MUNICIPALITY OF BROCKTON

Brockton Multi-Use Recreation / Municipal Office Complex Project

Report to the Project Management Committee

Walkerton Community Centre Assessment

PRISM Partners Inc.

6/18/2014

PRISM
Partners Inc

Introduction

The Municipality of Brockton engaged the services of PRISM Partners, Inc. to undertake a number of tasks on behalf of the Municipality, most specifically related to the Brockton Multi-Use Recreation / Municipal Office Complex Project ("Project"). The project brought together a number of elements from the **Recreation and Leisure Services Master Plan** including the Recreation Services Team's desire to include a new arena and community centre in the overall plan, replacing the existing Walkerton Community Centre. Direction to PRISM was provided by the Project Management Team ("PMT") on behalf of the Municipality and Recreation Services Team.

PRISM's mandate included the development of a Footprint Plan bringing all of the project components together at a single location in the East Ridge Business Park. The major components included a community centre and gymnasium, arena(s), soccer fields, indoor walking track the requisite parking and a municipal office building. The mandate was expanded to include an assessment of the existing Walkerton Community Centre with specific reference to the suitability and potential for an expansion of the existing building.

Walkerton Community Centre – Facility Summary

The Walkerton Community Centre was constructed in 1971/1972 with first use in late 1972. The facility now includes the following features:

- One 80 foot x 180 foot artificial ice pad
- Four under-sized player dressing rooms
- Two larger player dressing rooms at rear of building
- One referee dressing room
- Bench-style seating for approximately 800 persons

- Through-glass spectator space for approximately 100 persons (50 on benches on lower level and 50 in chairs on upper level)
- A community room capable of accommodating 300 persons (separate kitchen, bar and storage areas included)
- Snack bar
- Reception Area for Municipal and Arena office
- Office space for facility and municipal staff (253 sf shared by Summer Program Student, Recreation Programmer and Administrative Assistant – 144 sf for Recreation Director)
- Under raked-seating storage areas
- Ice resurfacing machine garage, refrigeration plant room and associated mechanical and electrical rooms located under the spectator seating area
- Maintenance shop and staff room in one shared space
- Upper and lower level male and female washrooms
- Minor Hockey, Figure Skating user-group storage rooms
- Exterior accessibility lift

As with many public buildings in smaller municipalities, the Walkerton Community Centre has been well-maintained and there is an obvious pride in keeping the building in good condition. A number of remedial renovations, restorations and cosmetic repairs have been completed since the building was originally constructed including:

- Addition of two dressing rooms at the north end of the building under the raked seating to increase dressing room capabilities and capacities
- Addition of an accessible lift to allow access to the community rooms (accessible only from the exterior of the building)
- Replacement of the roof membrane over the entire structure
- Replacement of the antiquated arena dasherboard, shielding system and player and penalty benches

- Replacement of existing metal-halide lighting in the arena area with 400 watt T5 fluorescent fixtures to create greater energy efficiencies
- Replacement of flooring throughout the arena area with rubber and slip-resistant material
- Modernization of the refrigeration cooling system to improve energy efficiency and to reduce risk of failures
- Drainage improvements on the west side of the building to alleviate water infiltration from the redevelopment of the west hill

At the time of its construction the building provided the Town of Walkerton with a modern facility common to many smaller municipalities in Ontario. It was designed to Building Code standards and Planning standards that have changed dramatically in the intervening period in multiple respects and would not meet the standards in place today for such a building. The existing facility does not provide for optimum energy efficiencies required by Code and taking the cost of energy into account, and does not provide the necessary public safety standards found in present day Codes and Regulations.

Present Facility Deficiencies

The Recreational Services Team prepared a report, "*Walkerton Community Centre – Current Design Deficiencies and Design Challenges*"[1] in 2011 following the completion of renovations in 2010 funded through the Recreation Infrastructure Canada ("RINC") Program. The report identifies the immediate necessary remedial improvements made through the renovations and also outlines the remaining deficiencies and challenges. In summary, the RINC program allowed the Municipality to make crucial repairs but did not provide funding for major renovation or expansion of the building. Many of the updates and repairs made to the building, as noted above, were part of the RINC financed project.

[1] Appendix A

The 2011 Recreation Services Team report provides a summary of the work completed under the RINC program and other renovations and repairs that have been completed along with a list of continuing deficiencies including the following:

- The ice-surface is non-standard (80x180) with an aging concrete floor and secondary refrigerant piping
- The building is susceptible to flooding from the Saugeen River
- Bench seating configuration is inconsistent and installation creates a public trip hazard
- Spectator heating is inefficient
- Accessible access is limited and is not compliant with present accessibility requirements
- No proper wheelchair seating is provided for spectators
- No proper snow disposal area is provided creating risks with outdoor disposal in heavy vehicular and pedestrian traffic
- No effective separation of players and spectators
- Dressing rooms are too small by current standards requiring two rooms for one team
- The refrigeration system is not energy efficient and does not provide for any heat recapture

The designation of the Walkerton Community Centre as a place of refuge for citizens in the event of an emergency is inconsistent with its present location, reliance on a portable stand-by emergency generator for back-up electrical power and shortage of parking. As the most likely need for an emergency place of refuge is in the event of a major flood, the Walkerton Community Centre would fail to meet the accepted requirements on the basis of its own susceptibility to flooding, its lack of accessible facilities and its lack of road access during a major flood.

