

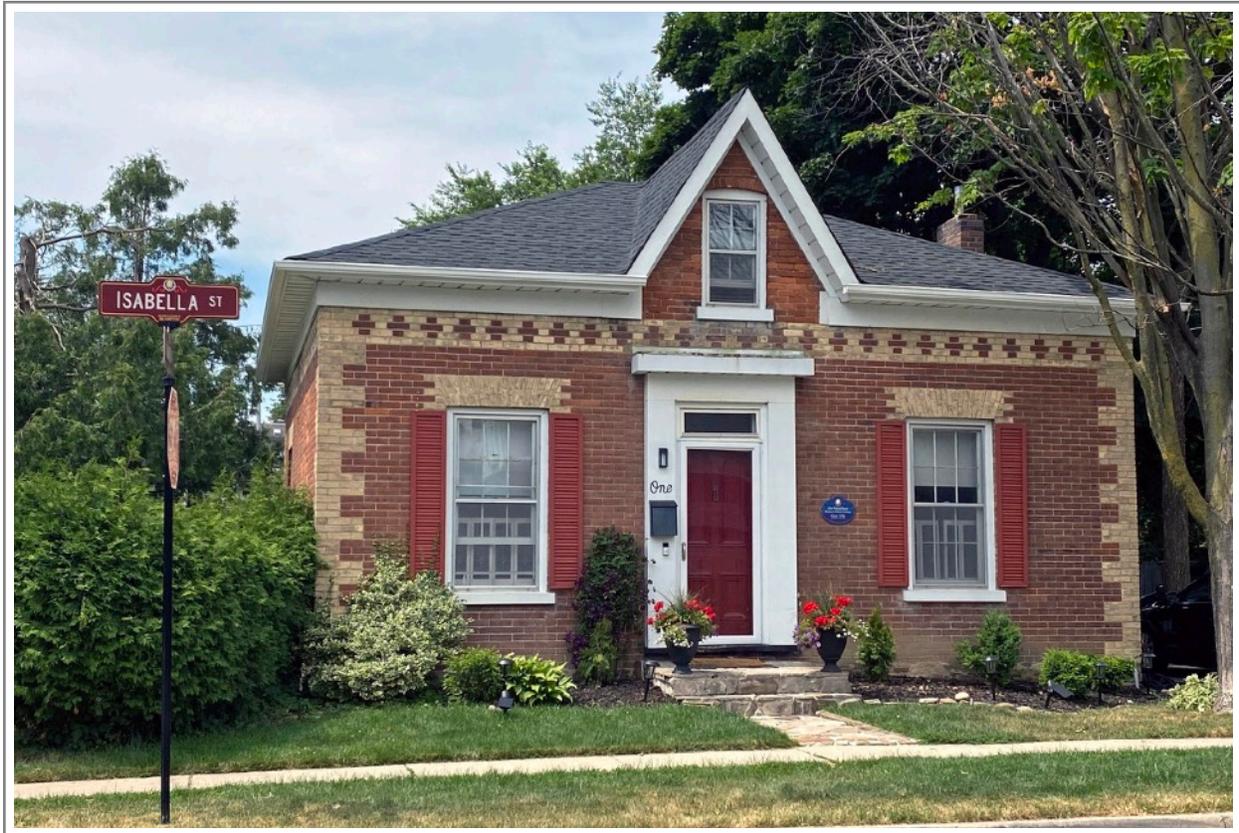
# Building Pathology Critical Report

Prepared for:

**One Isabella St,**  
Brampton, Ontario

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## **Building Pathology Methodology**

- a. Building Pathology is a term “used to define a holistic approach to understanding buildings. Such an approach requires a detailed knowledge of how buildings are constructed, used, occupied, and maintained, and the various mechanisms by which their structural, material and environmental conditions can be affected.”
- b. The EZDimensions Building Pathology Investigations are intended for the discovery of serious faults in the building albeit whether it is for structural, or cosmetic or any other reason. It is a comprehensive investigation of the historic fabric of the subject building to ascertain any dangers from rot, animal infestation, neglect, or additions or unsympathetic alterations or modernization. It is not just the facts which are highlighted, but the possible causes of the obvious and so not-so-obvious damage as well as possible and probable faults that could surface in the near future. From that, we can determine a course of action to remedy the situation.
- c. Our reports are written in plain English and we include footnotes to explain any technical terms if necessary. We write our reports with the reader in mind and we include annotated photographs.
- d. A Professional Engineer must address any structural issues which are noted within the report, and no recommendation of the same shall be given or implied. This service will not recommend any products or services which, in the opinion of EZDimensions, will be detrimental to the health of the building envelope or historically incorrect for the style era.
- e. Buildings in an historic environment require informed conservation. Meaning ‘understanding the historical development, and significance, of your building or area and identifying the most appropriate approach to its management.’
- f. Where original, or historic, elements remain intact they should always be retained and repaired or restored where possible.

## Report Type

**Building Pathology Critical Report:** This report is a summation of visible conditions that may be harmful or deteriorating the condition of the building. Only those areas visible will be reported on. Issues requiring further investigation will be noted and any issues requiring attention concerning the overall structure or safety of the building will be noted.

Section numbers noted in **Red** are the most urgent and could impact the structure and/or safety of the occupants. **Yellow** numbered sections are those that will improve the overall health and protection of the building and its components. **Green** are sections that are not urgent but should be addressed with future maintenance projects to keep the building in optimal condition and historically accurate.

**Yellow** arrows highlight positive changes such as preferred grading or special features to retain. Critical differentiation of best practices or heritage materials are underlined for the reader to take special note of. Words in *Italics* are technical or construction terms that are defined in the terminology section for better comprehension.

## Other Reporting Available

**Building Pathology Solution Report:** A follow-up secondary report to a Critical Report. It provides detailed solutions, remedies, drawings and instruction for the homeowner or building professional hired to remediate, repair or restore existing conditions. As a Professional Building Pathologist this critical information is provided based on historic building methodology and an understanding of the Ontario Building Code (OBC) and current building practices as an Accredited Architectural Technologist with an MMAH certified Building Code Identification Number. (BCIN )

**Old Home Maintenance Report:** Personalized for your home provides an outline and schedule for maintenance and upkeep of your heritage home. What to watch out for, what to update regularly and how to make sure your home is in tip-top shape.

