

**TRIUNE LODGE  
BUILDING ASSESSMENT  
AND  
PROPOSED IMPROVEMENTS**



Report prepared by  
3-D Building Technologies, LLC  
651-659-0035  
[www.3-dbuildingtech.com](http://www.3-dbuildingtech.com)

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## **EXECUTIVE SUMMARY**

Known to be the last fully operational historic Masonic lodge facility in the metro area, the Triune Masonic Temple, located at 1898 Igelhart Avenue, Saint Paul, MN, is a pristine example of Neo-Classic Revival architecture. The facility, constructed in 1910, is listed on the National Register of Historic Places (November 13, 1980) and remains intact – virtually unchanged from its original construction.

The building enclosure consists of a brick masonry exterior, punctuated by windows at the basement level and at the upper level in rooms that support the function of the lodge building. The front of the facility, where the Neo-Classic design is most evident, has stone pilasters and trim augmenting the brick façade. Ornamental metalwork at pediments and cornices further accentuate the Neo-Classic design.

The lodge room itself is windowless, and is styled as a Fellowcrafts' Lodge Room, with several features built into the space that are part of the instruction of the Second Degree. The floor is maple hardwood, the walls and ceiling are plaster. There is a proscenium at one end of the space and a second floor gallery at the other end, which also houses the pipe organ. Spaces contiguous to the Lodge Room include meeting rooms, a library, restrooms and the stairway/hall.

In October of 2010, the author of this report visited with several members of Saint Paul Lodge #3, to discuss plans for renovations to the facility. Areas under consideration for the renovations include, but are not limited to, the kitchen area, restrooms, floor to floor access, building access, mechanical system upgrade, exterior envelope preservation and rehabilitation and window replacement. Subsequent to the initial visit, the author visited the site in November to measure the footprint of the building, to photograph the building facades and to take note of the building envelope condition. In February, the author, along with a representative of Johnson Controls and Carl Andersen (Saint Paul #3), met at the facility to investigate the present condition of the heating system, with the intent of providing a proposal for replacing the boiler with a new, energy efficient boiler. This report incorporates a proposed replacement of the boiler and accessory components, to meet current mechanical and code standards.

The intent of this report is to outline the condition of the facility, provide suggestions on the restoration and rehabilitation of the facility, to prioritize the work to be performed and to provide a high-level estimate of probable costs of the work. Going forward from this report, the author recommends that additional study and design work should be conducted to further define the scope of the project, potential phasing of the work and to facilitate a more thorough estimate of construction costs.

## **PRESERVATION COMMENTARY**

The Triune Lodge building is listed on the National Register of Historic Places. As such, renovations or alterations to the facility have certain restrictions as to the extent, and materials used in the work. The extent of work and the design documents are subject to review by the State Historic Preservation Office (SHPO), prior to any construction activity occurring.

The condition of the facility today and the unchanging use of the building and spaces within, suggests two treatment approaches for renovations; one is “preservation” and the other, “rehabilitation”.

### **Preservation:**

Values the retention of all historic elements through conservation, maintenance and repair. Existing forms, materials and the integrity of their application to the work are crucial to the successful project. Preservation focuses on maintenance rather than wholesale replacement of elements that are deemed historic in nature. Limited and sensitive upgrading of building systems (mechanical, electrical and plumbing) is deemed appropriate within a project involving preservation as a treatment.

There are several elements of the proposed work that will involve preservation as a treatment process to extend the working life of the building, while also adding to its energy efficiency. These are:

- Re-pointing the brick masonry
  - Carefully remove loose mortar. Re-point with mortar matching the color and strength of the original mortar.
- Repair of stone coping
  - Strip joints, provide mortar and sealant to prevent moisture intrusion into the wall system.
- Sealant joint repairs
- Minor flashing repairs
- Interior plaster repairs and painting

### **Rehabilitation:**

Places the same value on all historic elements and their treatment, but in the case of rehabilitation, historic elements have deteriorated over time to the point where more extensive repairs and/or replacement may be required. Care is to be taken to use the least invasive techniques to rehabilitate an historic element, such as splicing, piecing-in, consolidating, patching, etc.

Building elements that will be subject to the rehabilitation treatment are as follows:

- Window replacement
  - Replace with low maintenance exteriors, finished wood interiors, insulated sashes with profiles similar to the existing windows, and Low-E coating for energy efficiency.
- Cornice and soffit repairs
  - New flashing, roof covering at the upper portion of the cornice feature.
  - Remove rusted portions of soffit and replace with in-kind materials.
- Stone parapet coping
  - Cap with stainless steel or replace stone cap with in-kind material

The treatments and elements subject to historic preservation guidelines as outlined in the National Park Service Standards and Guidelines for preservation and rehabilitation must be carefully researched and

documented to facilitate discussions with MN SHPO regarding the work of the project. Most of the work mentioned above is meant to stabilize the building envelope and to increase its energy efficiency, which is consistent with the Standards.