Photos of the existing facility can be found in Appendix B.

Future Requirements

The Brockton Recreational Services Team has identified the future requirement for an arena facility capable of seating approximately 1,200 spectators with ancillary facilities meeting the standards seen in more recently constructed municipal arena complexes. These requirements and additional facilities would include the following items:

- A single ice-surface meeting NHL or Olympic standards (85 feet x 200 feet or 100 feet x 200 feet) with a single auxiliary ice pad
- A minimum of six "right-sized" dressing rooms with two sized to accommodate Junior C or Senior A team size requirements (including "separation" of teams and dedicated visiting team entrance)
- A referee dressing room capable of accommodating six referees simultaneously
- Ice resurfacing machine garage with internal snow disposal and adequate equipment storage area
- Facilities that separate players from spectators and opposing teams from each other
- A dedicated dressing room for a Junior C or Senior A team with adequate storage fro team equipment
- Scalable community rooms able to accommodate various group sizes
- Energy efficient mechanical and electrical systems capable of supplying auxiliary heat for other complex amenities and municipal offices
- Adequate parking for spectators and dedicated visiting team bus parking
- Snack-bar with capacity to serve a crowd of 1,200 spectators
- A fully accessible facility in compliance with the Ontario Building Code and the Accessibility for Ontarians with Disabilities Act
- Adequate storage spaces for tables, chairs, etc. and necessary maintenance and support equipment

Alternative Solutions

There are two alternatives to meeting the future requirements as identified by the Recreational Services Team: extensive renovation and expansion of the existing Walkerton Community Centre or the design and construction of a completely new facility. The two alternatives are both possible, but there are significant advantages and disadvantages to both scenarios.

Advantages	
Renovation/Expansion of Existing Facility	**Design & Construction of New Facility**
Maintains location in closer proximity to downtown Walkerton near the west entrance to town	Provides opportunity to design without specific site limitations
	Facility will be designed and constructed to latest codes, regulations and best practices and industry standards (ice surface size and accessibility)
	Facility would not be subject to flood risk of Saugeen River
	Facility can be designed to accommodate two ice pads for optimal operational efficiencies
	Facility can be designed to stringent energy efficiency standards
	Facility can be designed to be the hub of a "central" heating-cooling system creating optimized energy uses and efficiencies in the auxiliary spaces, for the municipal offices and with other local buildings
	Adequate on-site parking can be included in the design
	The existing facility can be re-purposed to provide facilities for other indoor sports and regional destination for indoor year-round turf opportunities

Disadvantages	
Renovation/Expansion of Existing Facility	**Design & Construction of New Facility**
Loss of use of the facility for a period of at least 18 months	Overall cost likely to be greater than a renovation/expansion of the existing facility
Potential loss-of-use and damage due to flooding of Saugeen River remains	
Increasing the width of the ice surface will require extensive structural changes to the west wall and a reworking of the westerly gravel access road to the municipal sewage treatment plant and a loss of already limited parking	
Increasing the length of the ice surface will impact the baseball diamonds to the north of the building	
Addition of on-site parking will impact baseball diamonds to the north of the building	
Limited space available for twinning when Horse Palace meets its life expectancy and is decommissioned	
Potential for "redundant" facility without a specific re-purposing plan in place	

Renovation and Expansion Scope

The concept of renovating and expanding the existing Walkerton Community Centre has not been studied in detail and a very extensive study would have to be undertaken to determine the scope, scale and realistic potential for the renovation and expanding the building. This study would have to advance to a level of design that would then allow for a review of the interface between new and old elements of the planned facility and for a comprehensive review of existing building elements and how they may or may not function under a new design subject to modern standards and building codes.

A preliminary scope for a potential renovation and expansion, taking into account the vision for a new facility put forward by the Recreation Services Team, would include the following elements:

- Expansion of ice surface to north and west (85x185 or 85x200)
- Addition of new seating to west side of expanded ice pad
- Rework of existing seating based on new arena layout
- Provision of new ice resurfacing machine garage and snow-melt pit
- Provision of new concrete rink floor complete with new coolant piping
- Provision of new refrigeration plant
- Provision of adequate storage
- Provision of new dasherboard system
- Structural changes to west wall to permit widening of ice surface and addition of additional seating on west site of expanded ice pad
- Provision of accessible rink-side seating
- Demolition and replacement of north wall to permit lengthening of ice surface
- Provision of accessible entrances and replacement of existing elevator
- Provision of accessible washrooms on both levels
- Installation of a fire-protection system throughout the building
- Construction of six "right-sized" player dressing rooms
- Construction of a "right-sized" referee dressing room
- Provision of dedicated female specific player and referee dressing rooms in addition to the "team" rooms
- Modification to all existing entrances and exits to comply with OBC and AODA Requirements
- Replacement of all building mechanical systems
- Upgrade of main incoming electrical service

Renovation and Expansion Challenges

The existing building presents a number of challenges to any major renovation and expansion project due to its location, its type of construction and its age. According to the Ontario Recreation Facilities Association document entitled, *"Determining your Facilities Replacement,"*[2] the expected lifespan of an arena is 30-35 years and the "tipping point" for major renovations is 32 years. As the Walkerton Community Centre is 41 years old, and has undergone some necessary and cosmetic renovations already, it is likely not a candidate for a further major renovation and expansion. As the ORFA notes, many buildings will have an effective lifespan much longer than noted in the report, but there is a point at which a facility will begin to suffice rather than support.

