

September 14, 2020



NOTICE TO ALL PROSPECTIVE BIDDERS

**RE: ADDENDUM 1
2020-RCF-74
Macaulay House Heritage Wood Window Restoration**

SCOPE OF WORK

Attached is the scope of work to be included with the Macaulay House Heritage Wood Window Restoration.

This Addendum is being issued to change and/or provide clarification and additional requirements for the specifications of the unit to be bid. The changes are summarized below.

Received by (Company Name)

Date, Time

**ADDENDUM MUST BE INCLUDED WITH TENDER SUBMISSION
PLEASE SIGN AND FAX BACK TO 613.476.7622**

PART 1 - GENERAL

1.1 SECTION INCLUDES

1.1.1 The work of this Section includes, but is not limited to, the following:

1.1.1.1 Repair of existing single-glazed window sashes and frames.

1.2 RELATED SECTIONS

1.2.1 Section 08 81 00 Heritage Glazing

1.2.2 Section 09 91 00 Heritage Painting

1.3 APPROACH TO WORK

1.3.1 The intent of the repairs to existing windows is to make them structurally sound, stable, and smoothly operating whilst conserving the maximum amount of existing fabric and its existing character.

1.4 STORAGE AND HANDLING

1.4.1 Store in safe, dry location in such a way as to prevent site damage prior to, during and after installation.

1.4.2 Deliver all glazing and painting materials to site in original, unopened, labeled and sealed containers, and store between 10 and 25 degrees C., and protect from impact and inclement weather.

1.5 TEMPORARY PROTECTION

1.5.1 Provide 13mm (1/2") plywood covering to protect window opening and interiors from the elements and for security during the work. Secured plywood such that fasteners do not damage the historic fabric.

PART 2 - PRODUCTS

2.0 LUMBER

2.0.1 Lumber generally: to CAN/CSA 0141-91 (R1999)

2.0.2 Identify lumber by grade stamp of an agency certified by Canadian Lumber Standards Administration Board, to National Lumber Grades Authority standards.

2.0.3 Use shed stock with maximum moisture content of 12% at time of fabrication.

2.0.4 Repairs to existing windows: Selects 1 and 2, Eastern White Pine, flat cut.

2.1 ACCESSORIES

2.1.1 Adhesive: waterproof, synthetic, formulated emulsion adhesive to CSA Standard 0112, 8M - 1977 - Type I and II, "Polyvinyl adhesives, cross linking for wood".

2.1.2 Epoxy Wood Consolidant:

2.1.2.1 PC-Rot Petrifier by PC-Products, contact by tel: (610) 432-3543 or www.pcepoxy.com.

- 2.1.2.2 ConServ™ Epoxy Patch 200: Contact Paul Marlowe, ConServ Epoxy LLC, P.O. Box 454, Northford, CT 06472, Tel: 203-484-4123. www.conservepoxy.com.
- 2.1.3 Exterior Wood Filler for repairs and finishing: PC-Woody Epoxy Paste by PC Products, contact by tel: (610) 432-3543 or www.pcepoxy.com or approved equal.
- 2.1.4 Wood preservative surface application: to CSA 080M, clear zinc naphthenate solution.
- 2.1.5 Wood refresher:
 - 2 parts double-boiled linseed oil;
 - 1 part mineral spirits;
 - 0.5 part wood preservative.
- 2.1.6 Nails: Galvanized finishing nails sized for purpose.

2.2 FABRICATION

2.2.1 Window repair:

- 2.2.1.1 Fabricate replacement parts to match existing in length, section and profile. Use as far as possible the original methods of attachment.
- 2.2.1.2 Fabricate replacement parts with sharp true profiles, to match existing exactly.
- 2.2.1.3 Sand elements lightly and ease corners in preparation for painting.
- 2.2.1.4 Use only adhesives and fastenings that develop sufficient strength for intended use, which are non-staining, and are unaffected by the environment to which exposed.

