

# UPDATED CONSERVATION PLAN CHAMPLAIN OIL COMPANY SERVICE STATION 70 RICHMOND ROAD OTTAWA, ONTARIO

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## Character Defining Features

Chimney's and Buttresses on either side of the Garage doors

Metal Roof with diverters over each door.

Window Hoods  
Windows with multi pane transoms  
Round Headed Window on the end Facade

Cottage Door.

Garage Doors appear to be replacements but needs confirmation.

Signage over the garage doors



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SUBMITTED TO: TRINITY DEVELOPMENT GROUP INC.

PREPARED BY: JOHN STEWART, COMMONWEALTH HISTORIC RESOURCE MANAGEMENT

Updated V5 April 2023

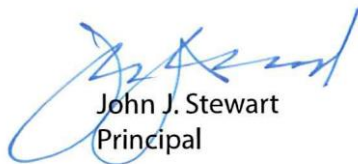


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**Commonwealth Historic Resource Management** offers service related to conservation, planning, research, design, and interpretation for historical and cultural resources. A key focus of the practice is assessing the impact of development on heritage resources. The firm was incorporated in 1984.

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Stewart is a founding member of the Canadian Association of Heritage Professionals. He has served as the Canadian representative of the Historic Landscapes and Gardens Committee of ICOMOS and the International Federation of Landscape Architects. Stewart is a panel member with the Ottawa Urban Design Review Panel and a board member of Algonquin College Heritage Trades Program.



John J. Stewart  
Principal

## CONTRIBUTORS

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The Conservation Plan was prepared for the Trinity Development Group Inc. as a part of the planning submission in support of the required Heritage Permit application and Demolition Application. John Stewart, Commonwealth Historic Resource Management in collaboration with a team of specialists prepared the report including:

Hobin Architecture Inc;

Fotenn Planning;

CDS Building Movers;

Cleland Jardine Engineering Ltd.

Paterson Group Engineers

John G. Cooke & Associates Ltd.

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# 1.0 INTRODUCTION

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## 1.1 Background

This Conservation Plan is a requirement of the City of Ottawa. It is a part of the planning submission in support of all three required applications (Zoning Bylaw Amendment, Official Plan Amendment and Heritage Application). The Conservation Plan and the Heritage Impact Assessment are companion documents and should be read together. The purchase of the adjoining property at 376 Island Park Drive responded to the City’s concerns that the development was over-built and triggered a revised design. Both the HIA and the Conservation Plan have been revised. This Conservation Plan (Updated) replaces the earlier versions submitted in January and April 2022.

A revised step by step plan for supporting and moving the station is outlined in Addendum A of this report. The report was prepared by Cleland Jardine Engineers Ltd. and includes the methodology and budget prepared by CDS House Movers Ltd. The temporary storage of the Station will be across the street at the gas station on the northwest corner. A lease has been negotiated for the duration. The process describing the move remains the same with a more detailed outline and strategy.

The following documents are referenced in the preparation of this report:

- A HIA accompanies the Conservation Plan evaluating the impact of the development proposal in a manner that is consistent with the City of Ottawa 2022 Official Plan Section 4.5;
- Standards and Guidelines for the Conservation of Historic Places in Canada. 2010;
- BHSC Designation Report, 70 Richmond Rd., August 13, 2015, File Number: ACS2015-PAI-PGM-0050;
- 70 Richmond Road - Heritage Building Relocation Feasibility Study Cleland Jardine Engineering Ltd. revised January 2023. Appendix A;
- Historical Building - Champlain Oil Company Service Station Complete building including garage bay, Scope of Work and Pricing quote CDS Building Movers revised January 18, 2023. Appendix B;
- Designated Substance Survey 70 Richmond Road Ottawa, Ontario. Paterson Group Engineers December 7, 2021, Appendix C;
- Relocation Feasibility, John G. Cooke Consulting Engineer Appendix C;
- As-found recording and supporting photo record; Appendix D
- Integration and layout of the service station as part of the ground floor retail Hobin Architecture March 2022.
- A collection of catalogues and histories describing the invention of the overhead garage doors dating from 1930.
- Hobin Architecture Heritage Building drawings April 2023

This Conservation Plan follows the content outline recommended by the City of Ottawa and documents the extensive dialogue between the City and the client team over the course of four years.

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This Conservation Plan is a requirement of the City of Ottawa. It is a part of a Heritage Permit Application to relocate the Champlain Oil Company Service Station herein referred to as “the Service Station). Applications for Zoning By-law Amendment and Site Plan Control Approval have been submitted to the City of Ottawa for a development proposal that includes relocating the Service Station from the back of the site to a prominent position at the corner of Island Park Drive and Richmond Road where it will be positioned as a free-standing element and integrated as a feature component of the proposed new building.

A Heritage Impact Assessment (HIA) prepared by Commonwealth was submitted as part of active applications for Zoning By-law Amendment and Site Plan Control Approval. The Conservation Plan and the HIA are companion documents and should be read together. A second application for a Heritage Permit will be submitted for the redevelopment of the property including a 10-storey residential apartment with commercial activity centred around the Service Station. This Conservation Plan follows the content outline recommended by the City of Ottawa and documents the extensive dialogue between the City and the client team over the course of two years.

A full discussion of the Trinity Development Corporation planning for the redevelopment of the property at 70 Richmond Road is provided in the Fotenn Planning Design Intent as well as in the Heritage Impact Assessment. The proposed development contemplates the relocation and integration of the Champlain Oil Service Station as a feature element. In order to facilitate the planned development and allow construction of a below grade parking garage the Service Station will be moved temporarily from its original site to a location across Richmond Road and then following construction of the apartment building to a permanent location at the front of the site where remedial work and restoration work as described in this document will be undertaken.

## 1.2 Condition

**The Champlain Oil Company Service Station** has been vacant for a number of years with no maintenance undertaken on the structure. Based on the assessment from both John G. Cooke Consulting Engineers and Cleland Jardine Engineering Limited, the building is in poor to fair condition.

The Service Station is a 100m<sup>2</sup>, one storey structure constructed in 1937 (Patterson Group EA 70 Richmond Road Title Search Deed NP45576 Registered Feb 16, 1937, Champlain Oil Company). The structure is made-up of three parts - a cottage retail, administration office (transition), and a two-bay service area. The foundation consists of cast in place perimeter concrete walls with a chamfered stepped base approximately 12". It is assumed that the foundation extends down approximately 5' below grade and is supported on perimeter footings.



The floor construction is concrete slab on grade. A small portion of the floor in the administration area

has a wood flooring with a shallow open pit below. The service garage floor is 1' lower than the rest of the building. The interior of the cottage has been completely gutted, exposing the wall and roof structure. A load bearing wall was removed under the western chimney and a built-up wood beam was installed at ceiling level to support the concrete block gable and chimney. The roof over the cottage section has a standing seam metal cladding with chimneys at the gable ends. It consists of rough sawn 2" x 9" horizontal ceiling rafters at 20" c/c supporting sloped rafters above. In the cottage area and the roof trusses appear to be in good condition.

The roof structure, over the administration section and service bay, consists of a built-up Montreal style standing seam Mansard profile. The framing consists of rough sawn 2" x 10" joists at 24" c/c supported on a steel beam running down the middle of the double bay. The metal roofing in the transitional area has failed and there is significant water infiltration. Cooke's report suggests that significant portions of the roof structure are deteriorating.

The service bay area is an open space framed by two exterior block walls, the interior brick wall and the north (front) wall with a single block pier and two large garage door openings. The interior cinder block loadbearing wall separating the transitional area from the service bay is in poor condition, with a large fracture across the doorway opening at the back of the building, and a variety of cracks in the wall at the front. The flooring in this space appears to be a concrete slab on grade. The exterior masonry walls are in fair to poor condition with localized vertical cracking noted in several locations. Based on a few limited areas, where holes in the masonry were noted, the masonry does not appear to be grouted nor reinforced.

The elevation plan and pictures ( Figure 2) document the condition of the partition wall. The demolition drawing submitted as part of the application to move recommends its demolition. The three sections of the building – cottage, office, and garage (Figure1) are defined attributes in the designation, but it is not clear if the interpretation requires them to be separate spaces. The wall is in very poor shape. This wall is a load bearing wall and if it is removed support for the roof is required.

The wall between the cottage and the office was removed before designation, which suggests that there is some ambiguity. Given the poor condition and the client’s preference to have the wall removed, demolition is being recommended. This wall is a load bearing wall and with its removal there will be need to provide new roof support.

Options such as distinguishing marks on the floor and a dropped header with columns will be introduced as a means of interpreting the original three-part interior.

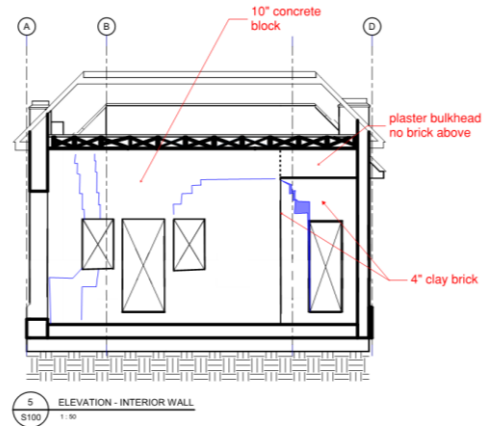


Figure 2: Interior dividing wall. Source: Cleland Jardine

### 1.3 Comparative Examples

The 55 Saint-Viateur Street Station in West Montreal is a mirror image of the Service Station at 70 Richmond Road. Source: photo: Justin Bur 2017



Below the example from the Municipality of Champlain near Trois-Rivieres has a similar cottage form but only a single service bay and no display section. The cottage form with standing seam metal roofs would appear to be a branding feature. The garage door has been infilled.

Figure 3 & 4: The images are two comparative examples of former Champlain Service Stations.



### 1.3 As-Found Record & Site Plan

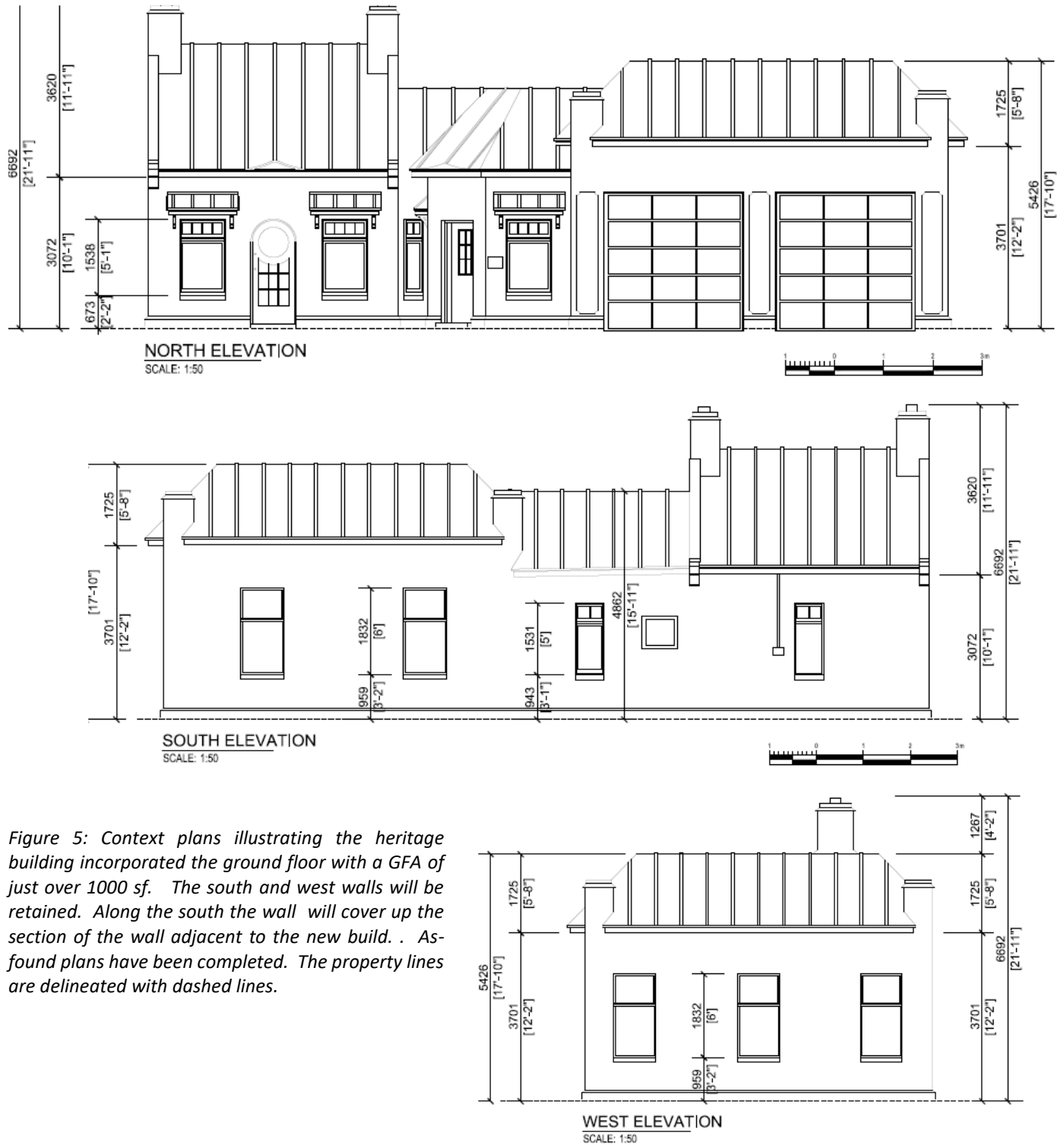
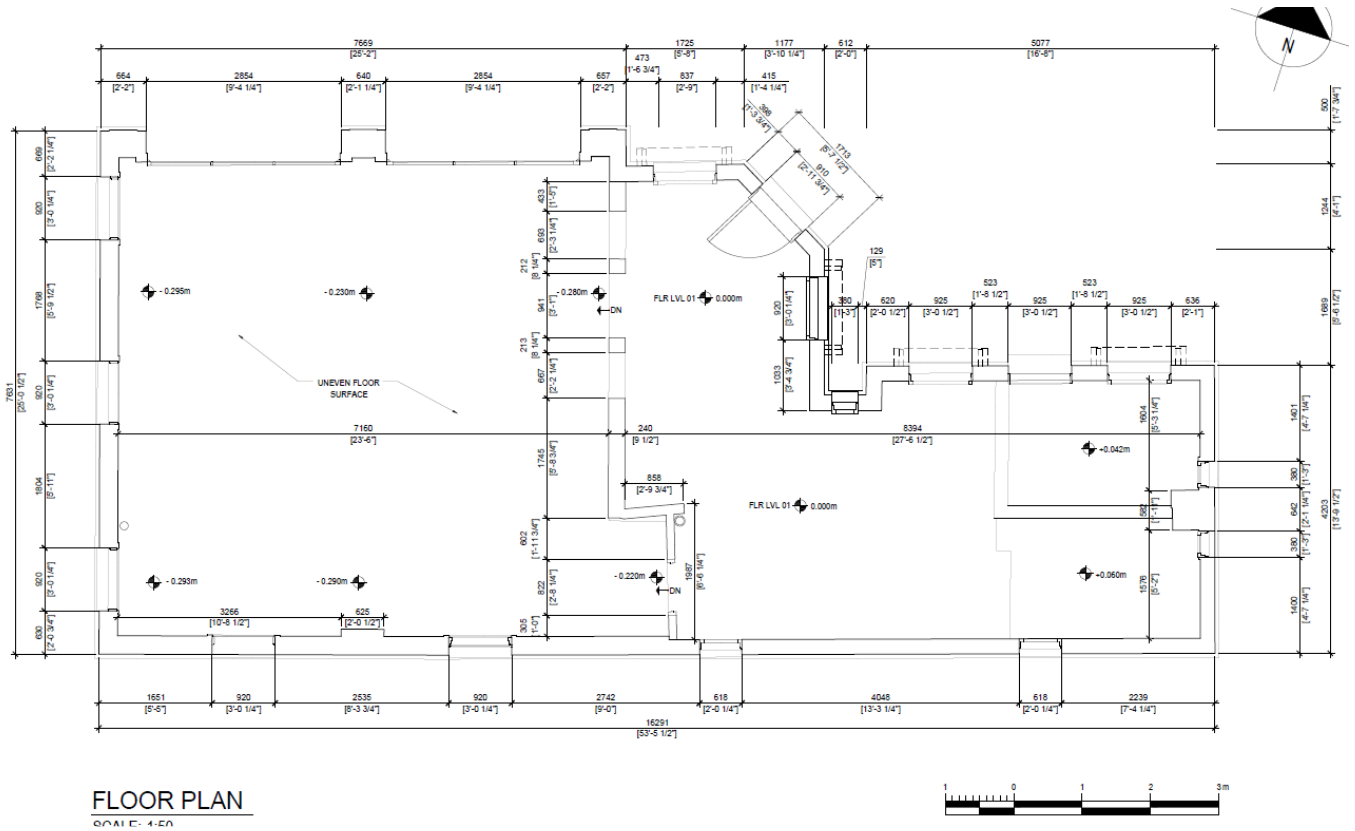


Figure 5: Context plans illustrating the heritage building incorporated the ground floor with a GFA of just over 1000 sf. The south and west walls will be retained. Along the south the wall will cover up the section of the wall adjacent to the new build. . As-found plans have been completed. The property lines are delineated with dashed lines.





## 1.4 Statement of Significance

The Champlain Oil Company Service Station has cultural heritage value as one of Ottawa's few remaining pre-Second World War service stations built when car ownership was becoming more popular. Its location on Richmond Road when it was the main highway to the west also contributes to its historical and contextual value.

The building is an interesting example of a '1930s service station, many of which were designed to evoke other building forms such as castles, cottages, or houses. The former service centre is domestic in scale, designed to resemble an English cottage. Features of the building that illustrate this include the rounded-arch doorway and round headed windows, the rectangular windows, each with an overhanging shed roof with brackets, the twin chimneys, and the steeply pitched gable roof.