A summary of the major challenges that the existing building presents to any renovation and expansion project that is focussed on meeting the stated requirements of the Recreation Services Team would include the following issues:

- The building is within the Flood Fringe Overlay as identified by the Saugeen Valley Conservation Authority and would not be a permitted use if planned today
- The scope of renovations envisioned are extensive and would not permit a broad application of Part 11 of the Ontario Building Code which allows for exceptions to compliance under some circumstances which may force many upgrades to otherwise "untouched" elements of the building
- The building does not have sufficient parking in accordance with the Municipality of Brockton Zoning By-Law (existing building would require in excess of 300 parking spaces) and there is insufficient adjacent land available to add the requisite parking
- The building does not comply with the Accessibility for Ontarians with Disabilities Act in many respects

[2] See Appendix C

- The present mechanical and electrical systems would need to be replaced as their age renders them unlikely capable of major expansion or upgrade to realize maximum energy efficiencies
- The structural design parameters used in the 1972 Ontario Building Code vary significantly from those in place in 2014 and would force significant structural upgrades to meet the existing Code requirements
- The structural design of the building, load-bearing masonry wall and structural steel roof joists, is less flexible than a structural steel building and will require a more complicated and expensive solution to add width and length to the building
- The inability of twinning a second ice pad with the existing facility when the Horse Palace is decommissioned

Potential Repurposing of the Facility

The single greatest disadvantage of the replacement of the Walkerton Community Centre as Brockton's primary ice surface is the identification of potential uses for the existing facility. While a business-case for repurposing of the existing building would have to be developed in support of a new arena, potential new uses for the existing building include:

- The opportunity to market the repurposed facility as a year-round regional destination for indoor turf sports
- Indoor field-house for soccer, arena football, rugby, lawn bowling, box lacrosse and other turf sports
- Continued use for trade fairs, exhibitions and floor rentals (billiard competitions, flea markets etc.)
- Indoor walking track for inclement weather use
- The large community room can be made divisible for use by smaller groups
- Provide much needed storage for parks maintenance operations and equipment

Conclusion

The existing Walkerton Community Centre has served the citizens of Walkerton and Brockton well in its 41-year history, and can continue to do so, but not at the level of service that is outlined by the Recreation Services Team requirements. In order to meet these requirements, wholesale renovation and expansion, leaving virtually no facet of the existing building untouched would be required.

The potential cost to renovate and expand the existing facility to meet present standards would still not alleviate many of the issues; namely, parking, lack of adequate storage space, susceptibility to flooding and would force compromises during the design due to the present building's construction and condition.

Given the building's age, location and potential for repurposing, we believe that the Municipality of Brockton should begin the process of planning for the replacement of the Walkerton Community Centre as its primary ice surface venue(s) and seek to repurpose the building once replaced. The decision to do so will result in a purpose-built solution that will serve the community for many years and will overcome the deficiencies and obstacles inherent in the existing facility and create significant cumulative operational efficiencies and cost savings in one building envelope.

Appendices

Appendix A – Recreational Services Team Report

Appendix B – Photos of Existing Walkerton Community Centre

Appendix C – ORFA Report – Determining Your Facilities Replacment

Appendix A

Walkerton Community Center Current Deficiencies and Design Challenges

The following questions have been asked:

- We just spent money on the old facility. It should be fine now!

- Why can't we just build dressing rooms on to the existing facility?

RINC Funding 2010-2011

- After an unsuccessful application to the Build Canada Stimulus Fund, in 2009, it was unknown if and when funds for replacement of the aging Walkerton Community Center might be available.