PART 1 - EXECUTION

2.3 DISMANTLING

- 2.3.1 All required dismantling, such as removal of stops, parting strips, sash, and hardware shall be done with extreme care, taking appropriate precautions not to damage adjacent material or window components themselves.
- 2.3.2 Take care with tools to avoid marring, crushing or splitting components. If necessary, nails which have to be removed should be snapped off on the back of the component rather than driven back through the face.
- 2.3.3 All components, including hardware, which are being dismantled shall be labeled and retained for the duration of the job.
- 2.3.4 Labels shall consist of gasket paper, marked with a waterproof marker, and attached to the component on a hidden surface in a secure manner. For smaller components such as hardware, place in a sealed plastic bag with the label visible within the bag.
- 2.3.5 Sash shall be appropriately stacked, padded and supported to prevent deterioration, warping, abrasion or other forms of damage.

- 2.3.6 When removing screws and hardware carefully clean the screw heads first. Apply penetrating oil 24 hours in advance of removal. Use screw drivers that fit the heads exactly. Where hardware is fitted into a mortise, such as the leaves of butt hinges, carefully and neatly cut the adjacent wood with a sharp chisel to avoid tear out.
- 2.4 REPAIR EXISTING WOOD WINDOWS**
- 2.4.1 Review existing windows in the repair shop with Heritage Architect prior to starting work.
- 2.4.2 Flush parts of frames and sash areas where decayed or damaged wood have been cut out with zinc naphthanate and consolidate and fill with epoxy resins and fillers, or piece in with new wood, glued and fastened, for larger areas of damage.
- 2.4.3 All joinery for stiles and rails to be through mortise and tenon, wedged and pegged slightly draw bored.
- 2.4.4 All vertical muntin bars are to be continuous and are also to be through mortise and tenon, wedged and pegged slightly draw bored.
- 2.4.5 Only horizontal muntins may be stub tenons.
- 2.4.6 Construct true and square where possible, but match existing irregularities so as not to emphasize them.
- 2.4.7 Prime end grain of all joinery work, including mortise and tenon joints, with linseed oil prior to assembly.
- 2.4.8 Shop prime and back prime all work before installation.
- 2.5 EPOXY WOOD CONSOLIDANT APPLICATION**
- 2.5.1 Provide dry, clean surface removing all dry rot, dirt, saw dust or loose paint. Remove existing paint and/or varnish to increase acceptance of consolidant by wood.
- 2.5.2 For vertical surfaces drill small holes in wood on angle to hold consolidant.
- 2.5.3 Apply mixture by pouring and brushing onto the wood surface until damaged area is fully saturated. The applicator bottle can be used to inject into drilled holes or larger openings in the wood. Consolidant will readily follow grain of wood. Apply wood consolidant while absorption continues.
- 2.5.4 Reapply prior to cure if required.
- 2.5.5 After curing is complete, infill missing pieces with epoxy wood filler.
- 2.6 EPOXY WOOD FILLER APPLICATION**
- 2.6.1 Provide dry, clean surface removing all dry rot, dirt, saw dust or loose paint.
- 2.6.2 Where rotted wood is present, remove or encapsulate with epoxy consolidant before applying epoxy wood filler.
- 2.6.3 Use screen wire or wood blocks to bridge or reinforce larger holes.

- 2.6.4 Using separate knives to remove equal amount needed, mix equal parts of A (off-white) and B (light brown) on flat surface until uniform tan colour. Mixing for a longer period of time will assure better performance.
- 2.6.5 For best results, allow 15-20 minutes of standing time after application before roughly shaping and moulding.
- 2.6.6 Form mould profiles to match existing wood profiles.
- 2.6.7 Let filler cure. Full cure achieved in 3-7 days. Cured epoxy can be worked and tooled similar to real wood.
- 2.6.8 Sanding can generally take place within 1-2 days – premature sanding will gum up sandpaper. Always sand in direction of wood grain.
- 2.6.9 Fine sand in preparation for hand priming and painting to suit existing surrounding heritage fabric, in accordance with Section 09 90 00 Heritage Painting.
- 2.7 'DUTCHMEN' REPAIRS**
- 2.7.1 Material spliced in as repair shall be same wood species with grain orientated to match original.
- 2.7.2 Joints shall be tight so that after finishing they are visible only upon close inspection.
- 2.7.3 In exterior situations joints shall be weather tight; bevel joints so that they would drain to the exterior should moisture penetrate.
- 2.7.4 Material spliced in shall be attached to the parent piece, not adjacent element.
- 2.7.5 Generally surface fasteners are to be avoided in Dutchmen repairs; clamp until adhesive has set and protect from pressure marks.
- 2.7.6 Dutchmen repairs are required where wood is broken or missing; not for minor wear and tear.
- 2.8 REPLACEMENT OF BROKEN GLAZING**
- 2.8.1 Cut replacement glass to suit size of existing lights.
- 2.8.2 Reglaze lights in traditional manner with glazing points and glazing compound.
- 2.8.3 Carefully remove existing wood glazing stop for reinstallation.
- 2.8.4 Secure replacement glass against back putty, secured with glazing points, 2 per side of pane.
- 2.8.5 Reinstall wood glazing stops, where they exist, over 2 mm (1/16") of face putty with fine nails. Fill all holes with wood filler.
- 2.8.6 Replace all putty with glazing compound, with mitred profile and mitred inside corner profile.
- 2.8.7 Finish compound flush with sash rebate so that it is not visible through glass.