**Building Pathology Comprehensive Report:** A full scope document of all heritage attributes and their overall condition aimed at the overall health and fitness of the Heritage building. Identify and provide solution information for remediation, repair or restoration of existing conditions as needed. Detailed restoration instruction, design and drawings for heritage features such as interior mouldings, dado & wainscotting, etc. Facade re-design, (vergeboard, porch and verandah construction drawings, building finish material design and colour schemes. Assistance sourcing professionals for skilled restoration of (windows, masonry, millwork, etc) or other specialized skills.

**Heritage Design & Building Permit packages:** Heritage sensitive renovation and/or additions design suitable for municipal heritage approval and permit packages for building permits.

## Building History \*

The House was registered under the Ontario Heritage Act in 2010 (bylaw 224-2010). It is within one of the earliest residential subdivisions in Brampton. The ‘Washington Block’ is an intact mid-Victorian/late-Edwardian residential neighbourhood. This house is one of the oldest in the area and is a half-storey masonry house representative of a Regency style (Ontario Cottage Vernacular). Built by carpenter John Pickard (later Brampton’s first tax collector) for himself and his wife Harriett Scott Pickard in about 1850.

Upon John’s death about 1882 the house was sold by Harriett to Thomas Taylor, a Millar and farmer (later Reeve for Toronto-Gore) and his wife Elizabeth until 1929.

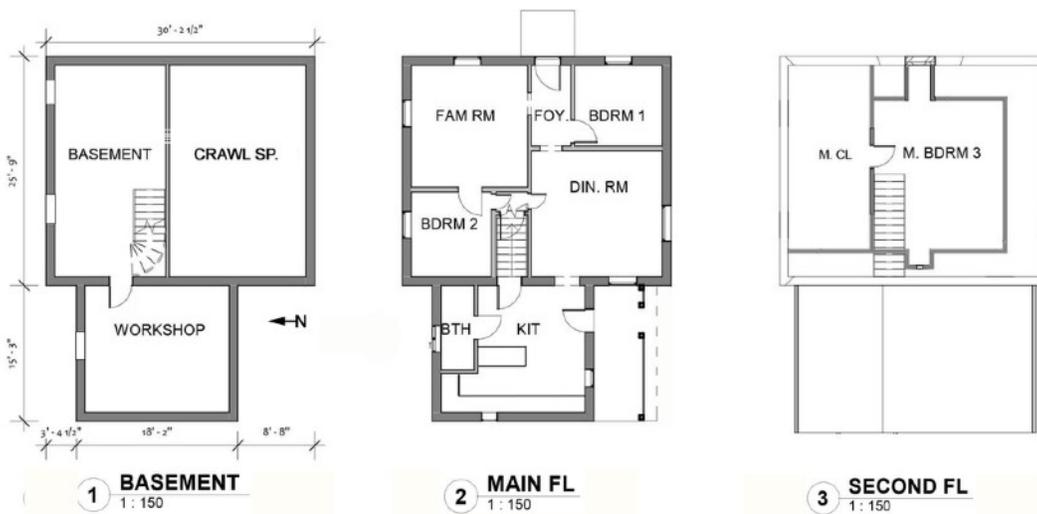
\* Excerpts from City of Brampton Bylaw 224-2010 ‘1 Isabella Street property designation of cultural heritage value.’ Document Under Part IV of the Ontario Heritage Act - June 23rd 2010

## Existing Building Condition

The building is double brick construction with an extra brick veneer on the street-facing sides (south and east). The rear addition (assumed summer kitchen) is double brick and has been altered with a contemporary kitchen and bathroom added to the space. The overall main building is in fair condition, however there are urgent issues facing the building:

- Structural foundation settling at corners to be reviewed before winter 2022
- Ground water management and poor brick and stone repointing using portland cement which is an incompatible material for the construction of a house of this age
- Electrical hazards in the basement at the panel and laundry area

The aluminum fascia, gutters and downspouts have recently been replaced which will help with some of the water issues affecting the brick & stone structure. There are also plans to add another rear addition providing an opportunity to protect and repair some conditions within this report.



## Building Terminology

**Architrave** - Decorative frame around a window or door.

**Basement vents** - Vents placed both sides of a foundation to allow air to flow and exchange with fresh air

**Beam** - A horizontal structural member made of multiple pieces or solid lumber, or steel supporting floors, roofs

**Berm** - A contrived slope to re direct and divert water down and away from a building

**Canopy** - A roof covering extending from a wall without posts covering a single door or window

**Caulking** - An adhesive or sealant used to close a seam or gap from water or air. (caulk, caulked)

**Cement** - A substance made with calcined lime and clay. It is mixed with water to form mortar or mixed with sand, gravel, and water to make concrete.

**Concrete** - A rough building material made from a mixture of broken stone or gravel, sand, cement, and water, that can be spread or poured into forms.

**Crawl space** - A heated or unheated basement space at four foot ceiling height or less

**Cricket** - A peaked frame behind a chimney or other parts of a roof that will direct rain and water away from a space that could collect snow or water and penetrate the roofing components to create a leak.

**Dormer** - A window that projects from a roof plane and is protected with a roof of its own

**Downspouts** - Metal drains connecting the upper gutter to a lower ground leader to collect and drain roof water

**EPDM rubber membrane** - (ethylene propylene diene terpolymer) a waterproof rubberized oil based sheeting used to protect wood from water (often used as pond liner)

**Fascia** - Board covering the rafter ends along the edge of the roof usually holds a gutter to collect rain water

**Flashing** - Metal material used to protect seams at roof intersections (valleys) or where a wall and roof meet or roof penetrations such as chimneys, plumbing vents, fan vents and air vents, etc.