## **PROJECT SITE DESCRIPTION**

Triune Lodge Building, located at 1898 Igelhart Avenue, Saint Paul, MN 55104

### **Sitework**

The facility is elevated from the public sidewalk by approximately three feet. At the public sidewalk is a concrete retaining wall. The principal entrance to the facility is on the north side, with five steps from the public sidewalk up to the raised yard surrounding the building. A paved walk leads from the stairs to the front entry platform. There is an additional step at the entry doors. A secondary or service entrance is on the west side of the facility, leading down to the lower level.

The raised yard is virtually level, sloping slightly down, away from the building on the north and west sides. The public sidewalk along the north side retaining wall is level. The public walk along the west side retaining wall slopes up slightly from north to south, meeting the entry level of the west side entrance. There is no rear yard to speak of. A narrow dirt and concrete strip runs along the south side between the building and the alley. Along the east side are concrete sidewalk pavers set into the ground. The grade along most of the east side is level, except for a portion at the south end of the building where the grade slopes down to meet the sloping alley.

### **Building – General Description**

The Triune Lodge facility is a two story brick masonry facility with wood framing at the roof and floors, augmented by steel supports under the lodge room floor. The facility was constructed in 1910 and first occupied in 1911, continuing to serve as a Masonic Lodge building and meeting house for Masonic and non-Masonic entities to the present time.

The entrance is a split entry arrangement, with the main level (lodge room) accessed by a run of stairs up, while the lower level (dining) is accessed by a run of stairs down.

The principal space on the upper level is the lodge room, with its proscenium and elevated gallery. A projection room is adjacent to the lodge room. Other spaces on this level are two meeting/reading rooms, a restroom and small utility/closet rooms. On a plane above the front entrance is an open area, used as an office.

The primary space on the lower level is the dining room, with its supporting kitchen. Other spaces on this level are restrooms, closets and utility rooms. This level is partially below grade (approximately four feet), and has several windows along the east and west walls, which provide daylight into this level. At the southwest corner of the dining room is an egress condition to the west side public sidewalk.

### **Building Superstructure**

**Roof:** The roof system consists of a single-ply membrane (EPDM), over rigid insulation over a wood deck, supported by heavy timber trusses. The trusses form a nominal pitch, which promotes drainage to the west and to the east sides of the facility. There are four roof drains which penetrate the roof system in the horizontal plane and are conveyed through the interior of the building to a point approximately 12”

above grade, where the drains daylight. The roof membrane is wrapped up onto the brick parapet walls, which are approximately 18" high, and the parapet is capped with pre-finished metal coping.

The parapet cap on the north wall consists of limestone coping. This coping has grout and sealant joints between the individual stone components; the stone is otherwise un-protected.

A metal cornice feature across the north elevation of the building wraps around the west and east facades approximately 8' from north to south. This feature projects from the brick façade approximately 18" and has a single-ply membrane applied to its top surface.

**Exterior Walls:** The building has an articulated brick masonry façade, featuring flat brick masonry pilasters and recessed brick panels along the east and west facades, and brick corbelling at the top and bottom of the recessed panels. Similar brick articulation is present on the north façade, with the addition of fluted stone pilasters, a projecting pediment over the entrance, architectural metalwork and minimal stone trim. At the foundation level is a concrete base.

At the lodge room level are nine, wood double-hung windows, approximately 3'-6" (w) x 7'-6" (h). These are located at the north end of the facility, outside of the lodge room itself. At the foundation level are twelve, wood double-hung windows, approximately 3'-6" (w) x 3'-6" (h). All of the windows are original to the facility and are of single pane (not insulated) construction.

## **PROJECT SITE ASSESSMENT**

### **Sitework**

In 1990, the federal government issued the Americans with Disabilities Act (ADA). This Act mandates that public facilities provide access to people with disabilities, both within, and outside their facilities. Although public and private facilities have different requirements, the intent of the ADA, by tort, should be applied to all facilities.

The Triune Lodge building is largely inaccessible, with two non ADA-compliant entrances. The nature of, and the amount of work projected to be performed will dictate that primary spaces be made accessible. The solution to making the primary spaces accessible will be challenging, likely incorporating an interior lift or elevator and ensuring access to the lower level meets the intent of the ADA.