2.9 CLEAN UP

- 2.9.1 Sand and clean affected woodwork to leave free from finish defects in any exposed part, ready for painting.
- 2.9.2 Clean all window panes to be free of grease, paint and other surface dirt that distorts vision.
- 2.9.3 Remove all debris resulting from work of this section from site.

END OF SECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

1.1.1 The work of this Section includes, but is not limited to, the following:

1.1.1.1 Replace cracked or missing panes of glass in existing windows with single glazing.

1.2 RELATED SECTIONS

1.2.1 Section 08 01 52.91 Heritage Wood Window Restoration

1.2.2 Section 09 90 00 Heritage Painting

1.3 QUALITY CONTROL SUBMITTALS

1.3.1 Samples

1.3.1.1 Provide samples of each type of glass specified for Heritage Architect's review.

1.3.2 Mock-Ups

1.3.2.1 Provide a mock up of each glazed light or pane type at the workshop for the Heritage Architect's review.

PART 2 – PRODUCTS

2.1 DISTRIBUTERS

2.2 MATERIALS

2.2.1 Glass:

2.2.1.1 Clear, single glazing, to CAN12.2-M78 or CAN12.7-M76 but thickness to match existing being replaced.

2.2.1.2 Single diamond float glass (2mm) for primary windows.

2.2.2 Adhesive: Hextall™ epoxy for repair of cracked glass.

2.2.3 Glazing materials:

2.2.4 Glazing putty by Allback™ Organic Linseed Paints. Contact 'Solvent Free Paint'. Tel. (866) 516-7787, www.solventfreepaint.com.

2.2.4.1 Setting blocks and spacer shims to be neoprene, Shore "A" durometer hardness 40 - 50.

2.2.4.2 Galvanized steel glazing points.

2.2.4.3 Pumice.

2.2.5 All exposed fasteners shall be slot head, steel screws, appropriately sized for application.

PART 3 – EXECUTION

3.1 REMOVAL OF GLASS

- 3.1.1 Note that ALL glass is to be carefully removed, retained and reinstalled.
- 3.1.2 Soften putty by the use of steam.
- 3.1.3 Note that each piece of glass is of a unique size and must be labeled and returned to its original location.
- 3.1.4 Proceed with reglazing only when sash repair and preparation work as described in Section 08 01 52.91 - Heritage Wood Window Restoration is completed and accepted.
- 3.1.5 Clean rebate in glazing bars thoroughly and coordinate with Section 09 90 00 - Heritage Painting to prime before reglazing.

3.2 PREPARATION FOR REPLACEMENT OF CRACKED OR MISSING PANES

- 3.2.1 Soften putty and remove without damaging glass or glazing bars.
- 3.2.2 Proceed with reglazing only when sash repair and preparation work as described in Section 08 01 52.91 - Heritage Wood Window Restoration is completed and accepted.
- 3.2.3 Clean rebate in glazing bars thoroughly and prime before reglazing.

3.3 REPAIRS TO BROKEN GLASS

- 3.3.1 Where breaks in glass measure less than 50mm (2") and where all pieces are present, the glass shall be retained, glued, and reinstalled.
- 3.3.2 Clean the edges of the pieces to be joined with acetone.
- 3.3.3 Align the pieces over the light table and tape together on both sides with conservation tape.
- 3.3.4 Slit the tape on the upper side of the glass with a razor along the edge of the crack. Carefully infuse epoxy into the crack. Monitor the infusion over the light table to ensure that the crack is completely saturated by epoxy.
- 3.3.5 Remove excess epoxy from all surfaces of the glass. Tape the glued piece further and immobilize until the glue sets.