**Floorboards** - planks running perpendicular to the floor joists providing structural rigidity to a flooring system

**Floor vents** - Supply and return air venting grates, or covering floor holes no longer in use such as a stove pipe hole

**Foundation** - Walls surrounding the basement or crawlspace supporting the structure of the building.

**Frieze** - A board usually placed at the top of a wall at the underside of the roof overhang or ceiling.

**Gable roof** - A simple two sided roof with a peak running from end wall to end wall.

**Ground-fault circuit interrupter** - GFCI electric outlet designed to trigger a shut off breaker if overloaded.

**Gutter** - Collects water at the edge of the roof and directs roof rain water to a downspout to be drained

**Hip roof** - A four sided roof inclined towards a peak and having 4 or more corners (hips) also known as 'Cottage'

**Historic Bricks** - Usually handmade or made with early technology from local clay materials and baked in a fire.

**Insulation** - Material added to a building cavity to still the air within thus creating a thermal barrier

**Joists** - Individual structural members laid horizontally and used to create a floor system or a flat roofing system.

**Leader** - At the end of a downspout directs water to a surface to absorb or divert rain water from a building

**Let-in flashing** - Where flashing is running along a brick face, the top of the flashing must be stepped in pieces, extend under the shingles, overlapped and the top portion fit into (let-in) the mortar joint and repointed to ensure water does not penetrate the brick wall

**Lime Mortar** -A type of mortar composed of lime and an aggregate such as sand, mixed with water. It is one of the oldest known types of mortar

**Lintel** - A horizontal beam wood or steel providing support above a window or door opening,

**Mortar** - Used in building to bond bricks or stones.

**Nogging** - Brickwork installed between the floor joists spaces usually where they rest on the exterior foundation wall

**Non-ionic solution** - Non detergent, bio friendly soap and mixed with water for non harmful cleaning

**Open Valley** - Metal material under roof shingles at intersection between two slopes to drain rain water into a gutter below. The shingles are cut back to allow the metal to show and drain without impedance.

**Portland cement** - Cement that is manufactured from limestone and clay and that hardens under water

**Post** - a piece of timber, multiple pieces of lumber or metal set upright and used to support a structural beam

**Powder Post Beetle** - A beetle larvae that feed on wood or lumber and reduces the interior to powder, evacuates when fully grown through small circular holes.

**Pyramidal cracks** - Break in mortar found in brick faces usually at an angle following the path of the brick mortar

**Rafters** - Roof lumber installed on a slope creating a vaulted, cathedral ceiling or attic space

**Remediation** - Reversing or stopping damage impacting the structural or health and safety of a building

**Repair** - To fix or put back elements or structure to its original form.

**Repointing** - Removal of failed or incorrect mortar installed between bricks or stone and installing fresh mortar.

**Restoration** - To refinish or reconstruct building attributes in intended style, materials, colours, or structure

**Rising damp** - water is wicked through building components and structure creating conditions for rot & mould.

**Roof Vents** - Product in various materials to allow air flow within the roof attic space from the soffits.

**Shutter** - Decorative or functional panels, fitted to close for privacy or shade on inside or outside of window

**Sill** - A shelf or slab at the bottom of a window or door frame to drain and vent moisture from the window

**Sill Plate** - A wooden beam or multiple joists running parallel to the floor joists at the bottom of exterior wall.

**Soffits** - Material placed under a roof overhang, covering the under side end of the roof rafters (eaves)

**Soffit Vents** - Products in various materials to allow an air exchange within the attic space to the roof vents.

**Spalling** - Water held within a brick wall that freezes will fragment, break and chip a brick or stone face

**Splash guard** - A standing piece of metal flashing at a gutter and valley intersection to keep water from overflowing or overshooting the gutter.

**Sprayfoam** - An insulating product that is sprayed in tight spaces to block gaps and drafts

**Spring brick** - Last brick on either side of an arch from which the arch 'springs' from

**Step flashing** - Metal material sections used partly under shingles to protect the seam where a wall and roof meet a brick wall and must be 'let-in' to brick (see let-in)

**Storm** - A secondary window to fit over the exterior of a window to help reduce draft and some thermal protection

**Sump Pit** - a pit to collect excess water from below the ground with intention of pumping out and away.

**Underpinning** - Additional basement depth added by digging out sections below the existing foundation and filling the underside with concrete to the intended depth. Thereby gaining basement ceiling height

**Vapour Barrier** - plastic sheeting used on the warm side of a wall, roof or floor to prevent deterioration of building or insulating material caused by condensation.

**Vaulted Ceiling** - Part of the height of a 2nd fl wall is sloped. The ceiling is formed by the underside of the rafters

**Weeping tile** - Material that collects excess water around the basement or foundation footing and directs it to a sump pit to be ejected to the surface and away from the building.

**Window wells** - Opening on the exterior of a window at ground level to below the window sill, it allows water and snow to drain below a window sill and prevent running into a basement

## 1.0 Chimney

The existing north side chimney is no longer in use. At some point, an extension was added with modern bricks to the original chimney base (1.01). This portion should be removed as it is in bad repair and unnecessary. The chimney could be built up to its original height using *historic bricks* to match for decorative effect or remain at its present height. Either way, it must be capped with a stone chimney cap to prevent pests and water infiltration. Improperly installed *flashing* at the roof line (1.02) evident by staining on the exterior *frieze* (1.03) and brick erosion (1.04) below and stained and failing drywall on the interior (1.05). From the ground it could not be verified if the chimney has a suitable *cricket* to divert water from behind the chimney to the side *flashing*.

Evidence of similar conditions can be found on the south wall where only a small portion of the chimney is evident within the attic space of the house (likely originally serving a stove) similar *frieze* water stains (1.03), brick deterioration (1.04) and water stains on the roof *rafters* (1.06) is evident. It is recommended in both cases the original brick be cleaned, the remaining chimney properly *flushed* and the wood *roof rafters* below be inspected to ensure they have not been structurally compromised, although the roof looks to be sound and in good condition. (See 3.0)



## 2.0 Flashing

The *flashing* where the rear addition and porch meet the main brick wall has been installed correctly with lead *step flashing let-in* to the brick and extending under the shingles. (2.01) This *flashing* should be checked for deteriorating metal and replaced where necessary. The *flashing* on the *canopy* at the rear west wall, (2.02) the north chimney (1.02) and capped rear chimney are not adequately installed. All flashing must be stepped and let-in to the brick (see illustration), and extend under the shingles except at the lowest slope should be allowed to drain over the shingles.

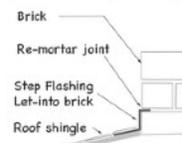
Moreover, the *flashing* ‘ledge’ (2.04) in front of the rear southwest window does not satisfactorily prevent water from finding its way to the wood window frame and porch below. It is critical that water be directed away from the edge to protect it from the ingress of water. Some signs of water damage is beginning to appear on the underside wood ceiling of the porch.

The second floor rear *dormer* does not appear to have *flashing* (2.05) as the wall seam at the roof is *caulked* and it appears to be failing. Proper *flashing* is needed when the roof is next replaced in the meantime regular inspection of the *caulking* and maintenance is required.

