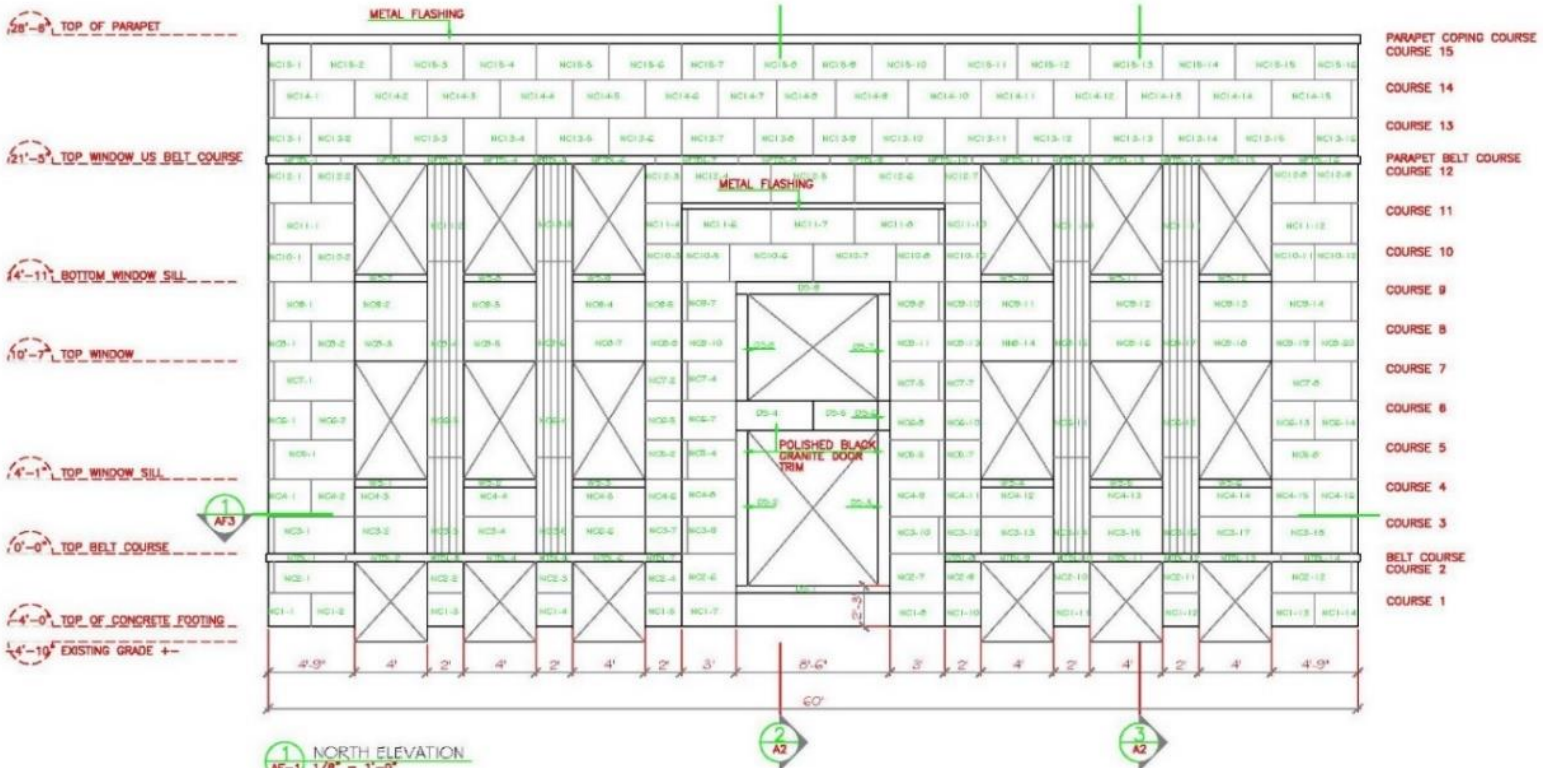
COMMONWEALTH

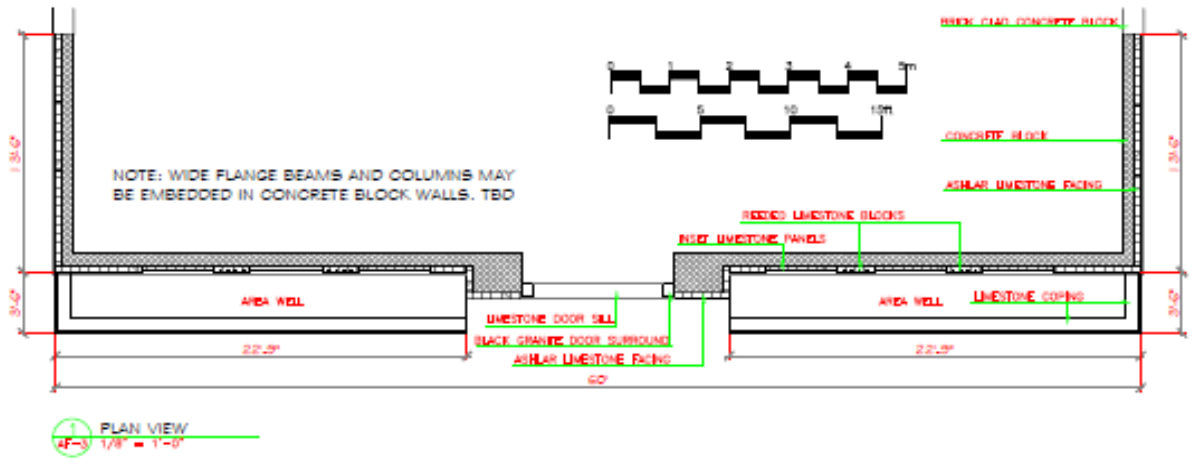
THE MATERIAL CONSERVATION PLAN

100 ARGYLE AVENUE, OTTAWA

COMMONWEALTH HISTORIC RESOURCE MANAAGEMENT

REVISED NOVEMBER 2020





THE MATERIAL CONSERVATION PLAN

1. INTRODUCTION

The following is a revision of the Conservation Plan prepared by Commonwealth in January 2018.

The front portion of 100 Argyle Avenue is distinctly different from the rear brick clad building. It was designed as a distinct feature at the request of the Ottawa Improvement Design Committee. The front is load bearing masonry construction type, consisting of a 4" coursed limestone ashlar blocks affixed to an 8" concrete block and brick backup wall with steel supporting concrete floor and roof slabs. The building has a flat roof with parapets. Traditionally, the stone cladding was laid up and plumbed first using spacers followed by the backup courses. The coursed ashlar limestone is supported on steel angles at the base of the parapet, extending the width of the north facade. Steel angles are also evident at the head of the basement, ground, and second floor windows suggesting a traditional load bearing masonry wall construction. Traditionally, the ashlar limestone would have been dressed at the quarry, numbered, crated, and shipped to the site for reassembly.

Figure 1: view of 100 Argyle Avenue

The Report outlines the feasibility of retaining and incorporating the front portions of the façade as part of a proposed infill development being planned for 100 Argyle Avenue.

- The approach or strategy to achieve the outlined goals included:
- Research into on-line sources and at the Library and Archives Canada in the Lithwick collection of architectural drawings.
- Base documentation in the form of as-found drawings consisting of plans, elevations, sections, and details necessary to understand the technical aspects of the proposed approach.
- Developing a set of annotated masonry conservation drawings where the deterioration patterns and proposed conservation methods and treatments are outlined.
- A conceptual approach outlining the dismantling, storage, and reassembly sequence.

