shoring supports in the basement strongly suggests that the existing structural system lacks sufficient support.

6. The floors throughout the building are uneven and out of level, indicating possible settling or structural issues.



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7. Several wood members in the roof structure are exposed are not fully protected by shingles, siding, or other covering materials. This may lead to moisture damage and potential degradation over time if not addressed.

8. The top of the roof appears to be deflected when observed from a distance.

9. The porch is lacking proper foundations or footings, which raises concerns about the stability.

10. Deflection and cracking in the ceiling suggest structural instability

11. The railings are too low posing a safety risk and do not meet code requirements

12. Water infiltration was found into the basement, likely causing damage to the foundation, walls, and materials

13. Worn and cracked masonry in various areas indicates the masonry's inability to support the building's load and exposure to weathering and water damage.

14. Foundation does not appear to be waterproofed. As a result, water is allowed to enter the building, leading to potential moisture-related issues such as mold growth, weakening of materials, and possible structural damage.

The plumbing system contains lead solder, which is hazardous to human health and is banned to use in residential buildings. Additionally, the electrical wiring observed during the site visit does not meet current ESA standards.

Furthermore, we are advising that transportation of this structure is not a consideration as the structure is not adequate to resist centrifugal forces which will be imposed during transportation. The cost of relocation is already financially unfeasible. To make relocation even possible, the building must first be made structurally safe and environmentally remediated. These additional costs compound the already high expenses, making the option of relocation increasingly impractical from a financial perspective.



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4.0 BUILDING ENVELOPE

4.1 Exterior Walls / Roof

4.1.1 Description

The exterior walls are a face sealed envelope assembly. The exterior walls do not provide the required resistance for vapor diffusion, they do not provide the necessary resistance to air transfer and do not provide the required resistance to heat transfer. Roof is without ventilation which will accelerate deterioration of the building components and leads to mold build up. The interior finishes show signs of deterioration as a result of exposure to environmental elements. The lath and plaster walls are deteriorating.

In general this envelope is in a very poor condition and is in **noncompliance** of both the Ontario Building Code and the Occupational Health and Safety Act of Ontario.

4.1.2 Observations

1. Spalling of the exterior veneer and cracking of joints are a result of weathering, water exposure, and improper maintenance allowing water to enter the building envelope.

2. Cracks visible in Soffit exposing the wooden elements to water damage and potential further deterioration.

3. The ceiling has cracked and deflected in multiple sections throughout dwelling, and creating a serious safety hazard.

4. The dwelling does not have proper roof ventilation, which is a requirement under the Ontario Building Code (OBC). Without adequate ventilation, there is an increased risk of moisture buildup within the roof space. This could create health hazards, including mold growth, and contribute to the deterioration of structural materials.



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5. Multiple sections of the ceiling throughout the dwelling have cracked and deflected, which poses a serious safety hazard. The condition of the ceiling suggests water damage and the potential for mold growth. This structural issue may also indicate shifting of the overall building structure, requiring immediate attention to ensure safety and stability.

6. In consequence of no air barrier, no vapor barrier, no roof ventilation and no thermal insulation the building assemblies and materials will deteriorate. The deterioration will lead to the development of mould, rot and corrosion, all of which are detrimental to an individual's health and is in strict contravention of both the Ontario Building Code and the Occupation Health and Safety Act.



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5. Conclusion,

The building at 12958 Hwy 27 has not been maintained in a manner to preserve its structural integrity. The basement structure and foundation are in a state of deterioration and require immediate attention. There are no permanent supports in place, leaving the structure vulnerable to further damage. Termite infestation is noted in the main structure supporting beam. This dwelling is subject to immediate collapse without notice.

The foundation walls are visibly cracked, which promotes water infiltration and exacerbates moisture issues within the building. Given the extent of the deterioration, it is recommended that the entire structure be renovated. The building no longer meets the structural requirements of the Ontario Building Code. In light of these severe issues, demolition is recommended. Any attempt to salvage or replicate the structure would require complete demolition and rebuild.

Based on our findings we are of the opinion that this building is not habitable. The building does not meet the minimum acceptable standards for public health and public safety, structural sufficiency, environmental integrity and energy conservation. Additionally, the building envelope fails to protect against mold, rot, and corrosion, creating significant health risks and violating both the Ontario Building Code and the Occupational Health and Safety Act.

Given the extent of structural deterioration, lack of structural support and infestation, lack of proper envelope and attic requirements, we recommend the demolition of 12958 Hwy 27 in the City of King as it is unsafe, uninhabitable, and non-compliant with health and safety regulations.

We further conclude that the non-compliance with the Ontario Building Code, and the Ontario Occupational Health and Safety Act overrides any historical and cultural value that this dwelling is said to contain. We recommend that this house undergo demolition because of its unhabitable condition, termite infestation of structural members and lack of proper building envelope.

If you have any questions, please do not hesitate to contact us.

Yours truly,

Sandro Soscia, P. Eng.
SOSCIA Professional Engineers Inc.



