

1.1 SCOPE OF WORKS

- .1 The list of works listed in this section is indicative and non-limitative. It does not exclude works described in other sections of the specifications, shown on drawings or necessary for a complete execution of the works in the spirit of the plans.
- .2 The works of restoration of patrimonial existing wood and architectural woodwork include among other things the restoration of patrimonial existing door frames in east wing and the two square towers, the restoration of existing wood paneling in the large room in East Wing on the second floor as well as the restoration of the wood stair in the guardroom.

1.2 RELATED REQUIREMENTS

- .1 Section 08 03 14 – Historic works – Wood door repairs.
- .2 Section 08 50 00 – New wood windows
- .3 Section 08 52 05 – Existing wood windows.
- .4 Section 09 91 13 - Painting – exterior works
- .5 Section 09 91 23 - Painting – interior works

1.3 REFERENCES

- .1 Architectural Woodwork Manufacturers' Association of Canada (AWMAC)
 - .1 Architectural Woodwork Quality Standards Illustrated, Eighth Edition, Version 2.0, 2005 (called « QSI » in the presents).

1.4 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit shop drawings prepared, at a scale of 1: 5, for the splicings and indicating pertinent details relating to configuration, materials and realization of assemblies. Provide shop drawings for the restoration works of the staircase of the guardroom. Drawings must illustrate the locations and dimensions of components to replace as well as the method of anchoring of the new pieces of wood.
- .3 Provide, at request of Departmental Representative, invoices, purchase orders, and suppliers' certificates of tests realized by the supplier and all other documents allowing to establish the conformity of used materials to specification prescriptions. Allow free access to source provision of supply of materials.
- .4 Submit shop drawings of reinstallation of wood paneling in the large room of Eat wing.

1.5 MOCK-UPS

- .1 Contractor must make the following mock-ups for approval of the Departmental Representative **before** proceeding to works.
 - .1 The complete restoration of 3 existing historic door frames in East Wing (including transom, glass replacement and paint of metal grille and door frame). The 3 door frames will be chosen by Departmental Representative.
 - .2 The removal of 3 linear meters of wood paneling in the large room of Eat wing in the presence of Departmental Representative.

- .3 The installation of 3 linear meters of wood paneling in the large room of East wing in the presence of Departmental Representative.
- .4 Repair of 5 fissures with epoxy flexible paste for wood.
- .5 5 surface repairs with epoxy flexible paste for wood.
- .6 Stripping of wood on 5 wood components at the site identified by Departmental Representative.
- .7 Stripping of wood on 5 wood components at the workshop identified by Departmental Representative.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Packaging, delivery, storage and unloading.
 - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
 - .2 Store materials off ground and in dry location.
 - .3 Deliver materials to site sealed packaging, identified with intact and readable labels.
 - .4 Handle materials carefully, in accordance with manufacturer's instructions, without breaking seals of containers.
 - .5 Unless indicated otherwise by manufacturer, store materials at a temperature ranging from 10 to 25 degrees Celsius.
- .2 Waste Management and disposal:
 - .1 Sort materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.7 AMBIENT CONDITIONS

- .1 At the end of each work day, cover the works exposed to bad weather with waterproof tarps solidly fixed.
- .2 Adhesive repairs:
 - .1 Maintain temperature of elements to be repaired at between 21 degrees C and 24 degrees C throughout its thickness and for 48 hours after repairing.
 - .2 Provide heating cooling equipment necessary to maintain temperatures specified.
 - .3 Undertake work under conditions of relative humidity at same level as operational requirements of end product.
 - .4 Relative humidity of large room on the second floor of East wing must be at 50% during 7 continuous days before removing the wood paneling in this room. Maintain relative humidity at 50% during the removal of the wood paneling as well. Contractor must install at least 3 thermometers with relative humidity detectors. A reading must be taken at each hour during the 7 days before the dismantling of the paneling. Results and readings of each detector must be transmitted to Departmental Representative on Excel table form on a daily basis during 7 days before removal of the paneling as well as during the removal works.

