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Norfolk County – Operation Division - Facilities Department
50 Colborne Street South
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N3Y 4H3

April 22, 2022

Project No. 22118

Attn: Mr. Michael Simoes
(Michael.simoes@norfolkcounty.ca)

Re: Norfolk County Facilities Restoration
Site Visit Observations and Assessment

Dear Mr. Simoes,

This letter is a narrative description of the general observations and additional investigation and assessment requirements beyond the proposal scope. Further provided are the prioritized rehabilitation and associated estimated budget. The effort and work required are defined to show what is required to complete the scope from the observed conditions. The investigation, building condition assessment, design, construction review, and contract administration is outlined to show what is needed to enable accurate and precise budgeting, design, and construction documentation. The additional investigation we are recommending is intended to reduce the design and construction risks, prevent budgeting discrepancies, and enable a greater degree of design certainty. The letter relates to all three structures within the scope of our present mandate, each structure shown in Figure 1 to 3 below:

- Norfolk County Administration Building
- Norfolk County Archives (formerly Eva Brook Donly Museum)
- Vittoria Old Town Hall

Figure 1: Exterior view of the County Administration Building

Figure 2: Exterior view of the Norfolk County Archives

Figure 3: Exterior view of the Vittoria Old Town Hall

A visual walkthrough review, drone survey, and lift survey was completed by John G. Cooke & Associates Ltd. (JCAL), along with a+LiNK Architecture Inc., to evaluate the existing conditions of the historic buildings as it relates to the scope of work. Jonathan Dee, P.Eng., CAHP, and Wes Wilson, B.Eng., EIT from JCAL, along with Tim Finch, OAA, visited the site on March 24, 2022, to inspect both the interior and exterior of the structures. A secondary site visit was performed on April 8, 2022, to garner additional information related to the County Administration Building. All information provided here is based on the information provided by the client and site visits performed through visual means.

This letter is being provided upon the client's request to present information based on the preliminary observed needs of the buildings concerning the pre-defined scope of work, along with the needs of the Consultant to complete said work through modifications to the scope of investigation and service level, based on the fee. This is due to the observed conditions strongly indicating that the scope of this project

will exceed that foreseen in our original mandate, requiring more intensive investigation and an increased intensity in the building condition assessment, design, and particularly construction. This is because the conditions being experienced within the structures, notably the County Administration Building and the Vittoria Old Town Hall, are associated with other, root-cause conditions within the buildings. In turn, causing other problems not previously known, impacting the structure and associated materials. This letter describes the impacts of the conditions observed and the recommended remedial measures.

Probable construction estimates are being provided upon request from the client to give a highly preliminary outlook and understanding of the project direction, with only preliminary knowledge about the conditions and an unknown complete construction scope due to the need for additional investigation and assessment as outlined within this document. It is to be made clear that JCAL are not professional cost estimators. These values should not be used for budgeting purposes and do not represent any class of assessment from no comprehensive statement of requirements being in place, no potential solutions, or functional program being developed. The state of the construction industry places significant risk in budgeting from drastic costing variability. More refinement will be applied to the costing of the project once undertaking the design process, in which accurate capital budgeting can be achieved.

Scope of Work

JCAL's present scope of work is to provide consulting services to restore the above-noted. For each of the structures, the following is the scope of work as defined within the services for restoration:

Table 1: Scope of Work Breakdown Based on Building

BUILDING	SCOPE OF WORK
County Administration Building	Deteriorated and fractured decorative plaster at the cornice of the council chamber ceiling
	Deteriorated and fractured plaster around the window lintel of council chamber windows
Norfolk County Archives	Wood window and sill restoration and repair
	Wood window shutter restoration and repair
	Masonry chimney restoration and repair
	Wood front entryway restoration and repair
	Wood facia board restoration and repair
	Entryway masonry rehabilitation
Vittoria Old Town Hall	Masonry rehabilitation
	Chimney repair and rehabilitation
	Wood windows and trim
	Front and rear entrance doors
	Cupola bell tower structure and cladding
	Cupola roofing
	Fascia and soffit boards
	Metal weathervane restoration

JCAL's agreement includes the investigation, condition assessment, design, and construction administration/review of the scoped items for the above structures. The scope of work was described in JCAL Proposal no. P22082, dated February 8, 2022. This report describes the observations made during our visits to the structure. Recommendations associated with the investigation are provided herein. These recommendations are intended to inform the scope of work of the buildings.

Investigation and Documentation

JCAL carried out an initial walkthrough on March 24, 2022, after being formally engaged in the project. This initial visit allowed a general review and understanding of the building's structural systems and condition. To our knowledge, no original structural drawings exist of the buildings that focus on this investigation. The following are the documents that have been made available to the consultants:

Table 2: Structure Documentation and Records Provided

BUILDING	DOCUMENTS
County Administration Building	Ontario Heritage Trust Easement
	Norfolk County OHA Designation
	Photographic History
	1976 Architectural and Mechanical Building Drawings
	2013 East Exterior Façade Window and Masonry Restoration
	2014 Masonry Restoration
	Norfolk County Developed Plan Drawings
	Building Substance Reports
	2016 Building Condition Assessment
Norfolk County Archives	Norfolk County OHA Designation
	Photographic History
	Documentary History of the Structure and its Evaluation
	2014 Architectural Drawings, Specifications, and Documents of the Rehabilitation
	Norfolk County Developed Plan Drawings
	Building Substance Reports
	2017 Building Condition Assessment
Vittoria Old Town Hall	Norfolk County OHA Designation
	Photographic History
	Documentary History of the Structure and its Evaluation
	Norfolk County Developed Plan Drawings
	2016 Building Condition Assessment

Each scoped area was inspected at each building at the initial site visit. The following is a listing of the general investigation performed:

- Surface investigation and evaluation of conditions on the exterior and interior of each building
- Masonry probing
- Photo documentation of the observed conditions

The attic of the County Admnistration Building was accessed to review conditions above plaster damage locations. A portion of the attic of Vittoria Town Hall below the tower was accessed to observe the structure, and a lift was used to determine cupola and upper level wood finish conditions at the exterior.