The exterior stair, with its accompanying railing, is not in compliance with current codes, but may possibly be retained in spite of this. The walkway between the stairs and the entry platform are cracked and should be replaced in any event.

### **Roof**

The roof membrane is approximately 10 years old and except for two holes in the membrane, is in very good shape. The metal coping is also in very good shape apparently being installed at the same time the roof membrane was installed. The roof appears to drain fairly well, with few areas of standing water. The roof drains do have an overflow drain near the primary drain and both the primary and overflow drains are connected to a vertical drain leader through the interior of the building. It appears that in areas where the roof drains are routed through the interior of the building, the plaster is exhibiting cracking and efflorescence. This may indicate open joints in the pipes or condensation on the pipes, which should be investigated further.

At the stone coping along the north end of the parapet, virtually all of the stone joints are open, and are incapable of preventing moisture from penetrating the wall system. This condition has very likely caused water to enter the brick masonry wall system as evidenced by the efflorescence on the exterior surfaces of the brick walls. This may also be a source of moisture intrusion on interior spaces, causing plaster surfaces to crack and effloresce. The coping stone itself is exhibiting the effects of severe weathering such as pitting, scaling and cracking. Left unprotected, this condition will become worse and may cause even the new sealant joints to prematurely fail, allowing water to enter the wall system.

The decorative metal cornice at the north side of the facility which projects from the face of the exterior walls, is protected on the flat, upper surface by an EPDM membrane. This membrane does not appear to be properly flashed and has pulled away from the brick wall as well as the outside edge of the metal cornice. It is incapable of preventing moisture from entering the cornice work. This too could be a source of moisture intrusion into the brick walls, adding to efflorescence (exterior) and deterioration of plaster on the interior. Also evidenced is rust-through of the metal soffit (under-side) at this feature. Without proper flashing and membrane protection, the cornice feature will continue to deteriorate and may prove to be a safety hazard due to weakening joints and supports.

### **Exterior Walls**

The brick masonry is in fine condition as is most of the mortar. There are several areas of concern with the brick and the mortar, where moisture has entered the wall system, causing efflorescence in several areas and mortar deterioration in others. The cause of the efflorescence has been cited above. The mortar deterioration may also be caused by moisture entering the wall system in some areas, but in others it appears that the mortar has been scoured by wind, rain and snow. Mortar deterioration must be addressed to prevent additional damage, both at the exterior surface and the interior spaces.

The vertical stone masonry is in fine shape; it was noted that the stone pilasters on the north façade have been painted with several coats of paint. It is unclear why these were painted, assuming that they are limestone of a similar nature to the stone coping. Sealant joints at these pilasters are open, which should be corrected to prevent moisture intrusion into the walls.

The condition of all windows is marginal, with several storm sashes exhibiting severe rotting. The condition of the operating window sashes is unknown at this time, but these are original to the building and are single pane, un-insulated windows. The entry doors at both the primary entrance (north side) and the service entrance (west side) are likely the original wood doors. The glazing is single pane and the doors and frames are un-insulated.

### **Interiors**

The principal spaces are generally in good shape, with evidence of recent remodeling and painting. Some plaster surfaces are cracked, some have a little efflorescence, but generally the interior surfaces are in good condition.

Accessibility between floors, accessibility at restrooms and egress are principal areas of concern to meet the needs of visitors to the facility and to address current codes.

Access between floors is served by the split entry stairs at the north end of the facility. Railings do not conform to current codes but may be allowed to remain depending upon the extent of work performed

within the project. To meet the needs of persons with disabilities, and to conform to the Accessibility Code, a lift or elevator should be considered within the facility.

Access to toilet room facilities is also a concern. Currently, none of the restrooms are fully accessible, nor do they provide proper fixtures for persons with disabilities. At present a men's room exists on both the upper and lower level and the women's room is only on the lower level. A code review will provide the data to determine how many restroom fixtures are required and how these should be distributed.

Egress for the building is provided at three points; the main entry (north side), which provides egress for both the lower and upper level, the service entry (west side), which provides egress effectively, only for the lower level, and the emergency stair on the south side, just off the proscenium. This last egress point serves only the upper level. In the code analysis for the facility, egress requirements and placement of exits will be outlined. Proper signage, including directional signage and emergency lighting for the facility should be studied further to determine if additional signage should be provided.

The kitchen area has a non-absorbent, vinyl-coated acoustic panel ceiling. The cabinetry is wood and the counters are plastic laminate. A two-compartment stainless steel sink exists at the east wall of the space and adjacent to the sink are the dishwasher and refrigerator. On the south wall is a commercial range/oven combination over-which is a large ducted range hood. The floor is painted concrete – several areas of the floor are missing the paint coating. In the center of the kitchen is an anchored counter with base cabinet.