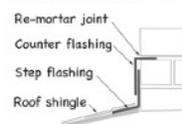
The *flashing* provided at the roof *valleys* at the front *dormer* are done incorrectly. There should be an open application valley flashing (see illustration below) where the *dormer* roof and main roof intersect. Overlapping shingles will not provide adequate protection. (2.06) The *flashing* should be installed in an open installation and a *splash guard* (2.07) installed at the *gutter* end to keep the water from overshooting the gutter to the stoop below. The metal *flashing* cap over the front door *architrave* (upper door trim) *flashing* is showing signs of rust and should be replaced. (2.08)



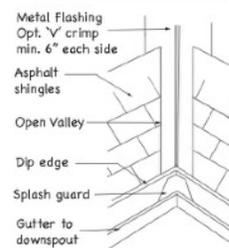
Historical Step Flashing



Modern Step Flashing



Open Valley Roof Flashing



Best Practice: OBC 9.26.4.3(5)  
Open Flashing Min. 6" at top each side. Increase by 1/8" per foot of valley run to handle the increase in water flow.

### 3.0 Roofing

The average life expectancy of an asphalt roof is approximately 15 to 30 years depending on type (basic vs. architectural). The roofing material appears to be in good condition. Some minor curling and asphalt debris was noticed. The *soffits* are lacking *soffit vents* (3.01) and minimal upper *roof vents* (2 per roof) can be observed on the main house and addition (3.02).

The main structure of the second floor has a cottage or *hip roof* (3.03) (4 sloped sides) with a *vaulted ceiling* making it more imperative for proper venting and *insulation*. To promote the longevity of the roofing materials and framing, and to help keep the 2nd floor more comfortable, *remediation* of this issue should be considered.

The rear addition has a *gabled roof* (3.04) (2 slopes) with a flat ceiling. This presents ample opportunity for adding more *insulation* in the ceiling area, adding *soffit vents* (3.01) and upper *roof vents* (3.02) is recommended for the planned renovations.



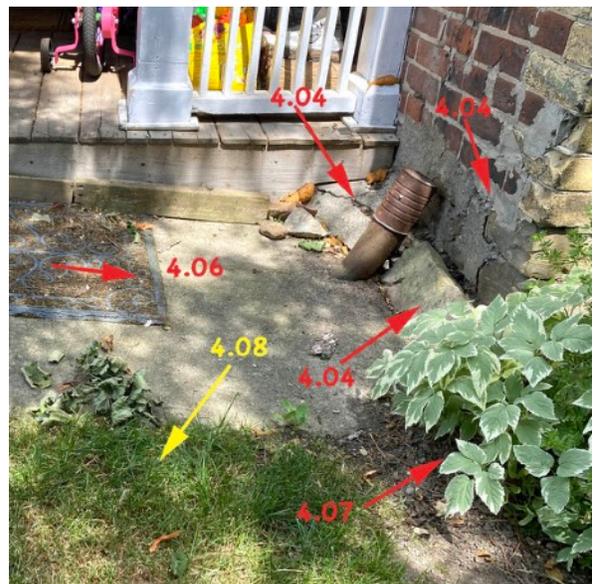
## 4.0 Ground Water Management

The most effective way to avoid water issues is to divert it away from the building. This prevents water from penetrating and eroding the heritage materials and leaking into the home. Several water management issues have been noted in this inspection that urgently need addressing to prevent decline of the building structure. The replacement of the *gutters and downspouts* has included *leaders* to divert the water but should terminate on a stone or solid splash pad to divert water flow further away from the house.

The North side of the building contains the driveway and 3 concrete *window wells* (4.01) with wood covers (4.02). There is significant deterioration of the *window well* where cavities allow water to leak between and into the well and *foundation*. (4.03) The paving surface is slightly sloped however there is evidence of water splash back and drainage of water to the *foundation*. Attempts have been made to *repoint* the brick *mortar*; unfortunately with *portland cement* (5.0) Redirecting the slope of the driveway away and to the street (4.05) or creating a *berm* at the edge of the building directing the water to drainage material that will allow the water to drain further away from the building is preferred.

The *concrete* walk at the South West corner where the main house meets the covered porch is in a critical state as the grade drains directly to the *foundation*. Evidence of damage to the *foundation* is observed including the bricks above (6.0) and should be rectified immediately to prevent further harm. Aside from the obvious slope of the *concrete* pad, (4.06) several attempts to block the water has been attempted (4.04), unfortunately, using *portland cement* (5.0) thus complicating the problem.

All storage, large shrubs and plantings should be kept away from the *foundation* (4.07) wall in order to monitor ground erosion at the *foundation*. A 10' perimeter is preferred or at a minimum provide a *berm* or sufficient slope away and drainage material to allow the water to drain to the ground cover and monitor annually and maintain the slope (4.08).

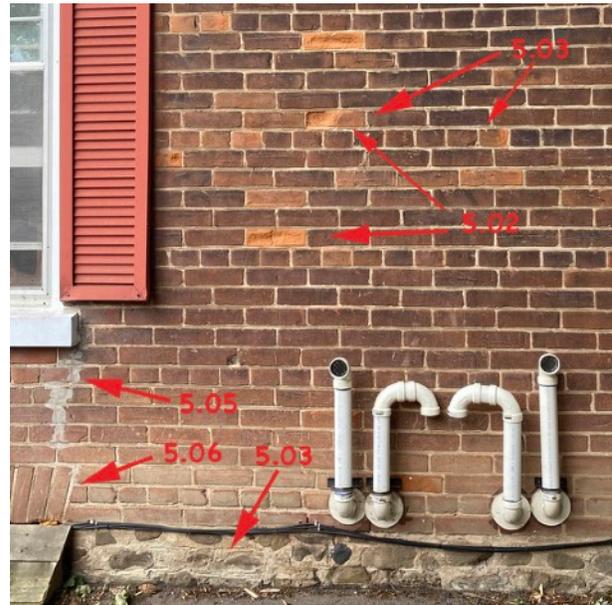


## 5.0 Brick Issues

The triple and double brick exterior walls built with *historic brick*, appear to be sound except at some corners, spot repairs will be necessary to the brick and *mortar* in areas on all walls to protect the overall structure of the house. Erosion of the brick face and *mortar* (5.01) has occurred from failed water protection, this exposes the softer *historic brick* centre and ultimately the interior of the wall. *Spalling* and cracks have occurred (5.02) where *repointing* and repairs were attempted using *portland cement* (5.03) which is incompatible with *historic brick* and stone materials. The *cement* locks in and holds moisture in the brick or stone and spaces between. This prevents it from draining, consequently, the freeze-thaw cycles of our climate cause the brick to crack and break.