- In March 2009, the Recreation Infrastructure Canada Program (RINC) was announced that addressed the aging community recreation infrastructure. Funds were specifically intended for renovation or retrofits for existing recreation infrastructure including Community Centers, Pools, Parks and Trails, with 66% or 2/3 of the funding provided by the Federal and Provincial Governments

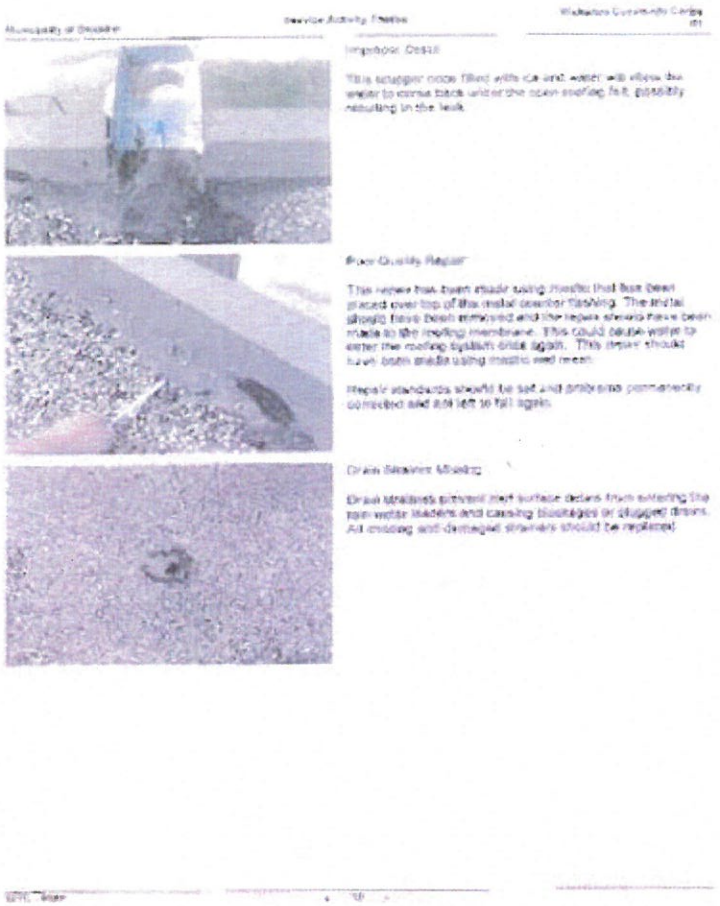
- Not knowing if these funds might be available in the future, the WPR decided to take advantage of the "Free money" to remedy some items needing immediate attention, address public safety and accessibility concerns, and attempt to address some energy deficiencies.

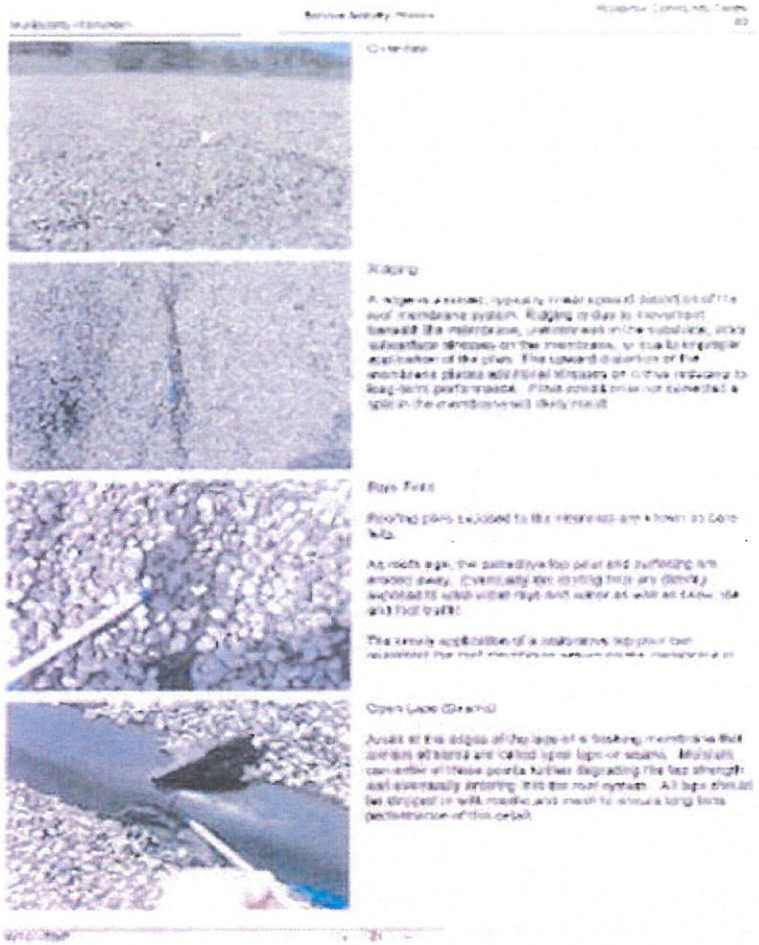
- In May 2010, with $ 3000,000.00 previously allocated in reserves for the roof replacement of the Walkerton Community Center , council supported an application for the RINC program for Renovations to the Walkerton Community Center, and Revitalization of Centennial Pool and Park

- Included in the successful RINC application was $ 500,000.00 for the Renovations of the Walkerton Community Center to address the immediate concern of preserving the structural integrity of the building with a new roof, improving the Health and Safety for staff and patrons, and investing in energy efficiencies of the antiquated facility.