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FIGURES

2 Storey building



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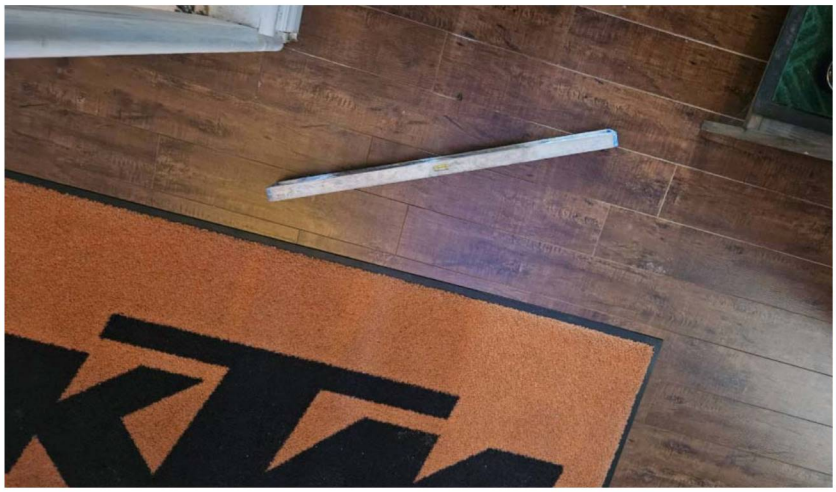
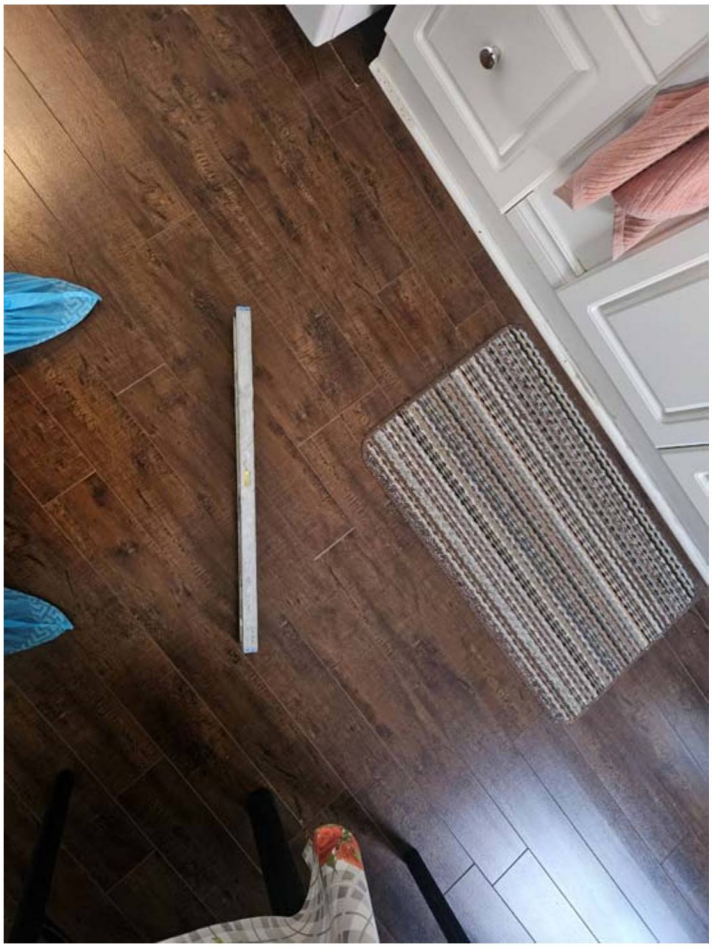
Floors – Out of Level





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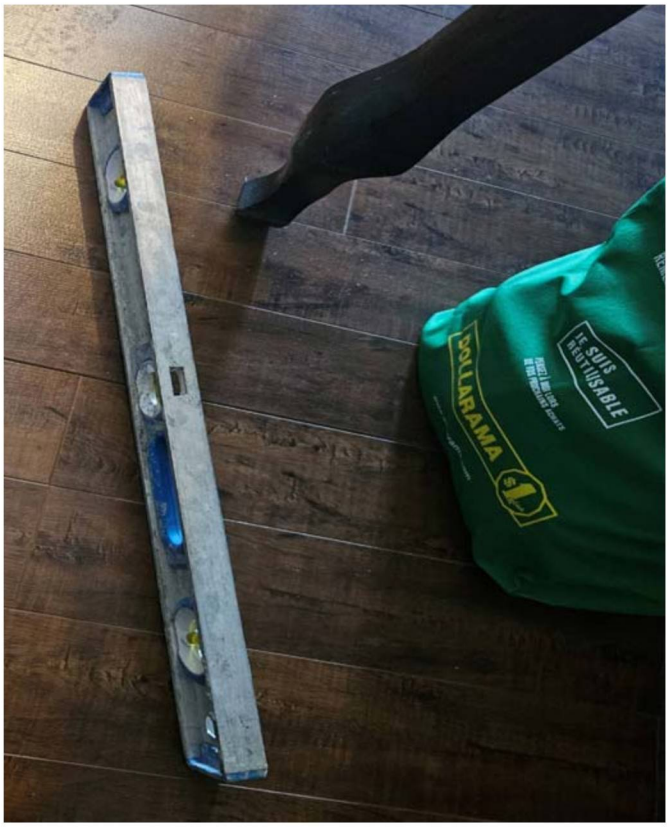



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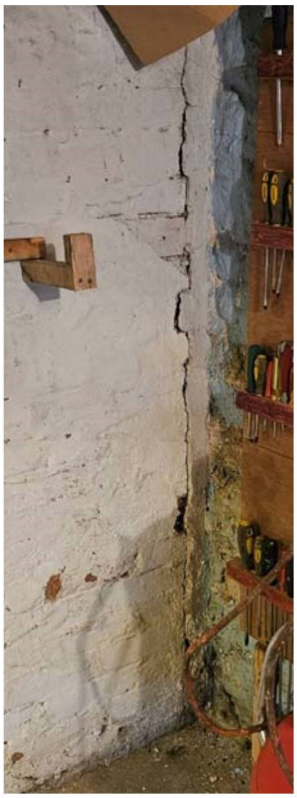
Deteriorating and cracked Foundation





