February 8, 2015

Shaun M. Gallagher, PE
City Engineer
524 W. Stephenson Street, Suite 330
Freeport, Illinois 61032

Re: Building Investigation Services
Report - Old City Hall Building
City of Freeport

Dear Shaun:

This report is a summary of our findings of the Building Investigation of the Old City Hall Building. We toured and surveyed the building on December 9, 2015 and inspected the dormers and sandstone façade with the use of the City’s bucket truck. The report includes a project background, observations, recommendations, and exhibits that highlight our findings and recommendations.

PROJECT BACKGROUND

The City of Freeport is seeking to remove the safety barrier fence from around the Old City Hall Building. The barrier fence was installed after an Illinois Department of Labor (IDOL) citation was issued to the City. The citation concerns falling sandstone caused by significant deterioration of the sandstone façade and cornices above the sidewalk and entrances. The desire of the City is to have the building eventually restored and returned to use for the community’s benefit. But until then (when funds become available), the building must be made safe for the neighbors and community.

The Old City Hall is a vacant, historic, two-story building with a basement, an attic, and a footprint of approximately 8,700 SF. Erected in 1899, the main structure is a stone-clad and masonry building of construction type III-B intended for office and assembly occupancy. The roof structure is wood-framed with heavy-timber trusses that clear span up to 58 feet. Originally, the roof perimeter was adorned with an ornate stone balustrade and parapet that provided architectural continuity and proportion between equally ornate gable-style dormers, newel piers, and a west-facing central pediment. Subsequent reconfiguration of the roof edge discarded portions of the balustrade and incorporated new exposed gutters and downspouts. PFG was retained by the City to perform a non-intrusive visual survey of the exterior and interior condition of the dormers. Cutting and patching, extensive probing, and exploratory investigation/testing and/or detailed calculations were not performed.

Items addressed include:
1. Document the historic roof dormers, remove the dormers from the roof, address structural and drainage modifications after the removal of the dormers, and assess the failing sandstone veneer on three elevations.
2. Develop a narrative for the City Council’s use and understanding of the issues.
3. Assist the City with a narrative response to IDOL and address the specific citation the City has received from IDOL on the building’s exterior.
4. Develop a preliminary budget and schedule.
5. Assist the City with Historic Preservation guidelines for documentation at a general level.


**OBSERVATIONS**

**Roof Dormers**: The roof dormers are in very poor condition with significant deterioration to the masonry bearing walls and wood roof rafters due to moisture infiltration. The dormers have moved laterally and rotated downward. The condition is most noticeable at the masonry side walls of the dormers. The exterior dormer support walls (second-floor wall directly below) are displaced and appear to be moving.

It is apparent from exterior observations that all four of the dormers have moved and been displaced. The movement is about two (2) to six (6) inches from plumb relative to the second-floor walls. This condition is most severe at dormer #s 1 and 2 (as identified in the attached plans). Dormer #1 has disengaged from the supporting wood frame and is sliding down the roof slope. Dormer #2 was unobservable from the interior, as access was blocked by the dome of the Council Room ceiling. The dormers’ displacement and movement are caused by all or part of the following:

- Water infiltration has caused decay to the wood framing bearing on the perimeter brick wall. Water intrusion through the roof flashings is ongoing and compounding the dormer deterioration.
- Solid brick side walls of the dormer are supported on sloped wood framing that has deflected and lost its connection to the brick walls. There is no visual evidence that the wood framing is mechanically secured to the masonry brick walls.
- Heavy timber trusses have deflected over time, causing the bearing ends of the truss to thrust against laterally unsupported brick walls, in so doing pushing out the exterior walls.
- The roof planes are irregular and interrupted with openings for the dormers that compromise its effectiveness as a structural diaphragm.
- The structure of the domed ceiling above the Council Room is framed in such a way as to be unrestrained and it is thrusting against the exterior walls. The exterior masonry wall is serving as a support that carries the interior domed ceiling system; a structural condition unlikely taken into account with the original design.

**Sandstone Façade**: The sandstone façade cladding is severely deteriorated and has exceeded its life. The sandstone is cracked, spalling, and severely eroded. It has significantly deteriorated and is eroding at an accelerating rate. The sandstone façade is spalling to the extent that smaller pieces of stone can be peeled away with simple force of the hand. The mortar joints throughout the façade are deteriorated and missing. There are open mortar joints, displaced out-of-plumb sandstone panels, and failed/missing caulk joints throughout the sandstone façade.