The Champlain Oil Company Service Station is historically valuable for its association with the growth of private automobile ownership in Ottawa. In the early years of the car, gasoline was usually purchased by the can from the local blacksmith or from pumps in front of a general store. The first full-service gas station was constructed in Pittsburgh, PA in 1913. By the late 1920s, the rapid increase in private ownership of automobiles prompted the construction of service stations devoted solely to selling gasoline and servicing automobiles. Contextual value is found in the building's location on Richmond Road, which played an integral role in the development of the small, rural villages west of Bytown, and later Ottawa as

the main highway into the city. The Statement of Cultural Heritage Value or Interest includes a list of heritage attributes.

### Heritage Attributes

Key attributes that embody the cultural heritage value of 70 Richmond Road as an example of a cottage-style, pre-Second World War Service Station include:

1. *irregular plan, comprised of three parts; the house-form commercial section, the adjoining office area, and the two-bay service section;*
2. *rounded-arch doorway with wooden round arched door with round window;*
3. *four rectangular windows with transoms and wood awnings with standing seam metal clad shed roofs with brackets;*
4. *two slender round headed windows with semi-circular transoms and three-light fixed sash on the east façade;*
5. *two garage bays service bays;*
6. *windows on the south and west elevations that consist of fixed three light lower sash with two and three light transom sash;*
7. *twin chimneys;*
8. *variety of roof types, including a gable roof, curved roof, and a mansard roof with standing seam metal roofing;*
9. *decorative wood and metal eaves;*
10. *engaged columns projecting above the roof line in the west section of the building;*
11. *the formed concrete plinth that the building is set on; and*
12. *its location on Richmond Road.*

## 2.0 CONSERVATION APPROACH

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### 2.1 The Plan

The Plan lays out the procedures to successfully relocate the heritage designated Champlain Oil Company Service Station to assure its conservation and rehabilitation as part of the ground floor retail. This report updates and elaborates on the information previously submitted. Additional details are and will be presented as Addenda to this document.

The properties making up the development site are located at the intersection of Island Park Drive and Richmond Road within Richmond Road/Westboro neighbourhood in the Kitchissippi ward. They include a single storey, cottage form Service Station constructed in 1937 that will be moved and a single-family residence at 376 Island Park Drive that will be demolished. The Service Station, designated under Part IV of the Ontario Heritage Act, will be moved from its original location at the rear of the property to a temporary location across the street (see figure 8 & 9). It will be returned to the site once the new development is constructed and set in its final position on a new foundation above the parking slab and there undergo rehabilitation.

The Service Station will be integrated into the ground floor facade of the proposed mid-rise and will become a ground floor retail space. Issues with the structural stability of the building, are being addressed by Cleland Jardine Engineers who determined the practicality of moving the building as a single structure. Their recommendation is to retain the Station in its entirety, stabilize it, move it as a single structure, and set it on a new foundation where necessary restoration will be undertaken.

CDS House Movers prepared a detailed step by step plan for moving the station outlined in Addendum B of this report. A methodology for stabilizing the Service Station in order to move it in its entirety is laid out in Appendix A by Cleland Jardine. They are also preparing documents for the retrofitting of the roof and structure once it is repositioned as part of the proposed development. Figure 3. provides a plan of the temporary location of the Service Station across the street at 77 Richmond Road. CDS Movers has laid out the proposed moving path sequence.



Figure 8: Plan and view illustrating the temporary location for storing the Service Station across from the Richmond Road site. In its temporary location the hydraulic wheels will be removed and the building set on cribbing.

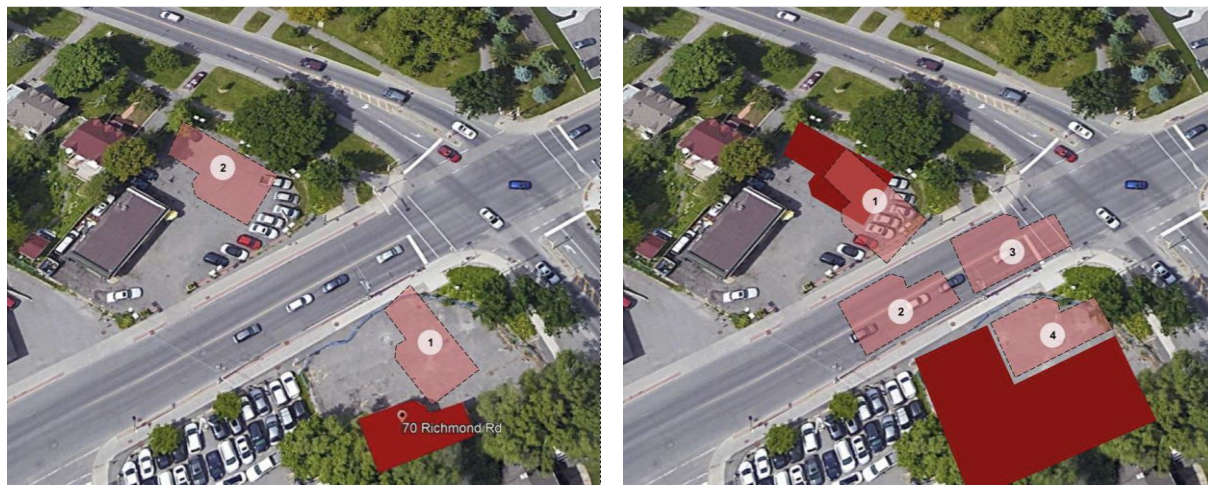


Figure 6 & 7: Diagram of the planned sequence of moves prior to the construction of the apartment midrise and post construction bringing the Station back on site and positioning. CDS House Movers Inc 2023.

## 2.2 Standards and Guidelines of the Conservation of Historic Properties in Canada

The new Official Plan 4.5 references the Parks Canada Standards and Guidelines. Both the HIA and the Conservation Plan have been assessed against these Guidelines. The Standards and Guidelines identify three primary conservation treatments, Preservation, Restoration and Rehabilitation; two of which are applicable:

**Preservation** involves protecting, maintaining, and stabilizing the existing form, material and integrity of a historic place or individual component, while protecting its heritage value. Consider Preservation as the primary treatment when: (a) Materials, features and spaces of the historic place are intact and convey the historic significance, without extensive repair or replacement; (b) Continuation or new use does not require extensive alterations or additions.

**Rehabilitation** involves the sensitive adaptation of a historic place or individual component for a continuing or compatible contemporary use, while protecting its heritage value. Consider Rehabilitation as the primary treatment when: (a) Repair or replacement of deteriorated features is necessary; (b)

The primary conservation treatment for the Service Station is REHABILITATION where alterations and additions are planned for a new use of the house-form Commercial section, the adjoining Office area, and the two-bay Service section.

The following applicable guidelines appear in *italic* with a discussion of how the conservation approach:

### ***General Standards for Preservation, Rehabilitation and Restoration***

***Standard 1. Conserve the heritage value of a historic place. Do not remove, replace, or substantially alter its intact or repairable character defining elements. Do not move a part of a historic place if its current location is a character-defining element.***

The location of the building at the south-west corner of the lot is a character-defining feature of its original use as a Service Station with parking and access lanes taking up most of the lot that fronts onto the two access roads. The building is being relocated to the north-east corner of the lot to be a prominent feature of the proposed development. Policies in the old Official Plan Section 4.6.1 Heritage Buildings and Areas, specifically 4.6.1.4 (a) states “*Where relocation of a structure designated under the Ontario Heritage Act is proposed, the City will require that the Heritage Impact Assessment demonstrates that relocation is the only way to conserve the resource. The City may consider the option provided that: [Amendment #76, August 04, 2010] [Amendment #96, February 22, 2012]*

*(a) The building is retained on site, but moved to another part of the property for integration into the new development”*

**Conservation Approach:** The proposal being put forward involves moving the building in its entirety. This plan requires two moving activities that will be separated by short-term storage off-site.

The proposal envisions relocating the Service Station to a location across the street to allow for excavation and construction of the below-grade parking structure. The service station will be severed from its existing foundation, stabilized, hoisted, and rolled across the street until the new mid-rise is completed when it will be rolled back across the street and placed on a new foundation.

### **Potential risk:**

The Service Station is in poor condition with noted deterioration, which poses a risk when it has been

severed from its foundation and is subjected to changes in loading. Potential damage may occur during transportation such as cracked masonry joints. The procedure calls for construction in-place of a steel frame structure using beams needed through the wall at periodic intervals and grouted in place.

Details of the methods for bracing, preparing the masonry, severing the foundation are described and should minimize risk (Appendix B.)

#### **Mitigation Measures**

- Lifting and moving a structure of this scale is a relatively common process. CDS House Movers are experienced contractors and recognized experts.
- The main negative impact to the heritage fabric will be the introduction of bracing and the beams used to support the block walls. In order to mitigate risk of cracking, masonry conservation and grouting will stabilize the concrete blocks and allow the walls to resist changing loads. The grouting will be undertaken prior to severing the concrete foundation walls allowing the building to be lifted and transported as a unit. Heavy duty steel strapping (Sections 1, 2, & 3 below) will support the lower portions of the wall.
- To ensure the outer walls are restrained, cross bracing will be introduced to brace the walls before the move and left in place until the building is returned to its permanent location.
- As part of the mitigation, a survey of the structure has been carried out by Cleland Jardine and will be updated following the move to the temporary storage location to ensure that any damage to the masonry is noted and if necessary, repairs undertaken. (see Figure 2)
- Prior to moving the Service Station, doors, windows, and all removable character defining attributes will be documented, labeled, crated, and stored for restoration and future reinstallation. These are discussed in section 2.5 Interventions to Specific Attributes.

***Standard 2. Conserve changes to a historic place that, over time, have become character-defining elements in their own right.***

**Conservation Approach:** Preservation and rehabilitation

The exterior of the building retains its original form, detailing, and materials from its construction date in 1937. Major alterations are noted to the service bays and the interior of the entire building. At some point the interior was totally gutted with interior finishes removed and the wall between the house-form commercial section and the adjoining office area demolished. The plaster on the strapped interior walls was removed exposing the block walls. The two garage doors were replaced.

***Standard 3. Conserve heritage value by adopting an approach calling for minimal intervention.***

**Conservation Approach:** Rehabilitation

The proposed relocation of the building within the lot is a major intervention; however, given the limitations of the site, the most practical means by which to conserve the building is to relocate it to the north-east corner of the site in a prominent location fronting on to Richmond Road. The Service Station will be aligned in the same east-west configuration.

***Standard 4. Recognize each historic place as a physical record of its time, place, and use. Do not create a false sense of historical development by adding elements from other historic places or other properties, or by combining features of the same property that never coexisted.***

**Conservation Approach:** Rehabilitation

The proposed relocation of the building to the north-east corner of the site does create a false sense of the development of the property; however, the retention of the three functional components – the house-form commercial section, the adjoining office area, and the two-bay garage section, identifies its original use as a Service Station while introducing a new distinguishable use.

***Standard 5. Find a use for a historic place that requires minimal or no change to its character-defining elements.***

**Conservation Approach:** Adaptive Reuse

Although the building will be relocated, the character-defining features, as identified by the Statement of Cultural Heritage Value will be conserved. The functional layout of the building and the scale of the building makes it suited as retail space. Its integration will be more fully addressed as part of the development plan phase of the project.

***Standard 7. Evaluate the existing condition of character-defining elements to determine the appropriate intervention needed. Use the gentlest means possible for any intervention. Respect heritage value when undertaking an intervention.***

**Conservation Approach:** Preservation

The Conservation Plan addresses the condition of the character defining elements, and any elements that are too deteriorated to repair will be noted. The Plan addresses the management of the Service Station throughout the move, its condition and conservation. The entire building has been recorded and a detailed condition report, along with a stabilization and preparation for moving report has been prepared including risk analysis and costs.

***Additional Standards Relating to Rehabilitation***

***Standard 10. Repair rather than replace character-defining elements. Where character-defining elements are too severely deteriorated to repair, and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements. Where there is insufficient physical evidence, make the form, material and detailing of the new elements compatible with the character of the historic place.***

**Conservation Approach:** Preservation and rehabilitation

***Standard 11. Conserve the heritage value and character-defining elements when creating any new additions to a historic place or any related new construction. Make the new work physically and visually compatible with, subordinate to and distinguishable from the historic place.***

CDF - its location on Richmond Road.

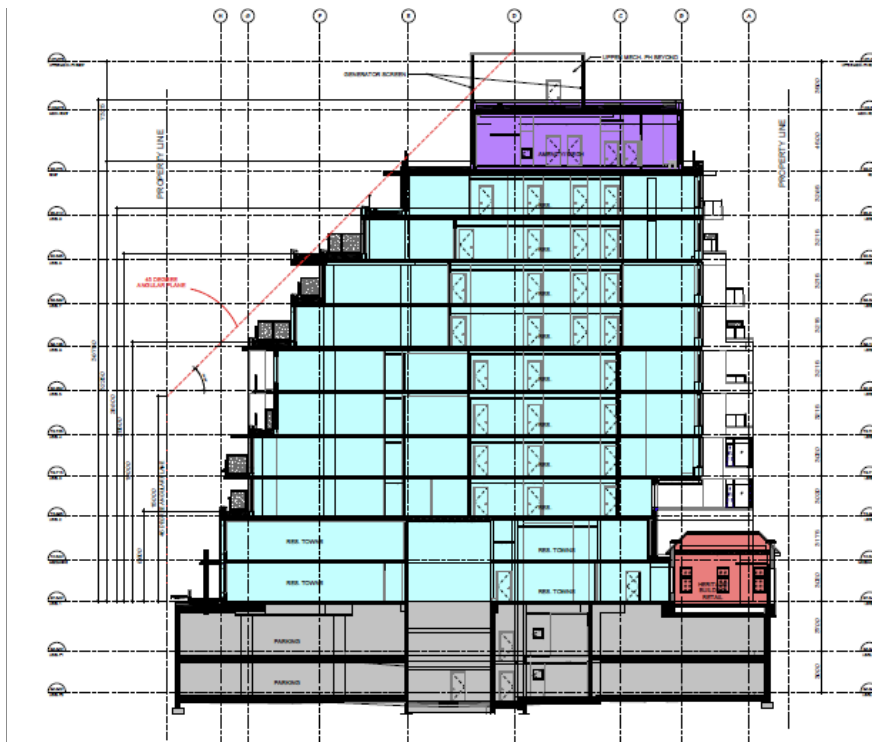
**Conservation Approach:** The development proposal is to construct a 9-storey midrise on the lot and set the Champlain Oil Company Service Station at a prominent location at the north-east corner of the site set proud of the new building. To achieve any degree of subordination it is important that the Service Station holds a defining location and can be interpreted as a distinct feature separate from the overall tower. The plan positions the station on the north-east property line, which provides the prominence. To give a subordinate role to the new building the Service Station will be placed in such a manner to offer a

three-dimensional view of the eastern portion by setting it proud of the Richmond Road elevation of the new building. The same strategy will be used for the two-bay section, setting the new building wall back from the face of the garage by 2.25 metres and having it visually appear to be a separate building.

**Potential Risk** The challenge is to make the new 9-storey development physically and visually compatible with the 1-storey Service Station. Because of the differences in scale, it is considered key to its visual compatibility that the materiality, and colour of the base of the midrise act as a backdrop to the Service Station without overwhelming it.

**Mitigation** Over the course of the design process, the design team considered several options that addressed visual compatibility and connecting the heritage building to the new building through clear and related datum lines, which were reviewed by the city. These various iterations demonstrate the analysis that has gone into finding a compatible approach to meet Guideline 11 of PC Standards and Guidelines. Some of the revisions include:

- the removal of the large vertical stone column replacing it with a more neutral finish as shown on the revised plans;
- reducing the projection of the glazed bay over the service garage and removing it from the first three floors,
- setting the service bays proud of the midrise;
- establishing the height of the entrance canopy to reference the garage; and
- setting the new building back from the south elevation to offer a more compatible relationship with the residential neighbourhood along Island Park.



*Figure 9: The cross section through the entire complex illustrates the position of the Service Station (pink) and its relationship to the midrise (turquoise). Source: Hobin 2023.*

## *Guidelines for Buildings*

### *4.3.1 Exterior Form*

#### *General Guidelines for Rehabilitation*

#### *Additions or Alterations to the Exterior Form*

##### ***Standard 12. Selecting a new use that suits the existing building form.***

**Conservation Approach:** The proposed retail use suits the existing Service Station building form. The change in grade between the service area and the garage will have to be modified to address accessibility requirements. The opportunity to have the garage doors operable will be positive for potential tenants and allow for the continued interpretation of the service bays.

##### ***Standard 13. Selecting the location for a new addition that ensures that the heritage value of the place is maintained.***

**Conservation Approach:** The most effective way to conserve the heritage value of the building is to move it to a prominent location at the front of the proposed development. Such a move assures that its visibility is maintained and placing it forward on the site suggests that the new build is subservient.

## 2.3 Interventions to Specific Attributes.

Interventions required that are physically and visually compatible to preserve character-defining elements as part of the conservation plan. All the Heritage Attributes listed in 1.4 Statement of Significance are addressed as part of the Conservation Plan.

(CDF) - A variety of roof types, including a gable roof, curved roof, and a mansard roof clad in a standing seam metal roofing;  
- decorative wood and metal eaves;

### ***Conservation Approach – preservation and rehabilitation as required.***

The standing seam metal roof membrane is an important character defining feature and will be reconstructed. The flashings in the valleys of the roof and around chimneys and at junctions between roof forms have failed as is evident by the stained wood sheathing as noted in John Cooke’s review. A new standing seam metal roof will replace the existing. The distinctive standing seam metal roofs on the awnings above windows and doors will be preserved depending on condition following detailed inspection. Remedial work prior to the move includes patching of the existing roof to prevent further damage.

The roof membrane and decking will have to be replaced due to the deteriorated condition of the roof deck. The roof structure, in addition to requiring repairs, will also be subjected to snow loads from being at the base of the new mid-rise structure and seismic requirements will also need to be addressed. Along the west elevation the heritage building will sit flush with the new concrete shear wall structure supporting the projecting bay above at the third floor. There will be a requirement for a hopper to direct water coming off of the garage roof away from the shear wall.