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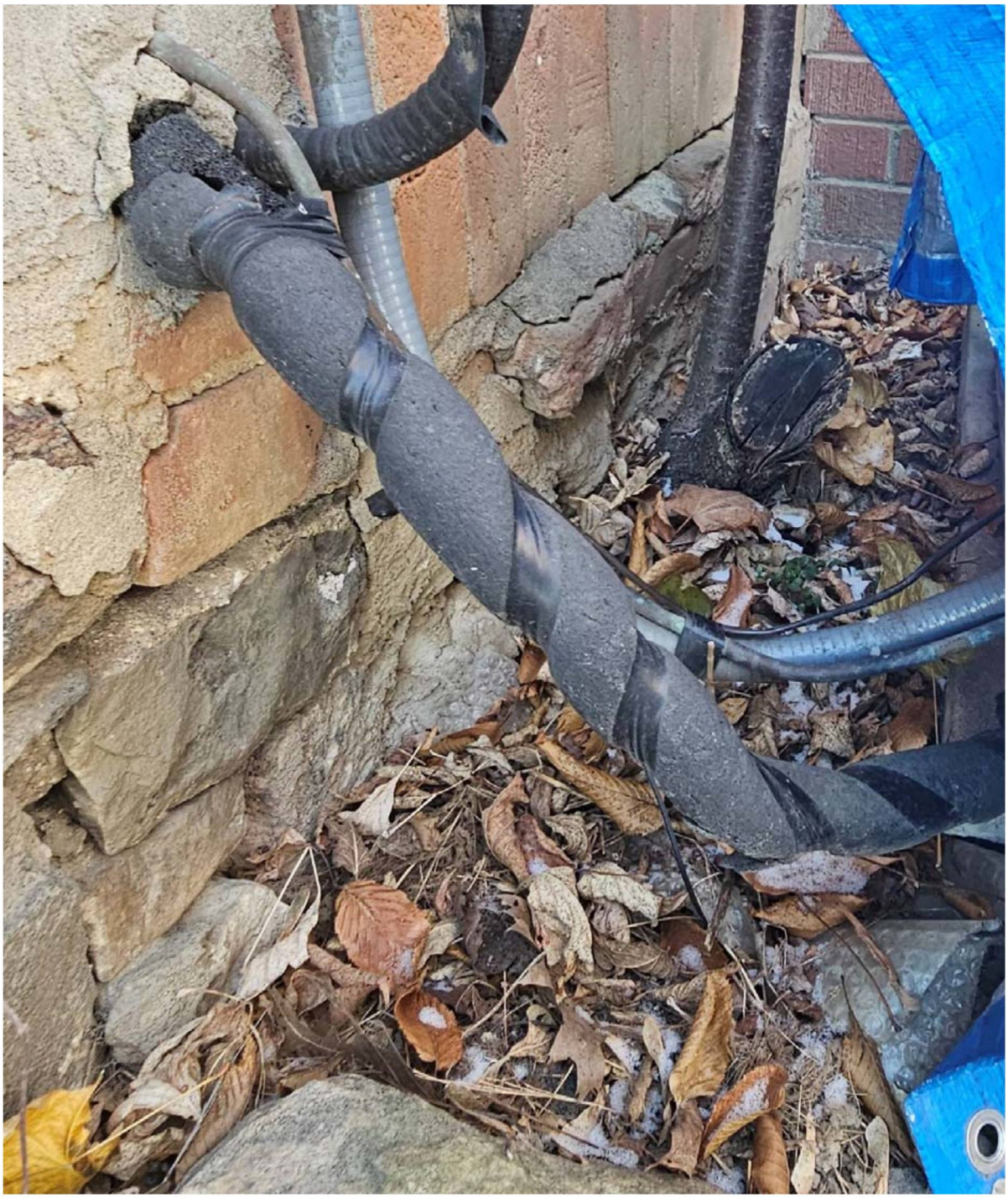



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Temporary Shoring provided for Additional Supports



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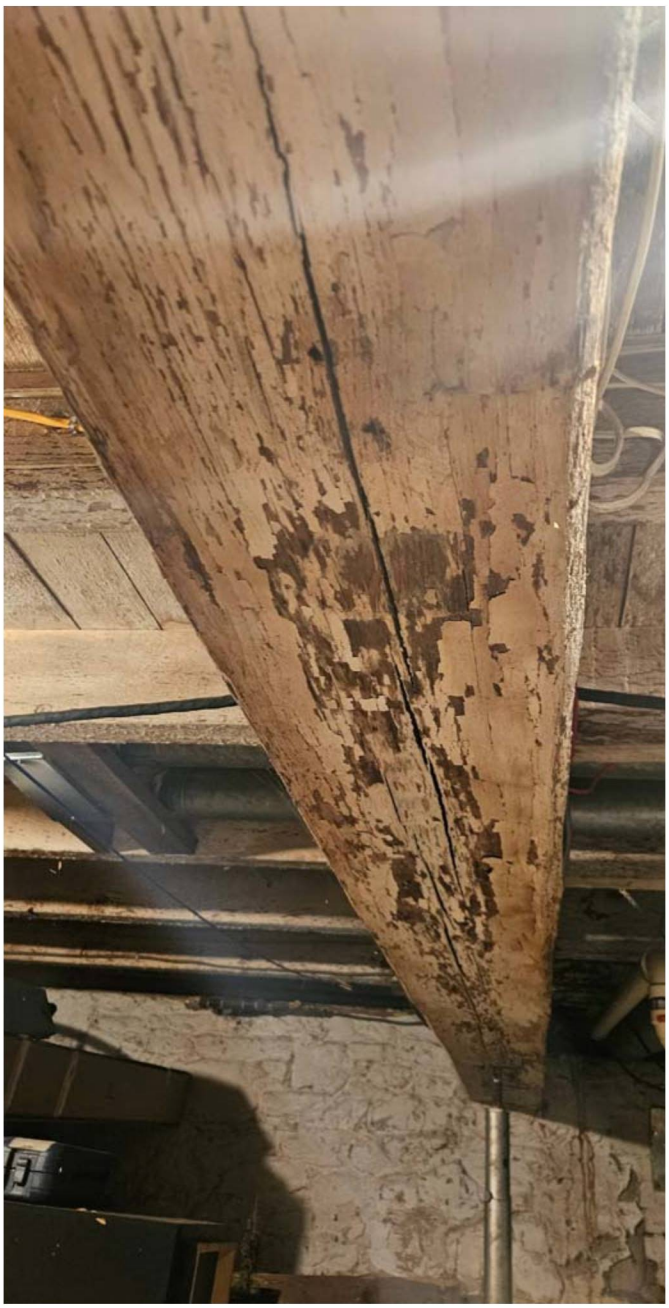
Damaged and Cracked Structural Elements



