



May 13, 2026

Prepared For:

WORKSHOP

6 Sousa Mendes Street

Toronto, ON M6P 0A8

Prepared By:

Giaimo + Associates Architects Inc.

213 Sterling Road, Unit 204

Toronto, ON, M6R 2B2

60 Brant Street:

Window Condition Assessment and Conservation Strategy

1. Introduction

Giaimo + Associates Architects Inc. (Giaimo) has been retained by Workshop Architecture Inc. to prepare this Window Condition Assessment and Conservation Strategy, as part of State of Good Repair (SOGR) work to be carried out at 60 Brant Street.

The subject property, located at the southwest intersection of Brant Street and Richmond Street West (60 Brant Street), is designated under Part IV of the Ontario Heritage Act (OHA) and included in the King-Spadina Heritage Conservation District (HCD).

60 Brant Street is part of a larger building complex known as the Waterworks building, constructed in 1932, during J. J. Woolnough's tenure as Toronto's City Architect. Designed in Art Deco style and rising two to three stories, the complex encompasses the northern half of the block bound by Maud Street on the west, Richmond Street to the north, Brant Street to the east and Adelaide Street to the south. The western portion of the complex has been developed with the addition of a 13-storey mixed-use commercial residential building. The subject building was adaptively reused for institutional use and operates as a transitional housing facility for youth known as Eva's Pheonix.

The objective of this report was to evaluate the condition of the exterior steel windows on the north, south, and east elevations (33 units in total) and to evaluate the options to replace or restore the windows. The proposed conservation strategy recommends restoration of the windows to minimize impacts on the heritage attributes and retain the building's cultural heritage value.

2. Cultural Heritage Value

The property at 60 Brant Street is designated under Part IV of the OHA. It was designated by the City of Toronto By-law No. 1350-2013 on October 11, 2013.

The Heritage Attributes from Schedule "A" of the By-Law include the windows:

The fenestration, with piers organizing the flat-headed window openings that are aligned vertically and horizontally on the administrative building, workshops and warehouse, some of which retain the original metal sash windows

The property is also within the boundaries of the King-Spadina Heritage Conservation District (HCD), in the St. Andrew's Character Sub-Area, and a 'contributing property'.

Within the HCD Plan, 'contributing property' is defined as:

a property, structure, landscape element or other feature of an HCD that supports the identified significant cultural heritage value, heritage attribute and integrity of the District.

3. King-Spadina HCD Plan

The King-Spadina HCD plan Policies and Guidelines for Contributing Properties, 6.13 Windows and Doors, indicates:

The use of metal sashes and the solid-to-void ratio of window to wall in contributing Commercial properties is an especially distinctive heritage attribute of the District.

Policy 6.13.1 indicates: "Conserve the form, placement, rhythm and style of original or restored windows and doors of contributing properties". However, 6.13.1.a. notes that minor alterations which increase building performance and life cycle may be permitted.

Policy 6.13.2 indicates: "Conserve structural and architectural features of original or restored windows and doors of contributing properties". The Plan further directs to repair damaged or deteriorated original window features, and to only opt for replacement when deterioration is beyond repair.

4. Window Condition Assessment

4.1 Limitations and Extent of Assessment

The material in this report reflects the opinion of Giaimo at the time of the site visit. The descriptions, observations and recommendations are solely based on physical evidence reviewed during the site visits. In addition, invasive, physical or destructive testing on or off site was not undertaken prior to developing this report.

The observations, conclusions, and recommendations included in this report may change following receipt of supplementary information, further reviews, and any additional coordination with stakeholders and consultants involved in this project.

Recommendations and proposed probable scopes of work contained in this report must not be interpreted as technical specifications for repairs nor are they to be used in the place of plans and specifications to perform construction work. The information, recommendations, and proposed probable scopes of work in this report are intended to guide future repair campaigns only. Prior to each repair campaign, further investigation and analysis is required that will lead to a comprehensive design. The design can be described in plans and specifications that would be used to tender and construct the work.

The mandate was specifically targeted to review visible elements of the steel windows in scope. The following aspects are excluded:

- Detailed survey;
- Reviewing and summarizing of past reports and studies;

- Review of existing building conditions in concealed or inaccessible areas;
- Roof membranes;
- Investigations or exploratory work;
- Laboratory analysis of building components;
- Study on the types and conditions of the building structure;
- Study on the types and conditions of mechanical and electrical systems;
- Building Code and/or regulation compliance analysis;
- Hazardous materials review and/or characterization, or analysis of air quality or potential contamination (asbestos, molds, etc.); and
- Review of any components that are not specifically identified as being included in the mandate.

This document should not be considered as exhaustive but limited. It does not guarantee the absence of hidden defects. Observation was made only of those areas that were readily accessible and visible, latent and hidden defects may affect the accuracy of this report.

4.2 Summary of Assessment Findings

A site visit was conducted on April 7, 2026, to review the overall condition of 33 steel frame windows across the north, east and south elevations. Four second floor windows on the east elevation, at the southeast corner of the building within the office area, were not assessed. These windows were covered in tarp at the time of visit. The observations were made from the interior and from the exterior at grade.

The portion of the building in scope has four main window types:

- Double height steel windows (north elevation) with an operable horizontal pivot sash comprising the upper three rows of lights.
- Projecting steel windows with two operable side awning sashes, each comprising the upper three rows of lights. This is the most common type and is utilized in two sizes.
- Small fixed window (originally operable), only one located at the House 10 common area.
- Large fixed window, only one located at the Property Maintenance Training Room (currently serving as storage space).

Original glazing appears to have been translucent Georgian wired glass. There are several cracked or damaged panes throughout and replacements with clear single pane glass. Frame deterioration was typically observed at the replacement panes.

Summary of representative conditions:

- Subframes – The subframes are likely keyed into the masonry; a condition to be considered for the restoration scope, as a combination of in-situ repairs and repairs at a shop may be considered by the subcontractor.
- Operability – Some operable sashes have been painted shut.
- Hardware – Most windows have partially missing hardware mechanisms, for example missing chains and pulley assembly. There are some windows with near complete set of operable hardware which can be referenced for restoration.
- Frame deterioration – Minor corrosion was mostly observed at the sills on the interior side. Atmospheric soiling, areas of paint loss, and cracking of glazing putty were also common conditions. Additionally, stress cracking within interior frame members was observed in one location. On the exterior, minor corrosion on the muntins and mullions was observed.