While the range/oven and other components may be in good shape and compliant with current kitchen standards, the cabinets, counters and other components are visualized to be outdated and require replacement.

## **MECHANICAL, PLUMBING, ELECTRICAL SYSTEMS**

The steam boiler in the mechanical room is the original boiler for the facility. The boiler and the several pipes and ducts are covered with asbestos wrappings, which appear to be in sound condition (not friable). Given the age of the boiler and its supporting components, it may be replaced in favor of a more compact and energy efficient boiler with its supporting equipment. The existing boiler may be able to remain in place, depending upon the size of the new system, but it would be advantageous to remove the boiler and the supporting equipment to facilitate the new kitchen and new boiler plant.

The condition of the waste and supply piping seems at this time to be in good repair. As toilet room remodeling occurs, new plumbing fixtures meeting current water-usage requirements are envisioned. Water supply and waste will require modifications to accommodate new fixture layouts within the separate toilet rooms. As the kitchen remodeling is performed, supply and waste piping will likely be re-configured to meet the new fixture layout and current codes.

Roof drains are concealed for the most part, only being exposed in portions of the interior spaces and daylighting at the exterior walls. These appear to be in good condition, but precautions may be taken to use a camera scope to ensure that these are tight and free of leaks.

The electrical system was not examined by this author. In the code analysis for the project, additional lighted exit signs or emergency lighting may be required. The facility does appear to have a heat detection system, although the building does not have fire sprinklers.

At the exterior of the facility, lighting at the front door is marginal and there is no exterior lighting at the service door on the west side. Both for safety, security and presence, lighting at these areas should be considered.

## **PROPOSED IMPROVEMENTS**

### **Sitework Recommendations**

- Facilitate access at the west entrance for people with disabilities
- Replace upper level sidewalk
- Extend entrance platform for code compliance
- Stabilize or replace portion of west side retaining wall
- Provide new lights at entrances

### **Roof Recommendations:**

- Replace temporary patches at roof. Inspect membrane for additional remedial work.
- Rake-out stone coping joints, apply new mortar and sealant
- Provide stainless steel coping over stone coping
- Remove roofing at cornice feature. Replace deteriorated supports as necessary. Provide new stainless steel or copper flashing. Provide new EPDM membrane, properly flashed at wall and outside edge.
- Repair decorative metal at cornice and pediment as required. Prime and paint all exterior architectural metalwork.
- Camera-scope roof drain leaders to determine integrity
- Perform thermographic survey of roof surface in conjunction with exterior wall survey

### **Exterior Walls Recommendations:**

- Perform thermographic survey of all sides of building to assist in determining extent of repairs.
- Perform selective re-pointing of mortar joints
- Clean façade
- Replace all windows with metal-clad wood replacement windows, consisting of insulated glass and Low-E coating
- Replace or rehabilitate entrance doors. Provide code compliant hardware as required.
- Scrape all lintels, re-prime and paint
- Strip sealant joints, prime and re-seal
- Tighten-up or replace flashing at lower level entrance at juncture with building wall.
- Rehabilitate above-grade portion of concrete foundation

### **Interiors Recommendations**

- Modify west side entrance to provide an ADA-compliant entry/egress condition
- Provide lift or elevator between levels
- Provide accessible restrooms for both sexes (preferred) on both levels. May require reconfiguration of walls adjacent to the restrooms, new finishes and new partitions within restrooms.
- Remodel kitchen to meet current standards and Owner needs. Provide new cabinets, counters, equipment as required. Strip and re-coat floor. Provide proper base at perimeter.
- Repair cracked plaster surfaces, prime and re-paint

## **Mechanical, Plumbing, and Electrical Recommendations**

- Remove existing boiler and supporting equipment, ducts and pipes
- Provide new, energy efficient boiler, with associative vents and ducts. Replace piping and valves as required. Provide new radiators as deemed necessary.
- Provide new ADA-compliant fixtures at restrooms
- Provide new plumbing fixtures and kitchen equipment as required at kitchen
- Provide new emergency lighting and exit devices as may be required.

## **PRIORITIES**

In order to assist in determining a budget and potential phasing of the work to accommodate user needs and financial preparations, the proposed improvements should be prioritized. Factors impacting the following list are: prevention of further deterioration of the shell, compliance with the ADA, compliance with current building codes, User needs and desires. The factors themselves are not to be considered prioritized, but each will influence the relative urgency of any given element of the work.