Based on the investigation, it was determined an expanded investigation and scope is required, and is presented here in as recommendations. From the recommendation alterations to other services such as the Building Condition Assessment, Design Services, and Construction Review and Contract Administration is deemed suitable.

Building Condition Assessment (BCA)

Due to the modified investigation recommended, an expanded scope would be required for the BCA for the scoped elements. The methodology in the proposal will be used to prepare the report. This is from the increased depth of investigation required by the Consultant to evaluate the information obtained and increased conservation methodology to be developed to enable the design to be executed.

Design Services

To complete the required design services, an expansion to the scope is recommended based on the needs likely to result from the intrusive investigation and based on the observed surface conditions when performing the initial site visits. The design services required relate to the prioritized conditions and rehabilitation presented above, with the primary driver being the expansion in effort required on the Consultant's behalf. All the previously illustrated design services within the proposal will be maintained. Effort expansion is particularly the case from the observed conditions needing significantly expanded drawing development in the way of schedules, details, and elevations from a lack of elevation drawings of the buildings included within this scope.

Construction Review and Contract Administration

Due to the expanded construction scope recommended and forecasted increase in the construction costing, an expansion to the scope of construction review and contract administration is required. This expansion includes additional effort from the Consultant and an increased construction review burden to ensure quality standards are upheld throughout construction. Construction review particularly is the case for heritage masonry and specialized heritage work considering the need for quality construction. All elements contained within the original proposal will be maintained.

COUNTY ADMINISTRATION BUILDING

The Norfolk County Administration Building, originally a Courthouse for the Talbot District known as Norfolk and parts of Haldimand County, was constructed in 1838. The structure is in the Town of Simcoe, in Governor Simcoe Square. The courthouse was reconstructed in 1864 following a fire that gutted the building, built in the English Italianate style, symmetrically proportioned, with a projecting two-story central bay containing the principal entrance. Central to the building is the coat of arms over the main entrance. In 1978 the building was converted from a courthouse to the Administration Building for the Town of Simcoe and Region of Haldimand-Norfolk. Extensive restoration took place to accommodate this transformation. The structure transitioned to the Norfolk County Administration building in the early 2000s, containing the municipal council chambers and other offices. The building is designated under Part 4 of the Ontario Heritage Act. During the project's research phase, it was found that the façades of the structure and grounds are under easement with the Ontario Heritage Trust.

Figure 4: Subject Site of the County Administration Building

Figure 5: Exterior view of the County Administration Building

The building has three accessible main levels in the primary structure: two upper levels and one basement level. A five-story tower joins the main building. A second wing adjoins the building with two upper levels and one basement level—an intermediate wing connecting the building, linking it to the adjoining Library. The exterior walls of the building are primarily constructed of yellow brick masonry clad with imported Ohio stone. The building contains a basement level constructed using red-brick masonry, with the same being present on all interior walls of the building.

Decorative plaster is along the length of the ceiling cornice in the council chambers at the base of the curved ceiling and the peak. Per the 1976 drawings, the decorative plaster was repaired and fastened where loose, and repaired to the original profiles were damaged. All walls within the space are lath and plaster, fixed to the existing masonry through lath. Based on the drawings, it is presumed this was performed using two-by-two wood stripping 10" on the center. It is typical for the space to contain three (3) plaster control joints vertically along each wall of the chambers.

Per the 1976 drawings, all existing windows were replaced with a new frames matching the historical frame profile, shape, and glass. Each window is cast in plaster on the curved section of the window only. The remainder of the window frame and surround is constructed of timber. Based on documentation received from the client, extensive restoration occurred in 2013 on the east façade of the building. The restoration

encompassed the second-story windows and masonry repointing of the entire façade. From communication with the client, it was learned that the window restoration occurred in situ and was limited to the exterior of the building only. Documentation from the 2013 restoration was attempted to be obtained by the client departments; however, could not receive the documents in time for this submission. A restoration project occurred in 2014 of the south façades of the building related to the masonry and windows of the structure.

Observed and Assessed Conditions

The following are the observed and assessed conditions as it relates to the deteriorated ceiling plaster:

- Plaster cracks and paint degradation was observed on the west side decorative cornice confined to the upper half of the ceiling curvature. It was reported that the cracks were leaking for 2 to 3 years. Since that time, the source of the leak, being the roof, has been repaired.
- A fracture extends beyond the core region of deterioration at the peak of the curved ceiling through the florets within the run mouldings.
- Delamination is occurring between the plaster within each of the areas with water leakage
- The decorative cast ornaments on the lower portion of the curvature appear not to have been impacted by the leak from the surface conditions being seen.
- In communication with the client's staff, the plaster within the deteriorated area has been continually flaking, with debris falling to the public seating area below.
- The floret condition is unknown, and it could not be fully confirmed if the cracks were static or active. The type of plaster used is unknown. Investigation is required to determine the condition of the plaster, support, brackets, and lath, to check for rot from the extended water leak.

The following are the observed and assessed conditions as it relates to the decommissioned chimney:

- During the investigation, the leak source was determined to be from a previously unknown decommissioned chimney located adjacent to the deteriorated plaster.
- The chimney was found to terminate in the main level ceiling supported by two 200mm deep steel sections pocketed into the existing wall, extending into the attic of the second level above the council chambers, terminating below the level of the sub-roof.
- The chimney is corbelled into the interior, cantilevered over the occupied space. The plaster curvature likely follows the corbelling. A directional crack is in the plaster at the chimney, suggesting movement in the plaster substrate, being the corbelled masonry.
- The roof above the chimney has a bulge, indicating the chimney is placing pressure on the roof. It is unknown if the leak was initially in this location as the roof has been replaced. Attic access to the region restrictive, preventing direct access, however, it is likely to have been approximately in this location.
- The chimney has a vertical fracture through mortar and masonry units along the flue length found not to have been filled per the 1976 drawings. However, it remained open from the attic to the ceiling of the main level. The length of the fracture is unknown as only the accessible attic space could be used to view the fracture in the south façade addition, enabling access to the top of the council chamber wall and commencement of the corbelling from the south side.
- An HVAC supply duct runs directly adjacent to the chimney and, in one location, punctures the masonry to enter the council chambers. When looking inside the duct, leakage of the supply air can occur into the open flue, causing air with high humidity to enter the flue in the winter, combined with cold air from the attic in winter, with the reverse cycle occurring in the summer. This causes a continued wetting and drying cycle of the masonry in the flue, compounded by the attic space not being insulated, enhancing the wetting and drying cycle.