5. Recommended Conservation Strategy

Section 4 concluded that the windows in scope are in good to fair condition¹. The recommended conservation strategy based on the overall window conditions and King-Spadina HCD guidelines is Rehabilitation. It is recommended the existing steel window frames and hardware be restored, and the single pane glazing be replaced with insulated glass units (IGU).

Based on the existing frame return depth, appropriate sealant placement and glass engagement, a maximum IGU thickness will be determined by the design team. Preparation of a mock-up with the proposed IGU is recommended.

The restoration work should be executed by a qualified specialist subcontractor with a minimum of five years experience working with heritage structures. This work should be reviewed on-site for adherence to heritage conservation best practices, by a qualified heritage consultant.

¹ The building components were graded using the following assessment system;

- Good: The assembly or component is mainly intact and is at minor risk of damage or deterioration due to normal service conditions (e.g. environment, loading) in the short term (1 to 5 years)
- Fair: The assembly or component is compromised and is at risk of damage or deterioration due to normal service conditions (e.g. environment, loading) in the short term (1 to 5 years)
- Poor: The assembly or component is lost or at considerable risk of loss due to normal service conditions (e.g. environment, loading) in the short term (1 to 5 years)

6. Visual Resources

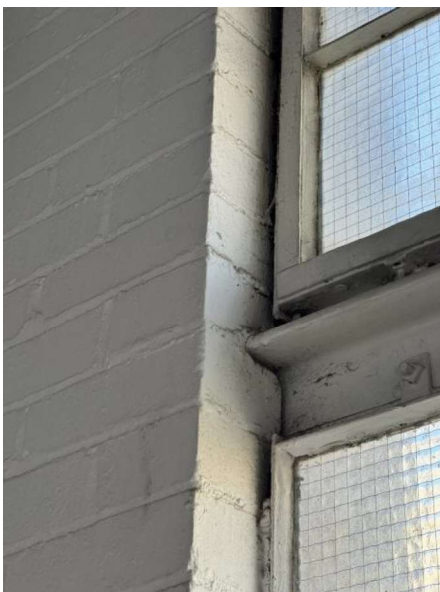
This section provides images of typical conditions observed on site.



Partially missing hardware mechanisms.



Cracked glazing putty at the sill.



Double height window subframe appears to be keyed into surrounding masonry.



Double height window horizontal pivot hinges.



Minor corrosion at the bottom mullion of operable sash.



Stress cracking within interior frame members.



Operable awning sash not fully seated in the frame due to worn or ineffective latching hardware.



Replaced and original glazing.



Minor corrosion at sill and cracked glazing putty.



Cracked glazing putty and minor corrosion at sill.



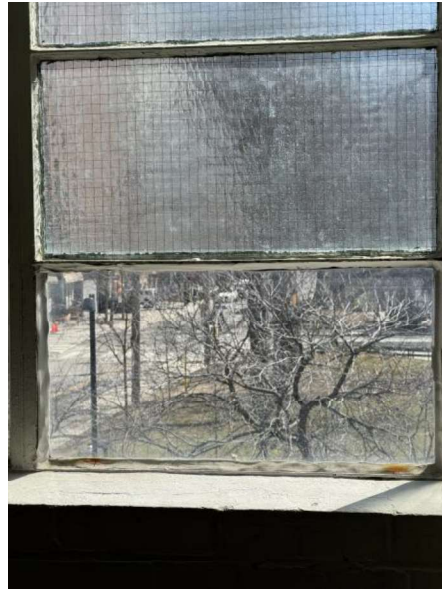
Window with interior storm and complete glazing replacement (Bedroom 204).



Atmospheric soiling and partially missing hardware mechanisms.



Replaced glazing and rearranged muntin at the window located in the kitchen.



Replacement glazing with localized corrosion staining at sealant.



Minor corrosion at exterior of the mullion.



Minor corrosion at operable sash.

1 General

1.1 DESCRIPTION OF WORK INCLUDES

.1 Work under this Contract covers the following:

Work includes, but is not limited to:

- Roof replacement.
- Heritage steel window conservation and glazing replacement.
- Interior refurbishment including localized replacement of ceiling finish at areas showing signs of water damage.
- Temporary relocation and reinstallation of mechanical units to facilitate roof replacement.
- Phasing and expedition of work to minimize impact on occupants and maintain intended operation of the building (including heating/cooling/ventilation), as further outlined in the documents.

1.2 RELATED SECTIONS

SECTION

01 11 00	Summary of Work
01 14 00	Work Restrictions
01 21 00	Allowances
01 25 00	Alternatives and Substitutions
01 26 00	Contract Modification Procedures
01 29 00	Payment Procedures
01 31 13	Coordination
01 32 00	Construction Progress Documentation
01 33 00	Submittal Procedures
01 40 00	Quality Requirements
01 51 00	Temporary Utilities
01 52 00	Temporary Construction Facilities
01 56 00	Temporary Barriers and Enclosures
01 57 00	Temporary Controls
01 61 00	Common Product Requirements
01 71 00	Examination and Preparation
01 73 00	Execution
01 73 29	Cutting and Patching
01 74 00	Cleaning and Waste Management
01 77 00	Close Out Procedures
01 78 00	Close Out Submittals
01 79 00	Demonstration and Training
01 91 00	General Commissioning Requirements

1.3 CONTRACTS

.1 Construction Work under single Construction Agreement Contract and Supplemental Conditions if applicable.

1.4 GENERAL REQUIREMENTS

.1 The requirements of the Articles of Agreement, Conditions of the Contract, Division 1 apply to and form all Sections of the Contract Documents and the Work.

- .2 Work in this Specification is divided into descriptive sections which are not intended to identify absolute contractual limits between Subcontractors, nor between the Contractor and their Subcontractors. The Contractor is responsible for organizing division of labour and supply of materials essential to complete the Contract. The Consultant assumes no liability to act as an arbiter to establish subcontract limits between Sections or Divisions of Work.
- .3 Specifications, Schedules and Drawings are complementary and items mentioned or indicated on one may not be mentioned or indicated on the others.
- .4 Contractor shall be responsible for materials, products, operations, or methods mentioned in the specifications or indicated on the drawings and shall provide to the quality or subject to the qualifications noted. Perform, according to the conditions stated, each operation prescribed and provide labour, materials, products, equipment and services to complete the Work.
 - .1 Work related to Heritage Steel Windows, including but not limited to restoration of window frames, glazing replacement and paint finishes to be performed by a contractor with not less than five (5) years experience in heritage restoration work.
- .5 Where the singular or masculine is used in the Contract Documents, it shall be read and construed as if the plural, feminine or neuter had been used when the context or the statement so requires and as required to complete the Work, and the rest of the sentence, clause, paragraph, or Article shall be construed as if all changes in grammar, gender or terminology thereby rendered necessary had been made.
- .6 The terms "exposed" or "exposed to view" refers to surfaces that are within the line of vision of persons from any accessible viewpoint, both within and without the building. Where any part of a surface is exposed to view, all other portions of that surface shall also be considered as exposed to view.