Figure 10: images of the standing seam roofs. Note the diverter flashing treatment above the doors.

**Impact.**

- On the west elevation a portion of the eave will be trimmed to accommodate the shear wall required to support the cantilevered portion above.
- On the south elevation the link roof will be lowered to avoid modifying the eave line. See Figure 15 sketch below.



Figure 10: Views clockwise - 1. from the west illustrating the recessed link between the Station and the apartment, 2. Aerial view illustrating the massing and ability to interpret the entire building as a separate feature. 3. A view looking south east illustrating the side window. Source: Hobin architecture 2023.

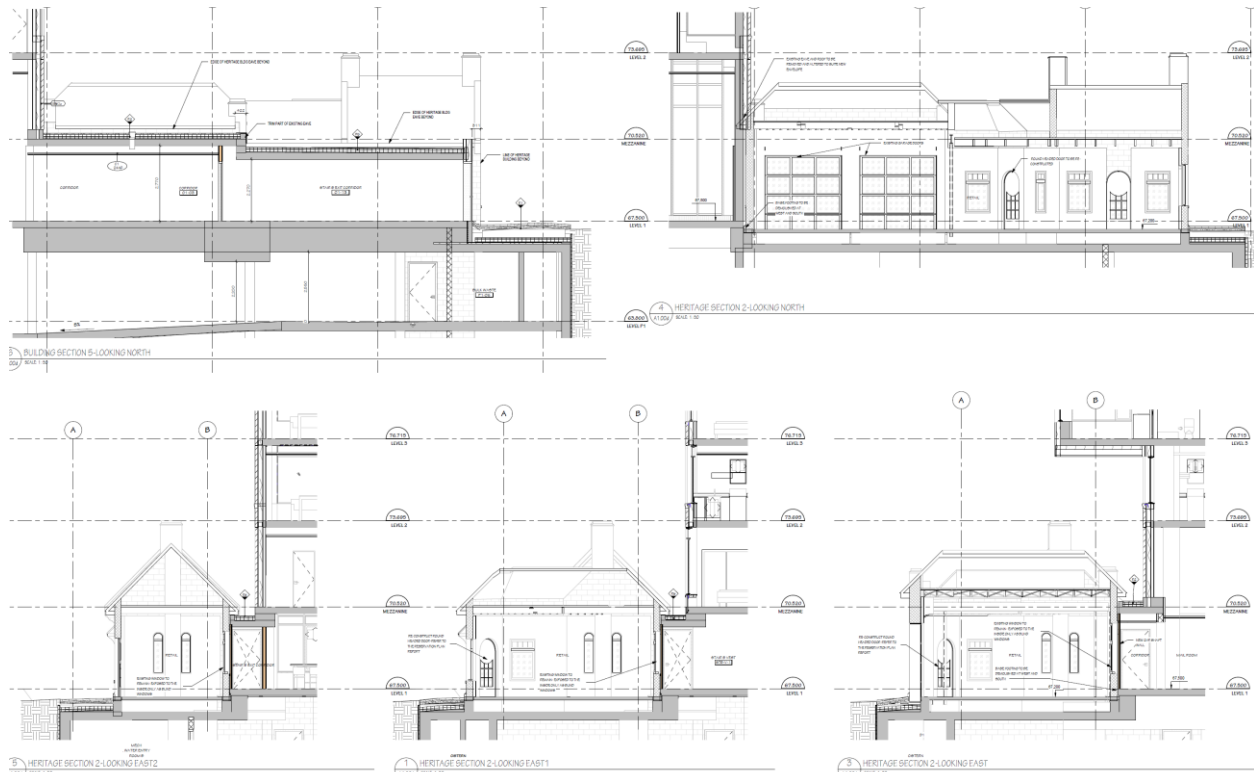


Figure 11: South Elevation: The flat roof linking the Service station to the development has been stepped to avoid damaging the stepped eaves. See yellow hi-light. Source: Hobin Architecture 2023.

### 2.3.1 Exterior Stucco Finishes, Chimneys, Buttresses, Windowsills

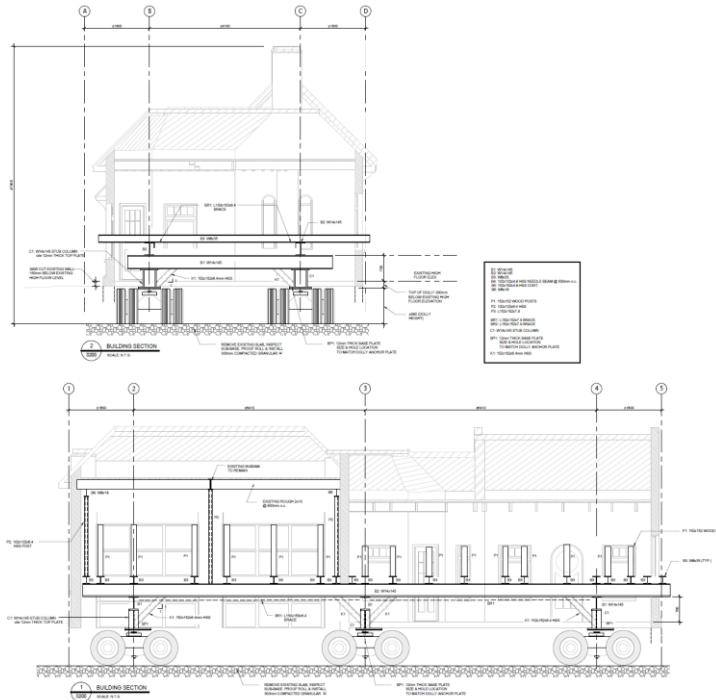
CDF) - twin chimneys; decorative eaves; engaged columns in west section of the building; the formed concrete plinth that the building is set on.

#### Conservation Approach – Restoration

The exterior perimeter walls as well as the interior wall between the service bay and the administration area consist of 200mm load bearing cinder masonry block walls with a stucco finish on the exterior and lath and plaster applied to wood strapping on the interior. An infill brick is used to frame out around windows and doors and to form the windowsills. The two chimneys and the four buttresses that project above the roof line in the garage will be retained as part of the exterior stucco finish and moved with the building. Analysis of the stucco indicates that the exterior stucco does not contain asbestos. (see Appendix B)

**Impact:** Moving the Building will require the block walls to be consolidated with grout and a series of structural steel beams and pins to carry the load and secure the building for moving. The vertical cavities will be grouted at 32" c/c to increase the lateral resistance of the walls as they are currently very poor. The structural consolidation and the metal frame with pins and strapping will result in extensive damage to the lower sections of the walls.

Paint analysis will be carried out for the exterior features of the Service Station. A colour palette will be prepared focusing on the body and trim colours for the stucco and plinth, window surrounds cottage doors and the garage doors as well as the roof and eaves. The cottage style is an early example of corporate marketing. Research is presently underway to determine if there was a corporate colour scheme for Champlain Oil Company Service Stations.



Structural Protrusions will not align with existing block coursing and removing full blocks in those areas will result in very large openings. For structural reasons, the openings should be as small as possible in order to leave as much masonry in place as possible. Since the stucco on the exterior will be patched and reparged, and the interior will be insulated and clad with drywall, openings should be cut out as required and later patch with new blocks and grout. Cleland Jardine Engineers. 2023.

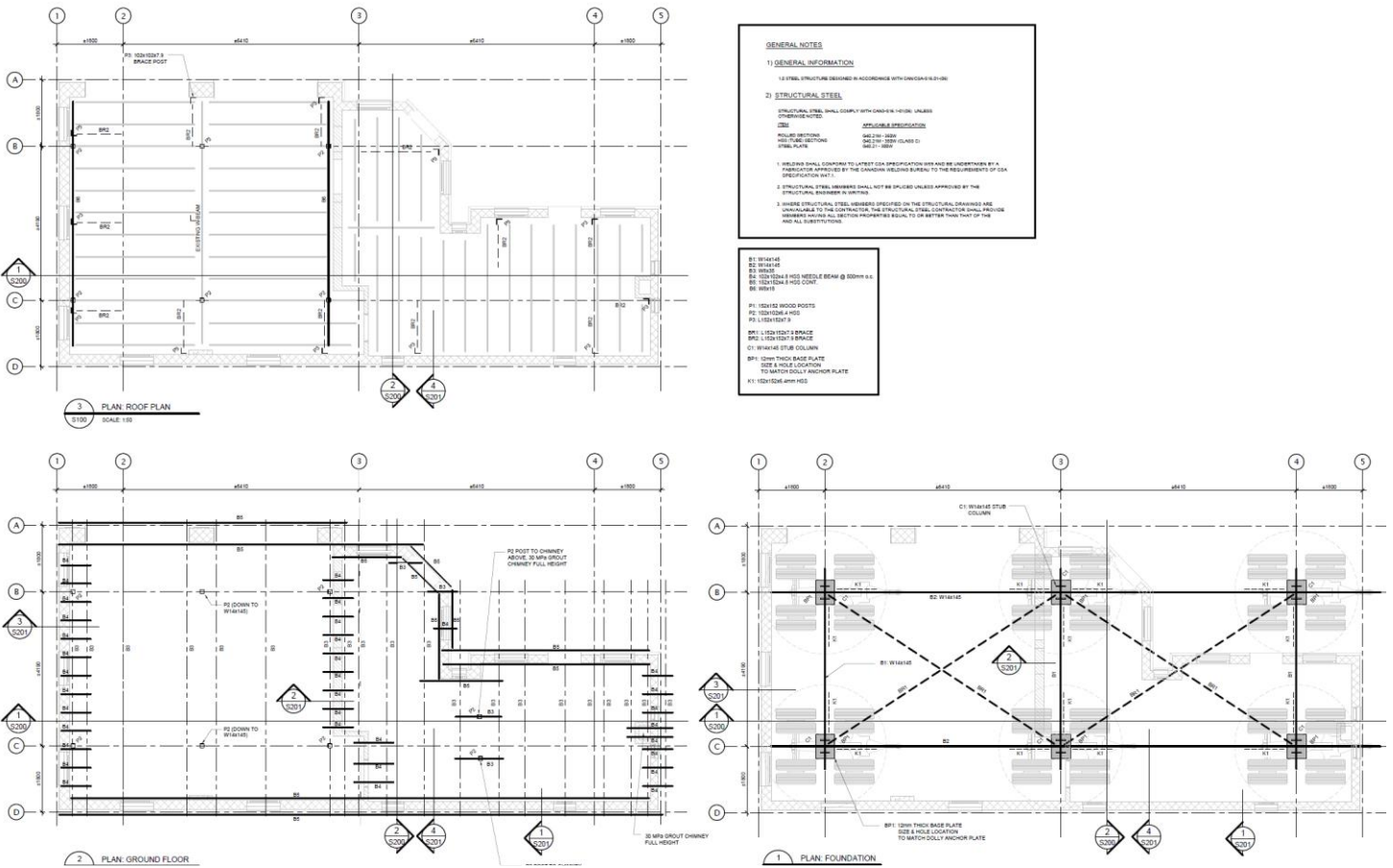


Figure 11: Positioning of structural steel and needles required to support the structure during moving. Source: Cleland Jardine Engineers. 2023.

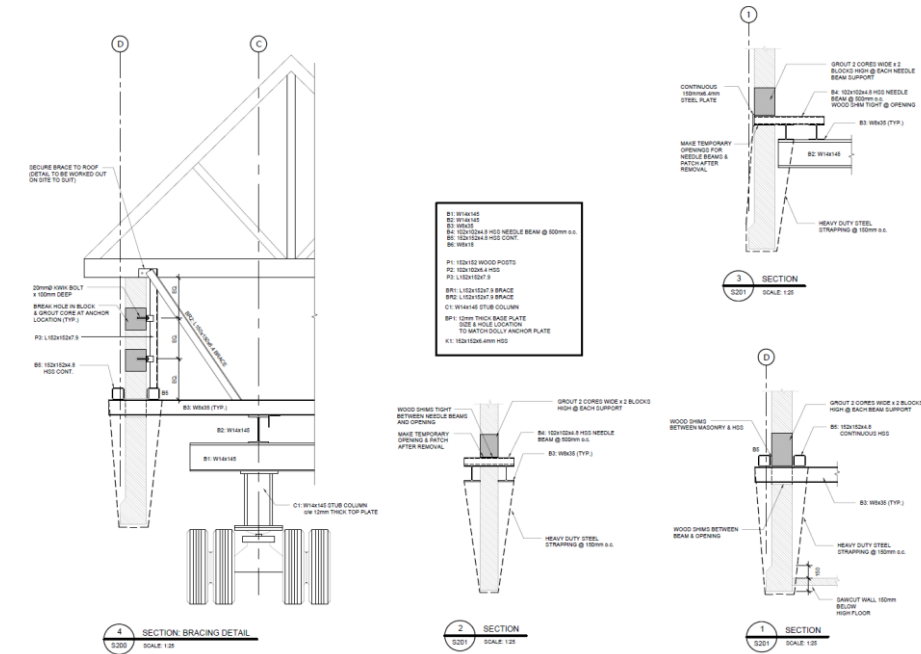


Figure 12: A series of drawings detailing the methodology for stabilizing the block walls by anchoring inserted pins in grout and introducing heavy duty steel strapping. Source: Cleland Jardine Structural Engineers 2022.

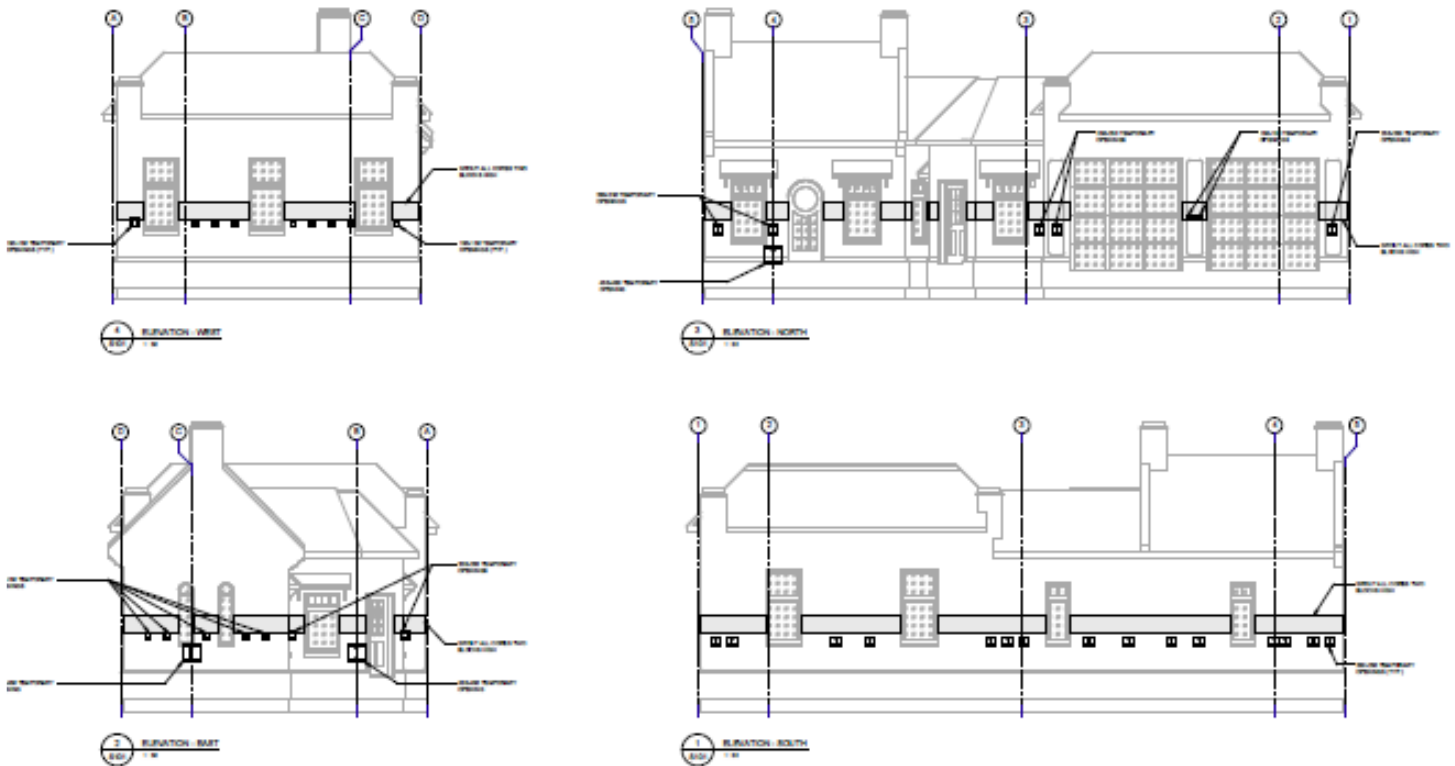


Figure 13: The elevations document the openings required to stabilize the block walls. The attached drawing S101 indicates the location of masonry openings. Source: Cleland Jardine Engineers. 2023.

### 2.3.3. The Interior Wall

(CDF) identifies the house-form consisting of commercial section, the adjoining office area, and the service bays.

#### Approach Demolition

The elevation plan and pictures ( Figure 19) document the condition of the partition wall. The demolition drawing submitted as part of the application to move recommends its demolition. The three sections of the building – cottage, office, and garage (Figure1) are defined attributes in the designation, but it is not clear if the interpretation requires them to be separate spaces. The wall is in very poor shape.

The wall between the cottage and the office was removed before designation, which suggests that there is some ambiguity. Given the poor condition and the client's preference to have the wall removed, demolition is being recommended. This wall is a load bearing wall and with its removal there will be need to provide new roof support.

#### Mitigation

Options such as distinguishing marks on the floor and a dropped header with columns will be introduced as a means of interpreting the original three-part interior.