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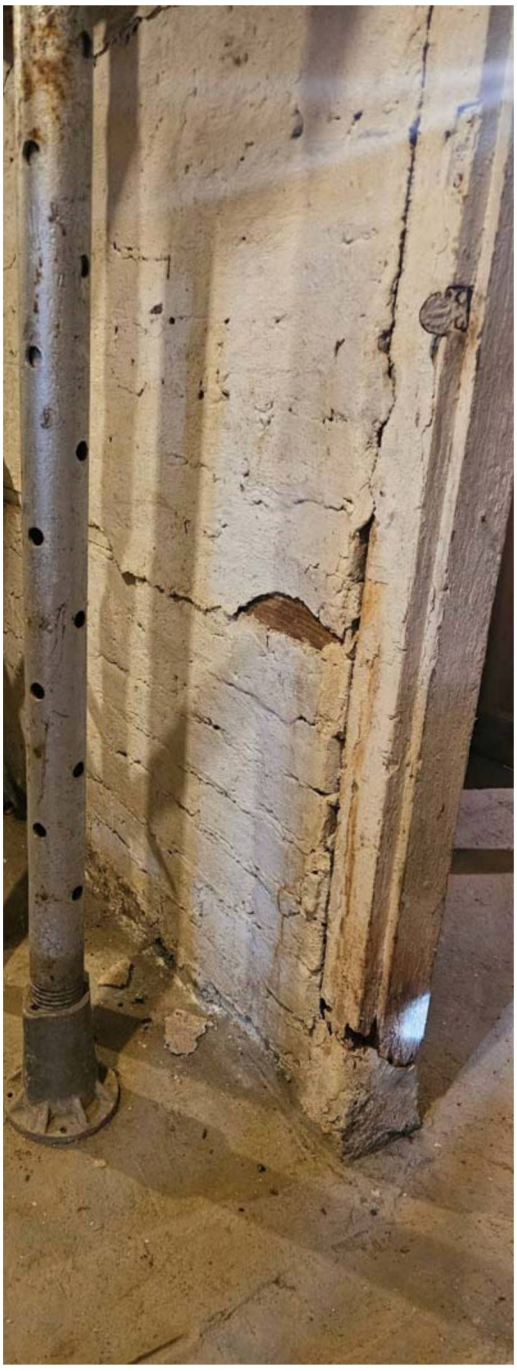



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Termite Infested Structural Beam



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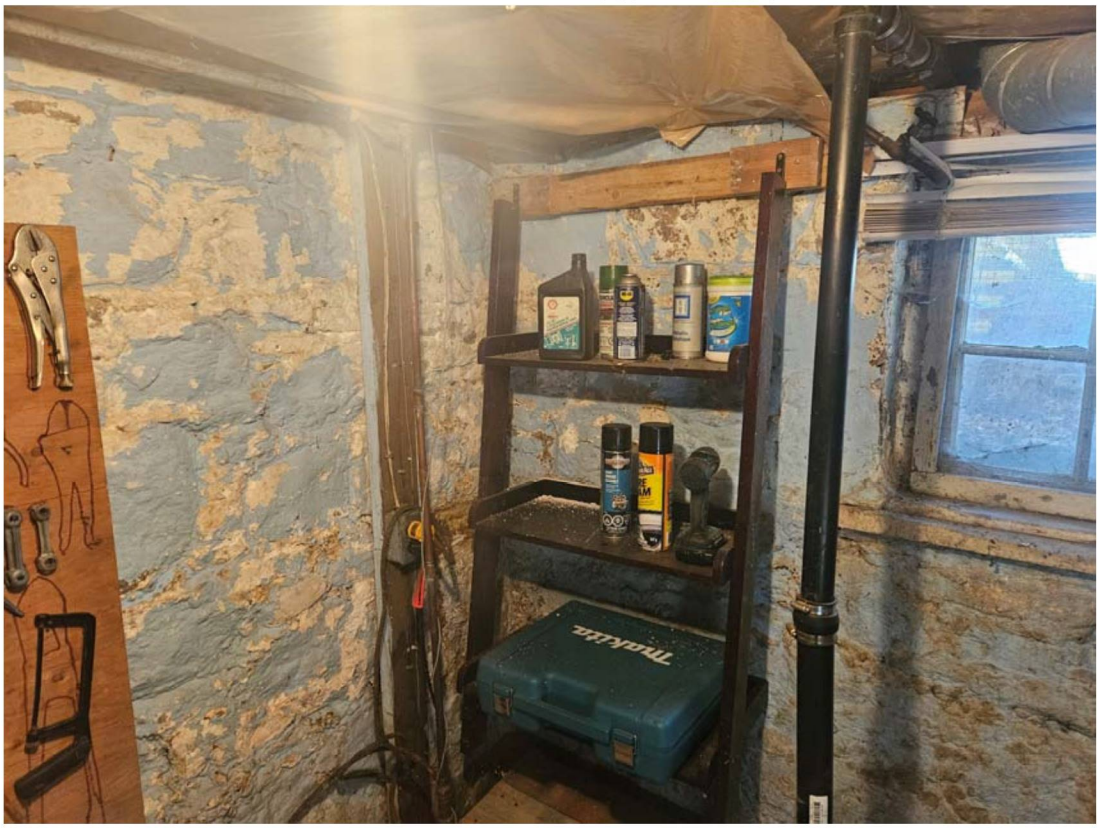
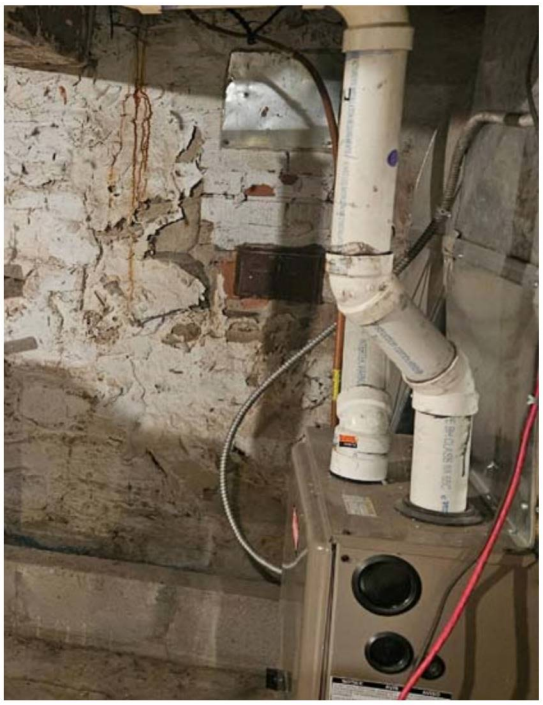
Water Infiltration