1.5 WORK SEQUENCE

- .1 Cooperation with The Owner in scheduling operations to minimize conflict and to facilitate The Owner's ongoing usage.
- .2 All of the Work is to proceed to the schedule submitted by the awarded Construction Manager (hereby referred to as the Contractor or GC) and accepted by the Owner. The Contractor's schedule will recognize the following restrictions:
 - .1 The Contractor must perform their activities respecting the requirements set forth in the specifications Division 01 - Section 01 11 00 "Summary of Work" and will safeguard the operations of The Owner. All services are to be left in good repair and operating while the Work is undertaken.
 - .2 Safe access through the intended Project access route and fire/emergency routes must be maintained. Throughout the construction period, the Contractor is to include for any hoarding, covered walkway, etc., necessary for this purpose. The construction activities are to be scheduled so as to minimize any complete shutdown of the manufacturing/production and delivery areas.

1.6 CONTRACTOR'S USE OF PREMISES

- .1 The Contractor shall maximize use of premises as much as possible to allow for:
- .2 Assume full responsibility for protection from construction hazards of The Owner's staff at all times when they are on the site.
- .3 Assume full responsibility for the protection of the existing buildings, systems and services, and utilities from damage due to the Work of the Contractor or any

Subcontractors employed on the site. After obtaining the approval of the Consultant, make good all damage to Owner's satisfaction and at no cost to Owner.

- .4 Site storage:
 - .1 Allocate an area on site within the limits of the Work acceptable to The Owner for storage of Products brought to the site by all trades. Materials and equipment to be stored on site in storage containers (i.e. C Can Containers) or on site in a weatherproof storage enclosure.
 - .2 Do not encumber site with materials or equipment items are stored on site.
 - .3 Keep storage area tidy at all times and do not use other parts of the property for storage.
 - .4 Assume full responsibility for protection and safekeeping of products stored on premises.
 - .5 Move any stored products or equipment which interfere with operations of The Owner at no cost to the Owner.
- .5 Refer to Section 01 14 00 for additional work restrictions relevant to the Work.

1.7 DOCUMENTS AT THE SITE

- .1 Keep the following documents on Site, stored securely and in good order and available to The Owner and Consultant in hard copy:
 - .1 Current Contract Documents, including Drawings, Specifications and addenda.
 - .2 Change Orders, Change Directives, and Supplementary Instructions.
 - .3 Reviewed Shop Drawings, Product data and samples.
 - .4 Field test reports and records.
 - .5 Construction progress schedule.
 - .6 Meeting minutes.
 - .7 Manufacturer's certifications.
 - .8 Permits, inspection certificates and other documents required by authorities having jurisdiction.
 - .9 Current as-built drawings.
 - .10 Material Safety Data Sheets (MSDS) for all controlled Products.

1.8 OCCUPANCY AND USE OF PREMISES

- .1 The Contractor and all Subcontractors are expected to understand that all areas of the building remain occupied during the Work and that the Work is to be executed in such a manner as to provide the minimum interference with the partial use of the premises by the occupants, and the maximum safety of the occupants during the Work. The Contractor and all Subcontractors will take reasonable measures for the control of noise during working hours.
- .2 The Contractor shall maintain normal building operation and traffic flow, with minimum inconvenience from noise and dust to the tenants of the facilities.
- .3 The Contractor shall organize the work at each facility so as to minimize any disruption in the ordinary use of the facility by the tenants, ensure minimum interference with the occupation, use and enjoyment of the facility by the tenants and minimize any reduction in comfort at the facility.

- .4 All noise and vibration generating operations, such as jack hammering, drilling, compacting and the use of other such equipment, that will interfere with the occupied portions of the building shall be confined to the hours as stipulated in Section 01 14 00.
- .5 The Work shall be confined to the area defined on the drawings except that services connections, sanitary and storm connections, and certain portions of landscaping, hard paving and curb work shall be executed on Municipal property under regulations of authorities having jurisdiction
- .6 It is essential that the existing building be maintained weather tight at all times. The Contractor shall therefore furnish all temporary protection, enclosures, tarpaulins, etc., as may be required to weatherproof any openings made by the Work. The Contractor and all Subcontractors must seal off or temporarily dam all open roof edges, etc. to prevent any water present on existing roof areas, from entering the occupied floor(s).
- .7 The Contractor is to ensure that throughout the duration of the construction, the Owner's power requirements must not be affected by the service of the construction. Provide at minimum, 14 business day advance notice there is any planned utilities shut down in accordance with requirements of Section 01 14 00.

1.9 SETTING OUT

- .1 Be responsible for setting out the Work. Prior to setting out the Work, verify dimensions and elevations shown on the Contract Documents and report to Consultant any unsatisfactory conditions that may adversely affect the proper completion of the Work.
- .2 Accurately set out the Work from levels and lines. Where Work of this Contract is dependent upon grades and elevations of existing structures or facilities, such grades or elevations shall take precedence over those determined by reference to established elevations. Advise Consultant of any discrepancies.
- .3 During any activity of the Work, layout and check all features, including but not limited to the following:
 - .1 Establish and maintain temporary bench marks set required to perform the Work..
 - .2 Provide general dimensions, lines and elevations required to perform the Work.

1.10 BUILDING DIMENSIONS

- .1 Report any inconsistencies, ambiguities, discrepancies, omissions, and errors between Site conditions and Contract Documents to Consultant prior to the commencement of Work. If inconsistencies, ambiguities, discrepancies, omissions, and errors are not reported and clarified, the most stringent requirement shall govern, as determined by Consultant.
- .2 Check all dimensions at the site before fabrication and installation commences and report discrepancies to the Consultant.
- .3 Where dimensions are not available before fabrication commences, ensure that dimensions required are agreed upon between the parties concerned.
- .4 Prior to commencing work, ensure that clearances required by jurisdictional authorities can be maintained.
- .5 Ensure that the necessary job dimensions are taken and Subcontractors are coordinated for the proper execution of the Work. Assume complete responsibility for the accuracy and completeness of all dimensions, and for coordination of all elements of the Project.