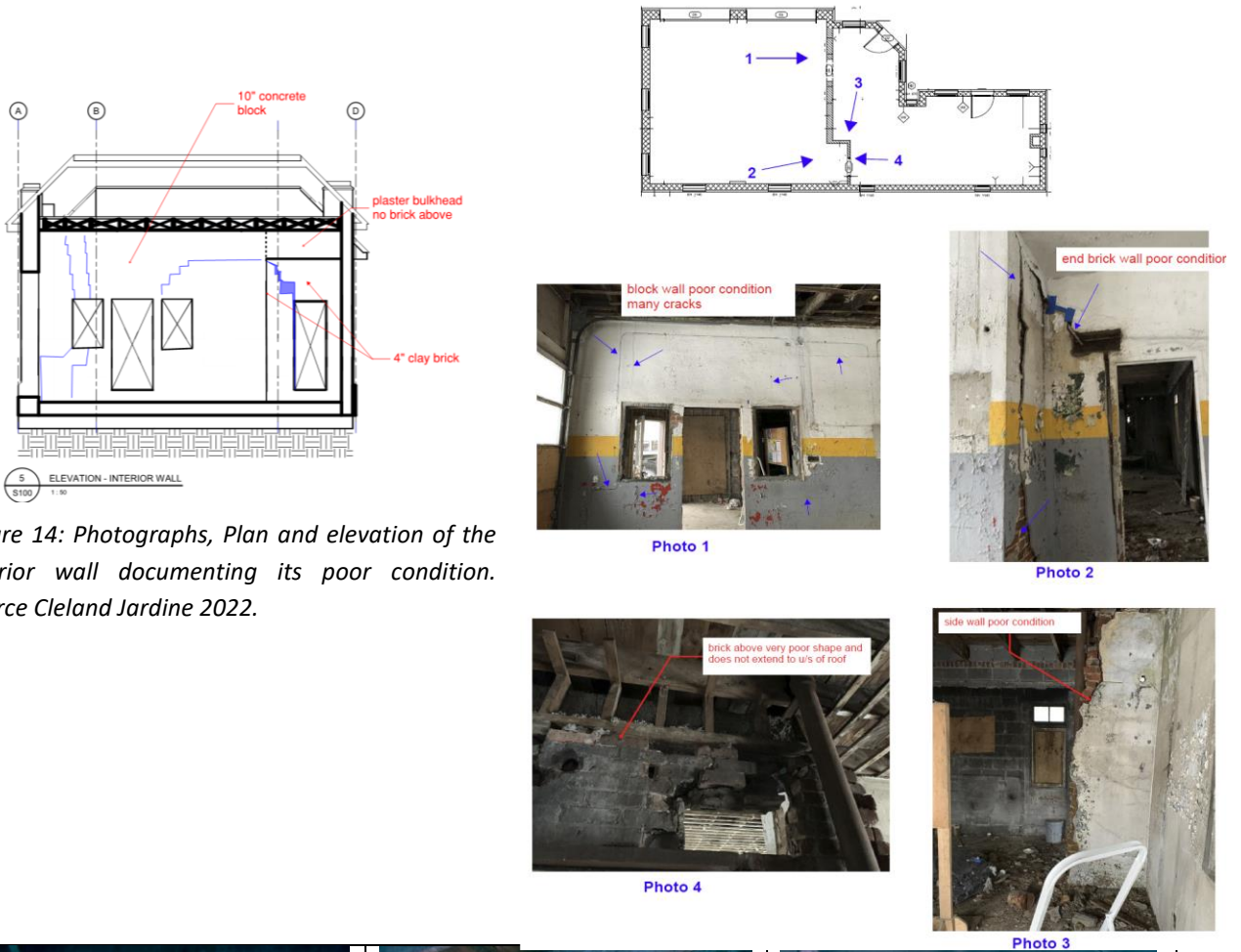


Figure 14: Photographs, Plan and elevation of the interior wall documenting its poor condition. Source Cleland Jardine 2022.



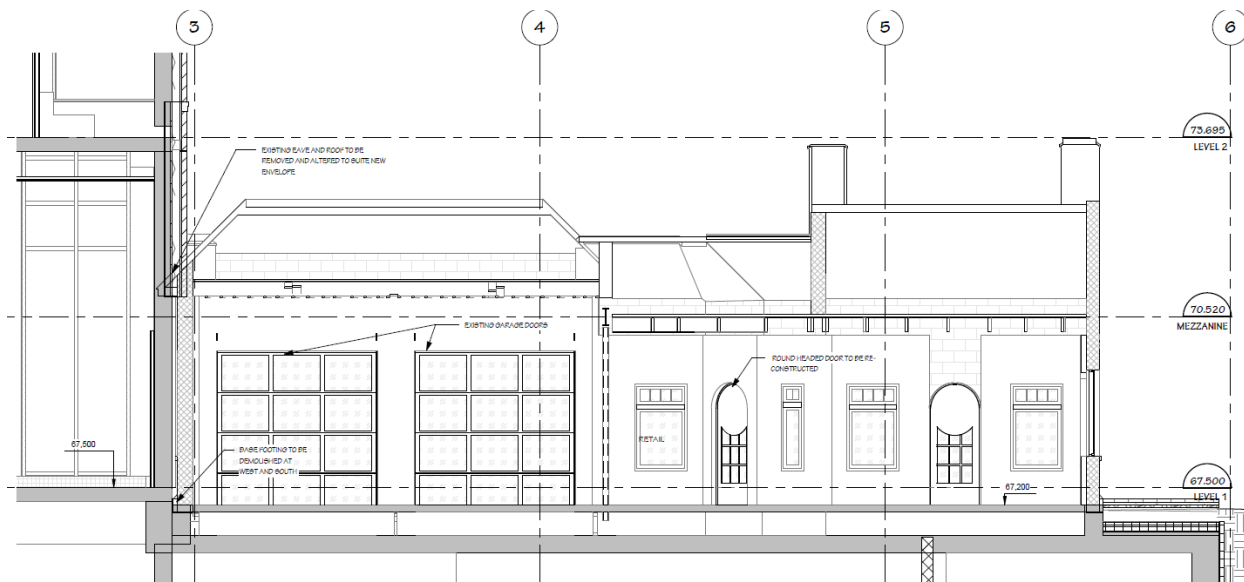
Figure 20: Interior views; 5. Looking towards the east wall with round headed windows on either side of the chimney. View 6. And 7. Interior views of transition area and the service bays. Source Commonwealth 2021

### 2.3.3. The West Elevation.

#### Conservation approach – Adaptive Reuse

The three sections of the house form are character-defining features and will be stabilized before being moved as a unit to a storage area and then to the front of the site where restoration will take place.

The floor treatment, and underside of the roof, the interior east wall and portions of the west and rear walls will define the Service Station in relation to the new planned retail. The plan being considered is to develop the service bays as a seating area with the ability to open the garage doors, the central section will serve as the sales and product display area and the former office will provide additional seating



HERITAGE SECTION 2-LOOKING NORTH  
SCALE: 1/8"=1'-0"

Figure 11: Section looking north with the West wall indicating the structural shear wall will block three windows along the west elevation.

The separation between the office and the sales/waiting area had been previously opened with a structural beam defining the spaces. A similar approach will be taken with the existing partition wall removed and a drop beam and columns defining the garage section. As part of the building's reuse, the original volumes of the interior will be defined with the floor plan opened up. Interventions to accommodate new uses will require the removal of the partition wall separating the garage portion from the sales product display area. A new entrance will replace one of the windows along the west exterior wall.

The entire building as shown on the floor plan will be moved. The reconfiguration and integration of the west and south walls as well as the interior dividing walls are discussed above.

The interior walls will be strapped and insulated with spray foam to improve the energy efficiency of the building and ensure the long-term conservation of the cinder block walls.

The service station will sit proud of the new building with one of the three windows on the west wall projecting past the front façade by 66mm. The shear wall will cover the stucco wall and the eave line will be trimmed to allow the shear wall to extend up. It is proposed that the two windows be restored as a blind window that can serve as an interpretive display on the inside. From the exterior it will be covered over by the shear wall.

### **Impact**

The modifications to the floor plan includes:

- removal of the interior dividing wall,
- setting the floor level at 67.2 throughout,
- introducing stairs between the Service station and the new development commercial,
- placing a shear wall adjacent to the Service Station west wall,
- replacing one of the windows on the west exterior wall to create a larger opening and covering the window to the south with the shear wall.
- Insulating exterior walls and covering walls and ceiling with drywall or equivalent.
- Removing the eave along the west elevation to accommodate the shear wall.

#### ***2.3.4. The House-form, Interior Floor Plan and Finishes***

CDF) identifies the house-form consisting of commercial section, the adjoining office area, and the service bays.

#### ***Conservation Approach: Adaptive Reuse.***

The three sections of the house form are character-defining features and will be stabilized before being moved as a unit to a storage area across Richmond Road, and then relocated to the front of the site where restoration will take place.

As part of the building's reuse, the original volumes of the interior will be defined with the floor plan opened up. Interventions to accommodate new uses will require the removal of the partition wall separating the garage portion from the sales product display area. Entrances will be from the two doors on the north. There will be no access from the new midrise residence. The floor treatment, and underside of the roof, the interior east wall and portions of the west and rear walls will define the Service Station in relation to the new planned retail. The plan being considered is to interpret the three sections with the service bays developed as a seating area with the ability to open the garage doors, the central section will serve as the sales and product display area and the former office will provide additional seating. It will be necessary to introduce washroom(s), potentially food service and a storage area.

The separation between the office and the sales/waiting area had been previously opened with a structural beam defining the spaces. A similar approach will be taken with the existing partition wall removed, and a drop beam and columns defining the garage section.



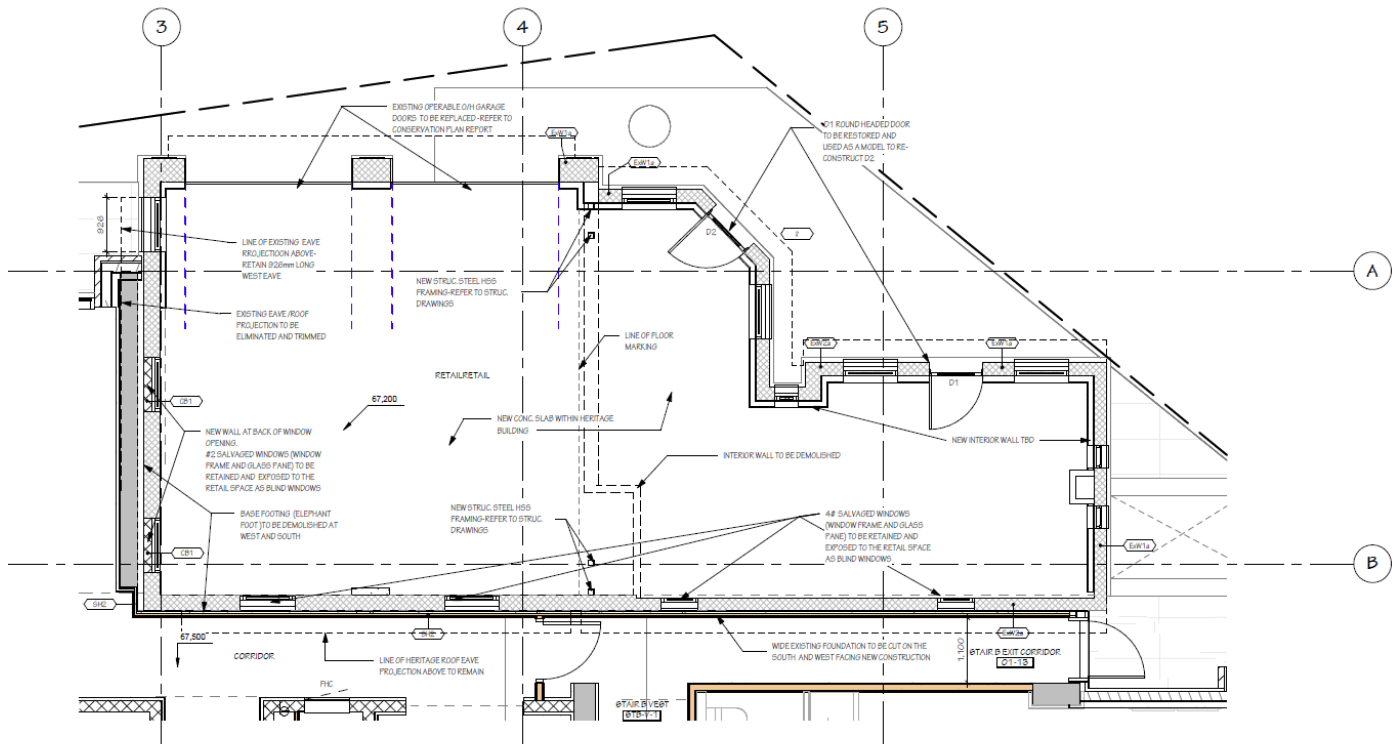
The entire building as shown on the floor plan will be moved. The reconfiguration and integration of the west and south walls as well as the interior dividing walls are discussed above.

The interior walls will be strapped and insulated with spray foam to improve the energy efficiency of the building and ensure the long-term conservation of the cinder block walls assuming that the areas will be air conditioned. The windows along the west and south elevations will be retained, restored, and viewed from the interior only. They will be treated as blind windows with backlighting.

**Impact**

The floor plan indicating the modifications includes:

- removal of the interior dividing wall,
- setting the floor level at 67.2 throughout,
- placing a shear wall adjacent to the Service Station west wall,
- Maintaining all of the windows along the west and south facades.
- Installing a 2-hour fire rated wall on the exterior south elevation.
- Insulating exterior walls and covering walls and ceiling with drywall or equivalent.



1 01-LEVEL 1-HERITAGE FLOOR PLAN  
A1.00c SCALE: 1:50

Figure 12: Retail floor plan documenting the areas of impact. Source: Hobin Architecture 2023.

**2.3.5. Windows**

(CDF) four rectangular windows with transoms and wood awnings with standing seam metal clad shed roofs with brackets;

two slender round headed windows with semi-circular transoms and three-light fixed sash on the east façade.  
 4 windows on the south and west elevations that consist of fixed three light lower sash with two and three light transom sash.

**Conservation Approach – preservation, rehabilitation, and restoration.**

The typical wood window assembly consists of wood frames set flush within the masonry openings. The As-found window and door schedule identifies four window configurations or types. They are discussed in the chart below including the conservation approach.

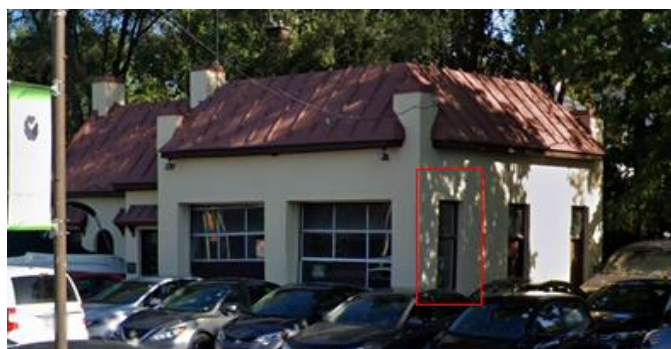






Figure13: This view highlights in red the first of the three windows along the west side of the Service Station. The proposed midrise building has been set back and allows the side windows to be interpreted from the exterior, the middle window will be converted to a larger entrance way and the most southernly window will be covered over with a structural wall being placed on the exterior of the service station’s west elevation. Source: City of Ottawa.

Window	Type	Dimension	Conservation Treatment
W1 – 2 Wood windows 	a fixed lower sash with three lights and a fixed semi-circular transom sash, with wood linings covering the exterior block reveals.	380 x 1520	Preservation: The window assemblies are in good condition and will be preserved. Repairs as needed. The existing glazing will be retained with an interior thermal unit install.
W2 – 1 Wood window next to door on the north facade	Fixed lower sash with a two lite transom	400 x1 540	Preservation: The window assemblies are in good condition and will be preserved.
W3 - two windows on the south elevation in the office and service areas. 	Windows consist of a fixed lower sash with a six-lite configuration with a fixed upper sash with a two lite configuration	620 x 2160	A combination of preservation and rehabilitation. The window frames are in good condition. The lower fixed sash have been altered with the removal of the muntins dividing the window into three lights. One of the original two light fixed transoms is in situ.
W4- Two interior windows overlooking the service bays	Sashes and Frames have been removed	700 x 1140	With the removal of the interior wall the 2 windows and 2 doors will not be replaced

<p><b>W5</b> Four windows, two in the office and two in the transition area on the east and north elevations.</p> 	<p>The window frames are set flush with the block walls and consist of a fixed lower sash with a three-light configuration with a fixed transom above with a four-light configuration. A metal hood awning is set above each of the windows</p>	<p>920 x 1540</p>	<p>A combination of preservation, and rehabilitation. The 4 window assemblies are in good condition overall, one of which retains its original three light fixed lower sash and four light transom sash that will be preserved. New single glazed three light fixed wood sash replicating the original form and detailing will be inserted where the original sash have been altered. New single glazed fixed transom sash with a four light configuration will be inserted where the sash has been altered. The existing glazing will be retained with an interior thermal unit install.</p>
<p><b>N6</b> – five windows on the south and west elevations in the garage service bays</p> 	<p>consisting of a fixed lower sash with a 9 lites configuration with a fixed transom sash with a 3 lite configuration. (see historic photo 1947 figure 14.</p>	<p>920 x 1880</p>	<p>A combination of preservation and rehabilitation. One window will not be reused. The historic photograph indicates that the windows were multi-pane with 9 lights with a transom above. Two of these windows on the south elevation will have a fire lite glazing.</p>

**2.3.6. Entry Doors**

**Conservation Approach: Restoration and Reconstruction**

*(CDF) – rounded-arch doorway with wooden round arched door with round window.*

The distinctive entrance door to the office will be retained and preserved, as will the awnings above the windows and doors. The round-headed door will be repaired as necessary and used as a model for the reconstruction of the second door, which had been altered at some time.