Community Center
RINC Improvements 2010

- The existing "tar and gravel" roof had several deficiencies in the surfacing and joints, as well as improper drainage which was the cause of many leaks
- Over time, the leaks caused damage to the roof and insulation, and ceiling inside the building





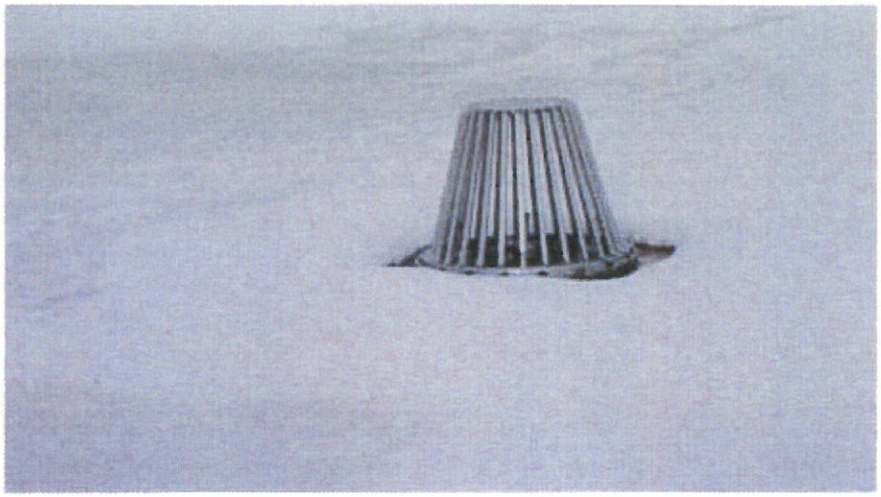
Community Center
RINC Improvements 2010

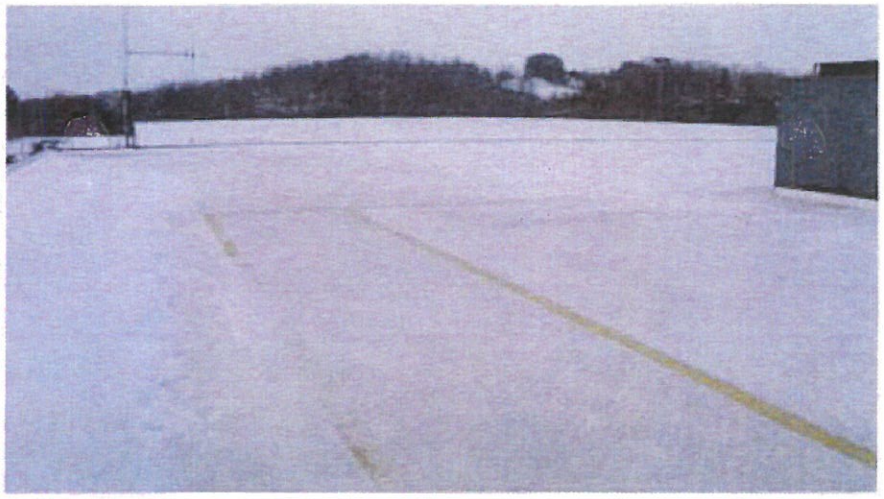
- The improper drainage created premature corrosion of the block wall, and windows resulting in irreversible water damage to the offices and interior of the building

Community Center
RINC Improvements 2010

Roof refurbishment

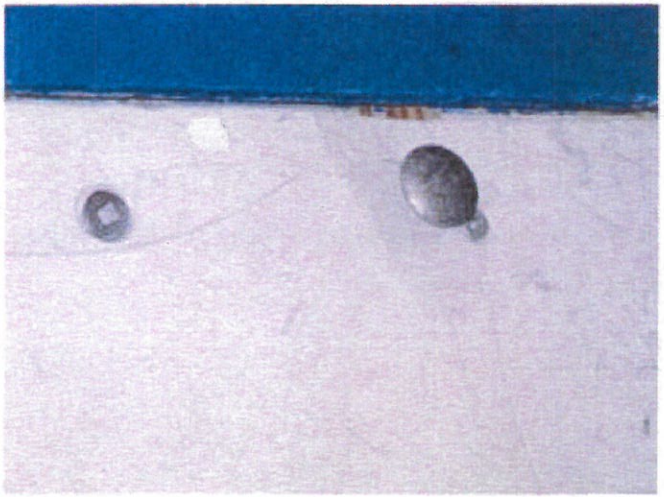
- 6,500 sq. ft over the auditorium, with removal and replacement saturated foam, covered with a 60 mil. TPO energy saving white membrane
- 22,692 sq. ft. of arena roof, with removal of saturated insulation, additional ½ " fiber board/insulation, covered with a 45 mil. TPO energy saving white membrane
- All roof drains were resealed, and tapered, with new roof scuppers and downspouts added for proper drainage
- Existing deteriorated metal flashings were replaced
- Total Cost of Roof Replacement approx. cost $ 140,000.00





Community Center
RINC Improvements 2010

- Arena Dasher Boards and Gates, Player Benches
- The original board and gate system was installed in 1972, and later renovated by covering the existing plywood with ¼ " poly puck board
- The plywood backing had deteriorated and sandwiched together with carriage bolts to the wooden supports
- the original gates latches were worn and insecure resulting in gates opening during play
- Visiting teams expressed concerns for player safety