- .6 Verify that the Work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearance to adjacent Work, as set out by requirements of the Contract Documents, and ensure that Work installed in error is rectified without extra cost to the Owner before construction continues.
- .7 Verify dimensions of shop fabricated portions of the Work at the site before shop drawings and fabrications are commenced. The Owner will not accept claims for extra expense by reason of non-compliance with this requirement.
- .8 Check and verify dimensions referring to Work and interfacing of services. Dimensions, when pertaining to the Work of other Sections (Subcontractors), shall be verified with the Section (Subcontractor) concerned. Ensure that Subcontractors performing various Sections cooperate for the proper performance of the Work.
- .9 Do not scale directly from the Drawings. If there is ambiguity or lack of information, immediately inform Consultant. Any change through the disregarding of this clause shall be the responsibility of the Contractor.
- .10 All details and measurements of any Work which is to fit or conform to Work installed shall be taken at the site.
- .11 Leave areas clear where space is indicated to be reserved for future equipment, including access to such future equipment.
- .12 Whether shown on the Drawings or not, leave adequate space and provision for servicing of equipment and removal and reinstallation of replaceable items such as motors, coils and tubes as recommended by equipment manufacturer.

1.11 EXISTING SITE CONDITIONS

- .1 Make a careful examination of the site and investigate and be satisfied as to all matters relating to the nature of the Work to be undertaken, as to the means of access and egress thereto and therefrom, as to the obstacles to be met with, as to the extent of the Work to be performed and any and all matters which are referred to in the Contract Documents. Claims for additional costs will not be entertained with respect to conditions which could reasonably have been ascertained by an inspection prior to tender closing.
- .2 Report any inconsistencies, ambiguities, discrepancies, omissions, and errors between Site conditions and Contract Documents to the Consultant prior to the commencement of Work. If inconsistencies, ambiguities, discrepancies, omissions, and errors are not reported and clarified, the most stringent requirement shall govern, as determined by the Consultant.

1.12 SUPPLEMENTARY DEFINITIONS

- .1 In the Specifications, references such as "shown on the Drawings", "specified", "scheduled", "called for" and the like shall be deemed to include work required by any of the Contract Documents.
- .2 In the Specifications the expression Section(s) is synonymous with Subcontractor(s) if the context permits. The expression "all Sections" shall be deemed to include the Contractor.

1.13 EXAMINATION

- .1 Each Section (Subcontractor) shall examine surfaces prepared by other Sections (Subcontractors) which affect its work and shall ensure that defects are corrected. Commencement of Work shall imply acceptance of prepared Work.

- .2 All Sections (Subcontractors) shall check and verify with the Contractor all dimensions, especially those pertaining to work of more than just their Section (Subcontractors work).
- .3 All details and measurements of any work which is to fit to, or conform with, work already installed by other Sections (Subcontractors, shall be taken at the job site by the Sections (Subcontractors) concerned.

1.14 SUPPLY AND/OR INSTALLATION

- .1 Unless the word “only” suffixes “supply” or “install” or other variations of those words according to the Section wherein they are used, it is the express intent of this Contract that “supply and install” is implied.
- .2 Unless otherwise specified, Work shall be installed in accordance with the manufacturer's printed directions and recommendations.

1.15 SATISFACTION / APPROVAL

- .1 The expression “to the satisfaction or approval of The Owner” shall be implied throughout the Specifications in regard to all materials and workmanship.
- .2 “Submit for approval” means that the item in question is to be submitted to The Owner for approval and that a written acceptance of it is authorization for its use in the Work shall be obtained before it is incorporated in the Work. Sections (Subcontractors) shall submit items for approval to The Owner via the Contractor.
- .3 The terms “approved”, “review”, “reviewed”, “accepted”, “acceptance”, “acceptable”, “satisfactory”, “selected”, “directed”, “instructed”, “required”, “submit”, “permitted”, “approved alternative”, “approved equal”, or similar words or phases are used in standards or elsewhere in Contract Documents, it shall be understood, that words “by (to) The Owner” follow, unless context provides otherwise.
- .4 The term ‘or approved alternate’ or similar language following a list of products, systems, or manufacturers used in the Contract Documents shall be construed to mean approved by Consultant. Specified products to be Base Bid. Contractor to follow substitution procedures specified in this Section for submitting proposed products, systems, and manufacturers and obtain Consultant's approval of the same prior to proceeding with ordering proposed products and systems or engaging manufacturers. Contractors who purchase products and systems or engage manufacturers prior to Consultant's review and acceptance do so at their own risk.
- .5 An “approved method” means that which has the manufacturer's recommendation or which is generally accepted as good trade practice.

1.16 EXISTING SERVICES

- .1 The Contractor is responsible for ensuring all “Existing Services” (including but not limited to structural elements, water pipes, drains, electrical cables and fixtures, communications cables and fixtures, security cables and fixtures, HVAC ducting, cables and fixtures, etc.) are not interrupted and / or damaged by the construction work. The Contractor must take all precautions to ensure that services buried underground or contained in a floor or contained in other elements are identified on the drawings provided by The Owner and have been clearly identified on the Work Site.
- .2 The Owner will not be liable for any loss, damage, delay or claim whatsoever resulting or arising from the absence in whole or part of services not shown on drawings.

1.17 EMERGENCIES

- .1 Notify The Owner's Project Team immediately should an emergency arise on the Site, including personal injuries and accidents. This notification shall be by telephone or email immediately after the occurrence.
- .2 Provide an incident report including complete details on extent of emergency, cause and the action being taken.

1.18 FIELD MARKING

- .1 Do not use wick pen to mark face of products to be installed in the Work. Such pen marks will show through applied paint or vinyl coatings and the like in due course. The Contractor will be held responsible and required to remedy such defects, classified as "latent defects" regardless of when they occur.

1.19 SECURITY

- .1 Be responsible for security of all areas affected by Work of this Contract until taken over by The Owner. Take steps to prevent entry to the Work by unauthorized persons and guard against theft, fire and damage by any cause. Provide safe and secure access to and egress from existing premises at all times.
- .2 Take acceptable precautions to guard Work site, premises, materials and the public during and after working hours due to the Work of this Contract.

