

# MCKENNAN PARK BANDSHELL: FACILITIES CONDITION ASSESSMENT

SEPTEMBER 3, 2020



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## EXECUTIVE SUMMARY

This bandshell is located on the south end of McKennan Park in Sioux Falls, South Dakota. It was donated by the Cosmopolitan Club in 1926 and listed on the National Register of Historic Places in 1984.

The cornerstone of the bandshell corroborates that in 1926 the Sioux Falls Cosmopolitan Club sponsored the construction of a new band shell at the South end of the park. Since that time the Sioux Falls Municipal Band and other forms of entertainment have continuously performed at the band shell. At various times the city and neighborhood have collaborated to protect and repair the bandshell, including a substantial renovation effort in 1995, as well as regular ongoing maintenance.

Approaching nearly 100 years old, the band shell has been maintained well. As with non-heated, non-insulated outdoor wood framed construction, it is susceptible to freeze-thaw and water penetration damage. Keeping water out of a nearly 100 year old structure is an ongoing effort and periodic damage has occurred but typically addressed.

The roof has been replaced and appears in good condition, but because there is no gutter system, water on the exterior surfaces of the bandshell will remain a concern. Gutters and downspouts are recommended.

The lathe and plaster exterior finish, which has been patched and repaired at some point, does have cracks in some areas. In the short term some additional patching will help, but for long-term maintenance, tearing off the lathe and plaster and applying a new historically appropriate exterior watertight skin is recommended.

The windows appear to have been replaced over the years and the wood frames are very much compromised and need to be replaced. A historically appropriate aesthetic with low maintenance should be used.

The bandshell stage flooring area is commonly repaired as it is susceptible to moisture. The long-term recommendation is to tear off the decking of the entire bandshell and put down a two-inch layer of concrete (on the entire floor) to improve maintenance, reduce water penetrations and generally strengthen and improve the back of house area.

Structurally the bandshell has held up reasonably well and if kept dry, the wood structure can continue to be serviceable with some minor repairs. Because of the unique shape of the bandshell, it is susceptible to high winds which compress (or put in tension) the north edges of the bandshell stage. This has pushed the structure slightly in locations (and can be seen along the foundation wall) and needs shoring as damage leads to cracks and water penetration.

The foundation is in good condition and outside of minor caulking and repairs need no other attention. Several joists have been repaired, however additional joists and rim joists do need to be

replaced. This would best be achieved by replacing the decking as noted above to gain access.

Some efforts have been made to improve the drainage away from the low laying areas around the bandshell, including a storm drain on the east side. There should be additional attempts to keep water away from the building. This past spring several inches of water was noted sitting against the building for a few days at a time. The plaza area, seating areas, and sidewalks around the facility were not assessed at this time.

No electrical/lighting review of the structure was performed, but is recommended. The hidden cove lighting in the bandshell stage area appears to hold water and may need to be reviewed. All fixtures throughout should be as energy efficient as possible, but also it is recommended that historically sensitive fixtures are used when possible. Current lighting of the bandshell appear utilitarian with nominal concern for historical appropriateness or aesthetic.

The building is not entirely ADA accessible for handicapped users but there is wheelchair access from the north. Future renovations should consider ADA.

Aesthetically the bandshell remains an important and attractive element of the park but should a substantial renovation occur, there may be opportunities to improve upon the building aesthetic and lighting - all while keeping the the historic characteristics of the structure. The bandshell can be repaired/renovated and used for generations to come.

The bandshell structure is comprised of 2x stud framed exterior walls that support solid wood deck boards that span horizontally. The roof structure consists of 2x joists that support solid wood deck boards spanning perpendicular to the wood joists. The curved bandshell backdrop is also comprised of conventional wood stud framing that is laterally braced by the roof structure intermittently. The floor of the bandshell consists of wood 2x joist framing that span to perimeter concrete foundations.

For the most part, the bandshell is in reasonably good structural condition. The majority of the exterior wall framing that was observed did not show any signs of fatigue or decay. There were areas that appeared to have moisture damage, most notably on the southwest part of the building. This area of exterior framing appeared to have been reinforced already, but the deck boards appeared to be original and showed significant signs of decay. These boards should be replaced or reinforced.

The roof structure that could be observed also did not show any signs of fatigue or decay. We observed some lateral bracing supporting the top of the exterior walls back to the roof structure. This bracing appeared to be part of the original structure. The solid deck boards spanning between the wood joists also appeared to be in good structural condition.