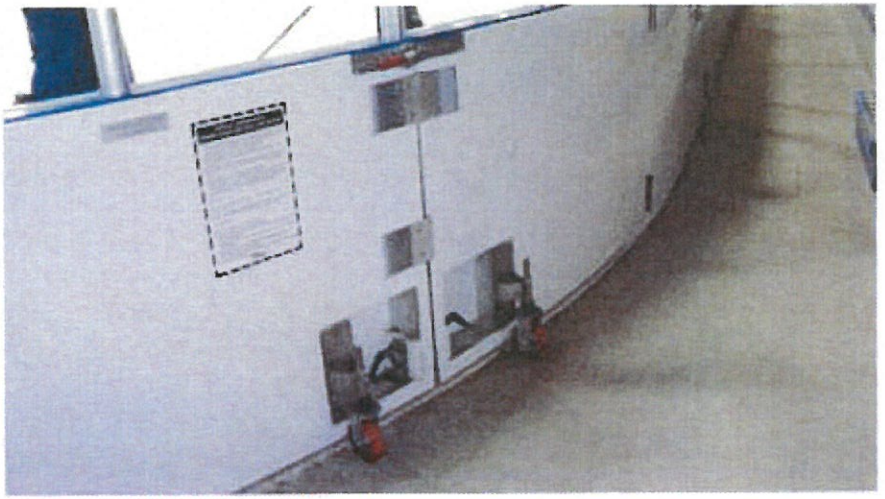


Community Center
RINC Improvements 2010

- A new Aluminum, removable, ProRink 181 ft x 81ft , 20 ft. radius dasher board system was installed with quick release removable sections for special events
- New gates and hardware were installed to ensure safe operations and security during activities
- The board height was adjusted to 48", slightly lower than the original boards to meet ORFA standards and were more conducive to spectators viewing in the lobby area
- New player and penalty benches, and timekeepers benches added , complete with coaches walkway, and critical access to the penalty boxes from the time keepers area.

Community Center
RINC Improvements 2010

- Original 4' and 5' tempered glass was replaced with 5' and 6' foot ½ " tempered glass with quick release supports
- The glass, players benches, and gates were brought up to ORFA Specifications for player safety
- The Aluminum board sections, gates and glass are all removable for future use
- The cost for the total Dasher board system was approx. $ 135,000.00



Community Center
RINC Improvements 2010

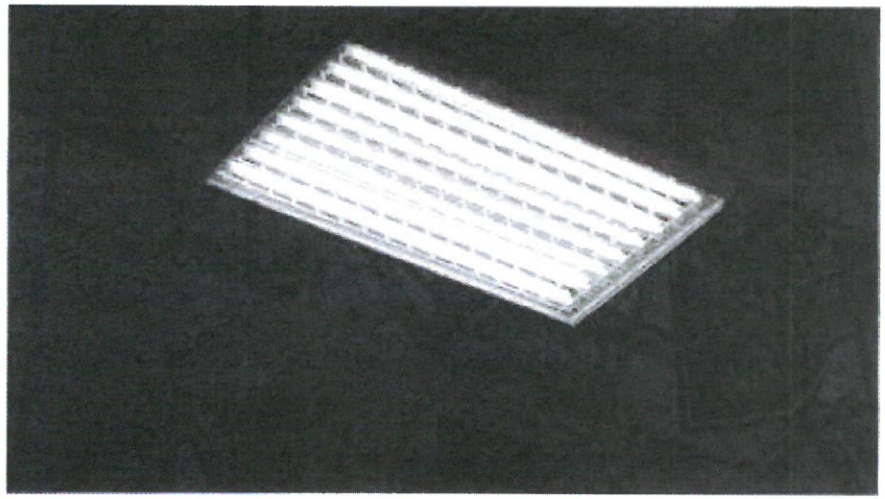
- 6,500 sg. ft of Johnson's resilient Rubber Flooring was installed, throughout the facility, front to back
- The existing flooring was worn through to the concrete in many areas and extremely difficult to maintain
- Many sections were loose with moisture trapped under the tiles creating mold and mildew concerns
- New flooring with nonslip stair treads, and visually enhanced steps were added for patron safety and visually impaired at the front entrance