END OF SECTION

1 General

1.1 SUMMARY

- .1 This section covers the provision of all labour, materials, equipment, plant, products and equipment required for the refurbishment of heritage steel windows as shown on the Drawings, including but not limited to:
- .2 This Section includes requirements for supply and installation of double glazed, historic steel framed windows as indicated on the Drawings to match existing steel windows, including but not limited to:
 - .1 Glazing replacement.
 - .2 Window painting.
 - .3 Silicone sealant glazing stop.
 - .4 Operating hardware.

1.2 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA):
 - .1 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel Structures
 - .2 CSA W59-03(2008), Welded Steel Construction (Metal Arc Welding), Metric.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-construction conference: Arrange a site meeting, to coincide with regular bi-weekly site meetings, attended by the Contractor, the Subcontractor's representative and foreman for this project, the Consultant, materials supplier(s), and other relevant personal before commencement of work for this Section.
 - .1 Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - .2 Review, discuss, and coordinate the interrelationship of steel windows with other exterior wall components. Include provisions for structural anchorage, glazing, flashing, weeping, air barriers, sealants, and protection of finishes.
 - .3 Review and coordinate the sequence of work required to provide the minimum interference with the use of the premises by the occupants, and the maximum safety of the occupants during the Work.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Division 01. Provide the following submittals before starting any work of this Section.
- .2 Samples:
 - .1 Submit sample sections of new frame and glazing bead sections to Consultant for review. Do not proceed with work without written approval.
- .3 Mock-up:
 - .1 Provide mock-up on site of refurbished window frame, connections, fasteners and accessories, including application of sealant and heritage painting as per related sections 07 92 00, 08 80 00 and 09 97 13.
 - .2 Submit for Consultant's review and written approval before commencing work.

- .3 Provide colour sample of finish for approval, as per Section 09 90 00.
- .4 Prepare a detailed schedule of repairs made to the heritage windows. Submit the schedule to the Construction Manager at the completion of the work.
- .5 Arrange with Consultant to review window repairs.

1.5 PROJECT CLOSEOUT SUBMISSIONS

- .1 Provide operations and maintenance information in accordance with Division 01.
- .2 Submit data for materials and methods for cleaning and maintenance that will not harm or stain glass, aluminum, rubber, sealant and other components of the assembly.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Protect window components during delivery and store in a dry, well ventilated place indoors and protect from injury.
- .2 Protect primed components from damage to coating.

1.7 QUALITY ASSURANCE

- .1 Qualifications: Provide proof of qualifications when requested by the Consultant:
 - .1 Repair and installation: Work to be undertaken by a contractor with not less than five (5) years experience in restoration of heritage steel windows.

1.8 SITE CONDITIONS

- .1 Site Measurements:
 - .1 Check all dimensions of existing metal window frames on site before submitting shop drawings for preparation of any new components as required.

1.9 PROTECTION

- .1 Provide temporary protection as required to prevent elemental and animal infiltration between removal of existing windows and glazing units, and installation of new units.

1.10 HAZARDOUS WASTE DISPOSAL

- .1 Dispose of contaminated material generated by the work in accordance with OHSA Leda Abatement Type 2 Guidelines.

1.11 APPROACH TO REPAIR WORK

- .1 The intent of the repairs to existing windows is to make them structurally sound, and stable, whilst conserving the maximum amount of existing fabric and its existing character.
- .2 Fabricate replacement parts to match existing in size, section and mould profile, and only when absolutely required as directed by Consultant. Use as far as possible the original methods of fastening.
- .3 Existing operable sash window to be fixed closed prior to repainting and installation of new glazing.

1.12 WARRANTY

- .1 Provide manufacturers written guarantee, signed and issued in the name of Owner, to replace the following items for defective material and workmanship for ten (10) years from date of Substantial Performance.

2 Products

2.1 MATERIALS

- .1 Steel sections for new window frames: In accordance with CAN/CSA-G40.21M-W44.

- .2 Welding materials: In accordance with CSA W59; type required for materials being welded.
- .3 Shop and touch-up primer alkyd metal primer to suit the select finishing coats.
- .4 Counter-sunk bolts: In accordance with ASTM A325 or A307.
- .5 Metal filler for steel windows only: epoxy type with high proportion of metal particles.
- .6 Mineral spirits: Varsol or similar.
- .7 Mechanical Scrapers.
- .8 Chemical paint stripper: Use 'Smart Strip' and associated neutralizer as required, available from Dumond Chemicals: (dumondchemicals.com)
- .9 Rust converter: 'Conquest' converter, available from Liner Rolpanit Inc.
- .10 Glazing, including glazing tape: refer to section 08 80 00.
- .11 Sealants: refer to Section 07 92 00.
- .1 replace weather seal at all operable panels
- .12 Primer and paints: refer to Section 09 97 13.
- .13 Replacement sections if required:
 - .1 Industrial Series steel sections by Bliss Nor-Am Doors and Windows Ltd., from solid, hot-rolled carbon steel, minimum thickness 3mm (1/8"), shop primed for site painting.
- .14 Hardware:
 - .1 Restore existing window operation hardware.
 - .2 Replace window operation hardware to match existing where missing or necessary.

2.2 FABRICATION

- .1 Fabricate replacement parts to match existing in size, section and mould profile, as required. Use as far as possible the original methods of fastening.
- .2 Finish metal surfaces to be smooth, even and free of nicks and scratches. Weld spatters and burrs must all be removed.
- .3 Grind exposed joints flush and smooth with adjacent finish surfaces. Make exposed joints butt tight, flush and hairline.'
- .4 Wire brush areas of rusted metal down to sound metal. For non-structural surface damage, up to 2.5mm (3/32") deep, make good with specified filler, restoring original profile and surfaces flush.
- .5 Ease all exposed edges to small uniform radius.
- .6 Form corners as full mitres, rightly fitting and fully welded.

2.3 FABRICATION TOLERANCES

- .1 Maximum variation in overall dimension of all new frames: 1.5mm (1/16") in length or breadth.
- .2 Maximum variation in sectional dimensions of frames: 0.8mm (1/32").
- .3 Maximum offset from true alignment of component: 1.5mm (1/16").

2.4 PRIME PAINTING

- .1 Apply one coat of primer immediately after cleaning (refer to Section 09 97 13)

2.5 SOURCE QUALITY CONTROL

- .1 Arrange schedule of site visits by and with Consultant.
- .2 Perform work in accordance with CSA W47.1 and W55.3.

3 Execution

3.1 INSPECTION

- .1 Inspect Work and conditions affecting the Work of this Section. Proceed only after deficiencies, if any, have been corrected.
- .2 Take site measurements of existing construction to which work of this Section must conform.