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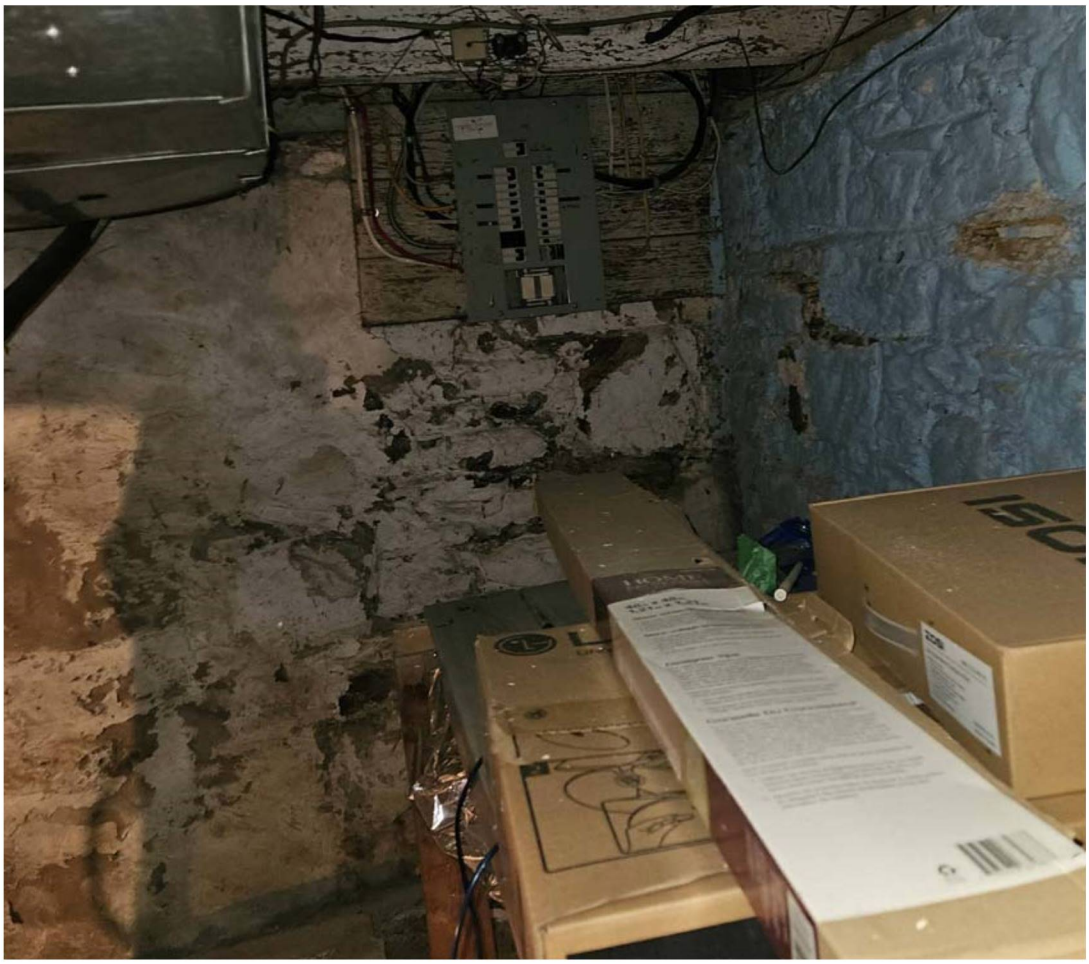

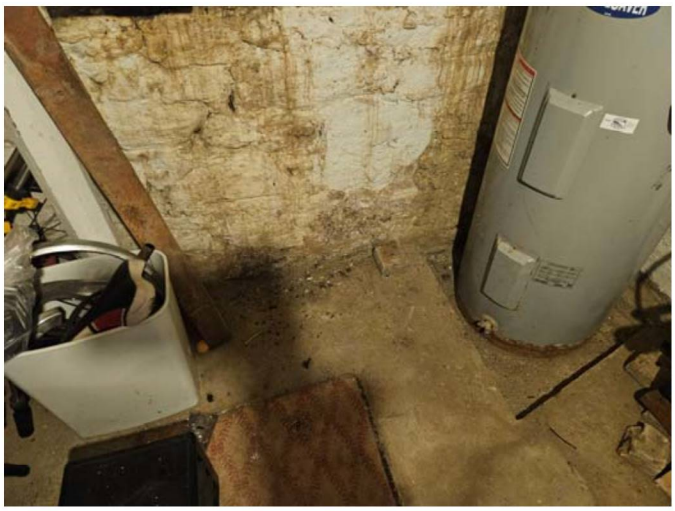



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Ceiling Cracked and Spalling



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Ceilings Cracked indication water infiltration and structure settlement