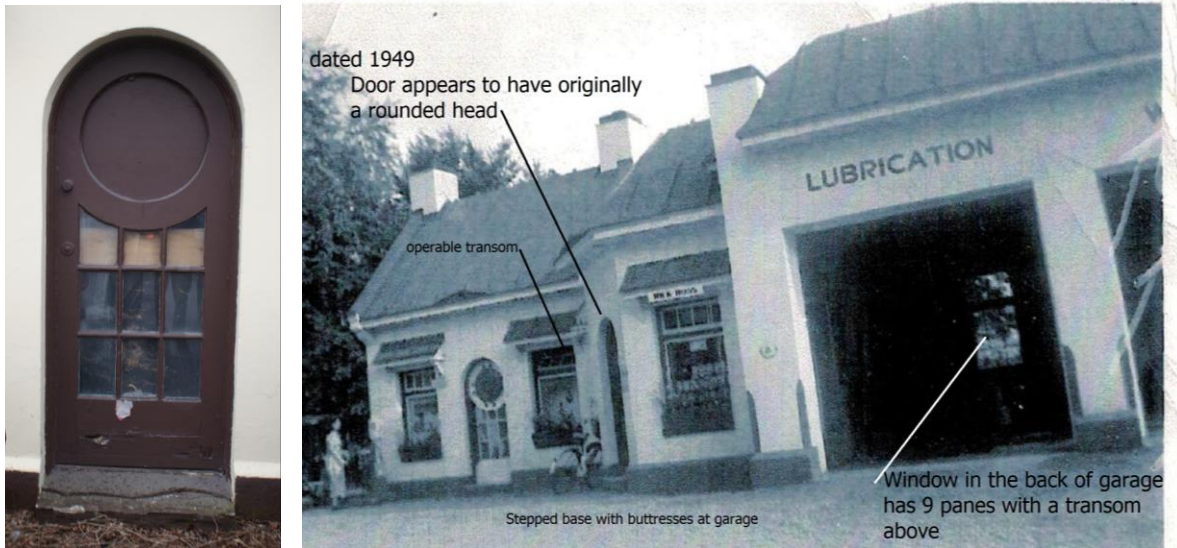


Figure 12 : Circa 1949 – 50. The historic view of the Service Station provides reference information supporting the conservation of the round headed doors at both entrances. Other features include the stepped foundation with chamfered treatment at the base of the service bay entrances. Over time, the scale of the stepped foundation has been reduced as grade was raised with the addition of asphalt. Source: Ottawa Archives, John Newcomb Collection.

### 2.3.7. Garage door

#### Conservation Approach – preservation, rehabilitation, and restoration.

(CDF) – two garage bays service bays;  
 - engaged columns projecting above the roof line in the west section of the building.

Overhead garage doors were first invented by C. G. Johnson who founded the Overhead Door Corporation in 1921. Mass production began in 1924 at a plant in Hartford City, Indiana. Overhead sectional garage doors were typically constructed of wood through the 1960s.

The garage doors of the two-bay section are aluminum finished and appear to be replacement units. They will be replaced with operable sectional overhead doors with glazing panels for the proposed retail use. The floor level of the Service Station has been set at 67.2 throughout. This will require the floor relationship between the office and the services bays to be modified and the height of the garage door reduced.

As illustrated below the rails will be wood with a defined profile.

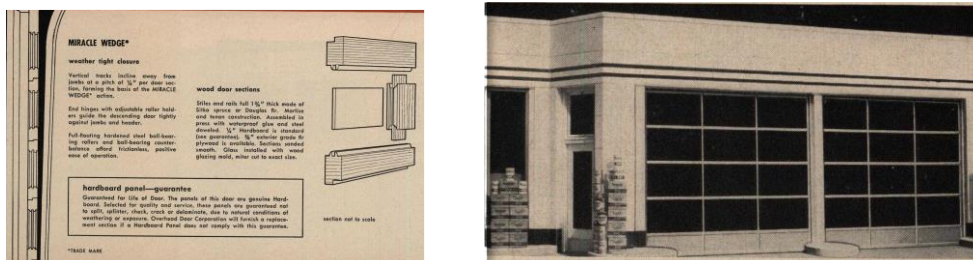


Figure 13: Illustrations from the Overhead Garage Door Corporation catalogue is one of a number of period catalogues sourced.

## 3.0 PROCEDURE/TIMELINE

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### 3.1 Sequence of Work

The following provides an outline sequence of the work plan:

#### **Abatement of Regulated Materials.**

1. No asbestos or other significant designated substance is present in the exterior stucco but is identified in the interior plaster finishes and will require mitigating measures.

#### **Previous Removals Fit-up and Finishes**

2. Photo document the previous interventions of both heritage and non-heritage interior interventions consisting of partition, ceiling, and wall finishes, including the interior hollow core doors, with their associated hardware and fixtures.

#### **Part 1 Enabling Work**

3. Identify where and make openings in the block wall for the insertion of beams.
4. Create localized openings for needle beams grouting of the masonry blocks.
5. Documentation of windows to be removed. These elements will be documented, with sashes labelled, crated, and stored for restoration and future reinstallation.
6. Recording, removal and store the existing round headed door for restoration and future reinstallation. The existing round headed door will be used as a model for the second door to be reconstructed.

#### **Part 2 Preparation for Lifting**

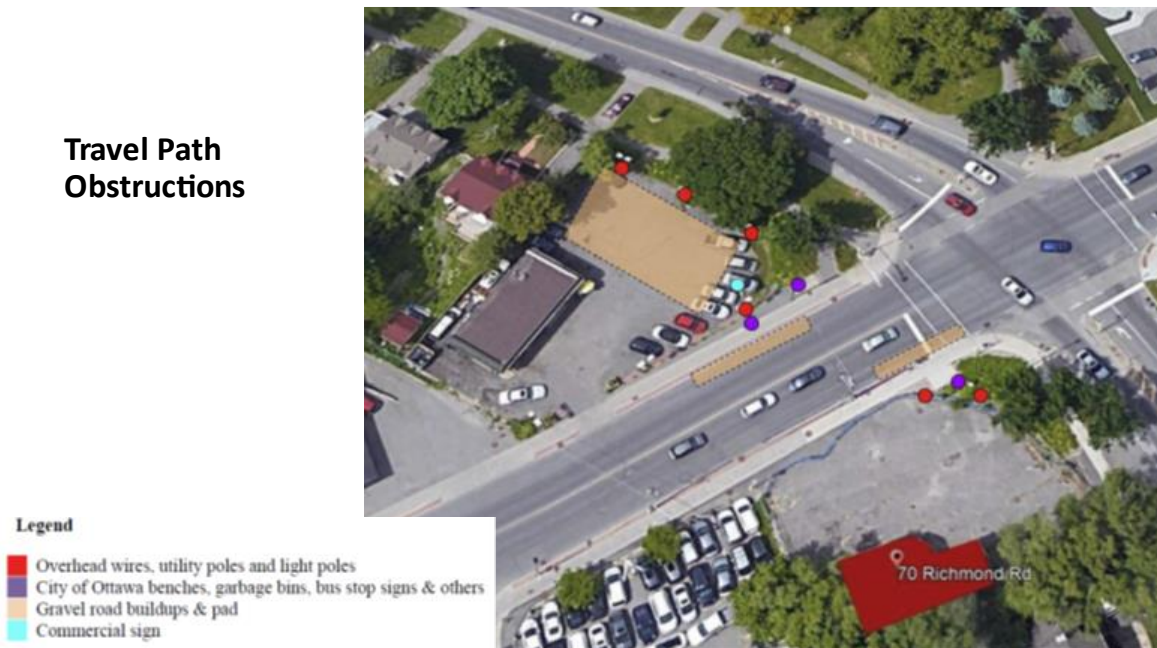
Procedures for Preparation for lifting have been developed by Cleland Jardine (See Figures 9 &10) and Appendix A) with strategy for moving set out by CDS Building Movers (Appendix B.)

7. Perform any masonry repairs required as part of the preparations for moving (e.g., stabilizing, and grouting block wall as part of pinning, localized temporary openings carefully removing blocks, record, store, and reinstall; crack repairs; limited dismantling at the foundation using concrete wall saws and rebuild around fractured areas). See Cleland Jardine plans and elevations documenting the positioning of needles and structural beams Figures 11 and 12)
8. Board up and secure entrances and openings.
9. Ensure that the replacement parapet/top of the walls and chimneys are flashed and weathertight.
10. The introduction of temporary structural bracing to stabilize the Station before its move.
11. Construction of temporary curbs to transition from roadbed.
12. Undertake paint analysis to determine original colours of roof, eaves, trim, walls and stepped footing, window surrounds, sash, and doors.

### Part 3 Lifting and Moving

Undertake the necessary steps for securing, lifting, and loading the building for moving off its existing foundations. The plan is to move it as one unit across the street where it will be stored. The move coordinated by CDS sets out a path and identifies obstacles along the travel route that will have to be cleared. A methodology for the building's stabilization, relocation procedures, storage of the building and means of protection while the mid-rise is being built is described in the Cleland Jardine in collaboration with CDS Building Movers.

#### Travel Path Obstructions



13. Once the building is relocated to its temporary location carry out an inspection to identify any damage.
14. Protection of relocated Station while off site.
15. Engage a masonry specialist and perform additional investigations and a more detailed review of the stucco to determine areas of deterioration, lost elements, and best method for grouting prior to the move.
16. Engage heritage specialists to restore the windows, fabricate new garage doors, and restore one door and reconstruct the one cottage door.

### Part 4 New Structural Support

The service station will be set on a new foundation, on top of a concrete slab, above the newly constructed parking garage. The phasing of the move will be coordinated with the construction of the below grade parking structure and will require moving the Service Station from its temporary location.

17. Finalize design of structural slab as part of the parking roof.
18. Excavation and construction of permanent parking garage structure and 9 storey building.
19. Moving the Service Station from temporary storage to its final position.
20. Setting the Station on the permanent concrete slab including the stepped plinth.
21. Removal of temporary lifting steel supports and needles.

### **Part 5 Restoration and Rehabilitation Work**

Procedures for Pre-move inspection, documenting the as-found condition and preparing a plan for conservation of character defining attributes have been set out in the conservation plan. An assessment will be completed once the Service Station is in its final location, including annotated, side-by-side images from pre-move survey, to identify any pre-existing and/or new conditions requiring intervention.

22. Reinstallation of the restored window sashes.
23. Assessment to inform masonry conservation scope.
24. Restoration of masonry walls that had temporary openings for transfer beam and needles.
25. Restoration and upgrading (as necessary) of existing wood roof structure and standing seam metal roof.
26. Conservation (if possible) of existing metal awnings and soffit.
27. Installation of restored (or new) metal eaves and soffit integrating venting.
28. Installation of restored round headed doors.
29. Preservation and Repairs, cleaning of metal elements, and window/door hardware.
30. Restoration of all masonry and reparging, as necessary including restoration of the masonry to accommodate the round headed cottage door.
31. Confirm the colour palette and paint, before the building is repainted.
32. Preparation of as-built record for future reference has been commissioned and will be made available as part of the ongoing conservation work.

### **Part 6 Interventions and Adaptive Reuse**

Complete interior work. A program for the retail space has not been fully developed. As part of the building's interpretation, the original volume of the interior will be retained. The aim is for the relocated building to accommodate retail uses and if possible, retain the three distinct spaces available to the public, which will require code compliance.

33. Interventions to accommodate new uses and to provide pass through and universal access will require dropping the door sill at openings and modifying the floor level of the service bays to provide barrier free access.
34. Installation of independent M&E system.
35. Fit-up for commercial operation
36. Installation of interpretive Lighting.
37. Introduce appropriate signage and interpretive panels that describing the history of the Station, its relationship to the Trudeaus and the Champlain Oil Company and the NCC scenic driveways.

## **3.2 Impact and Mitigation**

### **Building:**

The Service Station is in poor condition with noted deterioration, which poses a risk when it is subjected to changes in loading. This plan requires two moving activities that will be separated by short-term storage just off-site. Potential damage may occur during transportation such as cracked masonry joints. The procedure calls for construction in-place of a steel frame structure using beams needed through the wall at periodic intervals.

### **Moving:**

A methodology for stabilizing the building prior to it being moved has been clearly laid out by Cleland Jardine Engineering Ltd. including shop drawings showing the placement of temporary supports, pining

and reinforcements. A travel route and strategy has been laid out by CDS Movers that calls for the building to be hoisted onto a structural frame cribbing and transferred across the street where it will be stored until the midrise is constructed. Both the move across the street and the return are clearly documented and minimize potential damage during transportation.

In order to mitigate risk of cracking, masonry conservation and grouting will stabilize the concrete blocks and allow the walls to resist changing loads. The grouting will be undertaken prior to severing the concrete foundation walls allowing the building to be lifted and transported as a unit.

- To ensure the outer walls are restrained, cross bracing will be introduced to brace the walls before the move and left in place until the building is returned to its permanent location.
- As part of the mitigation, a survey of the structure is recommended following the move to the temporary storage location to ensure that any damage to the masonry is noted and if necessary, repairs undertaken.
- Prior to moving the Service Station, doors, windows, and all removable character defining attributes will be documented, labeled, crated, and stored for restoration and future reinstallation.
- Moving the building introduces an increased potential for loss or damage, particularly the features of the building that will be reconstructed. A secure place to store the building materials i.e., windows, etc. when the building is at its temporary location.

### **Views and Visual Context with the Street**

Views looking west from the intersection are convincing. The relocated Service Station is free standing as a foreground feature in front of the mid-rise. Views from the east from Richmond Road offer only part of the building exposed beyond the midrise. Aerial views looking down at the corner present a well composed landscape with the building mass clearly visible.

### **Alternatives**

With views looking west the Service Station is independent from the midrise with a prominent position on the corner. Introducing a much more restrained palette of materials and colours for the apartment building, stepping back, and raising the glazed feature above the service bays and setting back the main entrance to allow the service bays to sit proud of the main building when viewed from the west have all contributed a positive impact on the interpretation of the heritage building.

An additional alternative that could be explored with the City and the NCC includes a scheme with the building set on a foundation that encroaches slightly onto public property to give it more presence and better separation from the mid-rise. The former Richmond Road/Island Park Drive intersection was laid out as a round-a-bout, with a wider than a normal City right-of-way. Allowing the Service Station to encroach would have no impact on the public realm and would allow breathing room and an opportunity to have the west façade set out further off the façade of the new midrise building.

### **Interpretation**

The story of the Champlain Oil Company Service Station offers a number of themes that could be explored as part of an interpretive plan, including:

- early gas stations and the growth of private automobile in Ottawa,



- the introduction of the scenic driveway system, the round-about, and
- the association of the founder of Champlain Oil Company, Charles-Emile Trudeau, father of former Prime Minister Pierre Trudeau and grandfather to the current Prime Minister.

## **APPENDIX A: BUILDING RELOCATION FEASIBILITY**

**January 20<sup>th</sup>, 2022**  
**CJEL Reference No. 21-2412**

### **70 RICHMOND ROAD HERITAGE BUILDING RELOCATION FEASIBILITY STUDY**



**Prepared For:**

**TRINITY DEVELOPMENT GROUP INC.**

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**Prepared By:**

**CLELAND JARDINE ENGINEERING LTD.**

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Kanata, Ontario  
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3.0	TEMPORARY BUILDING RELOCATION .....	3
4.0	DETAILED PROCEDURES FOR THE MOVE .....	3
5.0	FEASIBILITY OF MOVING .....	7

#### **Attachments:**

- **Cleland Jardine Engineering Drawings S100, S101 & S102**
- **CDS Movers Quotation**

## 1.0 INTRODUCTION

Cleland Jardine Engineering Ltd. (CJE) was retained to review the condition of the existing heritage building at 70 Richmond Road and assess the feasibility of relocating the building into the new proposed development. Specifically, the review included:

Review of available documentation.

On site review of building to assess existing construction and conditions.

Review of adjoining property for suitability of temporary storage of building.

Review of proposed development concept for permanent relocation of building.

Coordination of requirements with project team.

### 2.0 EXISTING HERITAGE BUILDING CONSTRUCTION

The existing heritage building, constructed circa 1930's, consists of a 100m<sup>2</sup> one storey structure. Part of the structure consists of a two-bay car service space and the other narrower part, an administration area. The foundation consists of cast in place perimeter concrete walls. It is assumed that the foundation extends down approximately 5' below grade and is supported on perimeter footings. The floor construction consists of a concrete slab on grade. A small portion of the floor in the administration area has a wood flooring with a shallow open pit below. The exterior perimeter walls as well as the interior wall between the service bay and the administration area consist of 200mm load bearing concrete masonry block walls. The roof structure, over the service bay, consists of a built-up Montreal style wood construction creating the Mansard profile. The framing consists of rough sawn 2" x 10" joists at 24" c/c supported on a steel beam running down the middle of the double bay.

The roof over the administration area consists of rough sawn 2" x 9" horizontal ceiling rafters at 20" c/c supporting sloped rafters above.

The masonry walls were in overall fair to poor condition with localized vertical cracking noted in several locations. Based on a few limited areas, where holes in the masonry were noted, the masonry does not appear to be grouted nor reinforced.



**Exposed Masonry Wall Administration Area**

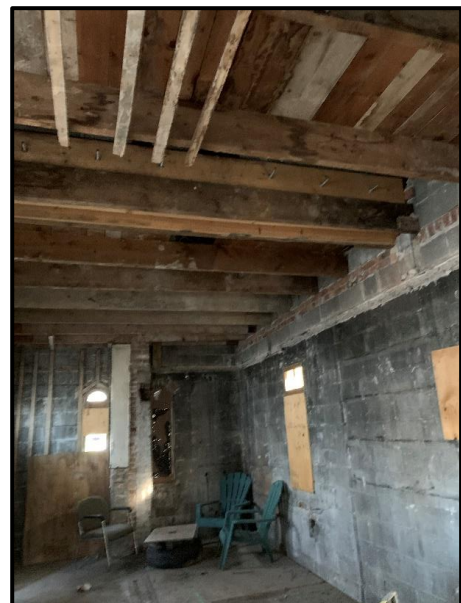


**Masonry Wall Behind Plaster Lath - Service Bay**

The load bearing masonry wall, between the service bay and administration area, is in poor condition with several cracks and major displacement (40mm) at the back portion.



**Interior wall with major crack/displacement at door openings**



**Roof framing administration area**

The roof framing has been subject to water infiltration and modification/patching over the years but remains in fair and sound condition.