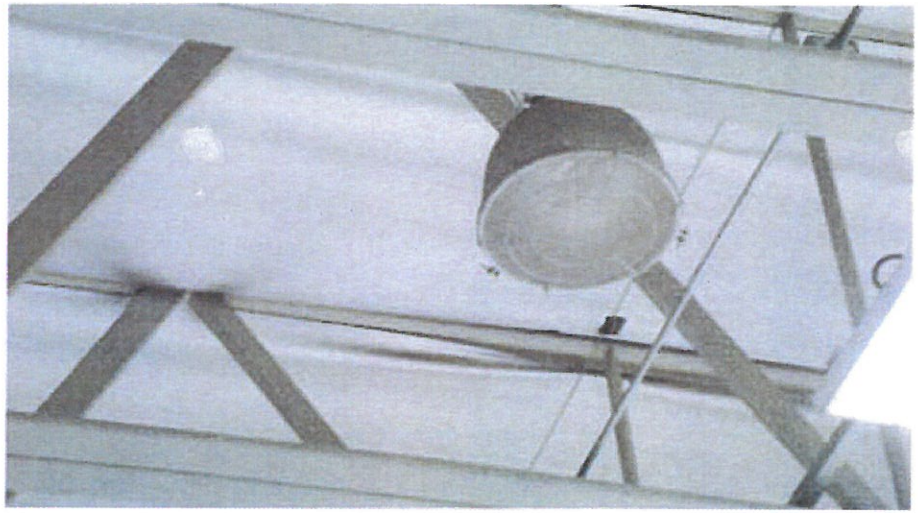
Community Center
RINC Improvements 2010

- Rubber flooring was installed throughout the entire facility.
- Patrons can move easily throughout the dressing rooms, lobby, players benches without damaging skates, while providing a seamless finish easy to maintain
- The grade of rubber flooring was carefully selected considering the life expectancy of the building and possible future uses
- The approx. cost for the rubber flooring was $ 78,000.00.

Community Center
RINC Improvements 2010

- Energy efficient T5 lighting was installed over the arena ice surface auditorium
- 36 x 8 x 4 ft. T5 fluorescent fixtures were installed to replace the existing 400 watt medal halide lighting
- The existing medal halide lights provided 43 foot candles, compared to 75-95 foot candles for the 8 tube T5 fixtures, at the same energy consumption
- The new lights were wired and capable of operating 2, 4, 6, or 8 tubes at any single time, resulting in additional savings using lower lighting levels
- The capability of selecting various lighting levels was a consideration for various activities future uses of the facility
- The cost for the lighting retrofit was approx. $ 30,000.00





Community Center
RINC Improvements 2010

Other improvements

- A glycol cooling system was added to the refrigeration system resulting in 60 % reduction in water consumption
- Office renovations, and drainage improvements along the west side of the community center, shower saver faucets, and added auditorium storage areas, and ceiling tiles were also realized with RINC funding.

Community Center
RINC Improvements 2010

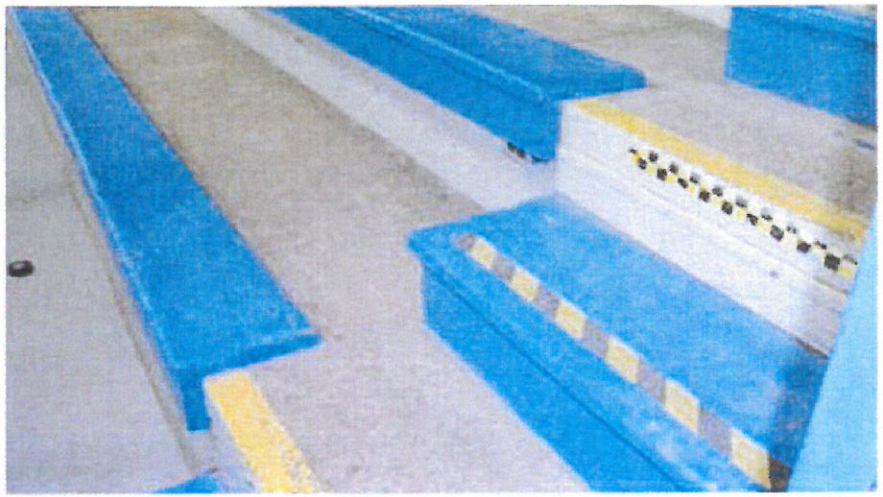
- The improvements to the Walkerton Community Center realized through government funding, will ensure a safe, and more energy efficient facility for the immediate future.

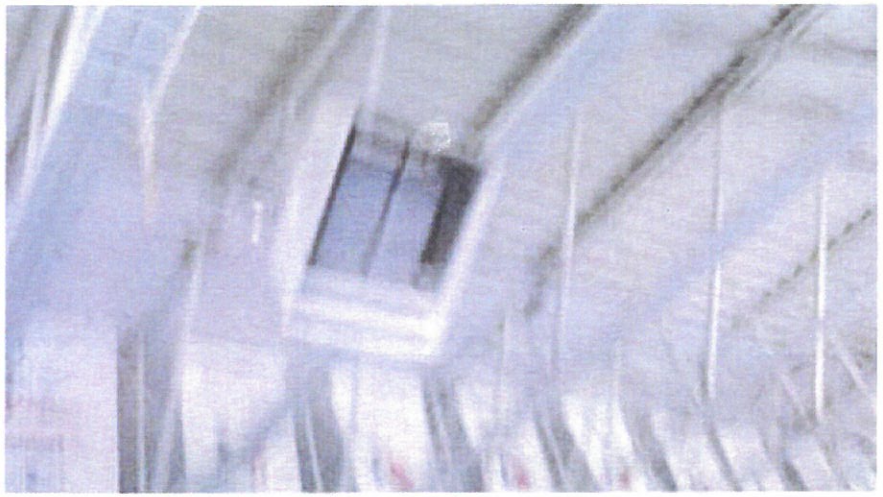
- RINC improvements also ensures the preservation of a valuable community asset for future use as a temporary second ice pad, or repurposing of the facility for future activities, or resale value

- RINC funding did not address existing structural or design deficiencies

Current Structural and Design Deficiencies

- Steps risers at the Community Center vary in height creating a Health and Safety Factor
- The wooden benches also create a trip hazard
- The spectator seating is also not conducive to persons with limited mobility
- Gas radiant heaters in the spectator area are not energy efficient, and could be replaced with in-floor heating generated by the refrigeration plant...