3.2 PREPARATION

- .1 Before installing replacement components, ensure that existing frames are securely fastened to the window jambs.
- .2 Report any areas of significant deterioration of the frames to the Consultant prior to commencing work.
- .3 Preparation of existing metal windows for painting:
 - .1 Refer to Part 3.3 of Section 09 97 13.

3.3 MODIFICATION OF EXISTING STEEL WINDOW FRAMES

- .1 The intent of the modifications to the existing windows is to create an overall uniform façade appearance whilst making them structurally sound and stable and conserving the maximum amount of existing fabric.
- .2 Remove loose paint and rust manually with scrapers from exposed surfaces of the frame on the exterior and interior.
- .3 Remove all existing putty and sealants, including existing sealant at the junction between the masonry and window frame for full perimeter.
- .4 Remove existing glazing units.
- .5 Remove all loose, cracked, worn or otherwise deteriorated putty from existing windows once glazing units are removed.
- .6 Remove glass and putty from casement sash to be repaired.
- .7 Use steam to loosen existing putty.
- .8 Use salvaged components from frames of windows to be replaced as required.
- .9 Strip off existing paint and wire brush areas of rusted metal down to sound material without the use of power tools. For non-structural surface damage, up to 3/32" deep, and 3 square inches, make good with specified filler, restoring original curved profile and flush surfaces. As far as possible remove all spalled, delaminated or heavily rusted components (more than 25% of original section thickness lost) from frames to be repaired.
- .10 Where frame is corroded more than 3 square inches review proposed repairs with Consultant to be paid for under contingency.
- .11 Replace missing, bent or otherwise defective components of frames, matching the existing configuration and assembly of elements using salvaged components from frames of windows to be replaced.
- .12 Replace weather seal at all operable window panels.**
- .13 Make rebuilt parts of window frames square, true and free of distortions in relation to the surviving part of the frame.
- .14 Join components with plug welds at 6" centres or as otherwise agreed with Consultant.

- .15 Form corners as full mitres, tightly fitting and fully welded.
- .16 Release seized existing horizontal pivot sash to allow them to be closed tightly against frame. Tack weld sash permanently closed and seal full perimeter on interior only.
- .17 Free rabbets, stops and glass edges of dust, dirt, moisture, oil and other foreign matter detrimental to glazing material adhesion.
- .18 Replace glazing units with new as directed, as per Section 08 80 00.
- .19 Review repairs with Consultant.

3.4 SITE REGLAZING

- .1 Ensure than rebate is primed and received 1 coat of paint before glazing.
- .2 Make good primer and first finish coat damaged by welding before starting reglazing.
- .3 Reglaze with glass as specified in Specification 08 80 00.
- .4 Ensure all stops, gaskets, splines, seals etc., are perfectly aligned and ready to receive glazing and insulated panels as specified herein.
- .5 Set the glass in the existing sash on Tremco 400 glazing tape and finish interior with beveled Tremco Spectrem 2.
- .6 All preformed tapes or gaskets shall be of a continuous length corner to corner and shall be cut over length to prevent stretching. Joints, splices and corners shall be mitred and sealed.
- .7 Clean all contact surfaces of glazing with solvent and wipe dry. Ensure all glazing channels are clean, true to line, and free of dirt or debris and that weep and drainage vents are open.
- .8 Reglaze all sash and frames on site.

3.5 REPAINTING

- .1 Let structural silicone cure for 1 week before applying final coat of paint.

3.6 SEALANT

- .1 Clean away residual sealant from masonry to ensure bond for new sealant.
- .2 Apply sealant to exterior junction between masonry and window frame, as specified in Section 07 92 10.

3.7 ADJUSTING AND CLEANING

- .1 At completion and continuously as Work proceeds, remove all surplus materials, debris and scrap.
- .2 At completion of Work, remove all protective surface covering film and wrappings. Clean all glass, panels and frames using mild soap or other cleaning agent approved by manufacturer.
- .3 Remove all excess glazing or joint sealing materials from exposed surfaces. Clean and polish glass.
- .4 Adjust operating hardware to function properly, without binding and to provide tight fit at contact points and weather-stripping.
- .5 Remove all debris resulting from work of this Section from site.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Furnish glazing materials and accessories to complete the fabrication and installation of:
 - .1 Tempered Glass and Interior Glazed Screens
 - .2 Exterior Insulated Glass Units
 - .3 Fire Rated, Ceramic Fire-Rated Glass

1.2 REFERENCE STANDARDS

- .1 Insulating Glass Manufacturers Alliance (IGMA) Manual.
- .2 American Society for Testing and Materials (ASTM):
 - .1 ASTM C542-05(2011), Standard Specification for Lock-Strip Gaskets
 - .2 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants
 - .3 ASTM C1172-09e1, Standard Specification for Laminated Architectural Flat Glass
- .3 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass
 - .2 CAN/CGSB-12.3-M91, Flat, Clear Float Glass
 - .3 CAN/CGSB-12.8-97, Insulating Glass Units
 - .4 CGSB-12.20-M89, Structural Design of Glass for Buildings
- .4 National Fire Protection Association (NFPA):
 - .1 NFPA 80-2013, Standard For Fire Doors and Other Opening Protectives

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Division 01.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Product Data: Submit manufacturer's product data for each type of product specified. Data shall indicate compliance with specification and installation recommendations of manufacturer of products being used.
 - .2 Samples: Submit samples of materials if required by Consultant before commencing work of this section. Samples shall be clearly labeled with manufacturer's name and type.
 - .3 Shop Drawings: Submit shop drawings, to the Consultant for review prior to fabrication.
 - .1 Clearly indicate each type of glass and identify relationships with adjacent materials or system where glazing is being installed or supported.
 - .4 Samples for Verification: Submit samples for verification including sample sets showing the full range of variations expected where products involve normal colour variations.
 - .5 Maintenance Data: Upon completion of installation, supply instructions covering re-glazing, adjustments and other relevant maintenance data.

1.4 QUALITY ASSURANCE

- .1 Conform to the requirements of the Flat Glass Marketing Association Glazing Manual, latest Edition.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements: Deliver packaged materials in their original containers with manufacturer's labels and seals intact.
- .2 Storage and Handling Requirements: Store vertically, blocked off the floor in a weatherproof enclosure in original containers with manufacturers labels and seals intact until read for installation, and as follows:
 - .1 Install glass as soon as possible after delivery to site.
 - .2 Handle glass carefully to its place of installation.
 - .3 Prevent damage to glass, adjacent materials and surfaces.