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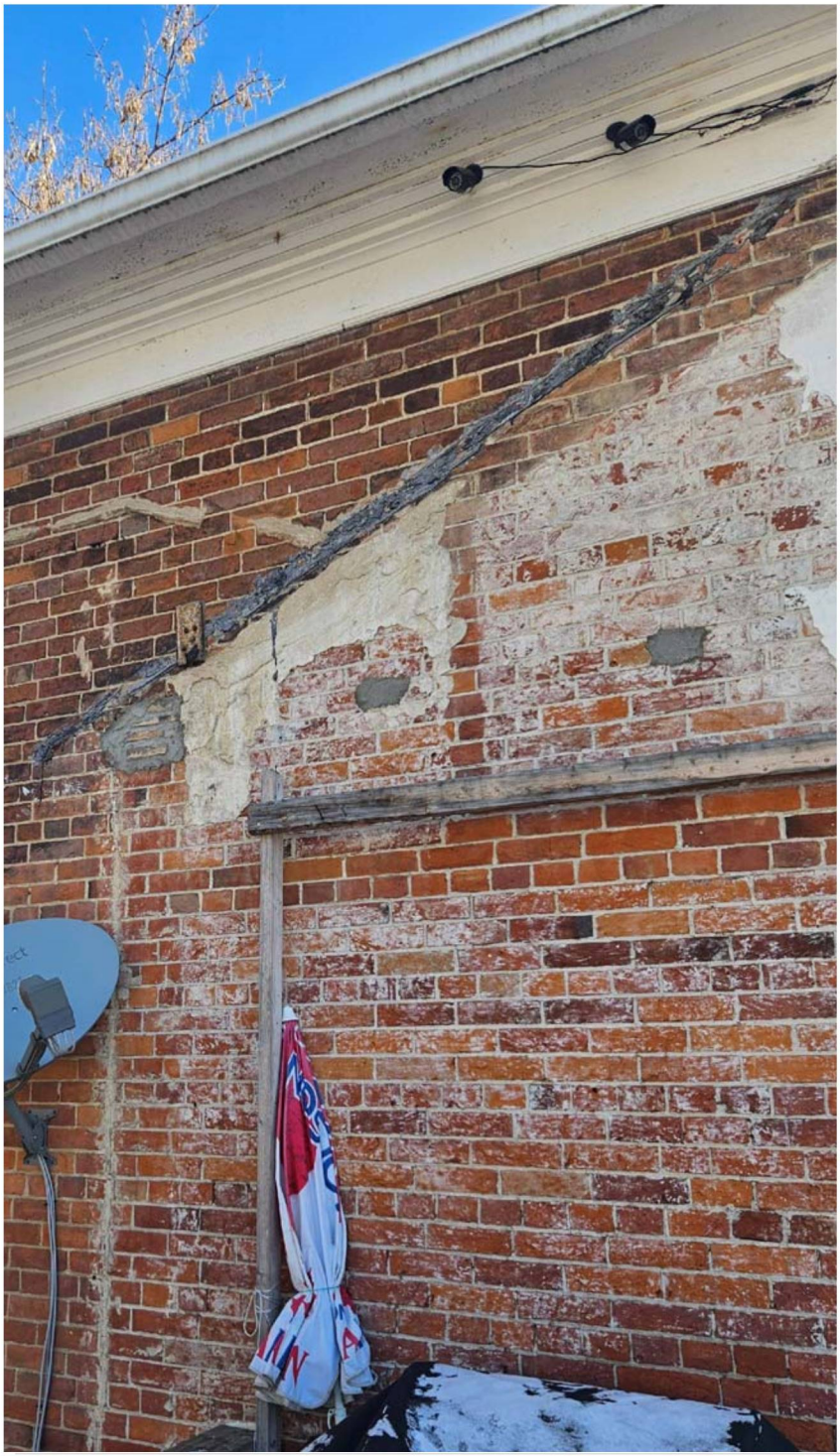
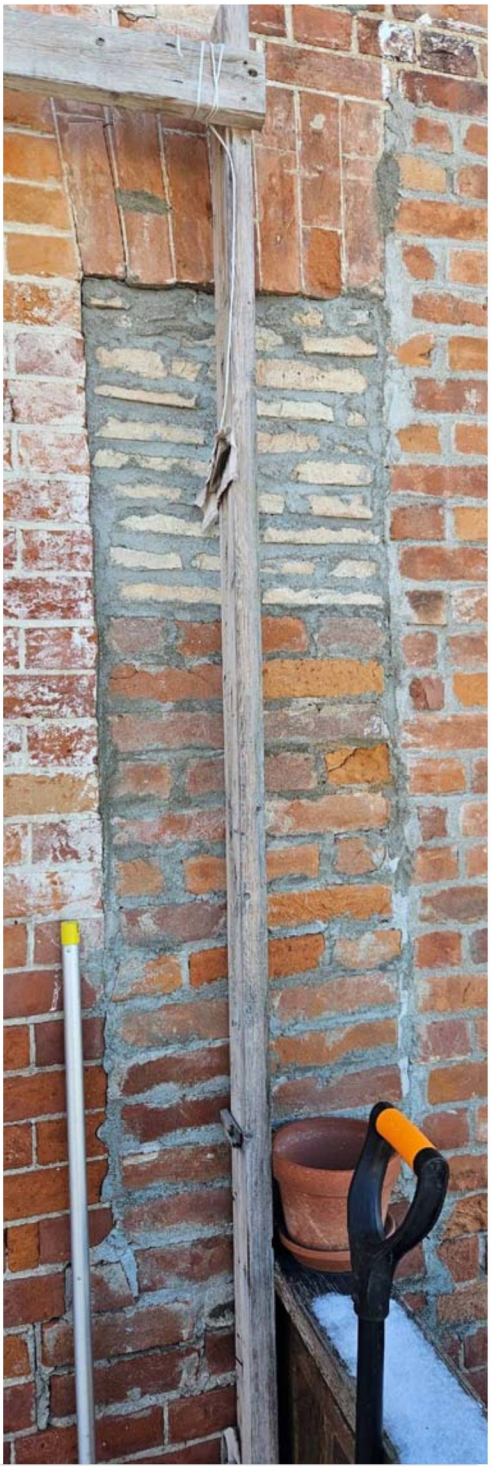
Damage from removal of addition