The following are the observed and assessed conditions as it relates to other plaster conditions:

- Long directional cracks are throughout the council chambers plaster in confined locations. This indicates movement in the structure from the material conditions of the lath, and masonry, in which the lath is fixed. A correlation was drawn between the location of each crack and a dormant chimney extending into the attic. Investigation is required at each crack and chimney to discern the condition being experienced and if movement of the corbelling is occurring above the space.

The following are the observed and assessed conditions as it relates to the East Façade Windows:

- Five (5) sizeable Victorian-style arch top wood-framed windows consist of thin double glazed thermal units in solid wood frames and muntin bars. These windows are not original to the building and were identified for replacement on the 1976 construction drawings.
- The windows are in stable condition. However, the following deficiencies were observed:
    a. Cracked wall plaster on the top arched, and a significant horizontal crack in the plaster running below and for the entire length of the group of windows.
    b. Cracked wood frames at the window arches.
    c. Water stains on the glass units and the interior sills from water infiltration from the exterior.
    d. Several glazed thermal units have condensation between the panes, indicating the unit seals have deteriorated.
    e. Paint degradation and loss were observed on the interior side of the windows. The condition of the wood frames and muntin bar materials could not be confirmed as the top of the windows could not be reached. However, due to evidence of previous water infiltration, some rot is suspected, particularly at the top of the arches. Further window by window investigation is required on both the interior and exterior sides of the windows.

Prioritization of Rehabilitation

The following is the prioritization of the conditions being experienced as observed:

1. Rehabilitation and consolidation of the chimney adjacent to the deteriorated ceiling plaster
    - Deconstruction of the chimney from the above wall level, down to plain with the existing wall to remove the corbelled region
    - Modify electrical lines in the chimney by removing and installing them in another location
    - Install helical anchors into the chimney, mechanically connect the chimney to the masonry
    - Monitor the existing fracture through crack monitoring
2. Restoration of the deteriorated decorative Plaster and making good the plaster disturbed when performing the intrusive investigation around the location of the decorative ceiling plaster
3. East façade window rehabilitation by selective replacement of frame elements from noted deterioration and selective replacement of glazed thermal units
4. Restoration of the east façade window plaster located on the upper window surround

Additional Scope of Work

1.0 Investigation

The observed conditions require the following investigation. The investigation as prepared in the proposal will be utilized as the process for below. The following is the additional investigation for to the Chimney:

- Thermal imaging to see the extent of the water infiltration, along with the wetting and drying cycles

The following is additional investigation required as it relates to the Council Chamber Plaster and timber:

- Paint analysis of the plaster surfaces to determine the colour composition
- Localized removal of plaster in the council chamber ceiling to determine the condition of the lath, substrate connections, timber structure, and layer plaster from the prolonged water exposure
- Observation openings in the decorative metal panel ceiling, with scaffolding required
- Sounding of ceiling plaster and east façade windows to determine if the plaster has debonded from the lath using interior scaffolding or vertical lift
- Thermal imaging to see the extent of the water infiltration and the wetting and drying cycles
- Asbestos and lead testing of the plaster and completion of DSR
- Precise documentation of the existing conditions of the ceiling plaster, with scaffolding required

The following is the investigation required as it relates to the east windows in the council chambers:

- Window by window investigation on the interior and exterior using a drone to determine water ingress on the wall by locating open joints, cracks, or deteriorated materials on the masonry east

wall and record elevations. The investigation would involve probing the timber elements for rot and sealant conditions. The window condition is consistent, and the in-depth investigation could be performed on a single bank with the results applied to the remaining windows.
- Localized interior removal of finishes below the windows to determine the extent of water infiltration
- Make one sample window operable to confirm the frame's condition behind the sashes.
- Precise documentation of the existing conditions of the windows.

From the observed conditions, a Plaster Conservator is recommended to be placed as an allowance if the observed conditions are more extensive than presumed based on the investigation recommended. To enable the investigation, asbestos and lead testing of the plaster in different regions of the space would be recommended to ensure the health and safety of all. In addition, temporary removal of wall hangings and protection of existing floor and furniture would be required to accommodate the interior scaffolding.

Fee Breakdown

Enabling a window to be operable is not included within the investigation costing as it is presumed this task can be performed by municipal staff. The fees provided are based on the additional required services based on the observed conditions and expected construction requiring increased effort and time by the Consultant. In addition, the level of service stipulated initially does not meet the required design depth for the building. The below fees do not include the Harmonized Sales Tax (HST), which will be added to each billing. Our fees for the services described are:

Table 3: County Administration Building Cost Breakdown

Additional Investigation to be Performed by General Contractor and Conservator			
1.1	Localized finish removal of the plaster and lath ceiling, and decorative metal panel opening with scaffolding	$ 15,000.00	
1.2	Localized removal of finishes below the sill of the large windows facing the exterior on the interior to determine the extent of water infiltration		
1.4	Plaster Conservator (Allowance)	$ 5,000.00	
	ESTIMATED COSTS	**$ 20,000.00**	**+ HST**
Consultant Time and Effort – Investigation / BCA / Design / Construction Documents			
2.1	Existing Fee	$ 5,625.00	
2.2	Estimated Additional Fee	$ 13,540.00	
	ESTIMATED FEE	**$ 19,165.00**	**+ HST**
Consultant Time and Effort – Tendering / Construction Review / Contract Administration			
3.1	Existing Fee	$1,875.00	
3.2	Estimated Additional Fee	$7,180.00	
	ESTIMATED FEE	**$ 9,055.00**	**+ HST**
	TOTAL ESTIMATED COST	**$ 48,220.00**	**+ HST**

Probable Construction Costs

Table 4: Existing Construction Allocation vs. Probable Construction Estimate

Existing Construction Allocation	Probable Construction Estimate	Notes
$90,000	$190,000	Costing efficiencies could be obtained from performing the chimney deconstruction and rehabilitation simultaneously as the roof rehabilitation due to the tight conditions within the attic space preventing access.

