



September 25, 2024

Village of Roscoe
Attn: Josef Kurlinkus, Village Administrator
10631 Main Street / PO Box 283
Roscoe, IL 61073

Re: Village of Roscoe
Riverside Park
South Pavilion Review
McM No. R0714-07-24-00114

Dear Josef,

McMahon Associates, Inc. (McMahon) has completed our review of the existing open pavilion shelter at the southeast end of Riverside Park in Roscoe, IL. The purpose of this review was to consider the overall structural integrity of the existing pavilion for consideration of proposed improvements, including re-roofing of the building, and to provide recommendations for corrective measures.

McMahon was present on-site on September 10, 2024 to observe the existing pavilion. Please note that our recommendations are based on our visual observations only. No special testing or measurements have been conducted at this pavilion. Further, no existing building plans are available.

Observations

The pavilion structure consists of a wood framed structure, approximately 24-feet by 72-feet in dimensions. It is our understanding that the building is approximately 30 years old.

The roof structure consists of wood purlins at 2-foot spacing, supported by a central board and side wood beams spanning between support posts. Wood trusses appear to have been constructed within the plane of the building at 6-foot spacing; the truss nodes are built from nailed connections, as opposed to the conventional system of truss connector plates. Connections between the purlins and trusses and the supporting wood beams are not readily visible. Knee brace kickers are located between the wood posts and beams, along the long sides of the building. Wood posts are located at 12-foot spacing along the long (bearing) sides of the pavilion, and at 8-foot spacing at the short (non-bearing) ends of the pavilion; the posts are embedded into the ground. A concrete floor slab is poured between the posts.

The pavilion roofing is damaged in multiple locations, and appears to be past its serviceable life.

The roof framing has a noticeable deformation at several locations. The central roof trusses have a slight sag in the middle of the span. The roof at the middle of the western side has a notable vertical drop; this is likely the result of posts settling into the ground. The roof at the northeast end of the east side has a slight dip at the edge of the overhang.

The wood posts appear to be in decent condition overall, and appear vertical. Vertical wood checks (cracking) are present in most posts, many on multiple faces of the same posts. Posts appear to have shifted, as there is a gap between the slab edge and the posts at several locations. At least one post at the central west side has settled into the ground, with notable vertical deflection present in the roof framing. The northwest column has been damaged, and has been reinforced with wood boards at the concrete slab.

The concrete slab appears to be in good condition overall, with minimal cracking observed. The central portion of the slab has either heaved or settled, resulting in a vertical step in the slab.

Conclusions and Recommendations

Overall, the existing wood pavilion appears to be in serviceable condition. The structural integrity of the pavilion structure appears sound. Most notably, the roofing is past its service life and should be fully replaced.

However, the overall pavilion appears to have shifted or settled, most notably on the west side. With the style of construction (wood posts and beams, with posts embedded in the ground) it would be difficult to vertically plumb the roof framing without reconstructing portions of the building. Recommended repairs would include new concrete foundations and/or new wood posts.

In addition, numerous posts have been observed with wood checking or cracking. Wood checking is a common occurrence in wood timber construction, which results in wood shrinkage from drying of the wood member over time. This cracking typically occurs in one plane of the timber post, and is more of a cosmetic issue than a structural concern given the posts still appear vertical.

Furthermore, the roof framing, specifically the wood trusses, appears to have been field constructed as opposed to shop fabricated trusses with conventional truss connector plates. While certainly valid, this style of construction is not as frequently utilized in current construction. When combined with the observed settlement and checking of the wood posts, the longevity of the structure is in question.

It is McMahon's recommendation that the Village of Roscoe consider replacement of this pavilion structure, rather than rehabilitation of the existing framing and/or reroofing. The pavilion structure itself does not require immediate replacement, though the roof is in poor condition. Therefore, the Village may want to consider replacement of the pavilion in the near future in lieu of reroofing only. The visual misalignment of the framing will continue to be present over the remaining lifespan of the building.

Page 3 | September 25, 2024
Josef Kurlinkus, Village Administrator

We appreciate the opportunity to provide this existing building review for the Village of Roscoe. Please feel free to contact our office with any questions regarding these recommendations.

Respectfully,

McMahon Associates, Inc.

A handwritten signature in black ink, appearing to read 'DJB', with a long horizontal flourish extending to the right.

Daniel J. Brellen, P.E., LEED AP
Associate / Structural Engineer

DJB:jlh

Enclosures: Photographs



Photo 01 - Pavilion Exterior Looking South



Photo 02 - Pavilion Exterior Looking North



Photo 03 - Pavilion Exterior Looking East



Photo 04 - Pavilion Roof Corner



Photo 05 - Interior Roof Framing



Photo 06 - Interior Trusses



Photo 07 - Typical Beams To Posts



Photo 08 - Roof Beams At Settled Posts



Photo 09 - Slab Step At Post



Photo 10 - Northwest Post Base