The floor structure of the bandshell also appeared to be in reasonable structural condition. There were a couple areas that showed some signs of fatigue and decay. The perimeter rim board also

showed signs of moisture damage. Some joists were observed to have moisture damage, most notably at the bearing ends of the joists. These areas need to be reinforced.

The foundations of the bandshell appeared in good structural condition. We did not observe any signs of settlement to the structure. We did observe some concrete spalling on the east foundation wall of the bandshell. This appeared to be cosmetic and did not appear to be causing structural concerns.

The lateral system of the bandshell is mainly comprised of the solid wood decking boards attached to the exterior wood studs, creating a shear wall system for the structure. We did not observe any holdown hardware on the floor plate or top of the stud wall. It appeared most everything was fastened using common nails. We did observe that the north floor plate appeared to be pulling away from the floor structure and concrete wall. The displacement was most significant at the corners of the curved bandshell backdrop.

It is our belief that this displacement is occurring because of a couple factors. First, the moisture damage of the rim board and joist ends on the north side have weakened the connection of the wall to the foundation. Second, the corners of the curved bandshell are framed similar to the rest of the exterior wall with minimal stud framing in these corners. The wind load that is applied to the structure from the south transfers around the curved backdrop and pushes out at the corners of the structure. We don't believe the corners are properly reinforced to support this load, which has caused some displacement. The corners should be reinforced with a wood post type support that could be braced back to the roof structure for additional strength.

The improvements necessary for the bandshell are interconnected from a construction standpoint. It is not appropriate to replace the windows without replacing the stucco. It is not appropriate to replace the floor and rim joists without replacing the stucco. Thus prioritizing any improvements is not helpful. The primary cause of damage is moisture penetration, and if a first step were to be done, we would recommend adding gutters and downspouts, and caulking/repairing the windows. This is a "first step" solution and a full repair of the structure as outlined in this document and on the priorities pages should be considered in the near future.

## PRIORITY RATINGS:

Items on the attached spreadsheet are numbered and many have corresponding photos or comments. The level of priority is also listed on the spread sheet, and defined as such;

“Priority 1” – should be addressed soon, 1-3 years.

“Priority 2” – not an immediate concern, but should be considered for the long-term viability of the structure, presumably in 1-7 years.

Because these issues are physically and structurally connected, it is essential to couple related issues when planning the renovations. These comments herein were reviewed on March 28th and May 13th, 2019, with Sioux Falls Parks staff present, Justin Christensen (RISE Structural Associates, Inc.), Cory Bleyenburgh (CO-OP Architecture) and Tom Hurlbert (CO-OP Architecture).

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### PRELIMINARY STATEMENT OF PROBABLE COST - McKennan Park Bandshell Estimate

| <b>BANDSHELL</b>                                       | <b>Quantity</b> | <b>Unit</b> | <b>Cost</b> | <b>Total</b>         |
|--------------------------------------------------------|-----------------|-------------|-------------|----------------------|
| Building Renovations                                   | 1,230           | sf          | \$ 200      | \$ 246,000           |
| Stucco Exterior                                        | 4,000           | sf          | \$ 40       | \$ 160,000           |
| <b>BASE BANDSHELL SUBTOTAL</b>                         |                 |             |             | <b>\$ 406,000</b>    |
| Contingency                                            |                 |             | 10%         | \$ 40,600            |
| Construction Reserve                                   |                 |             | 5%          | \$ 22,330            |
| Professional Services                                  |                 |             | 7.00%       | \$ 31,262            |
| <b>BANDSHELL SUBTOTAL</b>                              |                 |             |             | <b>\$ 500,192</b>    |
| <b>TOTAL (2019)</b>                                    |                 |             |             | <b>\$ 500,192</b>    |
| <b>TOTAL (2024)</b> <i>(escalation at 4% per year)</i> |                 |             |             | <b>\$ 608,560.05</b> |

*Does not include FF&E or other soft costs. Estimate based on current information and not a guarantee of actual final cost.*