### 3.0 TEMPORARY BUILDING RELOCATION

The proposed development will consist of a nine-storey mixed use structure on a two level below grade parking garage. In order to carry out the required excavation and construct the underground garage, the Heritage building will be temporarily relocated onto the adjoining property (see figure #1).

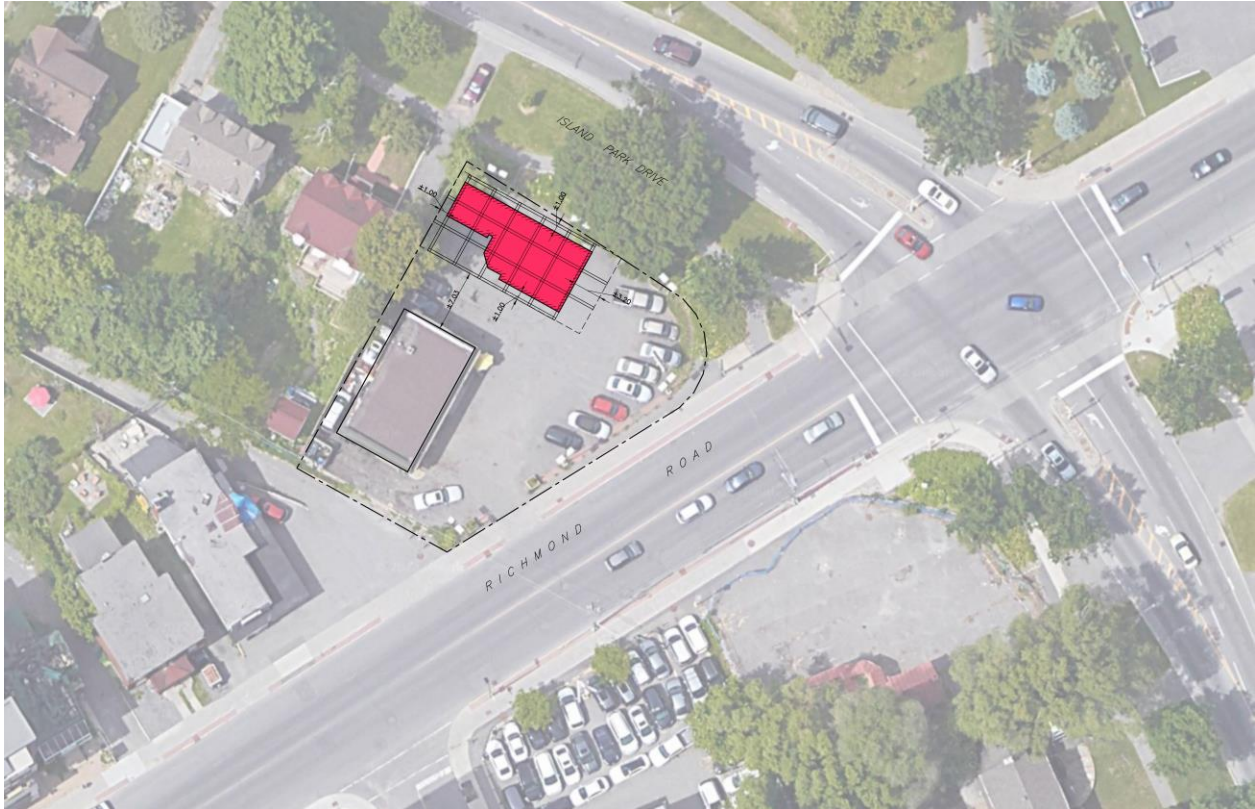


Figure #1: Temporary building storage location for the Service Station has been negotiated and will be stored directly across the road.

The building will remain in the temporary stored location (Figure 1) while the site is excavated, and the new concrete foundation and underground structure are constructed up to grade level. The building will then be relocated on top of the new reinforced concrete ground floor slab at its new location (see figure #2). Once the heritage building is in its new location, the concrete work above grade can continue while protecting the heritage structure.

### 4.0 DETAILED PROCEDURES FOR THE MOVE

For the moves, the building will be lifted onto a temporary steel structure and rolled into both its temporary and permanent locations. The following provides detailed steps on how this will be achieved.

### Stage One

The first step will involve preparing the building for the move and includes:

- Survey and recording of existing condition.
- Disconnecting of all utilities and services.
- Removal of all doors and windows for refurbishment and future reuse.
- Abatement and removal of all interior lath and plaster which contains asbestos.
- Localized removal of existing masonry along exterior walls at temporary needle beam support openings.

### Stage Two

The next step will be to construct in place a steel frame structure, with in the building, to be used in lifting and transporting the structure. See Figure xx

Localized temporary openings through the masonry will be required to install the main support and needle beams.

Once the main steel structure is in place, secondary bolting, grouting, shimming, and bracing will be installed to stabilize and safely transfer the building support onto the steel structure (see figures #2 and #3)

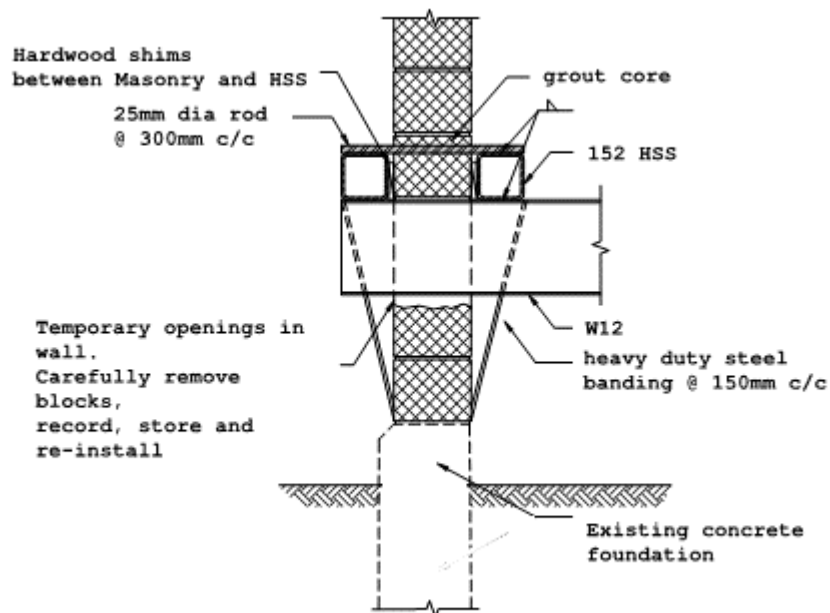
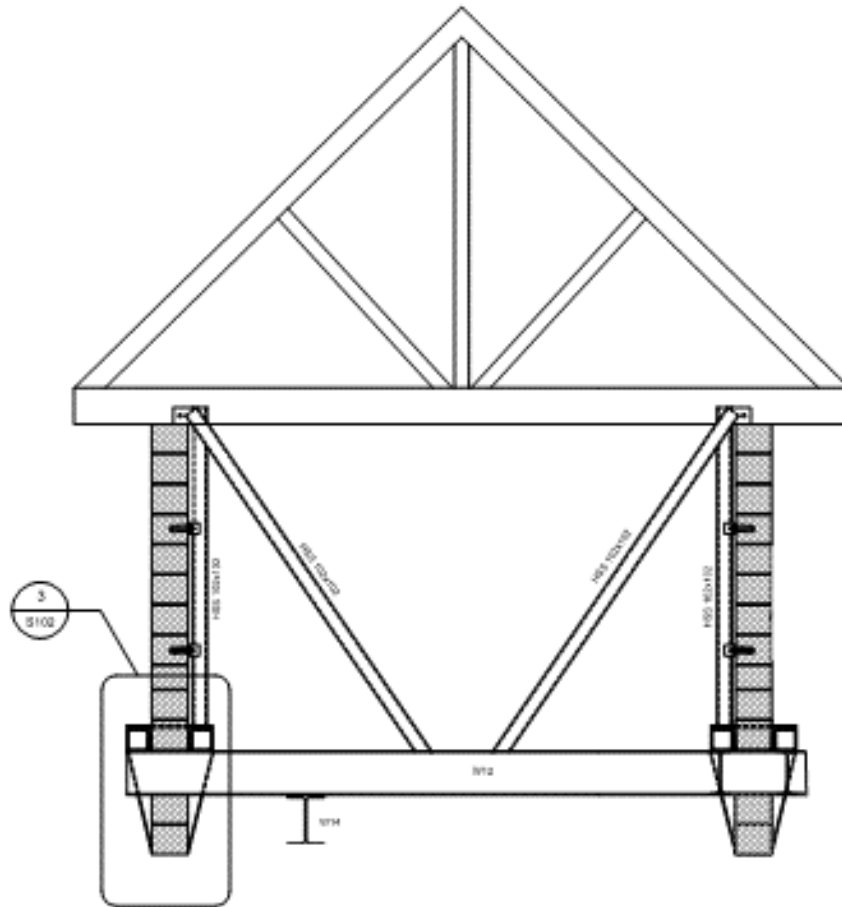


Figure #2



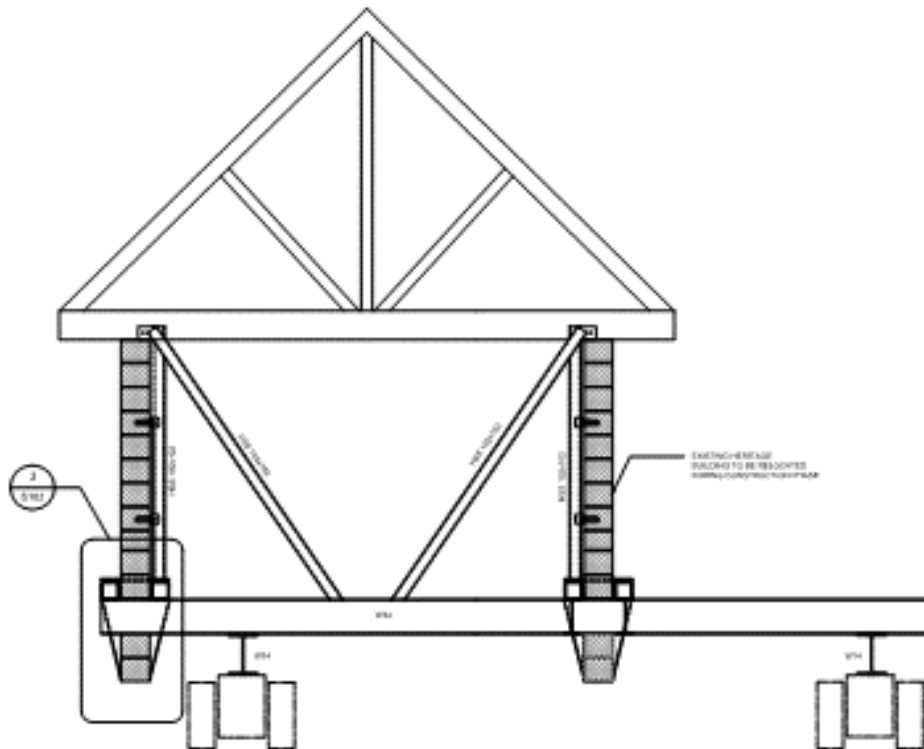
**Figure #3**

### **Stage Three**

Once the temporary steel support structure and stabilizing measures are in place, synchronized hydraulic jacks will be installed below the main support beams and used to slightly prestress the structure and remove the load from the foundation. The prestressing will be applied slowly while monitoring the structure.

After the stress is off the foundation, the masonry wall will be separated from the concrete foundation using concrete wall saws. Once separated from the foundation, the synchronized jacks will be used to lift the structure approximately 1200mm to permit the installation of pneumatic wheel dollies below the main support beams.





**Figure #4**

#### **Stage Four**

All soft and uneven surfaces along the path of travel will be levelled using compacted granular fill. This includes filling in the lower floor area in the service bay. Steel plates will also be used to distribute the loads.

The building will then be slowly moved to its temporary location using large truck tractors to pull and navigate the support frame. Temporary lifting of the frame and wheel re-alignment will be required to navigate the 90° turn.

The pneumatic wheel dollies are equipped with self-adjusting hydraulic jacks so that even support of the steel structure is maintained at all times.

#### **Stage Five**

Once the building is in its temporary storage location, it will be lifted off the pneumatic dollies and rested on temporary wood cribbing. The main support frame and all bracing will remain in place.

The cribbing will be set on rubber matting to minimize vibrations from the adjacent excavation.

All door and window openings will be boarded up to prevent trespassing and vandalism.

A survey of the structure will be carried out once it arrives at the temporary storage location to ensure that any damage is addressed and cannot accelerate any deterioration.

### **Stage Six**

Following construction of the new concrete structure to grade level, the building will be jacked from the temporary cribbing and back onto the pneumatic dollies ready for the move.

The new ground floor concrete slab is essentially level with the existing grade so minimal backfill and ramping will be required.

Prior to rolling the building into its new final location, temporary shoring of the new concrete slab using heavy duty construction jacks, will be required.

The structure will be moved along the building, navigating around column dowels and obstruction to roughly its final location. The structure will then be lifted, and the wheels rotated 90 degrees before it is rolled North to its final location.

Mechanical column dowel couples will be required where full length column dowels interface with the building travel.

### **Stage Seven**

Once the heritage building is in its final location, new concrete curbs on the structural slab will be constructed to receive and support the existing masonry walls. The building will then be lowered onto the concrete curb.

### **Stage Eight**

Once the building is supported and anchored to the new structure, all bracing, and the support frame will be dismantled and removed. The temporary masonry openings will be reinstated, and steel needle rods cut flush to the face of masonry.

### **Stage Nine**

Once the building is in its final location, the concrete formwork and construction will continue with the above grade portion of the new structure.

## ***5.0 FEASIBILITY OF MOVING***

The procedures were developed with the assistance of CDS building movers, who have substantial experience with these types of moves. They provided an estimated cost of \$602K to carry out the work. A copy of their quote is attached. Not included in their quote are:

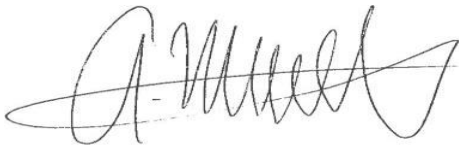
- Detailed recording of building.
- Disconnecting of existing utilities.
- Asbestos abatement
- Removal of doors and windows.
- Temporary masonry openings and reinstatement.

- Excavation and backfill.
- Breaking/removal of existing foundation in path of travel.
- Repairs of existing masonry
- Shoring of new slab in path of travel
- New concrete curb support and anchoring of heritage building.
- Insurance and engineering
- Given the condition of the structure, localized distress and movement of the existing cracks is possible. Allowance should be made for localized repairs following the move.

Based on the experience and expertise of the moving company, the fact that the building can be retained on site during storage and the relative short distance required to relocate the Service Station it could reasonably be assumed that the risk of damaging the building is low.

Report Prepared by:

**CLELAND JARDINE ENGINEERING LTD.**



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André Marcoux, P.Eng.  
Principal/Director – Building Science Department



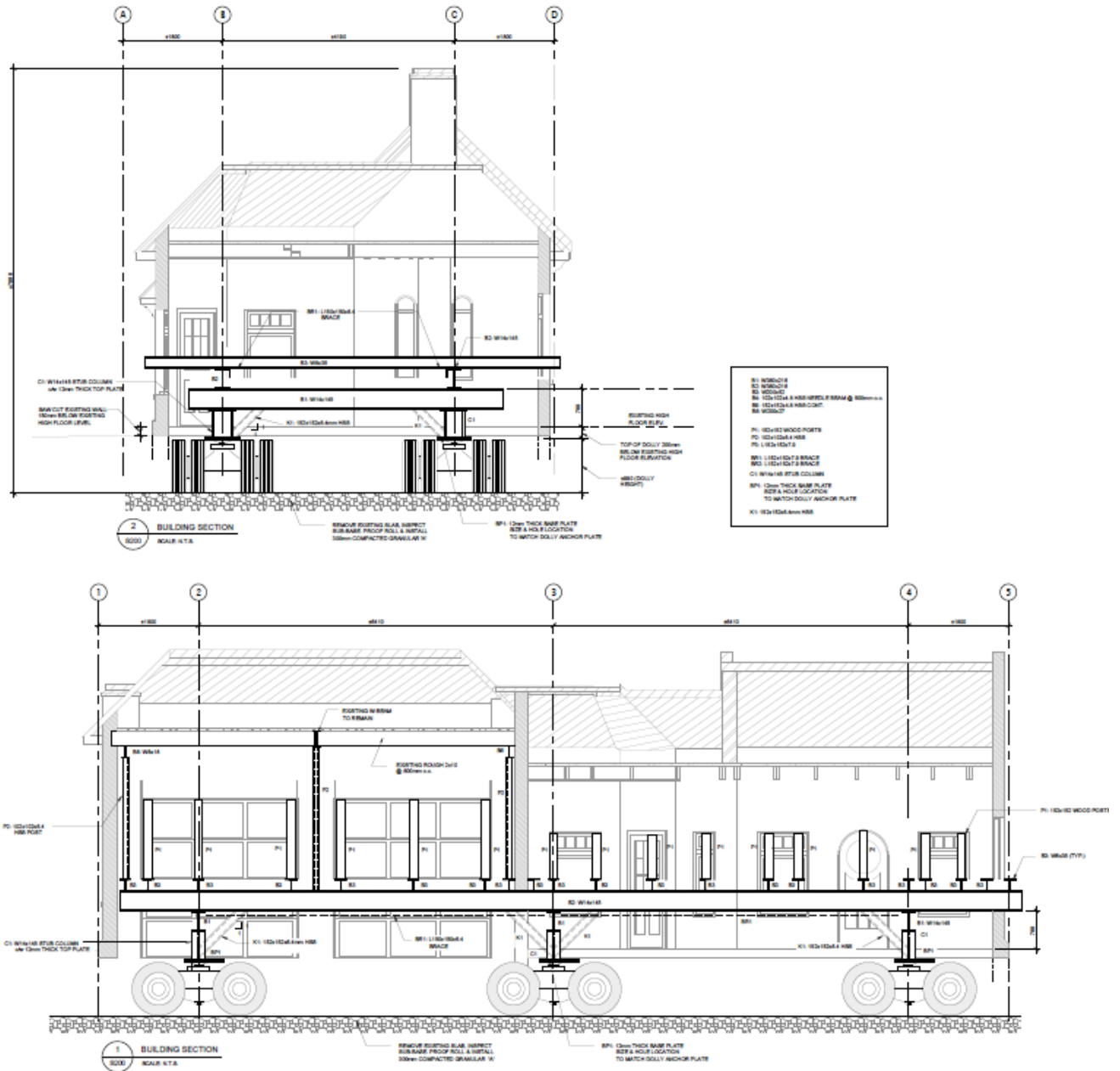


Figure 7: Revised elevations and sections illustrating the Service Station set on the steel frame. Source Cleland Jardine Engineering Ltd. 2023