The overall building envelope is in a state of deterioration and continues to allow moisture into the building, causing further decline of the structure. Approximately 55% of the mortar joints observed have failed at each of the three elevations examined. Approximately 45% of the stone veneer observed is loose or damaged.

The exterior sandstone façade at the second-floor level is in very poor condition. Observed are cracked stone lintels, bowed veneer sections, loose/missing joints and material, and severely weathered surfaces. The wall areas directly below the dormers are in the worst condition. We observed that the stone veneer panels in these areas (below the dormers) are out of plumb, which indicates they are moving.

The stone veneer at the first-floor level is in poor to fair condition. We observed cracked stone, poor/failed mortar joints, and open voids throughout the façade.

The existing galvanized sheet metal gutters and associated attachments are in good condition; they are sturdy, functional, and outfitted with electrical heat-tracing wire.

The conditions will continue to worsen until the compromised systems are addressed; it is recommended that remedial steps be taken very soon.
RECOMMENDATIONS

Based upon our observations, we believe the structure is compromised; the structural issues warrant keeping the adjacent sidewalks and street parking blocked off from public access until remedial steps are taken. We recommend removing the dormers very soon to prevent further damage to the property and any possible injury to the public. We recommend that a vertical survey of the existing walls be performed to monitor vertical alignment and that the dormers and walls be regularly monitored until the removal and repairs are completed.

Once the dormers are removed, we propose the voids in the roof be filled in with roof framing to match the existing roof slope and wood system. The “bowed” out-of-plumb walls at the dormer locations should be braced from further displacement by adding exterior steel plates with tension rods (see attached roof plan).

We concur with the findings of the previous structural inspection documented four (4) years ago by McClure Engineering Associates, Inc. The conditions of the dormers and sandstone façade at Old City Hall have become more critical and ongoing over these past four (4) years.

The building’s failed mortar joints should be routed out and tuck-pointed with appropriate type mortar. Loose and damaged stone should be removed/replaced and properly re-built.

The exterior sandstone façade at the second-floor level that has cracks, bowed sections, and loose joints and material should be removed, repaired, and rebuilt. We recommend that a qualified mason remove the sections of the sandstone panels under the dormers, further inspect the conditions, and rebuild the panels and stone lintels to correct further movement and deterioration. We recommend that the remaining wall surface be tuck-pointed and rebuilt as required.

We recommend that the stone veneer at the first-floor level with failed mortar joints, cracked stone, and open joints be tuck-pointed, rebuilt, and sealed according to industry standards.

We recommend that as the stone veneer is rebuilt and tuck-pointed, that other gaps and joints of other systems (windows/doors/louvers) be caulked to provide a “weather tight” condition.

A portion of the existing gutters, low-voltage wiring, electrical systems, and plumbing vent pipes will be impacted by this proposed remedial work. This will require modifications and adjustments during the dormer and sandstone repair work.

RECOMMENDED ACTION:

- Remove all dormers immediately and stabilize the movement of the heavy timber trusses to prevent additional displacement of second-floor walls.
- Install new roof framing, sheathing, and shingles to infill the dormer openings to match existing roof.
- Install new gutters to match existing.
- Rebuild and tuck-point the stone veneer/brick back-up on each façade to prevent water infiltrating through the walls and the structure.
- Remove and safely store (salvage) sandstone cladding and copper work for any future restoration efforts.
- Remove central pediment and piers to improve water tightness of the roof.
- Caulk and seal all gaps and open joints on each façade.
Exhibits

Site Plan
Photograph Commentary
Existing Attic and Demolition Plan
Proposed Roof Plan
Framing Plan Details
Budget Summary

This report reflects our best judgment after reviewing existing conditions that were visible without removal of roofing material, timbers, stone, masonry, concrete, or the use of any testing devices. This report shall not be construed to be a warranty or guarantee of the structure and/or its components. Inasmuch as our survey was limited to visual observation, we have not attempted to address responses to latent defects that may appear. This report does not address structure elements and/or systems not specifically reviewed herein. A set of the original drawings was not provided for our use, and verification of the structural adequacy of the original design is beyond the scope of our review.

Thank You for his opportunity to provide you and the City of Freeport with building investigation services. Please feel free to contact us should you have any questions about this report, or if you have need for other professional services.

Cordially,

Thomas M. Tristano, AIA
President

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