*Pyramidal cracks* (5.05) above the windows indicate the slippage of the *spring brick* (5.06) and should be stabilized when the brick repairs are performed by a professional brick mason with heritage experience. Where the brick has become dirty or mouldy (5.07) a gentle cleaning can be done with a *non-ionic solution*.

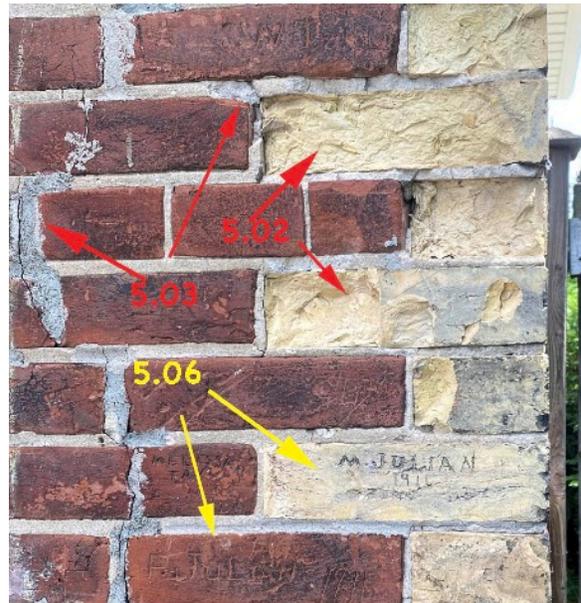
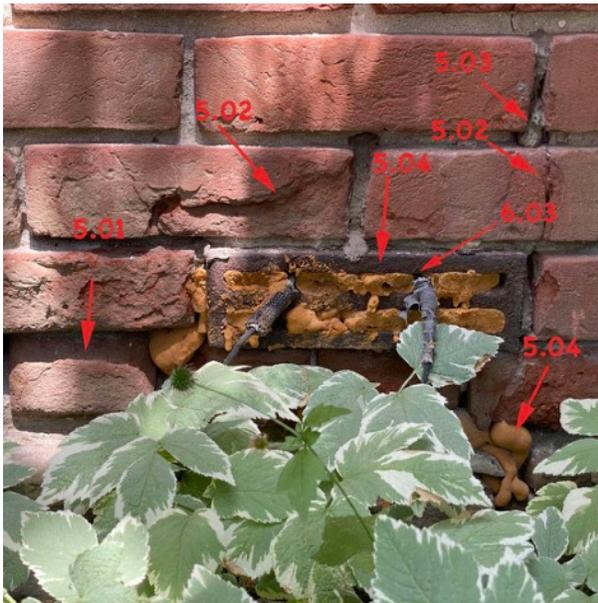
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## 5.0 Brick issues (continued)

In addition to the issues noted, *basement vents* installed to vent the basement space have been clogged with *sprayfoam* or *mortar*. (5.04) (See 6.0) Any *spray foam* and *portland cement* within a heritage fabric wall will cause problems.

A professional brick and stone mason experienced with heritage masonry should be contracted to remove the *cement* and *sprayfoam* remnants, replace or repair the brick and repoint using *lime mortar only*. Some bricks have been carved with the names of past family members residing in the house. These bricks should be cleaned and saved where possible as a nod to the past. 5.08

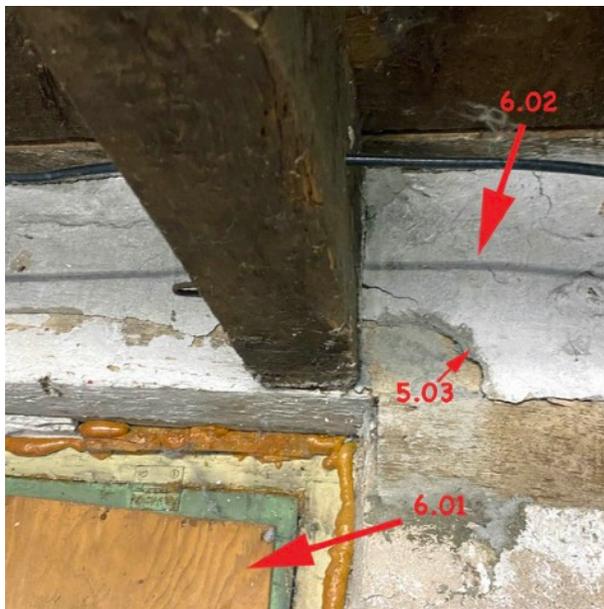


## 6.0 Basement health and venting

Water is the primary issue causing *foundation* failure. Basements originally were utilitarian at best, equipment only came later. With good water management and regular maintenance water can be diverted or managed away from the basement. However, any moisture in the air or absorbed in the wood materials is intended to vent through the windows (originally above grade), *nogging*, *foundation mortar* and *vents* placed on opposite sides of the building; all of which are integral to the health of the basement.

Mistakably some assume the vents are the cause of water and air leaks and block the air flow entirely. The basement should be left to exhaust the moisture naturally and *insulation* should be added to the basement ceiling under the main floor to keep the humidity or colder temperatures in the basement space separate. Sealing up windows, (6.01), parging the *nogging* (6.02) with *cement* or *sprayfoam* (5.03) and blocking vents (6.03) stunts the basements ability to vent and exchange the air trapping moist air in the basement will lead to *rising damp* conditions affecting any wood and the air quality.

The brickwork should be done by a qualified mason only, the concrete or foam should be removed and restored with lime mortar only as needed. Any *sprayfoam* should be removed from the windows, especially at grade level and ensure the window is secure and in good working condition. The *basement vents* should be cleaned out of any material and can be backed with screening to prevent rodents from entering the basement space.