NORFOLK COUNTY ARCHIVES

The Norfolk County Archives was donated to the Town of Simcoe in 1941, where it became a museum operated by the Norfolk Historical Society. The structure, also known as the Mulkins Residence and formerly the Eva Brook Donly Museum, is in Simcoe, Ontario. The home was constructed in 1845 in the Georgian/Loyalist style, known as one of the first brick buildings constructed in Simcoe. The exterior appearance remains virtually unchanged, and includes detailing typical of many early 19th Century residential buildings. More recently, the museum operations were transitioned to Norfolk County, with the site becoming the permanent home of the Norfolk County Archives.The building is designated under Part 4 of the Ontario Heritage Act.

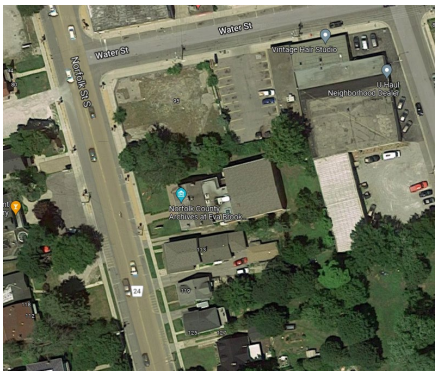

Figure 6: Site of the Norfolk County Archives

Figure 7: Exterior view of the Norfolk County Archives

The structure, the primary focus of this scope, is two stories, plus an attic and partial basement. A crawl space is under the remainder of the home. The building is multi-wythe brick masonry, on a composite stone and brick foundation. The home is currently used for exhibit space reflecting the home in its historical context and exhibit space for museum functions. The windows are symmetrically aligned throughout the facades, with shutters. The roof has five (5) chimneys, each with similar detailing. While the home has been a museum, several modifications have been completed. Notably, an addition at the rear, used for archival, museum, storage, and display purposes. In 2014, the main entryway, was rehabilitated, along with the façade masonry and chimneys.

A central transom, skylights, and entryway door is present in the center of the main façade. Per rehabilitation documentation, extensive refinishing of the surfaces occurred. The skylight and transom surrounds were made good, with the windows being reconstructed using epoxy for the muntin bars to replace the wood finishes. New paint was applied to the surface. In addition, the door was dismantled, sanded, and refinished, with the door reassembled using glue, without mechanical connections. It is noted that all metal elements were removed, cleaned, and reinstalled. No previous restoration was presented on the windows or shutters of the building. Five (5) chimneys are seen on the roof, with two located on each end of the home, centered around the peak of the roof gable, and the fifth located off-center nearer the north façade on the gable peak. In 2007, reconstruction occurred of the southeast chimney and the chimney on the north side of the centerline, along the gable, with general repointing occurring for the remainder. In addition, flashing and capping were placed on the chimneys. Per the documentation provided for the 2014 restoration, the chimneys were 100% repointed with selective brick replacement. Flashing was placed at the base with lead-coated copper capping on the existing curved masonry at the flue opening.

Observed and Assessed Conditions

All chimneys appear to be in good condition with slight deterioration to the masonry units and mortar, except for two chimneys, which were rebuilt and rehabilitated in 2007 and 2014. The following are the observed and assessed conditions as it relates to the southeast chimney and the chimney on the north side of the centerline, along the gable:

- The brick masonry chimneys date to the time of original constructionand have two flues each. One flue extends to the main level, with the other terminating on the second level, each going to an inactive firebox. The chimneys are clad in plaster in the interior spaces.
- The capping and flashing of the chimneys are in good condition at the time of the investigation
- During the site visit, it was shared a water leak was coming from the chimney into the main level. No visible leaks could be discerned at the visit; however, leaks of this nature are consistent with the observed conditions. Suggested is the cast-in-place concrete cap has failed or has deteriorated, allowing water ingress. Masonry deterioration exists on the course below the cast-in-place cap.
- Extensive masonry deterioration through crumbling and delamination of the fire faces. At the visit, pieces of brick were on the ground adjacent from winds the day prior. A fall hazard is present due to loose brick faces. The integrity of the chimney masonry are a concern. We expect loose masonry to be confined to above the roofline. The risk of falling debris is posed by masonry sliding down the roof and onto people or property in the driveway or walking on the path below.
- The mortar joints appear to have remained intact where brick spalling and delamination is occurring, suggesting a Portland mortar was used in previous restoration projects, incompatible with historic brick. This is because the application of impermeable coatings or impermeable mortar can disrupt the process of drying historic masonry. Any dissolved compounds present in the water, such as salts, do not evaporate and are transported to and left on the surfaces. This drying process is normally facilitated by the mortar joints, which are intended to act as the preferential route for moisture transmission because their capillary pore structure acts as the sacrificial element.

The following are the observed and assessed conditions of the windows and shutters:

- The windows are typically 6/6 Georgian Style wood-hung sash windows. The single or double-hung operation could not be confirmed. It appears some original glass panes are intact without any UV film added to the museum window glass.
- Windows are generally intact, but the following deficiencies were observed:
    - Sashes are not operable, painted shut.
    - Open joints between sash stiles and rails were evident on some windows.
    - Evidence of moisture migration and staining on the interior side of some windows. The existence of weatherstripping could not be confirmed at the time of visit.
    - Cracked bars are present in some window frames
    - Evidence of glazing putty loss and delamination around the perimeter of glass panes.
    - Caulking and paint on the windows has expired. There appears to be remnants of old paint that may be of interest. Per a DSR provided from the 2014 restoration, lead was present in the window paint and asbestos in the caulking. The paint is to be considered lead-based.
    - Previous repairs were observed, including but not limited to the following:
        - Use of epoxy/wood filler material to repair damaged/missing wood.
        - Some glass panes have been replaced with modern float glass.
        - Missing hardware or replaced with "modern replica." Some ground-floor windows have no sash locks visible and are a potential security risk.
        - Unfinished wood sash stops are in place on some windows.
- Most sills are stone, with two being wood on the north façade of the second story. Each wood sill exhibits a high degree of deterioration. No observed deterioration was noted on the stone stills.
- Wood shutters are intact mounted on the front windows on the east elevation. The shutters are not part of the current scope of work. However, the condition of the shutters should be brought to the Owner's attention. Based on our brief visual observation, at the time of visit, the shutters near the front door are exhibiting signs of material fatigue and stress. The shutter's anchors are pulling out of the masonry walls. It is understood that the shutters form part of the original heritage fabric of the windows, and it is recommended that a project to fully restore the shutters be considered soon.