3.4 INSTALLATION OF SINGLE GLASS PANES

- 3.4.1 Cut replacement glass to suit size of existing lights and to clearances recommended by glass manufacturer. Each pane of glass is to be undersized about 1/16" around the perimeter.
- 3.4.2 Glazing of sash windows.
- 3.4.3 See Heritage Painting – 09 90 00 for preparation for glazing.
 - 3.4.3.1 Reglaze lights in traditional manner, using glazing putty.

- Empty the entire container of putty on a non-absorbent surface and knead until soft before use. This will be easier if the putty is warmed in microwave.
 - Use putty at a temperature between 15° and 25° C. If the putty is too sticky, knead on a piece of cardboard to remove some of the oils. Do not add chalk to the putty, as this will cause separation of the product.
 - If the putty is too hard, re-warm the putty.
 - If possible use warmer softer putty for back puttying and harder putty for bevel putty.
 - Apply back putty to the rebates about 1-2 mm. thick but with enough putty so that the glass is well seated and there are no gaps between the glass and the rebates.
- 3.4.3.2 Set replacement or existing glass on full bed of putty to proper frame tolerances.
- 3.4.3.3 Secure glass with glazing points, 50mm (2") from each corner in each direction and about 200mm – 250mm (8" to 10") on centre.
- 3.4.3.4 Apply glazing putty with bevel to suit the size of the glazing rebate in the window.
- 3.4.3.5 Tool putty to true, even lines, and free of creases, cavities, bubbles and other defects which will mar its appearance and performance.
- 3.4.3.6 Mitre corners evenly and neatly.
- 3.4.3.7 Cut the putty back such that the putty and the top coat of paint (which will overlap the margin of the putty 2 mm) will not be visible when looking through the window from the inside.
- 3.4.3.8 Apply ground pumice to each pane of glass, sequentially. Spread liberally with a soft brush, allowing the pumice to absorb any oil residue. Sweep the pumice off the glass. The glass should take on a nice shine, free of oily prints. The discarded pumice may be used again for subsequent panes.

3.5 REPAINTING OF WINDOWS

- 3.5.1 The intent is to paint the cured putty with the exterior finishing paint coats.
- 3.5.2 Schedule putty replacement to allow sufficient drying and curing time before painting begins.

3.6 CLEANING

- 3.6.1 Clean glass and adjacent work of deposits resulting from glazing work.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

1.1.1 The Work of this Section includes but is not limited to:

1.1.2 Painting of all restored wood windows.

1.2 RELATED SECTIONS

1.2.1 Section 08 01 52.91 Heritage Wood Window Restoration

1.2.2 Section 08 81 00 Heritage Glazing

1.3 REFERENCES

1.3.1 General: All paint, stains, thinners, cleaners and pigments shall conform to CGSB 1-GP - 1, to 1- GP- 189 where applicable and to CGSP 1-GP- 72 specification selection on use basis.

1.3.2 Comply with the recommended practices, as applicable, described in Architectural Painting Specification Manual as endorsed by the Ontario Painting Contractors Association.

1.4 SUBMITTALS

1.4.1 Submit the following samples for the Owner's review prior to commencement of the work:

1.4.1.1 Submit duplicate 100 mm x 230 mm (4" x 9") "draw-downs" of each on-site paint formula type and colour on intended substrate.

1.5 DELIVERY, STORAGE AND PROTECTION

1.5.1 Store materials in dry, well-ventilated, safe place. Keep covered at all times and take all necessary precautions against fire.

1.5.2 Protect adjacent surfaces and surfaces not to be painted from splashes and residues.

1.5.3 Ensure fire and health hazards are the absolute minimum and provide fire extinguishers at all paintwork areas and storage areas.

1.5.4 Ensure painting areas are kept free from dust.

1.6 ENVIRONMENTAL REQUIREMENTS

1.6.1 Do not paint during or immediately following foggy, rainy or frosty weather, nor when the temperature is expected to go below 10°C before the coating is dry, in excessively humid or windy weather, in direct sunlight above 27° C or on damp surfaces (wood maximum 12% moisture).