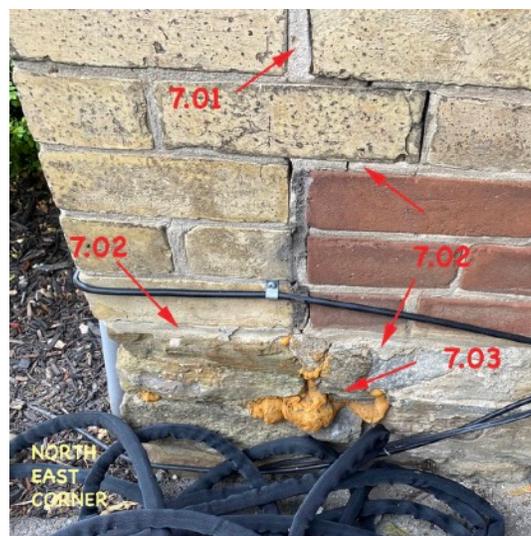


## 7.0 Foundation Issues

The south half of the basement contains a *crawl space* only accessible from a small opening in the centre wall. It is my belief the southern *crawl space* was the original *foundation* of an earlier building. The northern half was added or dug out and rebuilt to full depth (6'+/-) when the brick structure above was built. The rear ‘assumed summer kitchen’ was added, originally with a *crawl space* below; then the walls were *underpinned* and brought to full depth.

Structural instability is evident by exterior cracks (7.01) at the southwest corner of the existing main house at the *crawl space* and can't be inspected thoroughly below. The northwest corner of the rear addition which is in the part that has been *underpinned* with *concrete*, and several repairs to fill the cracks and missing *mortar* has been attempted with *portland cement* (7.02) and in places *spray foam* (7.03). The underlying *foundation* issues have remained and destabilized the wall, extending the settling cracks down into the *foundation* and up the structural brick walls, thus causing some bricks to crack and break. (7.04)

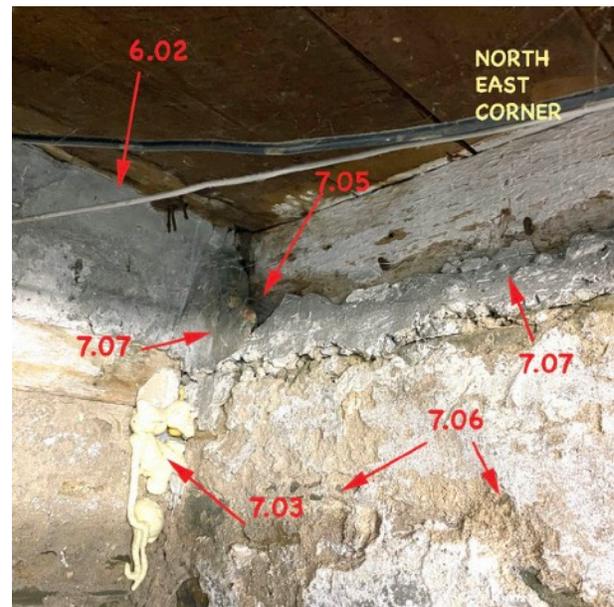
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7.0 Foundation issues (continued)

The southern *crawl space* could not be inspected however, most of the full-height basement walls demonstrate water retention in the *foundation* (7.05) This has caused the *mortar* to erode on the interior, evident by debris on the floor (7.06). In the case where *portland cement* or *sprayfoam* was used against the wooden *sill plate* or *joists* (7.07) this holds water on the wood and in time undermines the structure of the wood structural member.

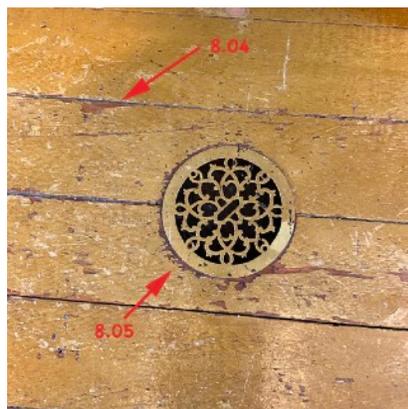
A Professional structural engineer is needed and a qualified brick and stone mason familiar with heritage buildings and historic brick should be hired to review the issues and make plans for structural stabilization and prevention of further deterioration.



## 8.0 Wood Structure

Only the main floor *joists* could be viewed at the time of the inspection. Most floor members appear to be sound with some signs of past issue with *powder post beetles* (8.01) which has caused cracking and weakening of a few joists (8.02). The wood joist ends resting at the mid-wall between the southern *crawl space* and furnace space, and are in direct contact with *concrete* (8.03) which holds potential for decay and rot. A structural engineer should review the soundness of all joists to ensure they are structurally sound. All wood *floorboards* appear to be original, and are integral to the building structure, they are sound but worn (8.04). Without sanding the floors should be refinished or painted as they originally would have been. All *floor vents* should be secured to avoid tripping hazards. 8.05

The *roof rafters* or second floor *joists* could not be viewed as they are covered with a stucco finish ceiling. Cracking was evident in areas (8.06) where water issues are likely due to a lack of proper *flashing* on the roof. If the stucco finish was to be removed it would present an opportunity to verify the integrity of the framing, ensure air space for proper *roof venting* and *insulation* and improve the interior finish.



## 9.0 Windows & Door

All but two windows (in the rear addition bathroom and kitchen) are original (9.01). I'm told the 6 over 6 windows work well and all the hardware systems are in place. The wood window interior frame and *sills* are in good shape requiring some maintenance and fresh paint (9.03). The exterior of the windows trim and sill is flashed with aluminum therefore it is not possible to view the exterior conditions. Aluminum *storms* and screens have been added (9.02) however, they do not open more than 6-8". If the exterior aluminum is to remain the *caulking* at the brick around the sides and top should be attended to (9.04). Do not caulk or seal under a window sill, this will trap moisture surrounding the window or door frame from evaporating or draining. The exterior *sill* for the *dormer* window above the front door has been sealed with *concrete* under the *sill* (9.05). Any material should be removed from under the *sill* when the other proposed brickwork is done. The metal *flashing* above the small awning over the door is contributing to brick decline with rain splashing on the wall above and the metal is failing, presenting rust stains (9.06).

The *shutters*, (9.07) aluminum *storms*, screens and aluminum *architrave* around the front door (9.08) are inconsistent with the style of the home and should be retrofitted with appropriate materials and properly sized (example 3 Isabella). The front stoop at the entry is sloped towards the house and should drain away. (9.09).