2. HISTORY

The following provides a brief historical outline describing the significance of the front portion of the building and its role as part of the Museum district and its relationship to the Museum across the street. The property at 100 Argyle Street is a 2 1/2 storey office building built in 1954 with an addition built in 1959. It served as the headquarters of the Canadian Labour Congress. References document the building

was designed by Sproule architects, and drawings from the Archives indicating that the addition is by Gilleland and Strutt.

The 1954 building plans for 100 Argyle were prepared and submitted by the firm of Sproule architects. Their submission was reviewed by the City of Ottawa and then forwarded to the Federal District Commission Review Committee who had the control of a building's appearance for any new construction facing federal structures, in this case the Museum of Nature. The Committee had no objection to the use of Queenston Limestone but requested a resubmission of the (front) elevation in a more contemporary design. The archival information includes a series of letters with drawings mentioned but not included[1]. It would appear that the façade was revised using the limestone resulting in a very handsome mid-century classic design. See the attached photo. We are assuming that the redesign front is contemporary with the 1954 build.

What makes this an interesting story is that five years later, the drawings for the addition were prepared by the firm headed up by James Strutt (Gilleland and Strutt Architects). Included in the set of drawings, but separate, is the front elevation that had been installed we assume on the original building (see attached). The fact that the drawings are part of the PAC Strutt folio is a reasonable clue that he had a role in the earlier facade design.

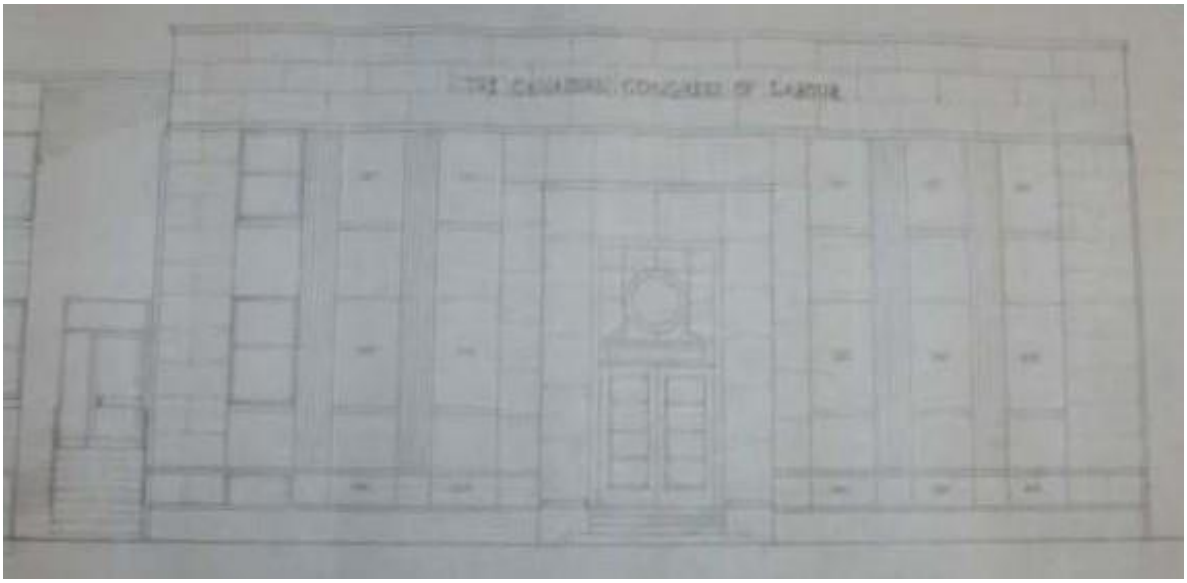


Figure 2: Elevation drawing from the 1959 set of drawings for the addition illustrating the original entrance configuration. Attributed to James Strutt. Source: Library & Archives Canada.

The Strutt association explains why the front portion of the building is a very different treatment with the front and 14' of the side walls in limestone attached to a brick backing. It would also support a case

1 *Rg34, B-1 Vol.278, File 211-C(4) NA. National Capital Commission Papers Central Registry Series Letter H.R. Cram, Secretary to C. G Wight, Director of Planning City Hall, Ottawa March 1954 Building Application by architect W.C. Sproule for permit of a building at 98-102 Argyle Ave. No problem that the building be constructed of stone but Committee "did feel that the design should be of a more contemporary character, and requested a resubmission of the elevation" – FDC architectural Committee has control of the buildings facing federal structures in this case the Victoria Museum block 4258 Centretown Section.*

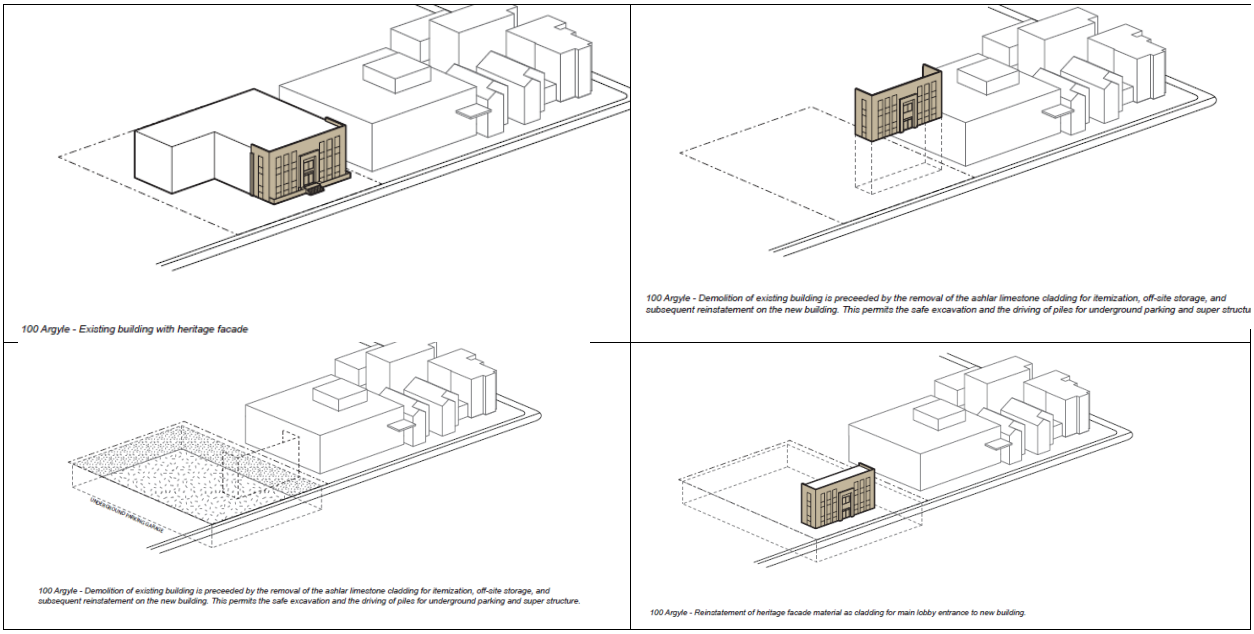
for reincorporating the historically significant front bay as a component of the new tower and maintaining the prominence with the street.

There is still some speculation, but given the very segmented way the building and façade were designed suggests a distinct conservation approach that respects the original intent. The front elevation was commissioned to have a relationship to the street and Museum as well as the building. With this information one could conceivably rewrite the building assessment to include key attributes speaking to the heritage value of this property: These might include:

- the role of the principal elevation as part of the Museum district and the Museum across the street.
- its association with James Strutt's mid-20th century modernist aesthetic as expressed in the two and one-half storey bay fronting on Argyle,
- the symmetry of the front façade expressed in a stripped down classism of the modernist style;
- the show piece of stonework panels, in Queenston limestone;
- the organization of the building with a significant front bay with a material change to the rear portion set subordinate to it, and clad in a grey brick;
- the building's visual relationship to the street and to other buildings along Argyle.
- the role of the NCC and the City establishing design parameters and civic cooperation

3. APPROACH

The following cartoon lays out the approach being recommended with itemization of the ashlar limestone cladding of the front part of the building, its removal as part of the building's demolition and storage off-site. While construction takes place at 100 Argyle Avenue any conservation work will be undertaken. The front including the limestone window wells will be relocated east of its original location but at the same distance from the property line, and reconstructed as the entrance foyer.