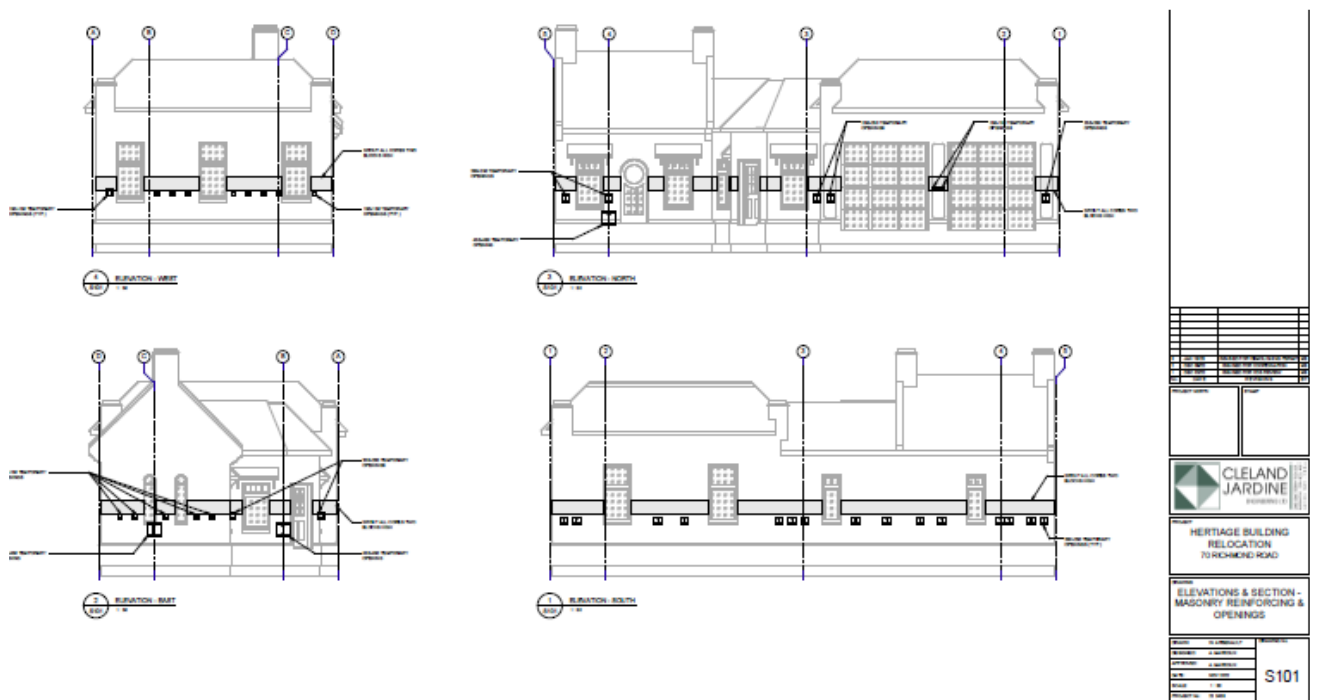
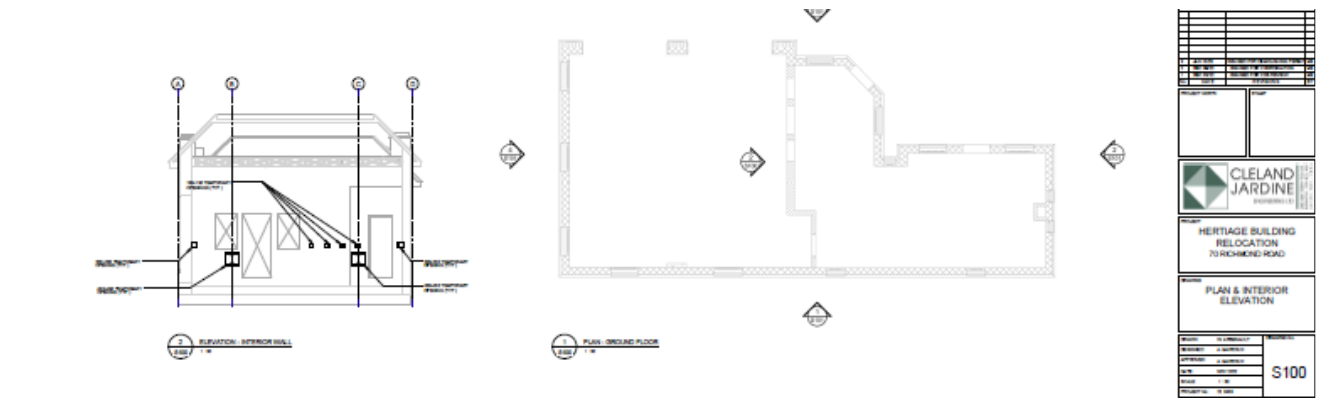
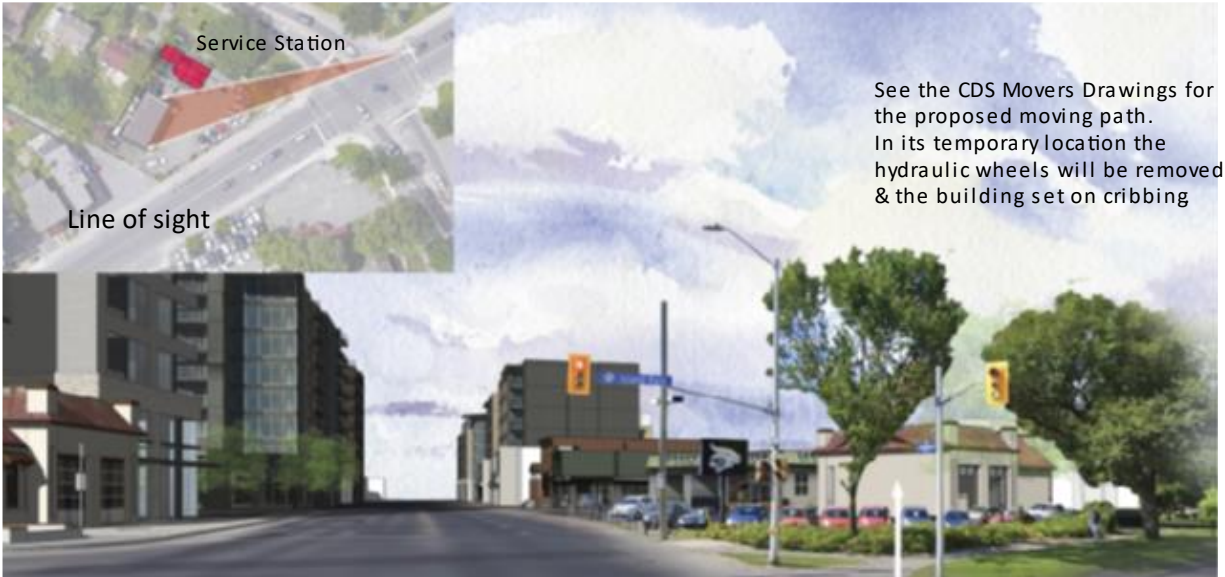


Figure 8 & 9: Updated drawings outlining the positioning of openings required and methodology for stabilizing the block walls. Cleland Jardine 2023.

## APPENDIX B: THE MOVE – RELOCATION PATH



### Proposed Relocation Paths

**Pre-Construction Relocation Path:** Movement of Heritage Building to 77 Richmond Rd.

1. 90° Turn at 70 Richmond Rd. to orient cottage section towards the north side.
1. Movement north in near-straight line across Richmond Rd. onto proposed resting location at 77 Richmond Rd. parking lot.

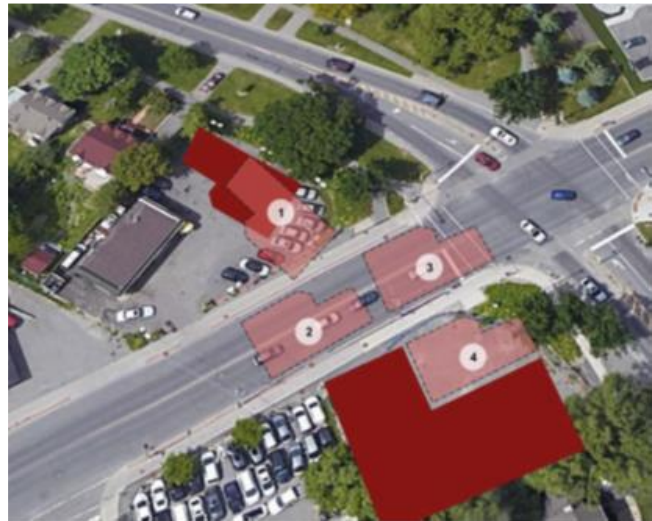


### Post-Construction Relocation

#### Path:

Movement of Heritage Building to New Permanent Location

1. Movement south onto Richmond Rd.
2. 90° Turn to orient cottage section eastwards
3. Movement eastwards to align heritage building with final location
4. Movement southwards from Richmond Rd. to final location



### Travel Path Obstructions



#### Legend

- Overhead wires, utility poles and light poles
- City of Ottawa benches, garbage bins, bus stop signs & others
- Gravel road buildups & pad
- Commercial sign



# APPENDIX C: DESIGNATED SUBSTANCE SURVEY



## Consulting Engineers

January 21, 2021  
File: PE5515-LET.01R

**Trinity Development Group Inc.**  
359 Kent Street - Suite 400  
Ottawa, Ontario  
K2P 0R6

Attention: **Mr. Michael Bottigoni**

Subject: **Designated Substance Survey**  
**70 Richmond Road**  
**Ottawa, Ontario**

154 Colonnade Road South  
Ottawa, Ontario  
Canada, K2E 7J5  
Tel: (613) 226-7381  
Fax: (613) 226-6344

Geotechnical Engineering  
Environmental Engineering  
Hydrogeology  
Geological Engineering  
Materials Testing  
Building Science

[www.patersongroup.ca](http://www.patersongroup.ca)

Dear Sir,

Further to your request and authorization, Paterson Group (Paterson) conducted a Designated Substance Survey (DSS) at the property addressed 70 Richmond Road, in the City of Ottawa, Ontario. This letter report summarizes our findings and results of the DSS.

## 1.0 BACKGROUND

The subject property is situated on the southwest corner of the Richmond Road and Island Park Drive intersection in Ottawa, Ontario. The subject property is occupied by a single storey commercial building with an attached two bay automotive service garage. It is our understanding that the building has been recognized as a heritage building and will be undergoing some interior demolition prior being relocated to another location.

The purpose of this investigation was to identify any potential designated substances within the above-mentioned structure prior to any demolition activities.

## 2.0 SITE INSPECTION AND OBSERVATIONS

A Paterson Group representative conducted a site visit on November 30, 2021, and a follow up site visit on January 14, 2022. During the course of the site visit, a visual inspection for materials containing the following designated substances: acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica, vinyl chloride, and the following substances: ozone depleting substances (ODS) and polychlorinated biphenyls (PCBs) was carried out.

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Ottawa

North Bay

Mr. Michael Bottigoni  
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## **2.1 Acrylonitrile**

Acrylonitrile is prescribed as a designated substance under Ontario Regulation (O.Reg.) 490/09 of the Occupational Health and Safety Act. It is a volatile, flammable liquid that is used to make many chemicals such as plastics, rubber and synthetic fibres. Acrylonitrile may be present in stable form in surface coatings (eg. paints), building material adhesives and plastics. Common adhesives observed in the subject building include applications for vinyl floor tiles and mouldings. The above noted products are not considered to pose a concern provided they are not subjected to extreme heat, such as a torch. Exposure to acrylonitrile is unlikely and not suspected within the building.

## **2.2 Arsenic**

Arsenic is prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. Arsenic has many industrial uses such as hardening of copper and lead alloys and in older lead-based paints. Similar to acrylonitrile, arsenic may also be present in stable form in building material adhesives and some metal alloys. Based on the limited quantity of potentially arsenic containing materials within the subject building, it is not expected that the arsenic concentration in the air will exceed its maximum allowable Time Weighted Average Exposure Value (TWAEV).

## **2.3 Asbestos**

Asbestos is prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. Asbestos-containing materials (ACMs) are defined under O. Reg. 278/05 of the Occupational Health and Safety Act as having a concentration of 0.5% or more by dry weight of fibrous asbestos (i.e. chrysotile, amosite, crocidolite and/or other amphiboles). Asbestos was commonly used in residential and commercial construction between 1930 and 1980.

A total of eleven bulk samples of potentially asbestos containing materials were obtained from the interior of the subject building during the sampling event on November 30, 2021, while six samples were obtained from the exterior of the subject building during the sampling event on January 14, 2022. All samples were submitted to Paracel Laboratories in Ottawa, Ontario for analysis. The potential asbestos containing materials were analyzed to determine the presence, type and content of asbestos, as shown below.

Table 1 details all samples collected from the subject building. The laboratory certificates of analysis are appended to this letter.

Mr. Michael Bottigoni  
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<b>Table 1 – Summary of Asbestos Testing 70 Richmond Road</b>				
<b>Sample No.</b>	<b>Description</b>	<b>Location</b>	<b>Fibrous Asbestos Content</b>	<b>Other Materials</b>
<b>November 30, 2021</b>				
DWJC1	Drywall joint compound	Garage bay	Not analyzed (insufficient compound in sample)	
DWJC2		Garage bay	None	100% Non-Fibers
DWJC3		Garage bay	None	100% Non-Fibers
PRG1	Parging cement	Office area	<MDL	100% Non-Fibers
PRG2		Office area	<b>1% Chrysotile</b>	99% Non-Fibers
PRG3		Garage bay	<b>1% Chrysotile</b>	99% Non-Fibers
PRG4		Garage bay	<b>1% Chrysotile</b>	99% Non-Fibers
PRG5		Garage bay	<b>1% Chrysotile</b>	99% Non-Fibers
VFT1	Vinyl Floor tiles Blue (30 cm x 30 cm)	Office area	None	100% Non-Fibers
VFT2		Office area	None	100% Non-Fibers
VFT3		Office area	None	100% Non-Fibers
<b>January 21, 2021</b>				
EXT-PRG1	Parging cement	Eastern façade	None	100% Non-Fibers
EXT-PRG2		Northern façade	None	100% Non-Fibers
EXT-PRG3.1		Western facade	None	100% Non-Fibers
EXT-PRG3.2		Western facade	None	100% Non-Fibers
EXT-PRG4		Southern facade	None	100% Non-Fibers
EXT-PRG5		Southern facade	None	100% Non-Fibers
Notes: <b>Bold</b> – Asbestos containing material as defined under O.Reg. 278/05 as having a concentration of 0.5% or more by dry weight fibrous asbestos. MDL - Method detection limit				

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### **Drywall Joint Compound**

Drywall joint compound was observed on the garage bay ceiling of the subject building. A total of three samples of the drywall joint compound were collected and submitted for analysis. It should be noted that minimal quantities of joint compound were present in one of the samples (DWJC1). As a result, this sample was not analyzed due to the lack of compound present in the sample. No asbestos was identified in the samples analyzed. Based on the test results, the drywall joint compound is not considered to be an asbestos containing material.

### **Interior Cement Parging**

Cement parging was observed on the walls throughout the subject building. A total of five samples of the cement parging were collected and submitted for analysis. Four samples were found to contain **1% Chrysotile asbestos. Based on the analytical test results, the cement parging throughout the walls of the subject building is considered to be an asbestos containing material.**

### **Vinyl Floor Tile**

Vinyl floor tiles were observed within the office area of the subject building. A total of three samples of the vinyl floor tiles were collected and submitted for analysis via positive stop. No asbestos was identified in the samples analyzed. Based on the test results, the vinyl floor tiles located in the office area of the subject building are not considered to be an asbestos containing material.

### **Exterior Facade Cement Parging**

A cement parging layer on the exterior block walls was also observed on the facade of the subject building. A total of six samples of the cement parging were collected and submitted for analysis. No asbestos was identified in the samples analyzed. Based on the analytical test results, the cement parging layer on the exterior façade of the subject building is not considered to be an asbestos containing material.

### **Insulation**

No potentially asbestos containing insulation material was identified during the inspection. A visual inspection of ceiling and wall cavities did not identify any insulation material throughout the subject building. If any insulation materials are encountered in the wall or ceiling cavities of the subject building that have not been identified in this report, we request that we be notified. In the event that suspected asbestos containing materials are discovered, all work is to cease until samples are collected and analysed. Alternatively, the suspected building materials can be treated as asbestos containing and be removed in accordance with O.Reg. 273/05.

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## **2.4 Benzene**

Benzene is prescribed as a designated substance under O.Reg 490/09 of the Occupational Health and Safety Act. Benzene is used in the manufacturing of many products including plastics, rubbers, resins and synthetic fibres. It is also used as a solvent in printing and paints as well as in petroleum products such as gasoline and diesel. Benzene may be present in older paints, sealants and roofing materials, some of which may be present in the subject building.

Benzene is not considered to be a concern, since it typically vaporizes rapidly from most products shortly after manufacturing or application, however, the above noted materials should not be subjected to extreme heat without proper worker respiratory protection.

## **2.5 Coke Oven Emissions**

Coke oven emissions are prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. Coke Oven emissions are not typically found outside the metal extraction industry. No sources of coke oven emissions are suspected or were observed with respect to the subject building.