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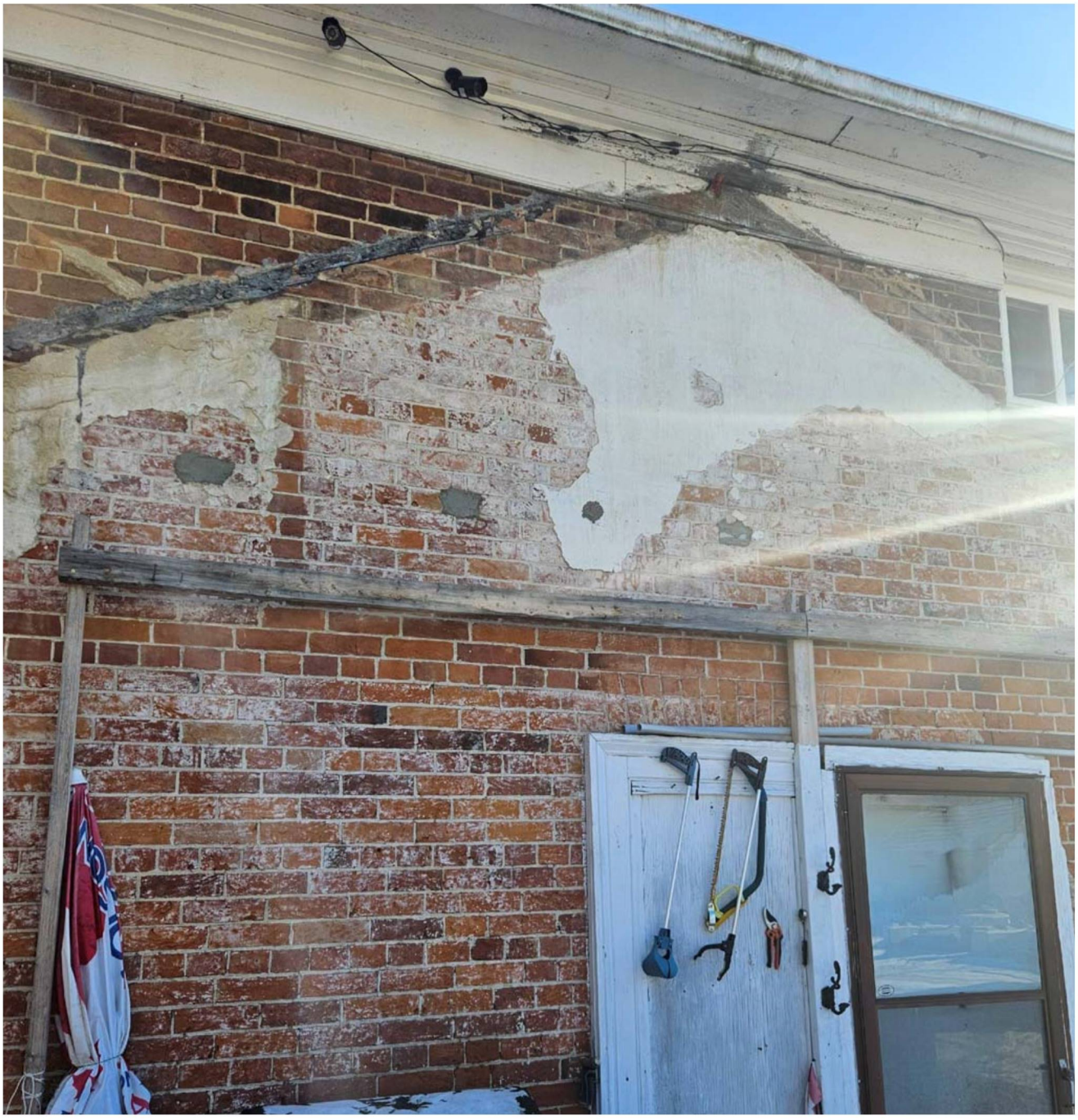



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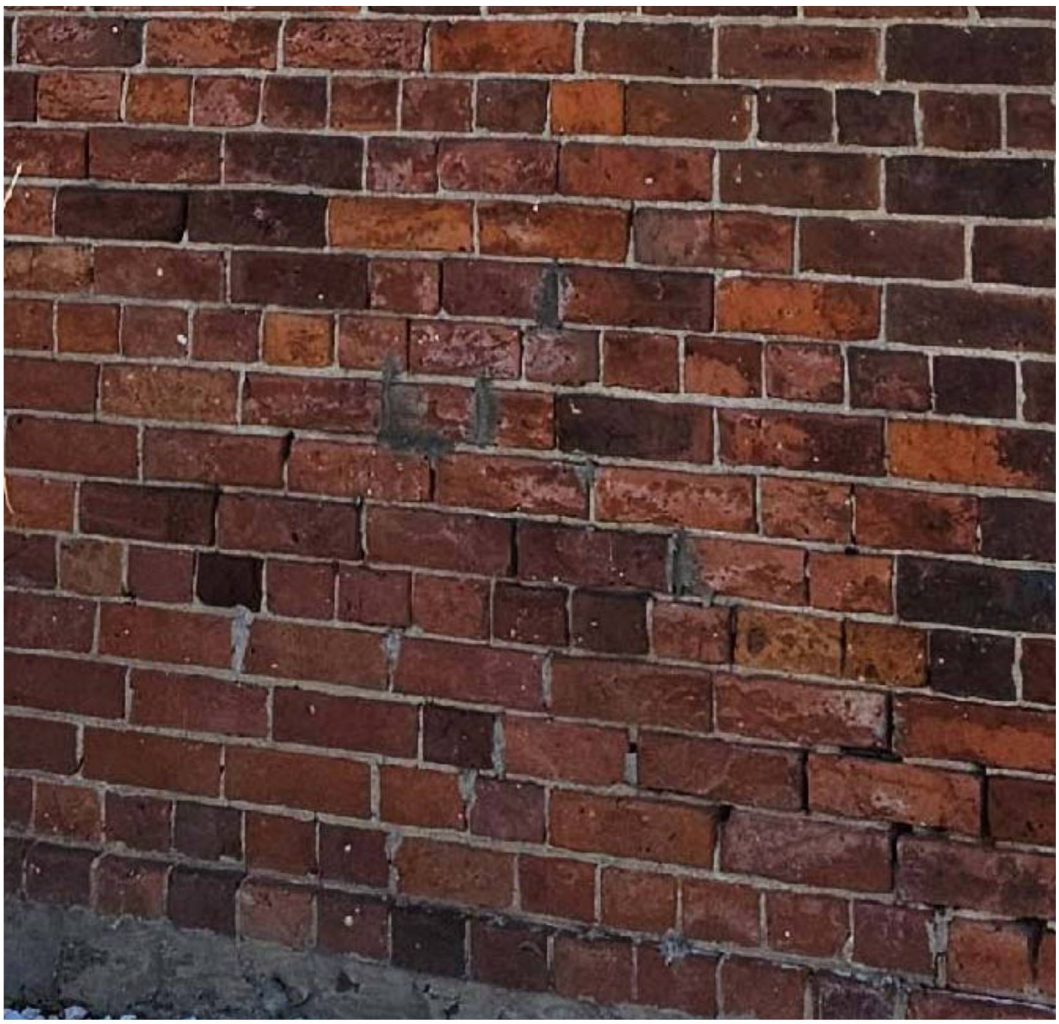
Spalling and cracking Veneer