1.8 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products

Part 2 Products

2.1 MATERIALS

- .1 Dimension lumber, moldings, paneling, and woodworks:
 - .1 Use white pine to match existing.
 - .2 Quality : QSI category 1.
 - .3 Actual dimensions and characteristics: wood pieces, rough, quarter-sawn, planed to be appropriate for repairs.
 - .4 Moisture content: 7 to 9 % after drying in the dryer.
- .2 Dowels:
 - .1 Dowels: same material as woodwork.
 - .2 Dimensions: as needed according to use.
- .3 Wood plugs:
 - .1 Cover recessed metal fastening devices with wood plugs cut from same species of wood as the face to be exposed.
 - .2 Direction of grain to match existing.
 - .3 Dimensions: as needed for each application and of diameter to give firm flush fit in bolt hole.
 - .4 Assembly pieces for lumber: stainless steel screws or bolts of type and dimensions appropriate for application.
 - .5 Adhesives: submerge the wood plugs and inserted pieces of wood in a bed of flexible epoxy adhesive for wood conceived specifically for wood repairs.
- .4 Wood blockings :
 - .1 Spruce: must be Eastern Spruce (*Picea Glauca*) of category construction #1 or better, sanded 4 sides Wood plugs: in same material as the woodwork wood.
- .5 Dowels and pins:
 - .1 Dowels and pins: of wood of same species as wood pieces to fix. Dimension pins and dowels according to pieces to support and/or maintain.
- .6 Nails, bolts, screws, washers and other fastening devices:
 - .1 Nails, bolts, screws, washers and other fastening devices conforming to CSA B-111-1974, hot-dipped galvanized.
Dimensions: of diameter to give firm flush fit in bolt hole.

- .7 Plywood:
 - .1 BC fir plywood from west of Canada exterior grade: conforming to CSA O121, for high density plywood for exterior use. Unless otherwise specified on the drawings, plywood must be “good 1 side” and sanded for paint finish when one face is destined to exposed to view and “sheathing” category elsewhere.
- .8 Antifungal treatment:
 - .1 Must be made with base of pentachlorophenol, tinted green, and conforming to appropriate clause of standard CSA 080-1974 for preservative treatment.

2.2 DIVERSE ROUGH CARPENTRY

- .1 The diverse rough carpentry must be spruce, unless otherwise indicated on drawings, and must be installed in massive pieces, of size and dimensions appropriate for the work; or in BC-Fir plywood from Western Canada of 19 mm thick unless another thickness is indicated on the drawings, and must be bolted, screwed or nailed in place in the manner most appropriate to needs of the works with a minimum of 2 fasteners per square foot of wood, measured on the face of direction.

2.3 NAILING BACKING

- .1 Unless otherwise indicated on drawings, nailing backings necessary for the installation of finished woodworks, and other works, must be white pine of appropriate dimensions, and must be solidly fastened in place.
- .2 Except if otherwise specifically indicated on drawings and specifications, all elements of woodworks that are not free-standing or are supported fully and continuously must be white pine.

2.4 BLOCKINGS

- .1 Blockings required for the installation of other materials, and at wall junctions, must be in spruce; they must be fastened in place with bolts, washers, nuts, in sufficient numbers to ensure their rigidity and all rigidly anchored.

2.5 SURFACE PREPARATION AND WOOD RESTORATION WORKS

- .1 Reconstitution paste for deteriorated wood elements: Use epoxy flexible paste to reconstruct partially (less than 50 mm cubic) elements to preserve which have superficial rot or to fill fissures in the wood element. Apply a consolidating compound as primer on all surfaces destined to receive the epoxy flexible paste. IMPORTANT: It is formally forbidden to use flexible epoxy for resurfacing wood elements or for too large reconstructions.
 - .1 Acceptable material for consolidating compound:
 - .1 Liquidwood by Abatron
 - .2 Replacement materials: approved by addenda according to Instructions to tenderers
 - .2 Acceptable material for flexible epoxy paste:
 - .1 Wood epoxy by Abatron