100 Argyle - Existing building with heritage facade

100 Argyle - Demolition of existing building is preceeded by the removal of the ashlar limestone cladding for itemization, off-site storage, and subsequent reinstatement on the new building. This permits the safe excavation and the driving of piles for underground parking and super structu

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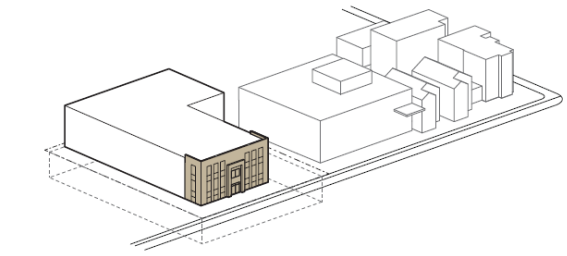
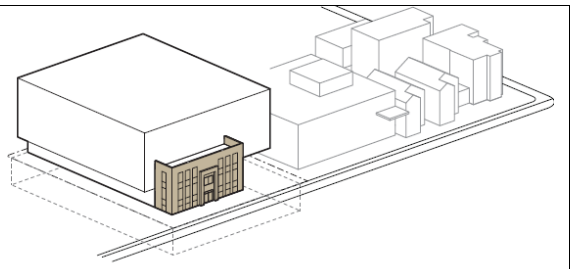
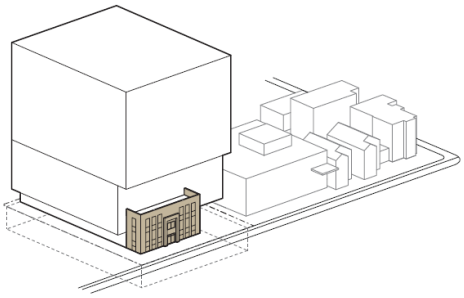
100 Argyle - Reinstatement of heritage facade material as cladding for main lobby entrance to new building.



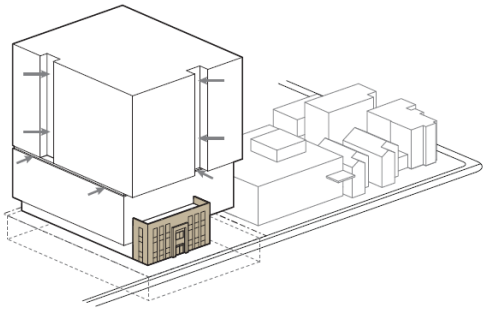
100 Argyle - Establishment of amenity uses.



100 Argyle - 3 storey podium is set back from the heritage facade.



100 Argyle - Upper tower cantilevers the podium and heritage facade on the North face.



100 Argyle - Articulation of building - reveals and cutbacks provide the building with proportions and scales that are akin to surrounding buildings.

Figure 3: Illustrating the documenting, dismantling and moving of the front portion of the building and repositioning it it. The sketch does not include the limestone window wells but they are considered part of the conservation program and will be reinstalled.

Figure 4. An elevation and a view looking west illustrate the new midrise apartment with the front portion of the original building serving as the main entry and building foyer. Source R Lahey Architect 2020.

4. AS-FOUND RECORDING

Commonwealth completed as-found measurements and photographs of the building facades. The visual inspection and measurements were undertaken from grade, and the height of the ashlar courses above the second floor windowsills was estimated based on the height of stone course below the windows. A set of as-found elevations, a plan view, and two sections were developed.

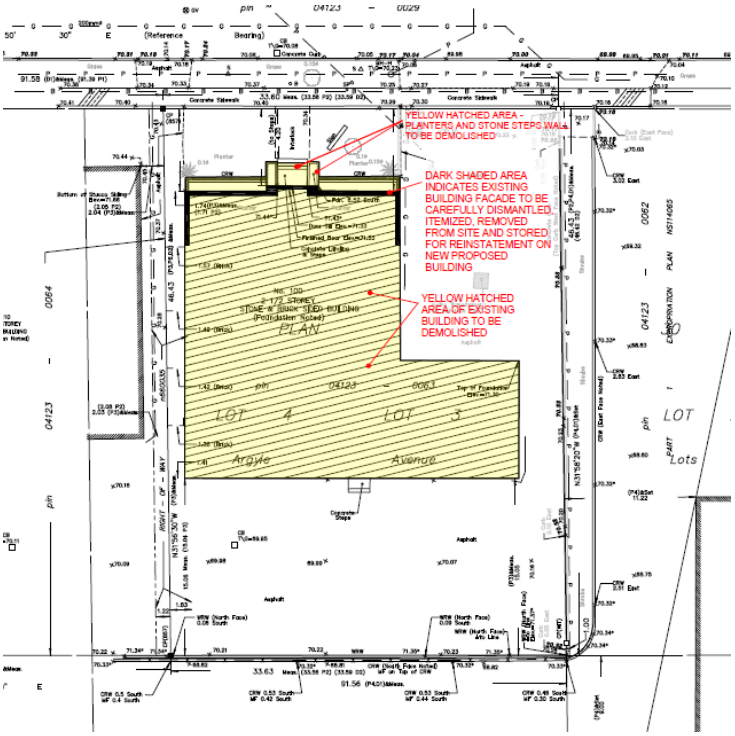


Figure 5: Survey Plan of the existing building indicating the portion of the building to be demolished shown in yellow hatch with the black outline indicating the front façade to be dismantled.

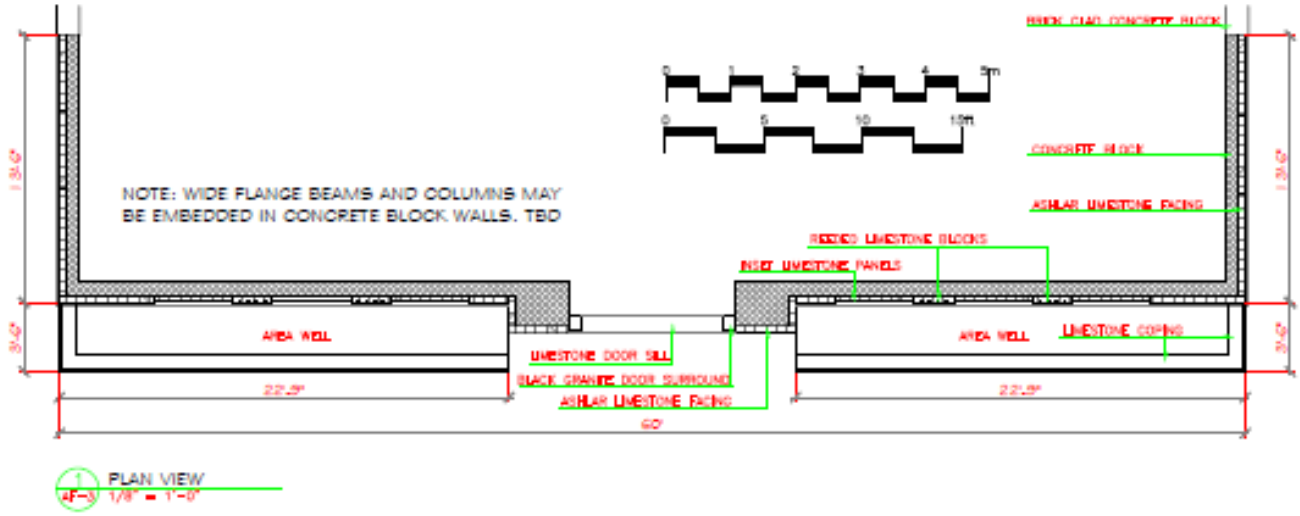


Figure 6: Plan As-Found drawing AF3.