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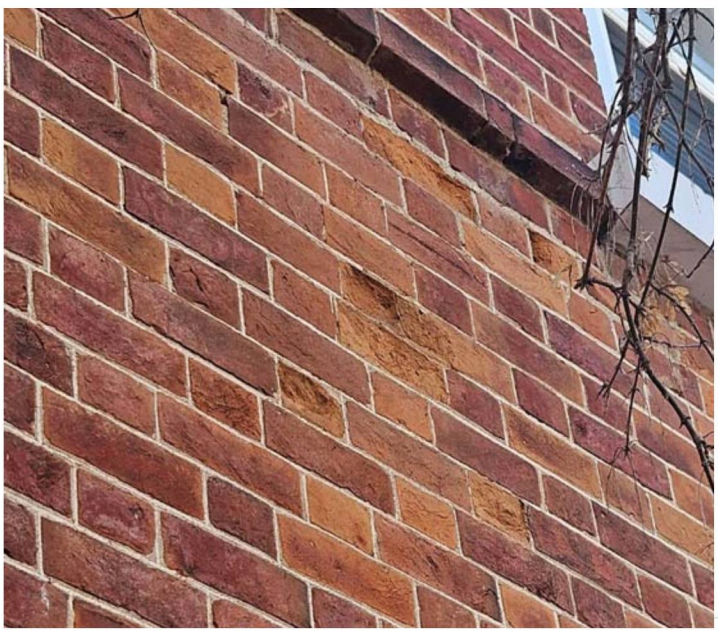


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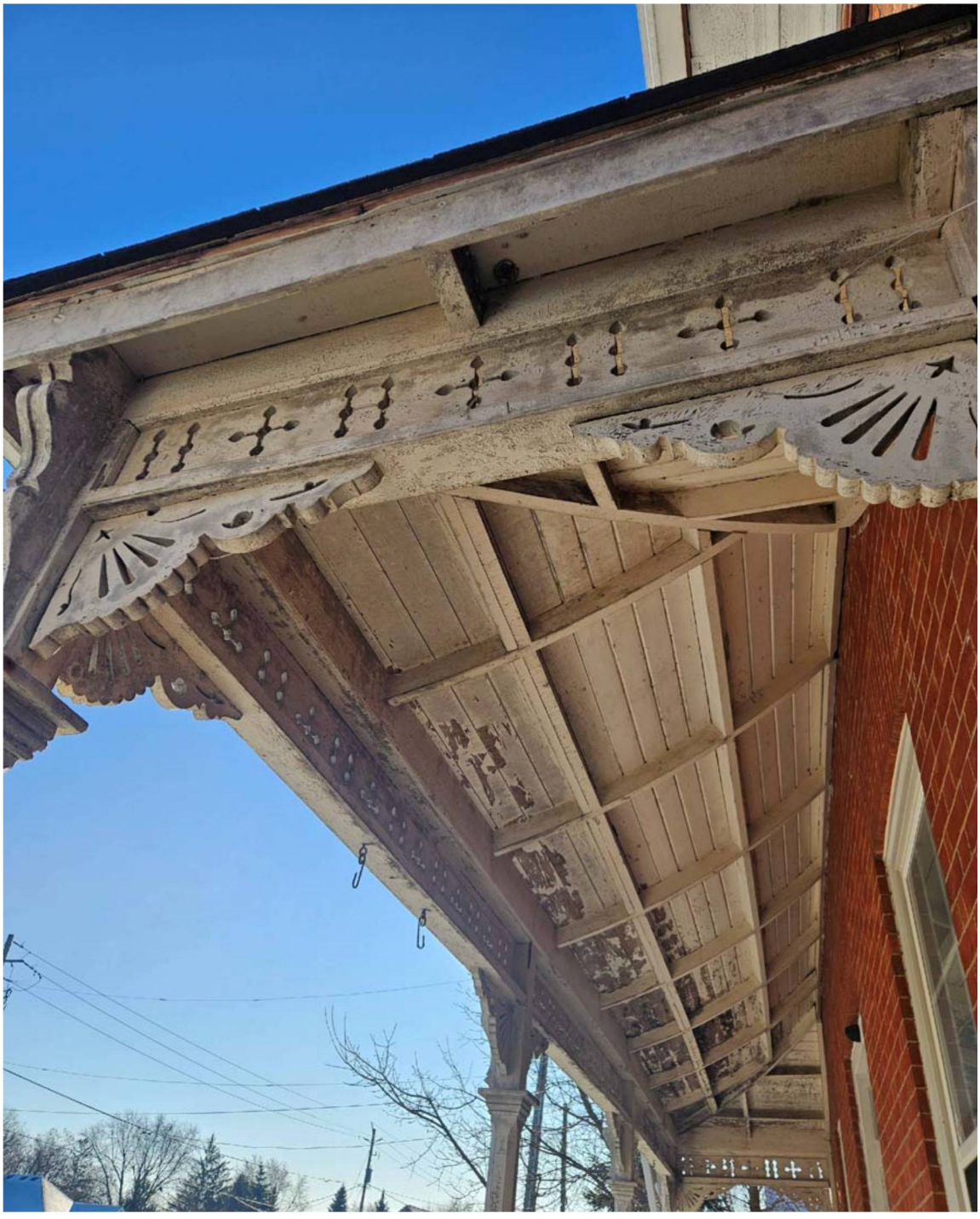
Porch



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