- .2 Replacement materials: approved by addenda according to Instructions to tenderers
- .2 Filling paste: Use flexible epoxy paste to fill all small holes and orifices in existing woodwork to preserve. Apply a consolidating compound as primer on all surfaces destined to receive the epoxy flexible paste. **IMPORTANT**: It is formally forbidden to use flexible epoxy for resurfacing wood elements or for too large reconstructions
 - .1 Acceptable material for consolidating compound:
 - .1 Liquidwood by Abatron
 - .2 Replacement materials: approved by addenda according to Instructions to tenderers
 - .2 Acceptable material for flexible epoxy paste:
 - .1 Wood epoxy by Abatron
 - .2 Replacement materials: approved by addenda according to Instructions to tenderers
- .3 Primer for knots, veins, spots etc. Primer applied in 1 coat at certain places only.
 - .1 Acceptable Materials for primer:
 - .1 B. I. N Shellac-Base Primer Sealer Ultimate Performance Primer-Sealer for interior and spot exterior use by the company Zinsser North America.
 - .2 Replacement materials: approved by addenda according to Instructions to tenderers.

Part 3 Execution

3.1 VERIFICATION OF EXISTING CONDITIONS

- .1 Stop work and report immediately to Departmental Representative conditions relevant to this contract not described in drawings: evidence of deficiencies, fungal or insect attack which may affect the scope of work and durability of the finished product.
- .2 Study carefully the brands of tools to reproduce and determine the best way to realize them.

3.2 PREPARATION WORKS

- .1 Protect existing surfaces adjacent to repair surface from damage during the Work.
- .2 Install adequate scaffolding, ladders and platforms for completion of work in accordance with Contract Drawings.

3.3 CONSTRUCTION

- .1 Special techniques: study tool marks and methods of reproducing them.
- .2 Cut back damaged or decayed wood to a point 10 mm beyond the last evidence of decay or damage.
- .3 Remove decayed wood with extreme care in order to neither disrupt nor damage the adjacent surfaces.

- .4 Create a cavity in existing element to insert wood repair element.
- .5 Remove decayed wood from building site daily.
- .6 Assemblies:
 - .1 Lay out assemblies and cut pieces according to approved mock-up.
 - .2 Shape repair piece using to Departmental Representative's satisfaction.
 - .3 Trial fit joints before fastening in place. Adjust as necessary to ensure close accurate fit with adjacent surfaces.

3.4 WOOD PANELING IN ROOM 203-1, 203-20, LARGE ROOM OF EAST WING

- .1 The existing wood paneling in the large room of East wing dating of 1913 is to be entirely dismantled. The wood of the paneling is presently very dry and very shattery. The removal of the boards must be done carefully, board by board, including the moldings as well. Contractor must take all necessary precautions to prevent losing boards by negligence. Contractor will be held responsible of damages caused to original wood elements.
- .2 Remove all anchors, nails and screws from boards and moldings of dismantled paneling. Departmental Representative must confirm scope of works on the boards and moldings of paneling at contractor's workshop before undertaking stripping works.
- .3 Strip in workshop existing paint on all surfaces of boards and moldings of the paneling. Note that paneling has been covered by an antifungal coating after the fire which must also be stripped. Do 3 tests of wood stripping for approval of Departmental Representative before proceeding to restoration works of boards and moldings.
- .4 Include a replacement of boards and moldings of the paneling of 20% by white pine boards and moldings having the same dimensions and same profiles as the existing components.
- .5 Fill the holes and fissures of recoverable boards and moldings with a flexible epoxy paste Resurface deteriorated wood components according to instructions of Departmental Representative .See article 2.5.
- .6 Once the boards and moldings restored, have the repairs approved by Departmental Representative before proceeding to paint works.
- .7 Sand and apply a primer coat and tow coats of paint on all boards and moldings of the paneling. Primer and two coats of paint must also be applied to non-exposed surfaces of boards and moldings.
- .8 Departmental Representative must approve paint works before transporting the boards and paneling to the site.
- .9 Transport the panelings to the site with padded protections. Contractor will be held responsible of damages caused to original wall elements.
- .10 Provide shop drawings of reinstallation of paneling to Departmental Representative before proceeding to reinstallation.