The following are the observed and assessed conditions as it relates to the historic entryway and door:

- The front door is a solid hardwood flanked by glazed sidelights and a transom above. The "unusual" (as stated in the OHA heritage designation) one-paneled door is of stile and rail construction with what is identified as a hand-carved inlay trim in contrasting wood colour. The door system has been identified as part of the original 1845 construction of the house. There is evidence of a previous storm door; however no longer in place.

- The wood door and sidelight unit generally appear to be intact. There is evidence of a previous storm door that was not in place at the time of visit but was removed in the 2014 restoration. However, the following deficiencies were observed:
    - The finish on the exterior face of the main heritage door has been wholly lost down to bare wood. The interior surface of the door has a faux-painted finish. The door was previously refinished as part of a 2014 project.
    - The inlay trim on the door has separated from the center panel with significant open joints.
    - Significant cracks in the center panel, open joints, and warping is evident. Some joints have been filled with putty wood filler but have failed.
    - The bottom of the door is in direct contact with the stone sill causing moisture wicking into the wood door. Wood rot and swelling is evident on the bottom of the door and on both sidelight bases. Typically, this rot often extends into the neighbouring wood flooring and structural framing at the stone sill and foundation wall. It is recommended that the existing wood flooring and wood joist at this location be investigated further for potential rot.
    - Use of epoxy / plastic wood filler material to repair damaged or missing wood is evident on the sidelight muntin bars and trim. Some of the finer trim details have eroded beyond recognition. The glue which was used to put to door back together after disassembly from the previous restoration has failed, leaving significant gaps in the frame
- Considering the significant heritage value, the door system contributes to the overall heritage value of the facility. The current precarious physical condition, it is strongly recommended that a separate wood conservator be retained to provide specialized expertise on the restoration of the door and sidelights to determine the best plan of action to preserve the greatest amount of heritage fabric.

The following are the observed and assessed conditions as it relates to the entryway masonry:

- Brick damage and deterioration are present around the West Elevation main entrance, likely where excessive amounts of de-icing salt have been used, along with snow build up from the removal of snow from the steps and piling adjacent to the masonry
- Masonry is deteriorated on the fire face of the brick, with pitting, flaking, and powdering

The fascia and soffit boards of the building are in good condition, with little to no deterioration. At the time of the investigation, no paint was observed to be delaminating from the wood.

Prioritization of Rehabilitation

The following is the prioritization of the conditions being experienced as observed:

1. Restoration and rehabilitation of the main entryway door, transom, and skylight
    - Removal, disassembly, and rehabilitation of the door, sidelight, and transom
2. Chimney Masonry Restoration (South-east Chimney and Chimney on the North side of the centerline, along the gable)
    - Replacement of deteriorated brick units
    - Possibly localized rebuilding, for the uppermost courses of the chimney.
    - Repointing mortar joints and removal of the cast-in-place concrete cap and replace with pre-cast stone with replacement/rehabilitation of the flue
    - Remove all existing flashing and replace it around the chimney
3. Entryway Masonry Restoration
    - Replace heavily deteriorated brick units with suitable masonry units
    - Repointing of the mortar in damaged regions
    - Ensure a snow removal process is in place to reduce masonry damage
    - Reduce the use of de-icing salts to the minimum necessary, or if possible, cease use of sodium-chloride de-icing salts and use an alternative de-icer.
4. Rehabilitation of Windows, Sills, and Shutters
    - Asbestos caulking and lead paint remediation around each window
    - Remove/rehabilitate selective windows, sills, frames, and associated materials, reinstatement of ironmongery, and replacement and repair in-situ timber elements.

- Rehabilitation and reconstruction of selective shutters
- Replacement of wood sills with stone sills, with the removal of paint and localized repairs

Additional Scope of Work

1.0 Investigation

As a result of the observed conditions, the below investigation is required with the prescribed methodology. The core methodology of the investigation as prepared in the proposal will be utilized as the process for the investigation described below.

- Access the crawl space to determine the joist condition adjacent to the stone sill below the door
- Paint analysis of window sashes and frames to ascertain and record the paint colour for all layers.
- Thermal imaging to see the extent of the water infiltration, along with the wetting and drying cycles
- Window by window investigation on the interior and exterior using a drone and ladder to determine the condition and location of water ingress on the wall by locating open joints, cracks, or deteriorated materials on the masonry east wall and record elevations. The investigation would involve probing the timber elements for rot and sealant conditions.
- Review of conditions by the Wood Conservator on the main front door.

Fee Breakdown

The fees provided are based on the additional required services based on the observed conditions and expected construction requiring increased effort and time by the Consultant. The level of service stipulated initially does not meet the required design depth for the building, and in particular with this structure, requires significantly enhanced time from the consultant to design a window solution.