The author of this report, applying his experience of similar projects, suggests the following priorities for the work. Phasing of this work, if necessary, is not defined at this time.

- Stabilize the Building Envelope
  - Repair or replace parapet coping as required
  - Repair cornice roof membrane and provide flashing
  - Repair decorative metal soffits
  - Perform roof repairs
  - Perform brick re-pointing
  - Replace windows
  - Replace flashings and sealants as required
- Building Access (site)
  - Perform sidewalk replacement
  - Extend front entry platform
- Building Access (interior)
  - Modify west entrance for accessibility
  - Provide lift or elevator
  - Provide accessible toilet rooms
- Kitchen Remodeling
  - Gut kitchen
  - Provide new cabinetry and counters
  - Provide new commercial-grade equipment as required
  - Strip and re-coat floor. Provide new base material.
- Mechanical
  - Replace boiler and associative equipment, pipes and ducts
- Electrical
  - Provide new lighted exit signs as required and emergency lighting as required.
  - Provide new exterior down-lights and wall sconces at main entrance for security and presence
  - Provide new exterior lights at service entrance (west side) for security

## SUMMARY OF ANTICIPATED COSTS

### Introduction

Taking all of the proposed improvements into account as a single project (IE: Not phased or broken out as individual projects), we have outlined below an anticipated cost for the work. This estimate may be used as a rough budget or target for raising funds to perform the work.

Assumptions made in this summary are as follows:

- The project will be done as either design-build or negotiated bid.
- This is one project, not phased, performed by a General Contractor who will engage subcontractors who are experienced in their trade.
- The estimate of probable costs is a “high-level” assessment. This is intended to provide the Owners with a fundraising goal for a capital campaign. A true construction cost estimate will develop and be further refined as design documents are developed.
- Unforeseen conditions are built-in to this estimate to a degree. We recommend several tests be performed to minimize unforeseen conditions and have included those in the estimate.
- The expected accuracy of this summary at this point in time is +/- 25%.

### Anticipated Costs (by CSI Divisions)

<b>Division 1 – General Requirements</b>	
Permits	\$135,975
Contingencies	
Contractor O&P	
Design fees	
Testing fees	
<b>Division 2 – Existing Conditions</b>	19,500
Boiler demolition	
Selective interior demolition	
Cutting and patching	
<b>Division 3 – Concrete</b>	15,000
Foundation restoration and sealing	
<b>Division 4 – Masonry</b>	85,000
Brick restoration	
Re-pointing	
Stone cap	
Masonry cleaning	
<b>Division 5 – Metals</b>	4,000
Railings	
<b>Division 6 – Wood, Plastics and Composites</b>	18,500
Miscellaneous millwork replacement and repair	

<b>Division 7 – Thermal and Moisture Protection</b>	12,500
Flashing and sheet metal	
<b>Division 8 – Openings</b>	61,000
Clad wood replacement windows	
Clad wood replacement doors	
Rated interior doors	
<b>Division 9 – Finishes</b>	28,500
Painting	
Plaster repair	
Gypsum board	
Ceramic tile	
<b>Division 11 – Equipment</b>	22,000
Kitchen equipment (Refrigerator, dishwasher, microwave, coffee, hood)	
<b>Division 14 – Conveying equipment</b>	105,000
Stair lift or wheelchair lift or elevator	
<b>Division 22 – Plumbing</b>	48,000
Plumbing fixtures	
Interior roof drain replacement	
<b>Division 23 – Heating, Ventilating and Air Conditioning</b>	295,000 <sup>1,2</sup>
Demolition of existing boiler, piping and abatement	
Boiler, pumps, valves, piping, radiators and controls (hot water)	
Furnace, fresh air intake and controls	
On-demand / instantaneous water heaters (2)	
Booster for dishwasher	
<b>Division 26 – Electrical</b>	18,000
Interior electrical upgrades	
Exterior lighting	
<b>Division 28 – Electronic Safety and Security</b>	8,000
Lighted signage	
<b>Division 32 – Earthwork</b>	6,500
Site restoration	
<b>Division 33 – Exterior Improvements</b>	8,500
Walks, retaining wall stabilization	
<b>Total anticipated project cost (+/-20%)</b>	<hr/> <b>\$890,975</b>

**Notes:**

- 1 – Energy rebates from Xcel Energy due to the Owner are not included in this figure.
- 2 – Johnson Controls Inc. can provide a turn-key mechanical system, meaning that they can furnish and install all equipment, piping, controls, etc., handing over a complete and functional system. With prior agreement, they will also provide financing for the components and installation.

*End of Assessment*