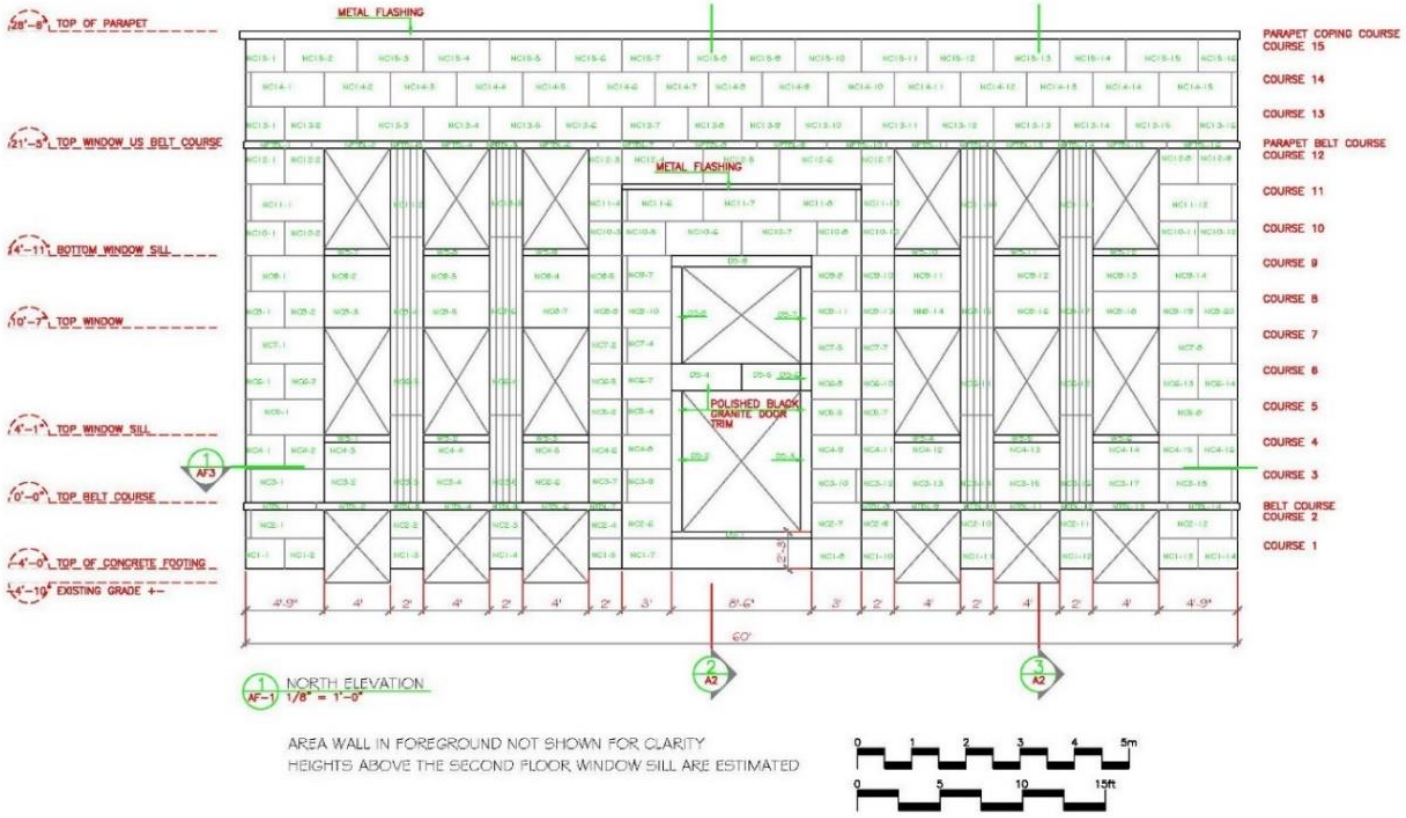


Figure 7: Front Elevation As-Found drawing AF1 and AF2. Source Commonwealth

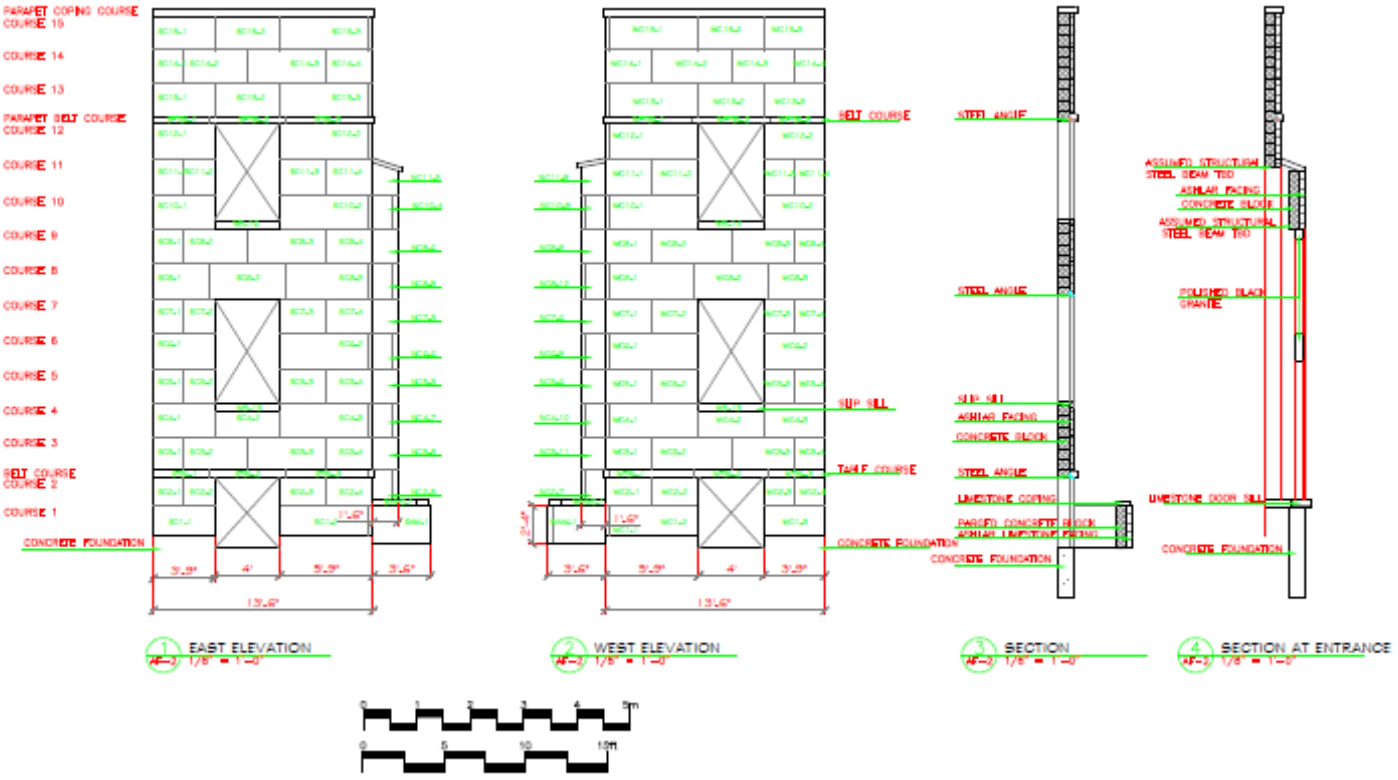


Figure 8: Side Elevations As-Found drawing AF1 and AF2. Source Commonwealth

5. ASSESSMENT OF MASONRY COMPONENTS

The masonry components that are included in this conservation assessment include:
Coursed ashlar limestone facing, belt courses, and door and windowsills
Coursed ashlar limestone area wall facing and coping extending the length of the building's principal façade and, polished black granite door surround at the main entrance.