1.7 WORKERS PROTECTION

1.7.1 Protective clothing and goggles: Workers shall wear personal protective equipment described in paint removal product data and authorities having jurisdiction.

1.7.2 Eating, drinking, chewing, and smoking are not permitted in the work area.

1.7.3 Workers shall wash hands and face when leaving the work area.

PART 2 - PRODUCTS

2.1 MATERIALS

2.1.1 Use ready-mixed paints and primers of the manufacturer listed.

2.1.2 Do not use substitutes.

2.1.3 Do not mix products from different manufacturers.

2.1.4 Thinners and cleaners as recommended by the paint or stain manufacturer.

2.1.5 Wood primer:

2.1.5.1 Benjamin Moore Fresh Start Acrylic Primer (K023).

2.1.5.2 Dulux WeatherGuard Acrylic Primer 1535

2.1.6 Wood window finish:

2.1.6.1 Aura Waterborne Exterior Paint Semi Gloss Finish K632 by Benjamin Moore or approved equal.

2.1.6.2 Dulux Weatherguard Exterior 100% Acrylix Paint, Semi-gloss finish

2.1.7 Washing solution:

2.1.7.1 1 part Tri-sodium phosphate (TSP);

2.1.7.2 ¼ (one quarter) part Household dish washing liquid;

2.1.7.3 5 parts Bleach: 9% Sodium Hypochlorite solution (such as Javex);

2.1.7.4 15 parts warm water.

2.1.8 Mineral spirits: Varsol or similar.

2.1.9 Sealer: Shellac

2.2 EQUIPMENT

2.2.1 Mechanical Scrapers: round off all sharp edges.

2.2.2 Scrub brushes: Natural bristle or soft plastic type only.

2.3 PAINT FORMULAE

2.3.1 Painting coats are intended to cover surfaces thoroughly; if in the Painter's opinion, the formulae specified are inadequate to provide a first-class finished surface, review with Heritage Architect before commencing work; surfaces imperfectly covered without review shall receive additional coats at no additional cost.

- 2.3.2 Painted exterior wood: 1 coat wood primer prior to sill installation; 2 coats exterior latex paint.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION – GENERAL

- 3.1.1 Prepare and hand sand all wood and metal surfaces as required. Do not use power tools on curved or moulded surfaces.
- 3.1.2 Ensure surfaces to be painted are dry, clean and free of dust, dirt or foreign matter.
- 3.1.3 Fill cracks, dents, holes, nail heads.
- 3.1.4 Perform work in a manner to reduce dust creation to lowest levels possible. All work will be subject to visual inspection and possible air monitoring. Any contamination of the surrounding areas indicated by visual inspection or air monitoring will require the complete enclosure and clean-up of the affected areas.

3.2 PREPARATION – NEW WOOD

- 3.2.1 Sand surfaces as required and make ready to receive primer.
- 3.2.2 Sink nail heads below surface of wood.
- 3.2.3 Seal knots, pitch and sapwood with leafing aluminum type sealer.

3.3 PAINTING

- 3.3.1 Apply materials in strict accordance with manufacturer's printed instructions. Mix paints thoroughly to a uniform consistency.
- 3.3.2 Apply paint coats with even uniform sheen, colour and texture, free of runs, brush marks, sags, crawls and other defects. Patching will not be acceptable.
- 3.3.3 Mix paints thoroughly to a uniform consistency.
- 3.3.4 Remove all dust and fine particles from all surfaces before painting.
- 3.3.5 Mask, cover, protect and ventilate as required.
- 3.3.6 Cut straight, neat and true junction lines.
- 3.3.7 Finish concealed edges with 2 coats of finish.
- 3.3.8 Sand lightly between coats of paint and reseal knots. Do not fill surface imperfections unless they trap water or allow water into the wood.
- 3.3.9 After first coat on wood, fill nail holes, splits or cracks with latex filler and rub smooth.
- 3.3.10 Do not paint when the temperature is 10 degrees C or lower or on damp surfaces.

3.4 CLEAN-UP

- 3.4.1 Clean spatters, droppings, and smudges, caused by this work from adjacent surfaces upon completion.

END OF SECTION