Table 5: Norfolk County Archives Cost Breakdown

Additional Investigation to be Performed by General Contractor and Conservator			
1.1	Paint analysis of the surfaces to determine the colour composition	$3,500.00	
1.2	Wood Conservator	$3,000.00	
	ESTIMATED COSTS	**$ 6,500.00**	**+ HST**
Consultant Time and Effort – Investigation / BCA / Design / Construction Documents			
2.1	Existing Fee	$ 7,875.00	
2.2	Estimated Additional Fee	$ 34,000.00	
	ESTIMATED FEE	**$ 41,875.00**	**+ HST**
Consultant Time and Effort – Tendering / Construction Review / Contract Administration			
3.1	Existing Fee	$2,625.00	
3.2	Estimated Additional Fee	$18,000.00	
	ESTIMATED FEE	**$ 20,625.00**	**+ HST**
	TOTAL ESTIMATED COSTS	**$ 69,000.00**	**+ HST**

Probable Construction Estimation

Subject to the explanation of conditions and limitations noted in the previous section, cost estimates are provided as follows:

Table 6: Existing Construction Allocation vs. Probable Construction Estimate

Existing Construction Allocation	Probable Construction Estimate	Notes
$115,000	$320,000	The cost is elevated due to the specialized work required to conserve the entryway.

VITTORIA OLD TOWN HALL

The Vittoria Town Hall is one of Norfolk County's designated properties under Part 4 of the Ontario Heritage Act. In 1802, the Crown granted the land with the Owner donating the land for public use within the District of Talbot. This portion of land was known as the Court House Square. In 1862 a Public Hall was constructed on the site of the Division Court. The hall was destroyed by fire in 1870, with records indicating a subsequent reconstruction by the end of 1879. It is an excellent example of the early, simple, functional, box-like structures built to accommodate the town's business and house the court sessions at intervals. Its style is derived from the neo-classic building tradition and is designed with high regard for its proportion. Over the building's lifespan, continued maintenance, rehabilitation, and restoration have occurred.

Figure 2: Subject Site of the Vittoria Old Town Hall

Figure 3:Exterior view of the Vittoria Old Town Hall

The historic structure, which is the focus of this scope of work, is one central story; within the main space, the building is the height of two stories. The building is multi-wythe brick masonry on a mass-masonry fieldstone foundation. Above the front entrance is a timber cupola/bell tower containing the bell. The roof features three (3) chimneys, each with similar detailing. On the interior, at the entrance to the building, is a single-story space of a lower ceiling height, above which a second level mezzanine/storage area is presently accessible by ladder. The main space of the building is open with a stage at the rear of the building. The central attic is accessed by ladder from the mezzanine, and spans the entire length. The roof structure consists of wood rafters and intermittent diagonal members and ties, plus large timber framing supporting the cupola/bell tower that bears on the east and west brick walls to either side. A secondary attic extends above the main attic, which enters the interior structure of the cupola/bell tower. Below the building is a crawl space accessible only by a small hatch through the stone masonry providing access to the joist and flooring composition of the structure.

The use of the building was recently shifted from a hall function to a space leased to a private operator to be used as a wedding venue. The use will present increased utilization of the facility. Per information provided by the client, no rehabilitation has occurred over the lifetime of the building during ownership/use by Norfolk County. Minor modifications are apparent to the building, such as storm windows on the interior. At the time of the site visit, the new operator was making cosmetic modifications to the interior of the building. Previous rehabilitation has been performed in the bell tower as indicated by the presence of a steel plate supporting the bell. Based on research, it was determined that some form of extensive restoration was performed around and post 1998. It is unknown what the restoration scope was and if the repairs noted herein were performed at this time. The building is constructed directly on the adjoining property line with 1548 Old Brock Street, Vittoria, Ontario. An agreement would need to be in place between the client and the adjoining property owner for any work or investigation to occur.

Observed and Assessed Conditions

The following are the observed and assessed conditions as it relates to the cupola:

- The roof of the cupola is in poor condition, with a number of leaks and material deterioration evident from water infiltration

- The cupola metal weathervane is in good condition with little to no deterioration.
- Paint peeling is present across the entire cupola exterior structure and architectural finishes
- A high degree of rot is present on the cladding and architectural finishes of the cupola
- In communication with staff, it was learned that some architectural finishes of the tower were blown off during a windstorm in 2019. The materials are in storage at a county facility.
- Based on imagery, it was determined that in recent years, an intervention was performed in the cupola from a steel plate being below the bell. No records were provided as it relates to this work
- The cupola structure is unknown from the concealed conditions and lack of access to the interior.
- From access to the main attic of the building, it was determined that large hand-hewn timbers extend from the cupola down from the secondary attic to a set of transfer beams within the main attic. The transfer beams extend horizontally into the side facades of the building pocketed into the masonry. The condition of the beam within the pockets is unknown. The brick masonry at these bearing points is in poor condition, as noted below, and presents a structural stability concern.
- Further investigation is required to determine the cupola condition.

The following are the observed and assessed conditions as it relates to the brick masonry and stone foundation:

- The brick masonry on the side facades of the building near the street-facing façade is bowing, causing a high deflection within the wall's masonry. The deflection extends from the foundation to the roof. As these walls are load-bearing, this represents a structural concern. Additional investigation is required.
- When correlated, the deflected brick masonry aligns with the pocketed timber beams at the roof level of the building, which transfers the cupola's load to the masonry. It is noted that the walls do not appear to include any piers in line with the loads from the cupola framing.
- Fractured masonry units exist in the deflected region, along with step cracking in the mortar joints in the wall. In this same region, previous repairs have debonded and cracked.
- The fieldstone foundation shows signs of deterioration, with stones being easily removed by hand from debonded mortar. Large sections of above-grade masonry exhibit a lack of good mortar holding the foundation together. Behind the loose mortar, efflorescence is evident, showing signs of incompatible mortar being used, indicating water has been entering the masonry. The stone is impacted by fractures, crumbling, and delamination, with exfoliation occurring in some locations. The core of the wall was not accessible, but we suspect a loss of mortar within the core is likely.
- The foundation may increase in width below grade; however, further investigation is required to confirm, along with determining the foundation's condition and depth through test pits.
- Step cracking and arch slipping is present at the window flat arches, which appears to be previously repaired in some locations. Further cracking is present below the sills of the windows.
- Extended fractures are present on the main façade in which mortar has been placed previously, which has since debonded from water intrusion due to the sill of the window not having effective water deflection. The same is the case at each window where fractures are present below the sill.
- At the painted black and white sign above the entryway door, deterioration of the brick is occurring, resulting in the brick powdering behind the painted surface.