Description

The coursed ashlar limestone facing is 4" thick and is secured to a concrete block back-up wall – the specific method and type of anchor has yet to be determined. A steel angle is evident below the parapet at the head of the second floor windows as well as at the head of the first floor and basement windows. The coursing of the stone corresponds with the top and bottom of the windows on the three floors, suggesting a relatively simple attachment method consisting of typical anchors of the period – metal rod anchors, clamps, and clips (Figure 3) that may have been used to secure the limestone ashlar block to the concrete block back-up walls.

The coursed ashlar facing consists of four (3-3/4") inch thick limestone blocks with a coursing height of 2'-0" +- (corresponds to the height of 3 concrete block courses) with a 3/8" mortar joint. The height of the stone courses varies. For example: the first two courses 1 & 2 at the base of the wall, measures 22" in height with a 5" limestone belt course, the next two courses 3 & 4, measure 24-1/2" in height, and

the height of the next three courses 5, 6 & 7 measures 26". The height of the ashlar blocks vary depending upon decorative features such as belt courses and the location of the floor structures. The length of the units vary from 1'-6" to 5'-5", with most in the 4'-0" range. The coursing between the ashlar blocks consists of an offset of half the length of the units between successive courses. The location and number of anchors can be determined with a metal scanner.

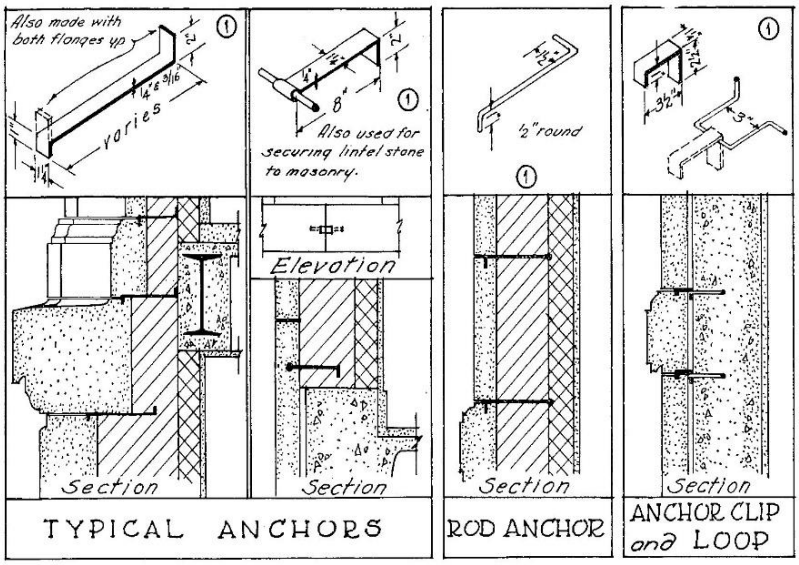


Figure 7: *Typical anchors used to secure cut stone facing to an assortment of back-up walls. The flat steel bar with upturned or downturned ends to the left the image, and the rod anchor would both be suitable to the relatively simple stone application on the facades. Source: Traditional Details for Building Restoration, Renovation, and Rehabilitation. 1932-1951 Editions Architectural Graphic Standards pg. 63. Ramsey Sleeper. John Wiley and Sons Inc.*

The belt courses and sills consist of shaped limestone blocks five (5") inches in height and six (6") inches in depth with an integral drip. The area wall and parapet are capped with a simple rectangular limestone coping. The vertical stone pieces between windows on the main façade are finished with what is termed 'reeding' – a surface made up of closely spaced parallel flat and V shaped profiles.

ASHLAR LIMESTONE AND GRANITE CONDITION

The ashlar limestone facing is for the most part in good condition with the exception of a few stones. The limestone is a brownish buff colour with a 'chat sawn finish,' which was a common finish for ashlar blocks. The source of the limestone is not known, however, there are a number of quarries in the Owen Sound area that supply 'Indiana' limestone similar to the material used on the building façade. Another possibility is the Deschambault Quarries near Quebec City. The black granite door surround is in good condition.

Figure 8: Detail view of ashlar limestone blocks with voids or vugs in the unit to the left. Note the shell fossils in the block to the left. Source: CHRM.

6. DOCUMENTING THE CONDITION AND CONSERVATION REQUIRED

The limestone contains calcite spots (white inclusions), some fossils, pit holes or vugs, and grain change. A number of the limestone units exhibit a range of deterioration patterns. These are briefly discussed and a conservation approach outlined. The As-Found drawings identify each unit with a number and any conservation required will be specifically noted to each unit. To follow is a discussion of the types of deterioration found with supporting images to help illustrate.

Blistering of masonry leading to loss of the stone surface typically associated with de-icing salts. There are a very limited number of stones affected on the three facades.
Conservation Approach: Selective retooling of the surface to remove disaggregated material;

Delamination - Delamination corresponds to a detachment following the bedding or schistosity planes of a stone. This is a relatively common problem with the stones on the three facades, being more common on the two secondary or return walls where the mason chose to place the poorer quality material.
Conservation Approach: Selective retooling of the surface to remove loose and scaling material. Complete replacement of stone face units with more severe surface delamination.

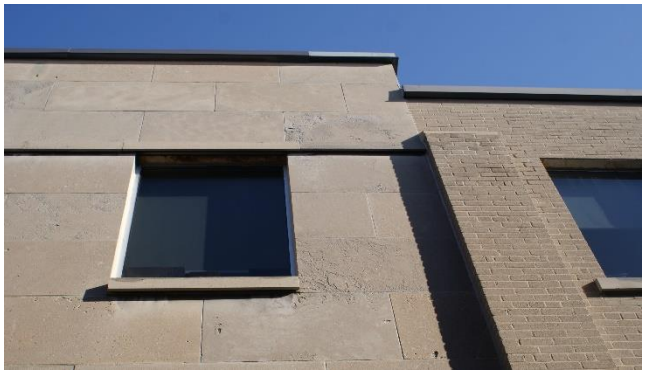


Figure 9: Detail view of a portion of the west façade. A delaminating stone is located to the bottom right of the window, as well as the face stone to the right of the window above the belt course. There are also a number of vugs or inclusions evident in the face stones. Source: CHRM.

Vugs or Inclusions - A cavity in rock; sometimes lined or filled with either amorphous (calcite) or crystalline material; common in calcareous rocks such as limestone. The calcite inclusions are for the most part small and inert and have no deleterious effect on the serviceability of the units. The larger inclusions, of which there are a number scattered throughout the façade, are of more concern as they tend to be larger and trap moisture, which, freezes, leading to further disaggregation of the stone.
Conservation Approach: Selective retooling and removal of loose or disaggregated stone. Application of a repair mortar such as Jahn M70 Limestone custom coloured to match the stone.

Impact Damage - Loss of stone material due to a mechanical action.
Conservation Approach: Varies depending upon the location, size and visibility. If small and out of sight the stone can be left as-is. Where the damage is more extensive, a stone Dutchman will be inserted.

Soiling - Deposit of a very thin layer of soot or other particles giving a dirty appearance to the stone surface. The soiling on the stone surfaces is fairly uniform and light on most of the face stones. Soiling is more evident below the belt courses and window sills that are protected from the cleaning action of rain water.
Conservation Approach: Clean the surface of the stone.

Fracturing – Delamination of a stone at a bedding plane that has different material characteristics. This is more common with the stones in the belt courses, and windowsills.
Conservation Approach: The options in regards to the stone windowsills are to replace defective units. This would entail a minimum of effort in that the slip sills are not tied into the adjacent walls. The course of action for defective stones in the belt courses is to replace the units by cutting out the mortar joints and removing the stone.