Thank you,



Tom Hurlbert, AIA  
CO-OP Architecture

|          |                                                                                                                                                                                                                                                                                                                                                                                         | Priority I | Priority II |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|
| Exterior |                                                                                                                                                                                                                                                                                                                                                                                         |            |             |
| 1        | There is structural damage near each edge of the stage, likely due to high winds causing the structure to shift. This is among the more serious ongoing issues and needs structural attention. Adequate repair of this would be a part of removing much stucco and replacing structure.                                                                                                 | ●          | ●           |
| 2        | The stucco at the base of the building where it meets the foundation is deteriorating to the point where it is exposing the sheathing and or rim joist.                                                                                                                                                                                                                                 |            | ●           |
| 3        | There is structural damage near each edge of the stage, likely due to high winds causing the structure to shift. This is among the more serious ongoing issues and needs structural attention. Adequate repair of this would be a part of removing much stucco and replacing structure. You can see in this picture the amount of shifting that has taken place at the wall sill plate. |            | ●           |
| 4        | In this picture you can see horizontal cracks in the plaster at all the joints in the shiplap sheathing behind the plaster. This is a result of building movement probably caused by the shrinking and expansion of the wood materials.                                                                                                                                                 |            | ●           |
| 5        | The stucco at the base of the building where it meets the foundation is deteriorating to the point where it is exposing the sheathing and or rim joist.                                                                                                                                                                                                                                 |            | ●           |
| 6        | The stucco on the foundation wall is cracking. There were no signs of cracking in the concrete foundation wall.                                                                                                                                                                                                                                                                         |            | ●           |
| 7        | The exterior inside corners of the building have been exposed to large amounts of water discharge from the roof, causing infiltration of water through cracks in the stucco.                                                                                                                                                                                                            |            | ●           |
| 8        | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                                                         | ●          |             |
| 9        | The simulated window trim and sills are rotting and or damaged. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                                                                         | ●          |             |
| 10       | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                                                         | ●          |             |
| 11       | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                                                         | ●          |             |
| 12       | There is structural damage near each edge of the stage, likely due to high winds causing the structure to shift. This is among the more serious ongoing issues and needs structural attention. Adequate repair of this would be a part of removing much stucco and replacing structure.                                                                                                 |            | ●           |
| 13       | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                                                         | ●          |             |

|    |                                                                                                                                                                                                                                                                                                                                                |   |   |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 14 | The exterior inside corners of the building have been exposed to large amounts of water discharge from the roof, causing infiltration of water through cracks in the stucco. New gutters and downspouts should be installed to prevent the infiltration of water that is causing significant rotting of the sheathing at these inside corners. | ● |   |
| 15 | There is structural damage near each edge of the stage, likely due to high winds causing the structure to shift. This is among the more serious ongoing issues and needs structural attention. Adequate repair of this would be a part of removing much stucco and replacing structure.                                                        |   | ● |
| 16 | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                | ● |   |
| 17 | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                | ● |   |
| 18 | The existing plaque donor's name has been removed.                                                                                                                                                                                                                                                                                             |   | ● |
| 19 | There is structural damage near each edge of the stage, likely due to high winds causing the structure to shift. This is among the more serious ongoing issues and needs structural attention. Adequate repair of this would be a part of removing much stucco and replacing structure.                                                        |   | ● |
| 20 | The stucco at the base of the building where it meets the foundation is deteriorating to the point where it is exposing the sheathing and or rim joist.                                                                                                                                                                                        |   | ● |
| 21 | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching.                                                                                                                                                | ● |   |
| 22 | The light cove at the back of the band shell should be clean of debris and flashing should be fastened and resealed.                                                                                                                                                                                                                           |   | ● |
| 23 | New gutters are recommended at all roof eaves.                                                                                                                                                                                                                                                                                                 | ● |   |
| 24 | There is structural damage near each edge of the stage, likely due to high winds causing the structure to shift. This picture shows a better view of the bowing in the wall as a result of the sill plate moving out where it meets the stage.                                                                                                 |   | ● |
| 25 | The stucco at the base of the building where it meets the foundation is deteriorating to the point where it is exposing the sheathing and or rim joist.                                                                                                                                                                                        |   | ● |
| 26 | The stucco at the base of the building where it meets the foundation is deteriorating to the point where it is exposing the sheathing and or rim joist.                                                                                                                                                                                        |   | ● |
| 27 | The stucco at the base of the building where it meets the foundation is deteriorating to the point where it is exposing the sheathing and or rim joist.                                                                                                                                                                                        |   | ● |

|           |                                                                                                                                                                                                 |   |  |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--|
| <b>28</b> | New gutters and downspouts are recommended at all roof eaves.                                                                                                                                   | ● |  |
| <b>29</b> | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching. | ● |  |
| <b>30</b> | The simulated window trim and sills are rotting, allowing moisture penetration. The simulated windows should be replaced with new windows and installed with appropriate flashing and patching. | ● |  |