1.6 SITE CONDITIONS

- .1 Ambient Conditions: Maintain temperature, humidity and solar exposure conditions of Glass Glazing materials during shipping, storage and site installation as required by manufacturer to maintain warranty and performance of installed products.

1.7 WARRANTY

- .1 Provide manufacturer's warranty for the following types of glass listed, against defects in materials and workmanship for the period indicated, commencing from the date of Substantial Performance of Work:
 - .1 Seal Failure: Failure of hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written instructions.
 - .2 Evidence of Failure: Obstruction of vision by dust, moisture, or film on interior surfaces of glass.
 - .3 Allowable Specific Exclusions: Breakage resulting from thermal stress will be accepted as a limitation to the warranty in accordance with CAN/CGSB 12.20.
 - .4 Warranty Period: Ten (10) Years.

2 Products

2.1 MATERIALS

- .1 Float Glass: In accordance with CAN/CGSB-12.3, glazing quality and as follows:
 - .1 Clear Glass: No tint
- .2 Tempered Glass (TGL):
 - .1 Clear, conforming to CAN/CGSB-12.1, Type 2, Class 'B'. Tempering shall be performed using horizontal tong free method.
- .3 Fire Rated, Ceramic Fire-Rated Glass (FRG): Material used in door and screen applications with fire rating requirements of 60 minutes with hose stream test.
 - .1 Fire Rated Glass: Two-ply of glass ceramic, laminated with Teflon or PVB interlayer and as follows:
 - .1 Thickness: 8mm
 - .2 Fire Rating: 60 minutes or as scheduled.

- .3 Labelled: Permanent logo listing name of product, manufacturer, testing laboratory, fire rating period and safety requirements
- .4 Basis-of-Design Materials:
 - .1 Technical Glass Products, FireLite Plus
 - .2 VetroTech, Keralite Select L
 - .3 SAFTI: Pyran Platinum L
 - .4 Or approved equivalent.
- .4 Gaskets:
 - .1 Neoprene/EPDM thermoplastic rubber type gaskets of sufficient thickness to be compressed 25% when installed, having 2,000 psi tensile strength, with 50 durometer shore A hardness plus/minus 5, maximum 30% resistance to permanent set, resistance to ozone without cracking, minimum elongation at break of 300% and conforming to ASTM C542.
 - .2 Colour - "Black".
- .5 Sealant:
 - .1 One component, silicone base, solvent curing sealant conforming to ASTM C920. Colour as selected Later by Consultant.
- .6 Glazing Compound:
 - .1 Non-hardening modified oil type glazing compound.
- .7 Setting Blocks:
 - .1 Neoprene/EPDM rubber type, 4" long, with 40 to 50 durometer shore A hardness plus/minus 5; resistant to sunlight, weathering, oxidation and permanent deformation under load and wide enough to extend from fixed stop to opposite face of glass of thickness suitable to glazing condition to provide adequate glazing "bite".
- .8 Spacer Shims:
 - .1 Neoprene/EPDM rubber type, with 40 to 50 durometer shore A hardness plus/minus 5; resistant to sunlight, weathering, oxidation and permanent deformation under load and of adequate thickness to provide correct glass to face clearance at least 1/8".
- .9 Glazing Tape:
 - .1 Macro-polyisobutylene preformed glazing tape, 'Polyshim' or 'Vision Strip' by Tremco Ltd., division of RPM Company, or approved equal.

2.2 INSULATING GLASS

- .1 Insulating Glass Units: Provide sealed insulating glass units in accordance with CAN/CGSB-12.8 in configurations indicated, IGMA certified, and as specified herein.
- .2 Manufacture sealed insulating glass units without edge channels or tape, that is, with bare glass edges.
- .3 Use two stage seal method of manufacture, as follows:
 - .1 Primary Seal: Polyisobutylene sealing compound between glass and metal spacer/separator. Colour: Black.
 - .2 Secondary Seal: Structural silicone based, filling gap between the lites of glass at the edge up to the spacer/separator and primary seal. Colour: Black.

- .4 Install stainless steel capillary breather tubes to equalize pressure differentials between insulating glass fabricating location and insulating glass installation location; crimp tube immediately prior to installation in accordance with glass fabricators written instructions.
- .5 Insulating Glass Units (IGU):
 - .1 Insulated Glass Unit (IGU-01) Standard Double-Glazed:
 - .1 Unit Composition:
 - .1 Outer Lite: 3mm thick, clear glass complete with Low-E coating on Surface #2.
 - .1 Low-E Coating (Surface #2) Basis of Design Materials: SunGuard SuperNeutral 68 by Guardian Glass, or approved equivalent.
 - .2 Gas Infill: 6.4mm (1/4"); 90% Argon, 10% air filled.
 - .3 Inner Lite: 3mm thick, clear glass
 - .1 Frosted film to be applied on Surface #4.
 - .2 Refer to Window Schedule for glazing units with security film (F1) on Surface #4 instead of frosted film.
 - .2 Unit Characteristics:
 - .1 Unit Thickness: 13mm
 - .2 Visible Light Transmittance: 70%
 - .3 Visible Light Reflectance: 11%
 - .4 Solar Heat Gain Coefficient (SHGC): 0.39
 - .5 Glass U-Value Winter: 1.88 (w/m2*K)
 - .3 Basis of Design Manufacturer: Guardian Glass, or approved equivalent.
 - .2 Insulated Glass Unit (IGU-02) Standard Double-Glazed:
 - .1 Unit Composition:
 - .1 Outer Lite: 3mm thick, clear glass complete with Low-E coating on Surface #2.
 - .1 Low-E Coating (Surface #2) Basis of Design Materials: SunGuard SuperNeutral 68 by Guardian Glass, or approved equivalent.
 - .2 Gas Infill: 6.4mm (1/4"); 90% Argon, 10% air filled.
 - .3 Inner Lite: 3mm thick, clear glass
 - .1 Refer to Window Schedule for glazing units with security film (F2) on Surface #4.
 - .2 Unit Characteristics:
 - .1 Unit Thickness: 13mm
 - .2 Visible Light Transmittance: 70%
 - .3 Visible Light Reflectance: 11%
 - .4 Solar Heat Gain Coefficient (SHGC): 0.39
 - .5 Glass U-Value Winter: 1.88 (w/m2*K)
 - .3 Basis of Design Manufacturer: Guardian Glass, or approved equivalent.