## **2.6 Ethylene Oxide**

Ethylene oxide is prescribed as a designated substance under Ontario Regulation 490/09 of the Occupational Health and Safety Act. Ethylene oxide is used in large volumes as a chemical intermediate in the manufacturing of many industrial products including textiles, detergents, foam, antifreeze, solvents and adhesives. Based on the limited quantity of potentially ethylene oxide containing materials within the subject building, ethylene oxide is not considered to pose a concern.

## **2.7 Isocyanates**

Isocyanates are prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. Isocyanates are the raw materials from which all polyurethane products are made. They are used widely in the manufacturing of foams, plastics, adhesives, synthetic fibres and coatings such as paints and varnishes, some of which are present in the subject building.

Over time, isocyanates will volatilize out of these materials but will only be present in trace amounts and are not expected to reach hazardous air concentrations. As a result, isocyanates are not considered to pose a concern.

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## 2.8 Lead

Lead is prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. For the purposes of this report, the commonly used value of 90 ppm [Surface Coatings Material Regulation (SOR/2005-109) – October 2010] will serve as the lead-containing definable limit. Lead concentrations will be categorized into three (3) classes, lead-based (greater than 5000 ppm), lead-containing (between 90 ppm and 5000 ppm) and non-lead containing (less than 90 ppm).

Lead may be present in older paints, plastics, lead caulking in bell joints for cast iron piping systems, lead solder in copper piping systems, electrical equipment and ceramics. Painted surfaces on the interior and exterior of the subject buildings were observed. Five paint samples were obtained from the subject building during the November 30, 2021 sampling event. All samples were submitted to Paracel Laboratories in Ottawa, Ontario for lead content analysis. Table 2 summarizes the lead results for samples collected from the 70 Richmond Road. The laboratory certificate of analysis is appended to this letter.

Sample	Location Description	Colour	Lead-Containing Definable Limit (µg/g)	Lead Content (µg/g)
PT1	Exterior wall	Beige	90	494
PT2	Interior wall	White/ beige	90	1030
PT3	Interior garage bay wall	Grey	90	10800
PT4	Roof	Red	90	22100
PT5	Window sill and doors	Brown	90	1490

Based on the test results, three paint samples obtained from 70 Richmond Road were found to be lead containing paints while two paint samples were found to lead-based paints.

## 2.9 Mercury

Mercury is prescribed as a designated substance under O.Reg 490/09 of the Occupational Health and Safety Act. Mercury may be present in thermostats (which were not observed in the subject building), barometers and hydrometers along with other laboratory measuring devices. It may also be present in older lead-based paints (which were identified) and many types of lights including fluorescent tubes.

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Any mercury containing equipment must be disposed of according to Ontario Regulation 347 as amended by O. Reg. 558, if it is being decommissioned.

### **2.10 Vinyl Chloride**

Vinyl chloride is prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. Vinyl chloride is the parent compound of polyvinyl chloride (PVC) which is used in many consumer and industrial plastic products. It is also used extensively in the glass, rubber and paper industries. Vinyl chloride may be present, in stable form, in pipes, plastics, vinyl's and interior finishes such as paints and varnishes throughout the subject building.

The health hazard associated with vinyl chloride comes primarily from the inhalation of fumes. In most applications vinyl chloride is considered to be stable as long as it is not subjected to extreme heat. As a result, vinyl chloride is not expected to be a concern as long as materials are not subjected to extreme heat.

### **2.11 Silica**

Silica is prescribed as a designated substance under O.Reg. 490/09 of the Occupational Health and Safety Act. Silica or silicon dioxide is the basic component of sand, quartz and granite rock. Silica is expected to be present in concrete and cement parging. Typical procedures including wetting materials prior to, and during, any demolition activities are required to control dust.

### **2.12 Ozone Depleting Substances (ODSs)**

No potentially ODS containing equipment was observed during the site visit.

### **2.13 Polychlorinated Biphenyls (PCBs)**

No potential sources of PCBs were observed during the site visit.

## **3.0 SURVEY SUMMARY AND RECOMMENDATIONS**

Based on our survey, one building material analysed was determined to be asbestos containing, three paints sampled were found to be lead containing and two paints samples were found to be lead-based. The possible presence of limited quantities of acrylonitrile, arsenic, benzene, ethylene oxide, isocyanates, lead and silica in the aforementioned building materials do not pose a concern, provided precautionary measures are followed during future proposed renovation works.

Mr. Michael Bottigoni  
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### **Asbestos**

Based on the observations made during the site inspection, combined with the analytical test results, the following ACMs were identified in the subject building:

- Cement parging; located on all interior walls throughout the subject building.**

All ACMs must be removed from the subject building prior to being disturbed by any planned renovation or demolition activities. If any insulation materials are encountered in the wall or ceiling cavities that have not been identified in this report, we request that we be notified to allow for the testing of this material. In the event that other suspected asbestos containing materials are discovered, all work is to cease until samples can be collected and analysed. Alternatively, these materials can be treated as asbestos containing and be disposed/managed of accordingly.

The removal, disturbance, or encapsulation of the identified ACMs throughout the subject building must be done in accordance with the procedures outlined in O. Reg. 278/05, and conducted by a contractor specialized in this type of work. A full copy of O. Reg. 278/05, made under the Occupational Health and Safety Act, can be found at [http://www.elaws.gov.on.ca/html/reggs/english/elaws\\_reggs\\_050278\\_e.htm](http://www.elaws.gov.on.ca/html/reggs/english/elaws_reggs_050278_e.htm).

### **Lead**

Lead may be present in the solder used in the copper plumbing system. This does not pose a concern to construction workers, provided it is not heated or pulverized. Based on the analytical test results, three lead containing paints and two lead-based paints were identified throughout the subject building. Appropriate procedures for working with lead on construction sites should be developed and implemented during any renovations/demolition or maintenance activities. Further information on precautionary measures can be obtained from the document entitled, “*Guideline - Lead on Construction Projects*”, prepared by the Occupation health and Safety Branch of the Ontario Ministry of Labour and dated April 2011.

### **Silica**

Silica is expected to be present in various building materials, including concrete and cement parging. When potential silica containing materials (as identified in this report) are to be disturbed, precautions should be taken to minimize dust creation (wetting surfaces) and protect workers, such as providing appropriate dust masks. Further information can be obtained from the document entitled “*Guideline – Silica on Construction Projects*” (April 2011), prepared by the Occupational Health and Safety Branch of the Ontario Ministry of Labour.



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## 4.0 STATEMENT OF LIMITATIONS

A designated substance survey was completed at 70 Richmond Road, located in the City of Ottawa, Ontario. The results of the survey are based on our visual observations made at the time of the site visit in conjunction with our analytical test results. Should any conditions be encountered at the subject site that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of Trinity Development Group Inc. Permission and notification from Trinity Development Group Inc. and this firm will be required to release this report to any other party.

We trust that this submission will satisfy your present requirements. If you have any questions regarding this report, please contact our office.

### Paterson Group Inc.



Mark St Pierre, B.Eng.



Eric Leveque, B.A.

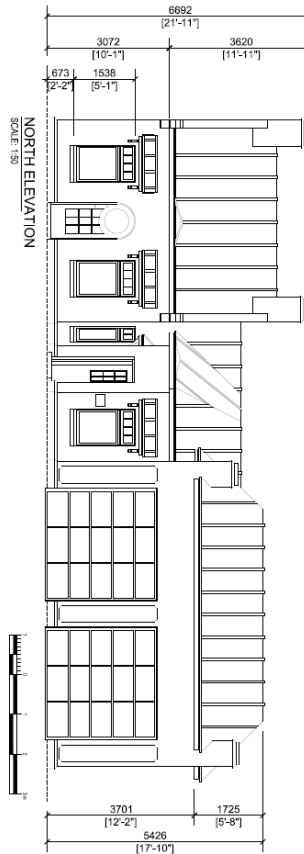
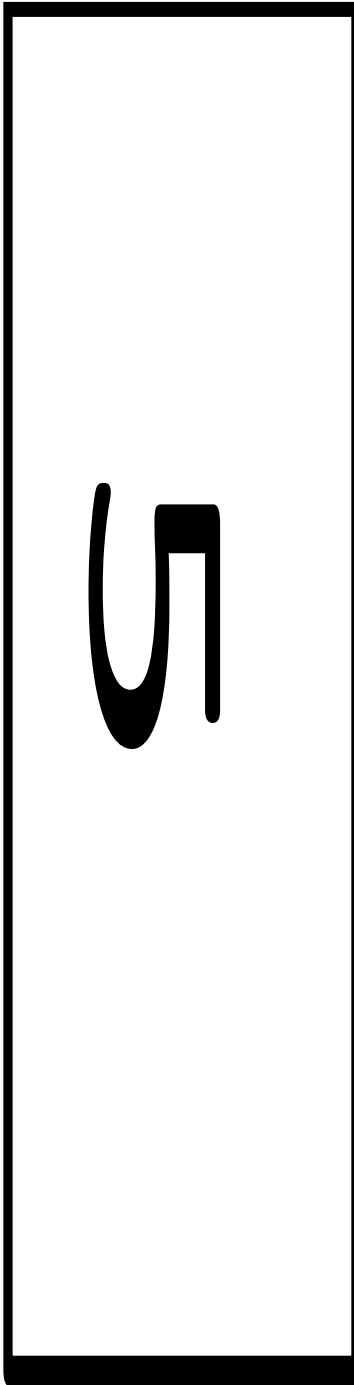
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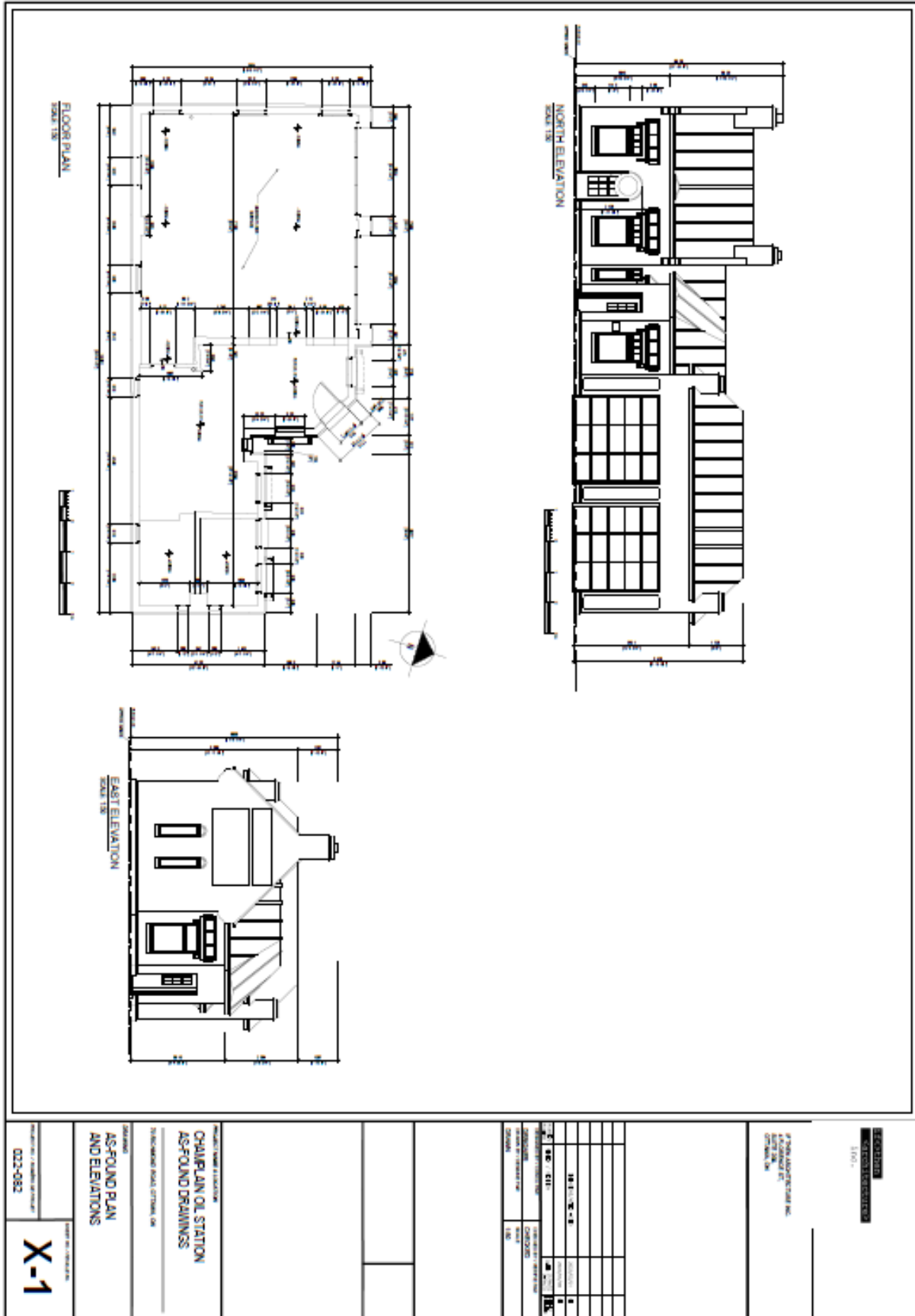
- Trinity Development Group Inc.
- Paterson Group Inc.

### Attachments:

- Laboratory Certificates of Analysis

# APPENDIX D: BUILDING AS-FOUND DRAWINGS AND PHOTOGRAPHS





## APPENDIX E: STRUCTURAL ASSESSMENT (JACL)



John G. Cooke, P.Eng., RSW President  
 Grazyna A. Materna, M. Eng., P.Eng. Vice President  
 John D. Barton, C.E.T. Vice President  
 Mary Cooke, C.Tech., CSP Partner  
 Lisa Nicol, P.Eng. Partner  
 Marty Lockman, P.Eng., ing. Partner  
 Jonathan Dee, P. Eng., ing. (Hamilton) Associate  
 Chris Vopni, P.Eng. Associate

Devtrin (Island Park) Inc.  
 77 Bloor Street West, Suite 1601  
 Toronto, ON M5S 1M2

September 8, 2020

Project No. 21004

Attn: Aaron Cameron  
 acameron@trinity-group.com

**Re: 70 Richmond Road  
 Relocation Feasibility**

Dear Mr. Cameron,

John G. Cooke & Associates visited the garage at 70 Richmond Rd. September 1<sup>st</sup> to assess any structural concerns with relocating the heritage building.

The building, constructed ca. 1934, is generally concrete block and brick exterior walls covered in stucco, with poured concrete foundations and wood truss roof framing with metal roofing. The depth of the concrete foundation walls is unknown. It was conveyed by the heritage consultant that the building has been empty for at least 20 years, at which time work began to convert it into a coffee shop but only minor work aside from removals of finishes was complete.

In general there are three main spaces; the cottage, the transitional area and the service bays, see Photo 1. The transitional area and garage are divided by an interior loadbearing brick wall. The separation of these spaces is visible by the differing roof structures from the exterior.



Photo 1: Overview of building [JCAL 2020]

The interior of the cottage has been completely gutted, exposing the wall and roof structure. At an unknown time in the past, a load bearing wall was removed under the western chimney and a built-up wood beam was installed at ceiling level to support the concrete block gable and chimney. There was no water damage visible in the cottage area and the roof trusses appear to be in good condition. There is a crawlspace under the flooring for utilities, this space was not accessible for review.

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The transitional area is highlighted by the many roof orientations and valleys. The metal roofing in this area has failed and there is significant water infiltration. It was not raining at the time of the visit, yet many of the wooden members were visibly wet. It is likely that significant portions of the roof structure are rotten and are actively deteriorating. The interior brick loadbearing wall separating the transitional area from the garage is also significantly deteriorated, with a large fracture across the doorway opening at the back of the building, and a variety of cracks in the wall at the front. The flooring in this space appears to be a concrete slab on grade.

The service bay area is an open space framed by two exterior block walls, the interior brick wall and the north (front) wall with a single block pier and two large garage door openings. The ceiling finishes were still in place so the roof structure was unable to be reviewed. However, based on the water damage to the ceiling finishes and algae/mould growing on the ground below, it is likely that there is significant water damage to the wood roof members. The ground in the garage is dirt infill. Note that the ground in the garage and around the property is likely contaminated from the historical garage use.

The following investigations are recommended prior to finalizing a concept for moving the structure:

- Complete three investigative test pits in each of the defined spaces to confirm footing depth;
- Remove the ceiling from the garage to review the roof structure and its condition.

Based on our initial review, the following work is expected to stabilize the structure prior to relocating:

- Rebuild the interior loadbearing brick wall;
- Repair deteriorated roof structure;
- Infill or brace the service bay door openings;

The roof structure, in addition to requiring repairs, will also be subjected to higher snow loads from being at the base of the new mid-rise structure. It is recommended to reinforce the roof structure for this higher snow load at the same time as the repairs, since many of the solutions will address both problems. However, it is possible that the existing roof over the service bay area is so severely deteriorated and under-designed for the higher snow loads that a complete new structure is required. In this case, the most effective approach may be to only move the repaired/upgraded cottage and transitional areas and dismantle/rebuild the service bays.

It is our opinion that the building can withstand relocation, in whole or in part, following the work summarized above and any additional strengthening or reinforcing that is informed by more in-depth investigations.

With the available information, it is our opinion that a hybrid solution is the most effective structural approach. This would involve moving the Cottage and Transition areas of the building while dismantling and rebuilding the Service Bay area to match the existing shape using comparable modern construction materials. This approach strives to eliminate complications with moving the eccentric lateral resisting system that is created by the two large openings and a single pier at the north facing elevation. This option offers the additional benefit to create a more manageable temporary building footprint that can be more readily accommodated during the new building construction phase.

Please don't hesitate to contact the undersigned should you have any questions or require clarifications.

Sincerely,

**JOHN G. COOKE & ASSOCIATES LTD.**



Chris Vopni, P.Eng. CAHP



Jamie Marrs, B. Eng.



## APPENDIX F: DEVELOPMENT PLANS OF THE SERVICE STATION