|          |                                                                                                                                                                                                                                                                                                                             | Priority I | Priority II |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|
| Interior |                                                                                                                                                                                                                                                                                                                             |            |             |
| 1        | The sill plate is rotting in areas where water has gotten through the exterior plaster or entered through one of the window openings.                                                                                                                                                                                       |            | ●           |
| 2        | The door jamb is showing signs of water damage likely caused by sealant failure somewhere around the adjacent door frame.                                                                                                                                                                                                   | ●          |             |
| 3        | The floor boards are separating at this location near the north exterior wall where the sill plate has moved outward, likely due to high winds causing the structure to shift.                                                                                                                                              |            | ●           |
| 4        | The exterior shiplap sheathing is rotting at the inside corners of the building. The exterior inside corners of the building have been exposed to large amounts of water discharge from the roof, causing infiltration of water through cracks in the stucco. New gutters and downspouts are recommended at all roof eaves. |            | ●           |
| 5        | The exterior shiplap sheathing is rotting at the inside corners of the building. The exterior inside corners of the building have been exposed to large amounts of water discharge from the roof, causing infiltration of water through cracks in the stucco. New gutters and downspouts are recommended at all roof eaves. |            | ●           |
| 6        | A gap in the floor is exposed at this location where the sill plate has moved outward, likely due to high winds causing the structure to shift.                                                                                                                                                                             |            | ●           |
| 7        | The exterior shiplap sheathing is rotting below the windows due to the infiltration of water through the simulated windows. All windows should be replaced and stucco removed to repair existing sheathing.                                                                                                                 |            | ●           |
| 8        | Blocking was observed at multiple locations on the curved wall of the band shell. It is believed that vandals kicked holes in the wall and this blocking was installed as backer for the patching of the holes.                                                                                                             |            | ●           |
| 9        | Patched plaster location.                                                                                                                                                                                                                                                                                                   |            | ●           |
| 10       | Some new beams and floor joists were observed in the crawl space. Overall, the existing foundations and wood structure are in good shape. Various joists may need attention.                                                                                                                                                |            | ●           |
| 11       | Some new beams and floor joists were observed in the crawl space. Overall, the existing foundations and wood structure are in good shape. Various joists may need attention.                                                                                                                                                |            | ●           |
| 12       | Some new beams and floor joists were observed in the crawl space. Overall, the existing foundations and wood structure are in good shape. Various joists may need attention.                                                                                                                                                |            | ●           |
| 13       | The rim joists were found to have some water damage and/or rotting. It is assumed that these locations mostly occur below the window openings above.                                                                                                                                                                        |            | ●           |
| 14       | The sill plate is rotting in areas where water has gotten through the exterior plaster or entered through one of the window openings.                                                                                                                                                                                       | ●          |             |
| 15       | The door jamb is showing signs of water damage likely caused by sealant failure somewhere around the adjacent door frame.                                                                                                                                                                                                   | ●          |             |

|    |                                                                                                                                                                                                                                                                                                                             |   |   |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 16 | The exterior shiplap sheathing is rotting at the inside corners of the building. The exterior inside corners of the building have been exposed to large amounts of water discharge from the roof, causing infiltration of water through cracks in the stucco. New gutters and downspouts are recommended at all roof eaves. | ● |   |
| 17 | A gap in the floor is exposed at this location.                                                                                                                                                                                                                                                                             |   | ● |
| 18 | Additional blocking was added near the door frame to the stage where the north wall has shifted out. It appears that this was a stabilization in place effort and not a complete restoration repair.                                                                                                                        |   | ● |
| 19 | Additional blocking was added near the door frame to the stage where the north wall has shifted out. It appears that this was a stabilization in place effort and not a complete restoration repair.                                                                                                                        |   | ● |
| 20 | Additional blocking was added near the door frame to the stage where the north wall has shifted out. It appears that this was a stabilization in place effort and not a complete restoration repair.                                                                                                                        |   | ● |
| 21 | Additional blocking was added near the door frame to the stage where the north wall has shifted out. It appears that this was a stabilization in place effort and not a complete restoration repair.                                                                                                                        |   | ● |

Images - Exterior

1.



2.



3.



4.



5.



6.



7.



8.



9.



10.



11.



12.



13.



14.



15.



16.



## Images - Exterior

17.



18.



19.



20.



21.



22.



23.



24.



25.



26.



27.



28.



29.



30.



## Images - Interior

1.



2.



3.



4.



5.



6.



7.



8.



9.



10.



11.



12.



13.



14.



15.



16.



## Images - Interior

17.



18.



19.



20.



21.