2.3 GLAZING FILMS

- .1 Translucent Security Film (F1): Micro-layered film designed for tear resistance and glass fragment retention.
 - .1 Film Thickness: 8 mil
 - .2 Film Type: Polyester
 - .3 Opacity: Translucent
 - .4 Basis-of-Design Materials: 3M ScotchShield 30PL Series, or approved equivalent
- .2 Clear Security Film (F2): Micro-layered film designed for tear resistance and glass fragment retention.
 - .1 Film Thickness: 8 mil
 - .2 Film Type: Polyester
 - .3 Opacity: Clear
 - .4 Basis-of-Design Materials: 3M ScotchShield Ultra S800 Series, or approved equivalent

2.4 FABRICATION AND MANUFACTURE

- .1 Label each light of glass with the registered name of the product and the weight and quality of the glass.
- .2 Check dimensions on site before cutting materials.
- .3 Minimum bite or lap of glass on stops and rabbets as recommended by glass manufacturer. Finish surfaces shall be free of tong marks.
- .4 Cut glass true to dimensions, square, plumb and level. Verify all dimensions prior to fabrication.
- .5 Distortion, pock marking or defects detrimental to appearance and/or performance, as determined by the Consultant, will be rejected.

2.5 GLAZING COMPOUND FOR FIRE RATED GLAZING MATERIALS

- .1 Glazing Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2%, designed for compression of 25% to effect an air and vapour seal.
- .2 Silicone Sealant: One-part neutral curing silicone, medium modulus sealant, Type S; Grade NS; Class 25 with additional movement capability of 50% in both extension and compression (total 100%); Use (Exposure) NT; Uses (Substrates) G, A, and O as applicable.
- .3 Acceptable materials:
 - .1 Dow Corning Corp., Dow Corning 795
 - .2 General Electric Co., Silglaze-II 2800
 - .3 Tremco Inc., Spectrum 2
 - .4 Or approved equivalent.
- .4 Setting Blocks: Hardwood, glass width by 4"x 1/4" thick.
- .5 Spacers: Neoprene or other resilient blocks of 40 to 50 Shore A durometer hardness, adhesive-backed on one face only, tested for compatibility with specified glazing compound.

- .6 Cleaners, Primers, and Sealers: Type recommended by manufacturer of glass and gaskets.

2.6 FABRICATION: FIRE RATED GLASS

- .1 Fabricate glass and other glazing products in sizes required to glaze openings indicated for project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standards as required to comply with system performance requirements.

3 Execution

3.1 EXAMINATION

- .1 Examine areas of work affecting the work of this section. Report in writing all defects, errors and discrepancies immediately to the Consultant.
- .2 Commencement of work implies acceptance of surfaces and conditions.

3.2 PREPARATION

- .1 Openings shall be free from moisture, frost, rust, dirt and foreign matter.
- .2 Clean surface to receive sealant with a clean cloth dampened with xylol or a 50-50 mixture of acetone and xylol. Wipe dry with a clean, dry cloth.

3.3 INSTALLATION

- .1 Conform to the recommendation of the glazing manual, Flat Glass Marketing Association, latest edition and as specified herein.
- .2 Unless otherwise indicated on drawings otherwise, provide tempered glass at all doors, transoms, sidelights and vision lites within 2'-6" of grade and/or finished floor.
- .3 Glaze doors scheduled to be glazed.
- .4 Set sheet glass with draw lines horizontal.
- .5 Glaze interior openings using compound or glazing tapes or gaskets.
- .6 Install removable stops. Insert spacer shims between glass and stops at 24" O.C. and not less than 1/4" below "sight lines". Fill remaining voids with sealant or glazing compound to "sight lines" and trim sealant/glazing compound to produce clean, sharp, straight lines without voids or depressions.
- .7 Replace loose stops in their original positions, tighten all screws.
- .8 Refer to drawings and door and frame schedule for locations of each type of glass.

3.4 INSTALLATION – FIRE RATED GLASS

- .1 Comply with GANA standards and instructions of manufacturers of glass, glazing sealants, and glazing compounds.
- .2 Protect glass from edge damage during handling and installation. Inspect glass during installation and discard pieces with edge damage that could affect glass performance.
- .3 Place hardwood setting blocks located at quarter points of glass with edge block no more than 150mm (6") from corners.
- .4 Glaze vertically into labelled fire rated metal frames or partition walls with same fire rating as glass and push against tape for full contact at perimeter of pane or unit.
- .5 Place glazing tape on free perimeter of glazing in same manner described above.
- .6 Do not remove protective edge tape.
- .7 Install removable stop and secure without displacement of tape.
- .8 Do not pressure glaze. Knife trim protruding tape.

- .9 Provide minimum ¼" edge clearance.
- .10 Install vision panels in fire rated doors to requirements of NFPA 80.
- .11 Install so that appropriate fire rating labels and markings remain permanently visible.

3.5 INSTALLATION – GLAZING FILMS

- .1 Install in accordance with the manufacturer's written instructions and the contract documents, plumb, true, and level over clean glazing.
- .2 Install film continuously, but not necessarily in one continuous length, with no gaps or overlaps and as follows:
- .3 Install seams vertical and plumb where necessary; horizontal seams will not be allowed.
- .4 Do not remove release liner from film until just before each piece of film is cut and ready for installation.
- .5 Install film with mounting solution and custom cut to the glass with neat, square corners and edges to within 3 mm of window frame.
- .6 Remove air bubbles, wrinkles, blisters, and other defects.
- .7 Installation Tolerances: Consultant will view film installation from a distance of 3 metres against a bright uniform sky or background and will accept installation where it appears uniform in appearance with no visible streaks, banding, thin spots or pinholes; remove and replace with new film when directed by the Consultant for materials not meeting requirements.

3.6 CLEANING

- .1 Repair all defects caused by the work of this section. Remove as work progresses, all excess or foreign materials or droppings which would set or become difficult to remove from surfaces at time of final cleaning.
- .2 Immediately prior to acceptance of work of this section by Consultant, remove temporary protection, clean and polish exposed surfaces of all work of this section. Use proper cleaning materials and methods to prevent damage to surfaces, finishes, sealer or work of other trades. Make good such damage to Consultant's satisfaction.
- .3 Do not use steel wool, wire brushes or steel scrapers on any finished surfaces.
- .4 Replace or make good to Consultant's satisfaction, upon completion of work of this section, all defective, scratched or damaged work, at no extra cost to the Owner.

END OF SECTION