Oakdale Auditorium - Structural Audit

Structural Building Description

The building is a single-story, single-room, approximately 8,500 square foot, octagonal building with steel framing and concrete footings. The concrete floor of the structure is sloped towards the south side of the building. The thickness of the concrete floor could not be measured. The roof is pyramid shaped with a set of windows located near the top of the structure. The roofing consisted of asphalt shingles with wood sheeting and 2x6 joists. Metal lattice columns are located at each of the eight corners. Numerous holes in the building’s siding and roofing allow for large amounts of wildlife to enter the structure and a large amount of animal excrement was observed in the structure. This report summarizes the structural condition of the building.

Footings

Footings were observed at each corner of the building. Four (4) of the eight (8) footings for the building were exposed as labeled in the attached aerial. Pictures of the footings can be found below. Footings 1 and 2 are in poor condition. Some of the concrete in these footings was delaminating as the footing was being exposed. Footings 3 and 4 are in good to fair condition with little delamination. On average, the footings are approximately 3 feet wide and 3 feet below ground level with an assumed 1’ stem wall.

Footing #1 - Portions of concrete missing
Flooring

The flooring of the structure consists of a concrete slab which slopes towards the stage at the south side of the structure. The slope was measured to be between 4% and 6%. The slopes were measured using an electronic level. Cracks were observed in the concrete flooring as shown in the picture below.
Timber Walls

The building is enclosed with wooden 2x6 siding without insulation. The exterior wood siding is in poor condition. Several holes were observed in the siding and the paint was peeling off the boards, as shown in the pictures below. The boards where the paint was removed show signs of water damage and mossy growth. The structural assessment did not find any lateral stability elements in the walls. The walls most likely can be removed to create an open-air shelter if the structural steel is sandblasted and painted to prevent corrosion.

Lattice Columns

Each corner of the building contains column encased in wood 2x6’s. One column was exposed for this investigation. The lattice column consists of two C9x15 channels connected with 2”x1/4” plates. There was no corrosion deflection or other structural concerns observed in the exposed column.
Trusses
The roofing is supported by a large, metallic space truss. The truss consists of metal double angles and plates connected at joints with both rivets and bolts. There are no significant signs of corrosion or deflections in the steel members or connections. If the building’s siding or roofing was removed, the exposed steel members will need to be sandblasted and painted to protect against corrosion.
Roofing
The roofing consists of 2x6 wooden joists and sheeting. Several large holes were observed in the roof sheeting. The joists appeared to be in good condition however, large amounts of water damage was observed on the wood sheeting. Portions of the building’s shingles were missing. The roofing does not appear to provide much lateral stability to the structure. The roofing could possibly be replaced with a fabric roof without impacting the structural elements significantly.
Conclusion

Overall, the building has several structural concerns that should to be addressed. The holes to the building’s siding and roofing should be repaired immediately to prevent any further water damage to the structure. If these immediate repairs are made to the building, the building could remain vacant without any further repairs for the next 5-10 years given the Park District regularly monitors the building for any further leaks or damage to the building.

If the Park District would like to refurbish the building for public use, several of the building’s footings will need to be repaired. Additionally, we recommend the wood siding damaged by water be replaced along with an entire new roof which includes both sheeting replacement and shingle replacement. The metal columns and trusses in the building appear to be in good condition and do not need repairs. In total, the cost of repairing the building at its present location is approximately $147,000. This includes $40,000 for the foundation repairs, which would include shoring the foundations in need of repair, selective demolition of the footings in poor condition, and casting new foundations. Additionally, $5,000 was included for replacing the bottom 4’ of siding damaged by moisture and mossy growth. We understand the Park District already received a quote for replacing the asphalt roof of $62,000. We estimate the replacement of the roof sheathing would cost $20,000. Additionally, a contingency of $20,000 is included to account for any repairs needed to the roof joists or wall studs which are hidden by the roof sheathing and wall siding. This report does not include any aesthetic, electric, or mechanical improvements (painting, lighting, HVAC, etc.).

Structure Relocation Feasibility Study

Due to the riveted connections and the building’s complicated framing structure, relocating this structure would be difficult and expensive. We estimate the cost to relocate the structure along with a new concrete slab and footings would be approximately $300,000. This includes approximately $130,000 for the slab and footings, $62,000 for a new roof, $12,000 for new siding, and $120,000 for the building relocation (depending on the distance).