Figure 10: View of a stone in the belt course (left) that has different material characteristics in the process of fracturing at a bedding plane. Source: CHRM.

Cracking – A very limited number of stones in the belt course, one face stone, and a doorsill have cracked.
Conservation Approach: Varies from complete replacement, to inserting stainless steel pins and applying a repair mortar such as Jahn M70 Limestone, custom coloured to match the stone. Alternately, if left in-situ, leave the stone in place and do nothing depending upon its visibility.

Compression Chipping - Small chips detached from the stone at masonry joints due to settling or deflection of the wall due to loading. This is evident in four of the reeded stones at the top of the first floor windows on the east side of the north façade (See Figure 11).
Conservation Approach: Remove chips and retool the area. Review structural loading conditions that caused the deflection.

Figure 11: Detail of east elevation at the basement level. The stone belt course is cracked at the mid-point, and the face stone at the lower left below the window has sheared at an external corner. Source: CHRM.

Figure 12: Detail view of north elevation with vertical reeded blocks, and the recessed panels below the first and second floor windows.

Figure13: View of limestone clad area wall and coping. Note that the basement windows are set into the foundation wall.

Figure 14: Note the rusting steel angle below the parapet belt course and the first floor window. There are indications on the north façade that the shelf angle below the parapet belt course is continuous. If this is the case, there is a high probability that the steel angle is secured to steel buried behind the wall.

Figure 15: View of the east façade of the building. Note the lintel stone above the first floor window that overlaps onto the adjacent stones indicating a traditional load-bearing application. Note the projecting brick pilaster and its termination at the top. A steel column is likely buried behind the pilaster. The beam may support additional horizontal steel beams that would support the parapet, to which the continuous shelf angle evident below the parapet belt course would be attached.

7. CONSERVATION APPROACH & METHODOLOGY

Dismantling and Storage

The Approach is the dismantling and reconstruction of the limestone cladding on a new back-up wall. The intention would be to dismantle the stone facing, sills, belt-courses, parapet coping, and area wall components. A detailed methodology follows:

- the window sills would be numbered with their corresponding window number;
- the belt courses and coping stones would be numbered similarly to the stone panels;
- the numbering system would look something like this E – C1-1, E – C1-2 etc. The E denotes the elevation, C – denotes the course 1 – 15, and the final number represents the sequencing 1, 2, 3, etc.
- the original vertical orientation of the units should also be marked on the back of the stones with an arrow for up.
- begin dismantling the exterior cladding from the top down;
- remove the metal flashing from the parapet;

- dislodge the parapet coping stones using a rubber mall, mark and identify each stone and note orientation and condition(s) of each unit;
- locate and cut the metal anchors along the top of the uppermost stone course 15;
- dislodge the stones successively using a rubber mall, mark and identify each stone and note orientation and condition(s) of each unit;
- repeat until all of the material has been removed;
- stack the material vertically on wooden pallets. Use wood spacers between stones; and
- ship to a storage location.

Reassembly

The assumption is that the stone cladding will be secured with metal anchors to a concrete block back-up wall in a manner similar to the existing installation method. Weeping holes will need to be installed to meet current building codes. Continuous weepers could be placed below the shelf angles that occur every third course.
Determine which stones need to be replaced. Fabricate new units to the form, dimensions, and colour of the replaced unit. There are approximately 350 pieces in the three facades including belt courses, and window and doorsills. A number of assumptions have been made in regards to the work, including securing the ashlar limestone blocks to a back-up wall in a manner similar to the existing installation; and, that the ashlar limestone blocks in the area wall enclosure will be used to replace any units that need to be replaced on the façade of the building.

Conservation Methodology

The majority of the conservation treatment - descaling of delaminated stones and cosmetic filling of inclusions or vugs could be undertaken following reassembly. Where stainless steel pins are required to stabilize a stone that has cracked, the work will be completed when the stone is installed in its final location. Cleaning of the stone would occur prior to the completion of the finish pointing.

Details regarding the interface between the new building and the front as well as the connectors have not been determined

The entrance to the reconstructed front podium will be set at a lower grade than currently exists. The front entrance portico will be modified and the existing stairs, which are not original will be removed with access from the street provided at grade. This will require setting the grade of the ground floor lower. The modification of the main entrance level to the building is an acceptable conservation approach within the context of a building 'rehabilitation' in order to meet accessibility objectives. 'Rehabilitation' involves the sensitive adaptation of a historic place or individual component for a continuing or compatible contemporary use, while protecting the property's heritage attributes.
In order to provide universal accessibility. Archival drawings provide an indication of the appearance of the 1954 doors that have been replaced. This appear on the elevation attributed to James Strutt

Figure 16: Close-up of the front elevation illustrating the original double doors with the elaborate transom. Source Archives and Library Canada.

Conclusions

The retention and reinstallation of the north wall and two return walls in a new infill development is an accepted conservation approach. The lowering of the entrance to a level closer to the existing grade is also an accepted conservation approach in order to meet other project objectives, including universal accessibility. The relocation of the building from its original location is discouraged.
In order to move forward with the dismantling the following elements need further investigation:

- Selectively remove the interior finishes at the floor and ceiling levels to determine how the floor levels are supported at the exterior walls. The archival drawings for the addition show the floor structure extending into the concrete block back-up wall. This may have implications when the floor structures are demolished;
- Steel columns and beams embedded in the exterior walls need to located;
- Scan representative ashlar panels to determine the placement of metal anchors securing the ashlar veneer to the concrete block back-up wall and or embedded steel; and,
- Remove interior finishes from the entrance bay to determine how the black granite door surround is secured and supported.

The following documents were used in the preparation of this addendum:

- Cultural Heritage Impact Statement for 100 Argyle Avenue, December 2018 Commonwealth;
- D1215 100 Argyle CHIS Revised 1 Jan.2, 2019;
- UDRP Recommendations 100 Argyle Avenue February 1, 2019;

- D1215 100 Argyle ADDENDUM November 2019;
- D1215 100 Argyle ADDENDUM 2 presentation January 2020;
- Memo to Anne Fitzpatrick, 100 Argyle Avenue, Heritage Comments, Strutt Façade and Agreed Approach March 14, 2020.

Archival Drawings

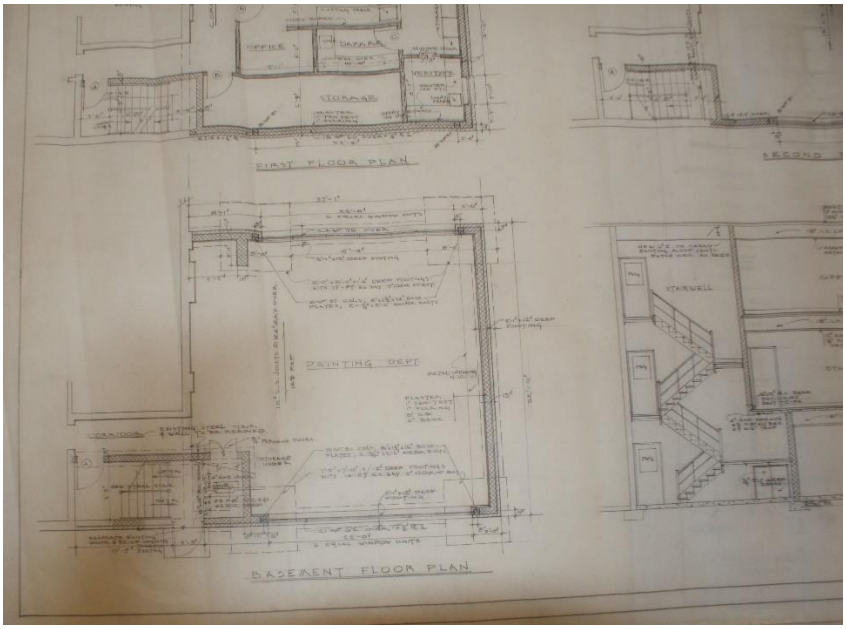


Figure 16: Partial drawing for the 1959 addition. The addition and the main building were completed within 5 years of each other. The likelihood is that the same construction methods and techniques were used in the main building and the addition. Note how the floor slabs are shown penetrating the interior concrete back-up wall, which should be documented during the demolition of the floor plates. Similar wide flange steel beams specified in the 'Notes' may have been used in the main building to support the masonry above the main entrance and other locations. Source: LAC Lithwick Collection Mikan No. 4002312.