The following are the observed and assessed conditions of the chimney masonry:

- Two chimneys are at the rear of the building with one flue each, which terminate on the interior of the building. The chimney is clad in plaster. The flue is capped with a concrete cast-in-place cap or a carved stone cap. A plaster drywall ceiling is obscuring the condition of the chimney within the attic space, where we expect masonry work may be required. The flue is dormant and does not serve as an active firebox. Each of the flues are capped with a metal plate on the interior.
- A single chimney is near the street-facing façade of the building. The chimney is dormant and has the same conditions as the two others.
- Extensive mortar deterioration is present on the two rear chimneys, showing mortar being pushed out of the mortar joints. Some mortar joints are entirely open.
- The masonry units of the chimneys are in good condition.

The following are the observed and assessed conditions as it relates to the soffit and fascia boards:

- Extensive paint deterioration exhibited on the soffit and fascia boards
- Significant wood deterioration and rot is present, with water intrusion likely occurring into the roof.
- Rot could be present on the adjacent rafters, particularly on the rafter tails; however, a destructive investigation would need to occur. Considering the extent of the rot, this is likely to be the case.
- It is unknown if sub-fascia is below the fascia board; however, considering the age, it is likely

The following are the observed and assessed conditions as it relates to the windows of the building:

- It is understood that the existing windows are original to the building construction.
- The north-east façade faces the address of 1548 Old Brock Street, the neighbouring property. The façade contains three large windows in the same plane, with flat arches of twelve over twelve sections double hung sliding sashes. All windows and sills are wooden.
- The southeast façade of the building is the rear façade. The façade contains one large window with a flat arch. The window is located within the center of the wall, with twelve over twelve sections and a double-hung sliding sash. All windows and sills are wooden.
- The southwest façade of the building faces toward an adjoining park. The façade is identical to that of the northeast façade.
- The north-west façade of the building is the main entrance to the building facing Old Brock Street. The façade contains three large windows, with curved arches at the window's peak. The windows are Palladia arched windows with nine over nine sections and double hung sliding sashes. All windows and sills are wooden.
- The following are conditions that are standard on all windows within the structure. Most of the conditions being experienced are from a lack of maintenance.
    - Deformation exists throughout the windows caused by structural movement within the walls; the sashes no longer fit or slide properly. There are multiple instances of step cracks within the masonry, particularly within the flat arches directly above the windows.
    - Breakdown of all paint is present, along with the putty, caused by a lack of regular maintenance; this allows for water to penetrate and become trapped, causing decay
    - Glass is displaced and broken due to the deformation of the sashes. In some sashes, the glass is completely missing from a failure of the muntin bars and putty.
    - Joints have failed, caused by timber decay due to water penetration
    - Openings are jammed due to the accumulated paint, rendering them inoperable
    - Worn and damaged beads, causing rattles and draughts
    - Decay of the stile, rail, meeting rail, and outer lining at the junction with sill and the window itself due to water penetration and decay over time from lack of maintenance
    - Extensive decay of the sills and associated frame caused by water penetration after paint breakdown. Water has crept into the joints between the timber sill and the masonry sub-sill. Decay contained within the case joinery
    - Missing and defective glazing putty from aging, water, and not being re-painted correctly
    - Extensive degradation of the wood surfaces with depression in the wood surfaces through water absorption expediting the process.
    - No water-shedding features are present on any windows within the structure.
- Based on Google Maps imagery, the windows have deteriorated significantly since 2013. In these images, no missing panes of glass are present, with early indications of paint deterioration suggesting that a significant degree of deterioration has occurred over the past ten years.
- Windows are in a very precarious condition with loose wood muntin bars, significant loss of glazing putty, and observed rotted and punky wood members and are in danger of collapse in strong wind weather conditions. No invasive investigation was performed to determine the window condition or substrates, limited by the instability of the frames. The framing around or under the window could not be determined; however, it can be safely assumed that the materials are extensively decayed.
- Condition of the windows pose a significant public safety risk and potential loss of heritage materials. Before any further investigation and for the protection of the public, emergency work is required immediately to stabilize the windows in place. The window stabilization means and methods will require careful consideration to avoid any further damage to the delicate state of the windows.

The following are the observed and assessed conditions as it relates to the doors:

- The rear entry doors exhibit signs of deterioration but are intact. The doors are located on each corner of the structure's southeast façade. A new staircase is present on the door nearest the park, with no staircase being present on the door closest to 1548 Old Brock Street.
    - The door adjacent to the park appears to be recently painted on the exterior, presumably by the operator. The original finish is unknown and possibly lost. The door appears to be of hardwood construction, with new hardware installed. The previous hardware could not be located on the site. Rot is present on the door, making it a possible security risk.
    - The door adjacent to the address of 1548 Old Brock Street has heavily deteriorated, with rot observed throughout the door. A potential security risk is posed if not addressed.
    - Recent painting of the doors has obscured the condition, leaving an assessment of the conditions challenging without paint removal from the thick coats covering the surface.
- The main entry door is in good condition with little sign of deterioration:
    - The bottom of the door shows signs of deterioration, likely from water exposure and salt exposure in the process of snow removal from the steps and wood entryway platform
    - The original finish is unknown and presumably lost. The existing finish has expired.
    - Broken wood on the latch side of the door, possibly from a break-in-attempt
    - Significant corrosion on the steel threshold and water staining on the sill.
    - Cracked and spalling concrete on the sill. It appears that the original sill (possibly wood or stone) has been replaced with concrete.

Prioritization of Rehabilitation

Below is the prioritization of the conditions being experienced as observed with phasing defined due to this project's scope. The first phase is emergency stabilization and structural rehabilitation. The second phase is composed of architectural finishes and envelope restoration. The proposed phasing is recommended to address the structure's most concerning and detrimental components.