- .11 Once shop drawings are approved, do a mock-up of reinstallation by installing 3 linear meters of paneling (boards and moldings in the presence of Departmental Representative for his approval.
- .12 Proceed to reinstallation of paneling once mock-up of reinstallation is approved.
- .13 Apply a last coat of paint on all boards and moldings once installed.

3.5 HISTORIC WOOD DOOR FRAMES OF EAST WING AND TWO SQUARE TOWERS

- .1 Do repairs to historic existing door frames as indicated on door and frame schedule in drawings.
- .2 Wood components of door frames and transoms are fragile and unstable. Contractor must take all necessary precautions to avoid losing components by negligence. Contractor will be held responsible of damages caused to original wood elements.
- .3 Consolidate and nail all components and moldings weakened and unstable of historic door frames and transoms. Departmental Representative must confirm the scope of works of all frames before undertaking stripping works.
- .4 Strip existing paint on all surfaces of door frames and transoms components. Note that door frames have been covered by an antifungal coating after the fire which must also be stripped. Do 3 tests of wood stripping for approval of Departmental Representative before proceeding to restoration works of door frames.
- .5 Replace glass of all transoms of all historic door frames in East Wing and two square towers. New glass to be clear and 4 mm thick. Note that transoms have steel grilles which will be kept in place.
- .6 For the totality of frames and transoms, include an extra replacement of 20% of typical components of frames (base, jamb, molding, crossbar, casson, etc...) in white pine of same dimensions and same profiles as existing components.
- .7 Fill the holes and fissures of recoverable wood components with a flexible epoxy paste Resurface deteriorated wood components according to instructions of Departmental Representative .See article 2.5.
- .8 Once components of door frames and transoms restored, have the repairs approved by Departmental Representative before proceeding to paint works.
- .9 Scrape and sand all grilles of transoms of all door frames in East Wing and two square towers. Apply a coat of epoxy based primer paint and two coats of black polyurethane based paint. Grilles are all painted in black.
- .10 Sand and apply a primer coat and two coats of paint on all components of door frames and transoms.
- .11 Coordinate the whole works with the works of installation of the new door/frame which are to be integrated to historic door frames.

3.6 STAIRCASE no. 2 GUARD ROOM

- .1 Do repairs to staircase as indicated on drawings.

- .2 Wood components of staircase (hand rail, step, balusters, panels, stringers, etc...) are fragile and unstable. Contractor must take all necessary precautions to avoid losing components of patrimonial staircase by negligence. Contractor will be held responsible of damages caused to original wood elements.
- .3 Consolidate and nail all fragile and unstable of historic staircase. Departmental Representative must confirm the scope of works of all components of staircase before undertaking stripping works.
- .4 Strip existing paint on all surfaces of wood components of staircase (hand rail, step, balusters, panels, stringers, etc...). Note that components of staircase have been covered by an antifungal coating after the fire. Antifungal coating must also be stripped. Do 3 tests of wood stripping for approval of Departmental Representative before proceeding to restoration works of wood components of patrimonial staircase.
- .5 Include an extra replacement of 20% of typical components of staircase (hand rail, step, balusters, panels, stringers, etc...). in white pine of same dimensions and same profiles as existing components.
- .6 Fill the holes and fissures of recoverable wood components with a flexible epoxy paste Resurface deteriorated wood components according to instructions of Departmental Representative .See article 2.5.
- .7 Once components of staircase restored, have the repairs approved by Departmental Representative before proceeding to paint works.
- .8 Sand and apply a primer coat and two coats of paint on all components of staircase.

3.7 WINDOW SHELVES

- .1 All shelves of passing windows and loophole windows of the Multi-functional room are of massive Brazilian Mahogany according to dimensions and profile illustrated on drawings..
- .2 When the window shelf of other than passing windows and loophole windows are identified on drawings as to replace by an identical shelf, the new shelf must be of massive Spanish Cedar according to dimensions and profile of the existing historic wood shelf.
- .3 Wood finishing of shelves: according to prescriptions of section 09 91 23 – Painting - new interior works.

3.8 CLEANING

- .1 Do cleaning works in accordance with Section 01 74 11 - Cleaning.
- .2 Upon completion of works remove surplus materials, rubbish, tools and equipment to satisfaction of Departmental Representative.

END OF SECTION