



Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: Wayne Ward
Position: Manager Facilities and IT
Title / Subject: Arena Engineering Reports
Date of Report: January 19, 2023
Date of Meeting: January 30, 2023
Report No: 2023-PRF-001

1.0 Issue / Origin

Brock Township has a rich heritage with three distinct towns which includes one arena facility per town. These facilities are aging and are showing their wear and tear from many seasons of youth and adult usage.

2.0 Background

This report is one in a series of reports which have been provided to Council on the topic of the three arenas. As the newest person to assume the role of Manager of Facilities for the Township the topic of arenas has been forefront as a topic of discussion at many meetings. These reports are specific to the arena area, ice surface area and supporting areas. They do not include the lobby areas, washrooms, dressing rooms, auxiliary rooms or auditorium areas of these buildings.

The reports included were completed by Barry Bryan Associates, Architects, Engineers, Project Managers between October 2021 and July 2022.

3.0 Analysis

Each arena is of a different era and structure type. A quick overview of the date of construction and type of structure follows:

- Foster Hewitt Memorial Community Centre, Beaverton.
 - Year of Construction: 1972
 - Type of Construction: Concrete Block, Pre-engineered rigid steel frame, concrete slab-on-grade
- Rick MacLeish Memorial Community Centre, Cannington.
 - Year of Construction: 1964

- Renovations: 1990 and 2004
 - Type of Construction: Tiber Bowstring Truss supported on Glulam columns, wood roof decking with pre-finished metal roofing. Metal clad exterior walls, concrete slab-on-grade.
- Sunderland Brock Memorial Arena, Sunderland
 - Year of Construction: 1977
 - Type of Construction: Concrete Block, Pre-engineered rigid steel frame, concrete slab-on-grade, cast-in-place foundation with concrete block pilasters.

Each report outlines in detail the observations of specific components of the facility. Photos of areas noted are included in the reports for reference.

Recommendations, both short and longer term, were provided to address the areas of concern.

- Foster Hewitt Memorial Community Centre:
 - The efflorescence and algae accumulation on the exterior walls should be cleaned from the structural systems and an adequate protective coating applied
 - All deteriorated/open/cracked mortar joints should be routed and infilled with a suitable repair mortar to restore the integrity of the existing building envelope
 - Patch any locations of spalled concrete masonry block with a suitable repair mortar to restore the integrity of the existing building envelope. Replace any damaged/cracked concrete masonry block with new block to match existing as required
 - Any corroded areas should be wire brushed to bare metal and epoxy painted to prevent further deterioration of the structural framing
 - Any peeled/flaked paint areas to be removed and repainted with a new coat of epoxy paint
 - Any areas of moisture staining on structural framing should be cleaned and a protective coating should be applied
- Rick MacLeish Memorial Community Centre:
 - Complete and analysis of the figure skating support hoist system and support framing, if not previously complete
 - Repair concrete at bleacher stairs
 - Extend short erection bolts at roof framing connections
 - Provide proper support of exterior stair posts
 - Repair or replace concrete slab-on-grad at ice resurfacer room
 - Repair or replace concrete housekeeping pads
 - Repair cracks in rink slab
 - Rout out and repoint deteriorated/open/cracked mortar joints
 - Repair damage to landscaping concrete retaining stair structures
 - Clean staining/efflorescence from concrete block walls
- Sunderland Brock Memorial Arena:
 - Complete repairs to wood canopy at south entrance including replacement of any damaged wood columns, reinstating shifted/damaged connections, confirming extent of column checking and potentially installing bollards to protect against further impact

- Complete repairs to exterior exit stairs and associated foundations on the east and west sides of the arena
- Reinstate damaged or missing lateral support braces at the pre-engineered frames
- Replace missing bolts on pre-engineered frames
- Extend short anchor bolt threads at bases of pre-engineered columns
- Complete an analysis of figure skating support hoist system and supporting framing
- Repair concrete stairs at bleachers
- Rout out and repoint deteriorated/open/cracked mortar joints
- Repair cracks in rink slab or consider full replacement
- Clean corrosion and repaint pre-engineered framing
- Repair damage to concrete foundation wall on east elevation
- Replace sealant at external expansion joints
- Replace guards on west wall louvres

Not included in all of the engineer reports was a notation regarding the skating club lift units what are currently installed in each facility. Engineer reports for these installations are not on file and should be completed to ensure the structures are able to properly support the intended use of these items and that the units themselves are properly installed and being maintained.

Included in this report is also a spreadsheet comprised of some items not included in these reports such as the refrigeration system components. The spreadsheet included projected dates for replacement. These dates are based on the typical lifespan of the components.

4.0 Related Policies / Procedures

Not applicable

5.0 Financial / Budget Assessment

The amount of work including engineering is still to be determined. Work that can be completed in house by staff will be based on time and materials. Some work will require outside contractors to complete. Materials to match existing will need to be sourced to maintain the esthetics of the buildings. Additional staff may be necessary to complete this work and continue to maintain all other areas of responsibility of arena staff. Most of this work will need to be completed during the off season when the arena staff are also responsible for maintenance of fairgrounds, parks, harbours, splash pad, playgrounds, along with maintaining the buildings for user groups and summer camps.

The reports identify a large number of overdue repairs and replacements. Staff recommend a one-time funding of \$200,000 be approved to address the backlog. Although \$200,000 will not address all maintenance, repair or replacement items, it will allow staff to prioritize their efforts on safety and emergency items based on the state of the infrastructure. If repairs are required at the Sunderland Brock Memorial Arena, care will be exercised to focus on items that do not interfere or duplicate the scope of the larger construction project.

6.0 Climate Change Impacts

Maintaining a better building envelope and structure provides for more efficient operations. Efficiency in operations can reduce natural gas, water and electrical consumption. These reductions can reduce green house gas emissions.

We are currently working with the Elexicon Group to monitor the electrical, water and natural gas consumption at the Foster Hewitt Memorial Community Centre to better understand our inefficiencies

7.0 Communications

Attached reports from Barry Bryan Associates

8.0 Conclusion

This report is to provide information on the state of the three arena facilities to allow Council to be fully aware of the condition of the infrastructure as it ages.

Overall, the facilities have been determined to be in fair to good condition as per the reports provided.

There are a significant number of items to be addressed to satisfy the observations within the reports. Refrigeration items such as the condenser unit at Rick MacLeish Memorial Community Centre are not included in these reports but have been identified by the refrigeration contractor as being at end of life.

By conducting the noted repairs these facilities may be upgraded to a more favourable condition.

9.0 Recommendation

BE IT RESOLVED THAT Committee receive this report, and

THAT, an Arena Rehabilitation project be approved to be used for the purposes of completing repairs including, where necessary, hiring of engineers and contractors such as masons and other trades.

THAT, the project be established at \$200,000 to be funded equally from the three Arena Capital Reserve Funds; and

THAT Committee approve this at the Council meeting of January 30, 2023.