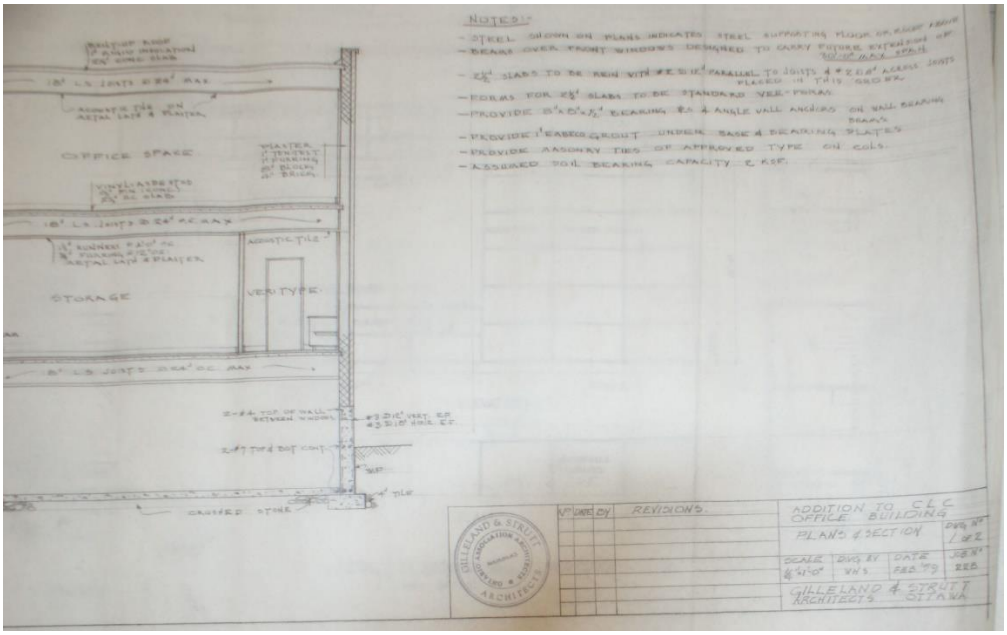
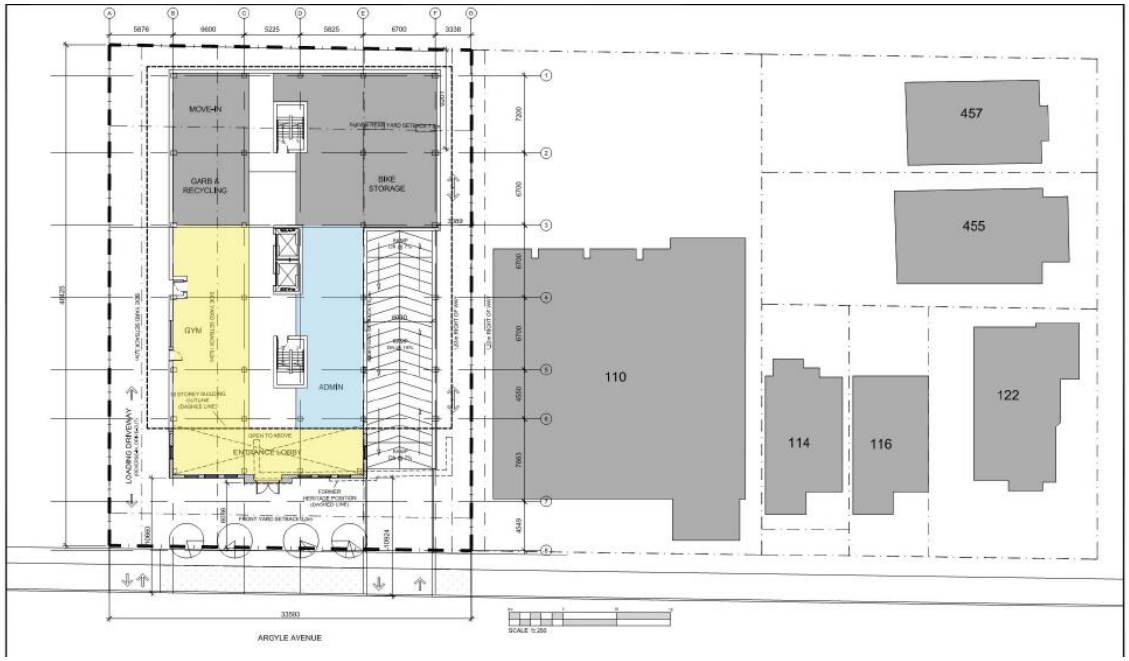
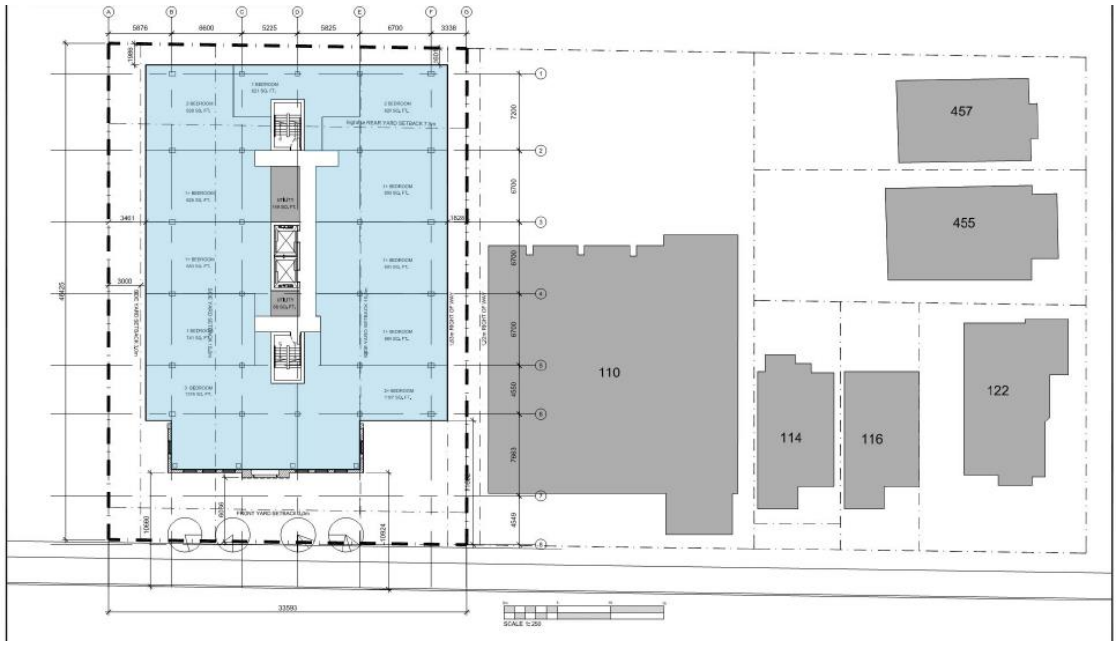


Figure 17: Partial plan and section of the 1959 addition. Note the steel columns embedded in the concrete block walls. Additionally, note the wide flange beams sizes supporting masonry walls above fenestrations as well as other locations. Source: LAC Lithwick Collection.