## 10.0 Electrical

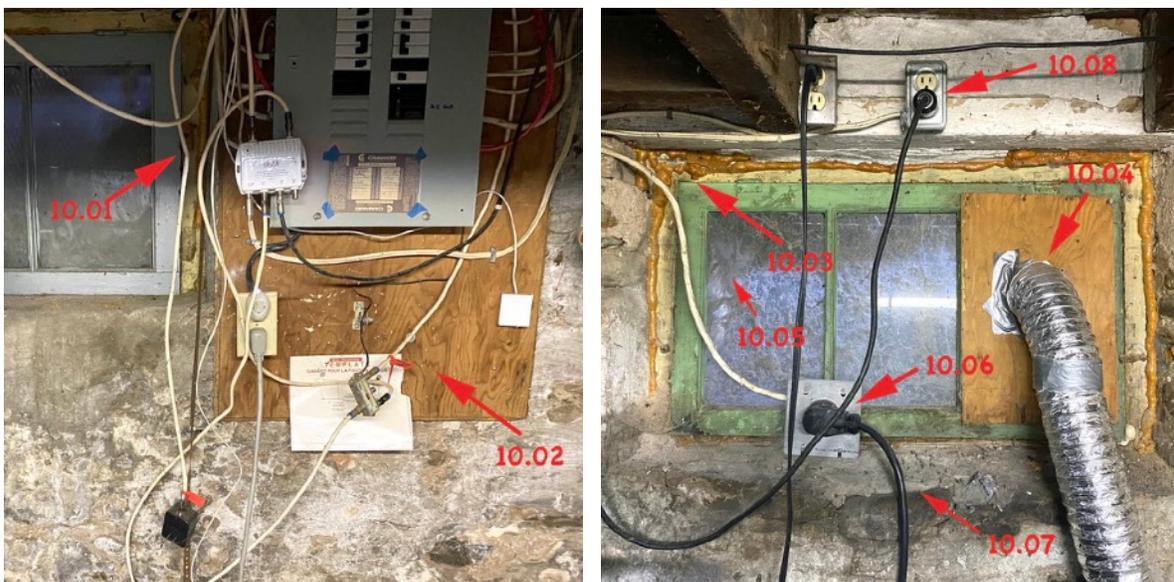
A planned addition will involve relocating the kitchen and bathroom although significant electrical work will also be undertaken, it's prudent to point out some urgent electrical issues that should be addressed before or within the scope of the planned work.

There is evidence of *knob & tube wiring* which appears to be out of service, this should be verified. This is a fire hazard and insurance companies may not adequately cover a fire associated with a *knob and tube* system! Many systems which appear to have been replaced may not be. Ceiling lighting is regularly disregarded (due in part to access) in a rewire and should be inspected to see if it has been executed properly.

There are also numerous loose and hanging wires within the basement and surrounding the electric panel (10.01) and basement ceiling. The plywood backing behind the panel is slightly damp to touch (10.02). All windows have been sealed (10.03) and the *window wells* are covered on the exterior. (4.02) Over the current laundry area, the northeast the dryer vent exhaust, (10.04) accumulated lint, debris (10.05) and snow or water within the *window wells* will affect the *foundation* and brick within these spaces. As mentioned in item (6.0) regarding 'basement health' this constricts the ventilation as designed and will need regular maintenance to be kept clean and dry.

A 220V dryer plug (10.06) is secured to the lower window frame where obvious signs of mould indicating that water has been present. (10.07) The two 120V outlets above are secured to the *nogging* (10.08) where moisture in the brick can collect. These situations pose real hazards and should be investigated and addressed by a licensed professional Electrician as soon as possible.

A thorough inspection of all outlets and wiring on the exterior or near any plumbing fixtures must be provided with a *ground-fault circuit interrupter* (GFCI) circuit breaker shut off.



## 11.0 Heating, Ventilation & A/C (HVAC)

A review of the existing forced-air heating system and *ducting* in the basement reveals some improperly sized or oversized ducts, unsealed seams and a lack of sufficient heating on the second floor. The design work necessary for the new addition will include an overall review of the existing *ductwork* to re-balance the heating system for more efficiency. A Professional Mechanical Engineer is required for the duct design, furnace capacity, heat loss calculations reports for building permits.

Adjustments to the heating system will be included within the scope of the planned renovations. In the past effort has been made to seal off the basement from the outside to prevent water, rodents and air infiltrating the basement and affecting the comfort of the home. This impacts the health of the basement space (6.0) and should be reversed. After the structural, and brick issues have been professionally resolved and the basement is working as designed, adding proper *insulation* and *vapour barrier* to the underside of the basement ceiling will separate basement separate from the conditioned main house living space above.

In future, if refinishing the interior of the second-floor, removal of the existing ceiling finish will allow the opportunity to add *insulation*, air space, *vapour barrier* and more *venting* to the roof which will also go a long way in improving the comfort of the 2nd floor interior of the home.

## 12.0 Plumbing

A planned addition will involve relocating all plumbing for the laundry, kitchen and bathroom therefore current plumbing issues are not included in this report. A licensed plumber should be contracted for this work.

With proper water management and allowing the *foundation* to function as it was originally intended, will help to keep the *basement* space dry. If however water continues to be an issue, consideration for an interior *weeping tile* drained to a *sump pit* with pump may be the best option for managing water.

## 13.0 South Porch

The existing south side porch appears to be in good condition, minimal signs of rot exists on the base trim around the posts, and the decking is adequately sloped however the existence or condition of the existing *foundation* or *floor joists* are not visible. A thorough inspection of the porch posts and footings, as well as the ceiling boards for signs of rot or deterioration, is needed. Any failing material should be replaced wholesale, primed and painted to match.

Remember wood should never come in contact with *concrete* or soil as it will rot the wood prematurely through capillary action and *rising damp*. The wooden post for the porch roof requires separation from the concrete with *metal risers* or an *EPDM rubber membrane*.

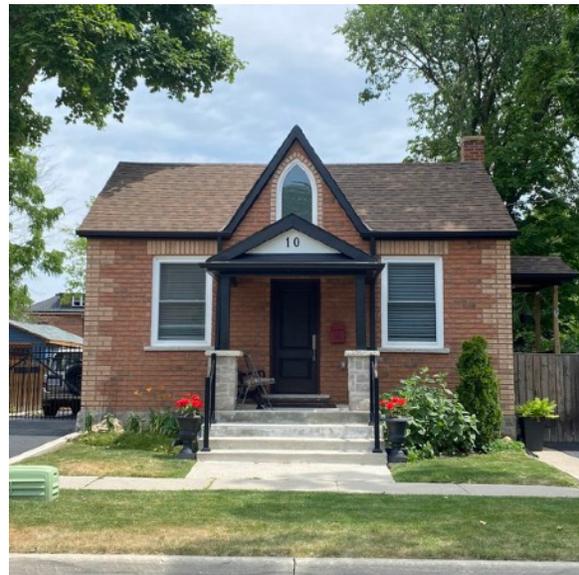
## 14.0 Paint

Any building built prior to the 1990s will have lead-based paint present on the interior and exterior and is of a great health concern only if digested or inhaled in its sanded form. If the paint is in good condition leave and prime/paint over existing. If the paint is flaking or chipping you can test for lead or assume it is lead-based and handle accordingly with remediation or removal. Do not use a heat gun or chemical stripper to remove paint.