Phase 1.0 – Emergency Stabilization and Structural Rehabilitation

1. Emergency window stabilization
    - To be performed as described above
2. Consolidation and restoration of masonry and ramp reconstruction
    - Repointing and reconstruction of the stone masonry foundation at the road facing façade, and the adjacent sidewalls of the structure for approximately ten feet in length
    - Repointing and reconstruction of the brick masonry at the corners of the structure adjacent to the street-facing façade and sidewalls of the building, to support the cupola framing.
    - Rebuilding the accessibility ramp at the front entrance to the building
    - Chimney Masonry Rehabilitation
        - Replacement of deteriorated brick units and repointing mortar joints
        - Removal of the cast-in-place concrete cap and replaced with pre-cast stone
        - Re-set/replace capping and flashing of the chimney into and around the chimney
        - Flue replacement and rehabilitation
3. Window Rehabilitation
    - Asbestos caulking and lead paint remediation around each window and sill
    - Remove and rehabilitate all windows, sills, frames, and associated materials, along with the reinstatement of appropriate ironmongery
    - Rehabilitation of masonry as needed around the windows upon removal

Phase 2.0 – Architectural Finishes and Envelope Restoration

1. Cupola Rehabilitation
    - Reinstate and perform restoration as required on the weathervane
    - Reinstate roofing suitable to the period and building, along with flashing
    - Reinstate and rehabilitate the wood architectural finishes of the cupola

2. Soffit and Fascia Board Rehabilitation
    - Restoration of the soffit and fascia boards of the building and flashing recommended to perform at the same time as the roof replacement
3. Exterior Door Rehabilitation
    - Rehabilitation of the rear exit doors
    - Stair, landing, and enclosure construction to replicate the original design of the structure
    - Minor rehabilitation of the front entrance door

Additional Scope of Work

1.0 Investigation

As a result of the observed conditions, the below investigation is recommended. The investigation as prepared in the proposal will be utilized as the process for the investigation described below.

- Access to the crawl space below the building to determine the condition of the joists
- Paint analysis of the surfaces to determine the colour composition
- Thermal imaging to see the extent of the water infiltration, along with the wetting and drying cycles
- Window by window investigation on the interior and exterior using drone and ladder to determine the condition and location of water ingress on the wall by locating open joints, cracks, or deteriorated materials on the masonry east wall and record elevations. The investigation would involve probing the timber elements for rot and sealant conditions. Required to perform this is the removal of the interior storm windows to access the interior of all windows.
- Dig test pits to determine the depth and condition of the stone masonry foundation
- Create openings in the stone foundation to determine the condition of the masonry core
- Installation of aluminum ladders at each attic level to give access to the cupola structure without performing a destructive investigation. However, based on the conditions observed, scaffolding access and destructive investigation may ultimately be required.

Fee Breakdown

Access to the attic space via aluminum ladder has not been included as it is assumed this task can be performed by municipal staff. The fees provided are based on the additional required services based on the observed conditions and expected construction requiring increased effort and time by the Consultant. In addition, the level of service stipulated initially does not meet the required design depth for the building.

Table 7: Vittoria Old Town Hall Cost Breakdown

Additional Investigation to be Performed by General Contractor and Conservator			
1.1	Paint analysis of the surfaces to determine the colour composition	$3,500.00	
1.2	Digging test pits by an excavator in 3 – 5 locations to determine the depth and condition of the stone masonry foundation	$10,000.00	
1.3	Perform core openings of the masonry foundation		
	ESTIMATED TOTAL COSTS	**$ 13,500.00**	**+ HST**
Consultant Time and Effort – Investigation / BCA / Design / Construction Documents			
2.1	Existing Fee	$ 22,500.00	
2.2	Estimated Additional Fee	$ 23,500.00	
	ESTIMATED FEE	**$ 45,500.00**	**+ HST**
Consultant Time and Effort – Tendering / Construction Review / Contract Administration			
3.1	Existing Fee	$ 7,500.00	
3.2	Estimated Additional Fee	$ 14,000.00	
	ESTIMATED FEE	**$ 21,500.00**	**+ HST**
	TOTAL ESTIMATED COSTS	**$ 80,500.00**	**+ HST**

Probable Construction Estimation

Subject to the explanation of conditions and limitations noted in the initial such section, cost estimates are provided as follows:

Table 8: Existing Construction Allocation vs. Probable Construction Estimate

Existing Construction Allocation	Probable Construction Estimate	Notes
$300,000	$655,000	The estimate is for all phases of construction. It is recommended, to phase the work to make costing manageable to the client.

CONCULSIONS

The following is a breakdown of estimated costs for each facility based on the effort, time, and specialized work required. All fees are estimates and will be negotiated and confirmed upon approval. In addition, the pronanle construction estimate is listed, however limited from the reasons presented within that section.

Table 9: Summary of Estimated Fees and Probable Construction Estimate

	County Administration Building	Norfolk County Archives	Vittoria Old Town Hall
Additional Investigation to be Performed by General Contractor and Conservator	$20,000.00	$6,500.00	$13,500.00
Consultant Time and Effort – Tender Ready (Investigation / BCA / Design / Construction Documents)	$19,165.00	$41,875.00	$45,500.00
Consultant Time and Effort – Tendering / Construction Review / Contract Administration	$9,055.00	$20,625.00	$21,500.00
Probable Construction Estimate	$190,000	$320,000	$655,000

DISCLAIMER AND LIMITATIONS

This report is based on and limited to information supplied to John G. Cooke & Associates Ltd. by the representatives of Norfolk County and observations made during visual inspections of the subject properties. Only those items that are capable of being observed and are reasonably obvious to John G. Cooke & Associates Ltd. or have been otherwise identified by other parties and detailed during this investigation can be reported.

The work reflects the Consultant's best judgment considering the information they reviewed at the time of preparation. There is no warranty expressed or implied by John G. Cooke & Associates Ltd. that this investigation will uncover all potential deficiencies and risks of liabilities associated with the subject properties. John G. Cooke & Associates Ltd. believes, however, that the level of detail carried out in this investigation is appropriate to meet the objectives as outlined in the Scope of Work. We cannot guarantee the completeness or accuracy of information supplied by any third party. John G. Cooke & Associates Ltd. is not investigating or providing advice about pollutants, contaminants, or hazardous materials.

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We trust that this letter covers the scope of work as outlined and discussed with the client. Should there be any questions regarding this report, please contact us if we can further assist you.

Sincerely,

JOHN G. COOKE & ASSOCIATES LTD.

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