APPENDIX A: PROPOSED PLANS REVISED 2020

The plans are included here as reference.

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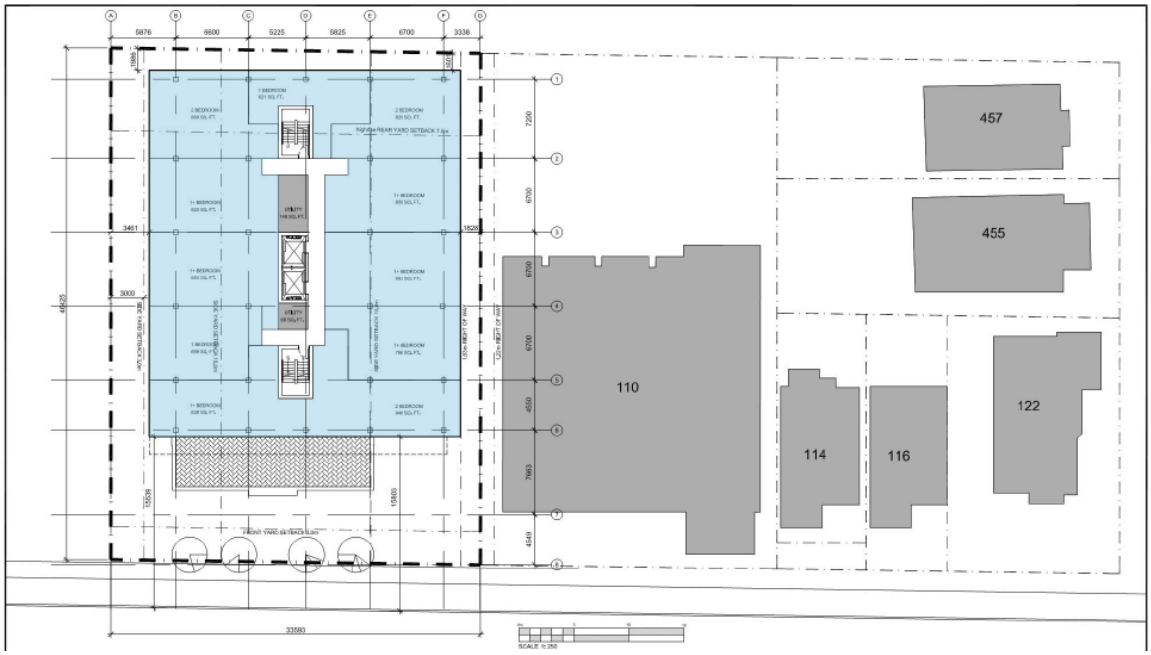
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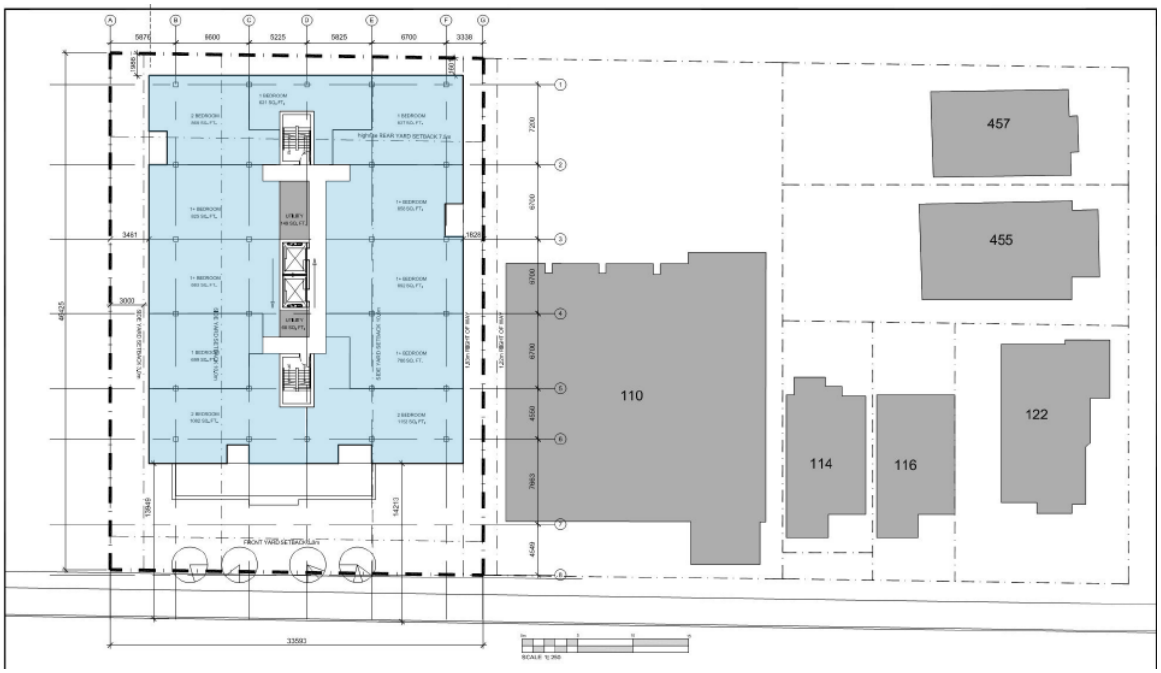
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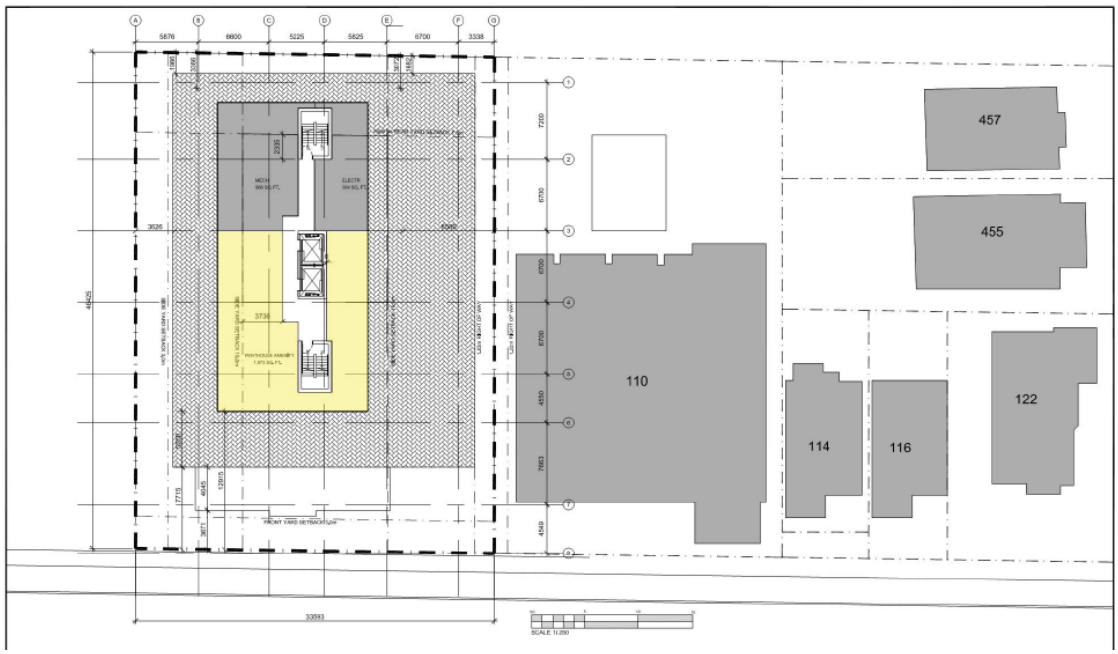
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