Always use an approved respirator when removing paint, see Health Canada’s “Lead Information Package” for up-to-date reports and details [www.canada.ca](http://www.canada.ca).

## Summary

This home is a lovely example of a mid-19th-century Regency Style ‘Ontario Cottage’ Vernacular dwelling. It stands out from other examples of the same style in the neighbourhood with its original brick, dichromatic details, and minimal alterations to its main facade. This home is also unique in that it has 2 view-scapes as it sits at a corner. These houses are small by today’s standards but outstanding in their charm. This example requires some attention to the critical issues noted but nothing reviewed in the report is beyond repair. After the primary issues are remediated and followed up with repairs, less critical issues can be attended to and with good maintenance this home will be in good stead for a long future.



- 'A' PROPOSED:**
- REMOVE UPPER CHIMNEY
  - CAP ORIGINAL CHIMNEY
  - REPAIR BRICK
  - VERIFY NECESSARY STRUCTURAL MEMBERS

EXISTING BRICK DAMAGE

ORIGINAL CHIMNEY

NON SYMPATHETIC CHIMNEY EXTENTION



EXISTING 1856 ELEVATION FRONT & DRIVEWAY VIEW

- 'C' PROPOSED:**
- ADDITION PROVIDES FOR WEATHER PROTECTION OF BRICK AND FOUNDATION
  - IMPROVE GRADE SLOPE TO DRAIN WATER AWAY FROM BLDG
  - ROOF VENTING ON NORTH SIDE TO NOT BE SEEN FROM STREET



INTERIOR CHIMNEY SUPPORT



CHIMNEY NOT IN USE

- 'B' PROPOSED:**
- REPLICATE SIMPLE AWNING BRACKET OVER NEW SIDE DOOR



← EXTENSIVE BRICK DAMAGE  
POOR BRICK REPOINTING  
NORTH EXPOSURE  
SHADDED & WET



ISABELLA STREET VIEW



DRIVEWAY VIEW (NORTH FACING)

No.	Description	Date
1	CONCEPT DESIGN FOR SITE PLAN APPROVAL	MARCH 21_22

I review and take responsibility for the design and am qualified in the appropriate category as an 'other designer' under sub-section 3.2.5 of Division C as per exception 3.2.4.3 (d) of the Ontario Building Code.

Erin Zagar  
EZDimensions  
reg. BCIN 20904

**HERITAGE PLAN**

Project number	Project Number
Date	DEC 2021
Drawn by	Author
Checked by	Checker

**A-4**

Scale



EXISTING 1870 REAR ADDITION AND PORCH

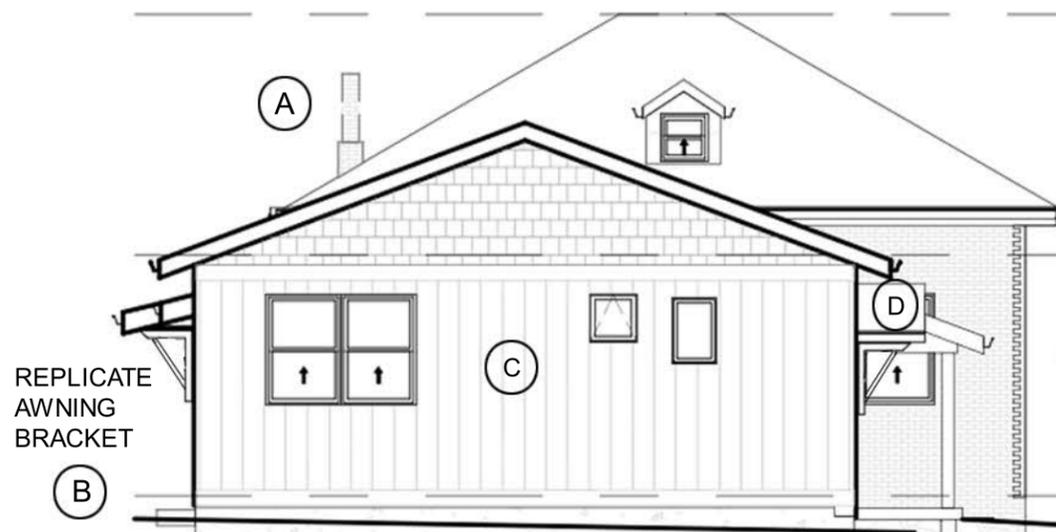
- 'F' PROPOSED\*:**
- REMOVE OVERGROWN HEDGES
  - SLOPE GRADE AWAY FROM BLDG
  - REPAIR BRICK & FNDN
  - NEW LOWER PLANTINGS AWAY FROM WALL TO KEEP DRY AND AVOID SOIL EROSION



- 'E' PROPOSED:**
- EXISTING DOOR OPENING
  - NEW DOOR WITH LARGER WINDOW FOR INTERIOR NATURAL LIGHT & THERMAL IMPROVEMENT



- 'D' PROPOSED:**
- EXISTING AWNING TO BE REUSED FACING DAVID STREET



REAR VIEW (WEST FACING)



VERIFY EX. PORCH POST FOUNDATION

DAVID STREET VIEW

**PROPOSED REAR ADDITION**  
1 ISABELLA ST

No.	Description	Date
1	CONCEPT DESIGN FOR SITE PLAN APPROVAL	MARCH 21_22

I review and take responsibility for the design and am qualified in the appropriate category as an 'other designer' under sub-section 3.2.5 of Division C as per exception 3.2.4.3 (d) of the Ontario Building Code.

Erin Zagar  
EZDimensions  
reg. BCIN 20904

**HERITAGE PLAN**

Project number	Project Number
Date	DEC 2021
Drawn by	Author
Checked by	Checker

**A-5**

Scale