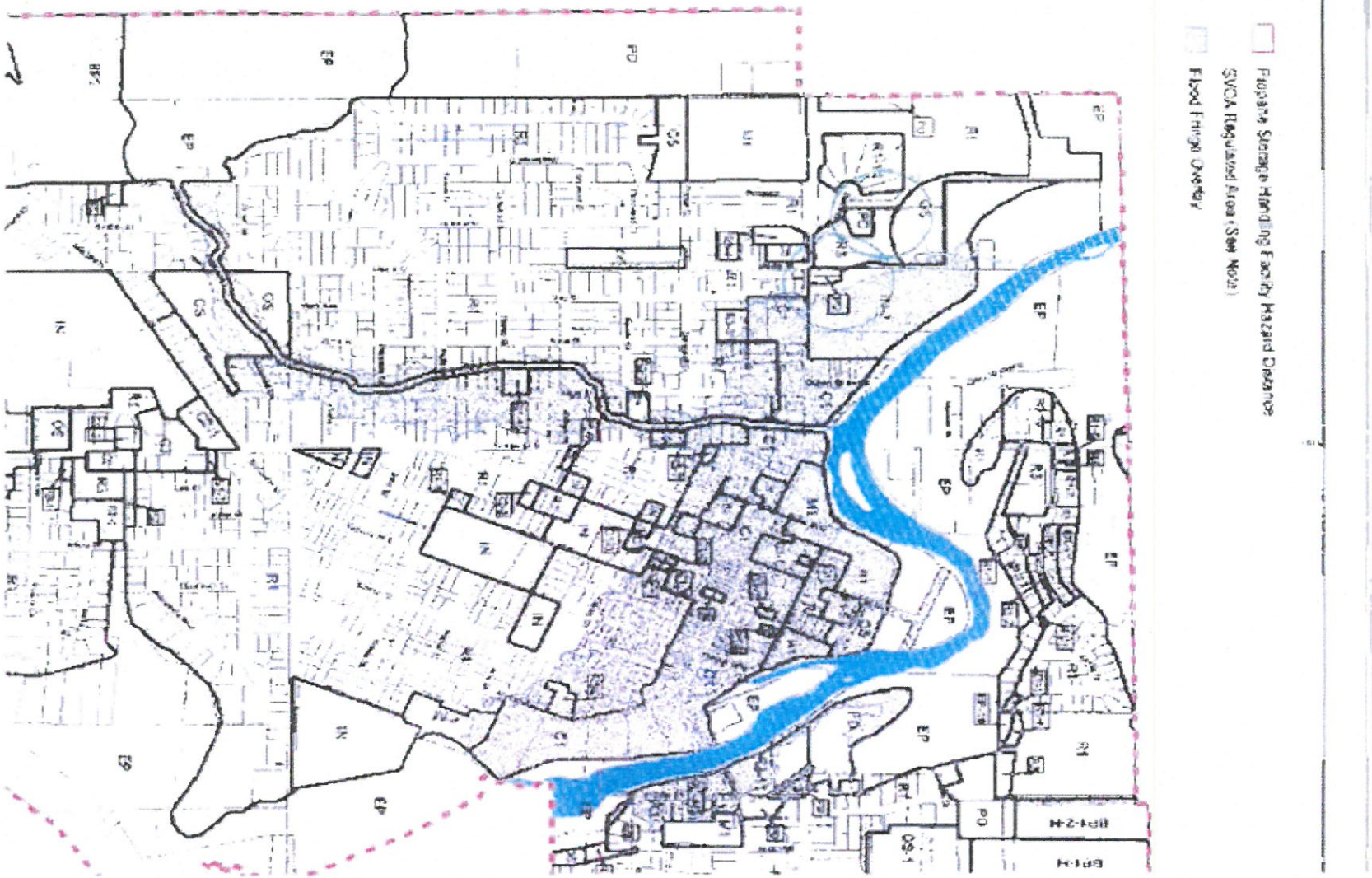


Current Structural and Design Deficiencies

- The Community Center is built in a regulated area subject to potential flooding
- The Saugeen Valley Conservation Authority regulates the size and types of buildings that can be constructed in these regulated areas
- The SVCA would also be involved with any alterations, or additions to the existing structure
- It is anticipated that any alternations to the existing elevations would require additional engineering, architectural, and construction costs.
- The Community Center is also identified as an Emergency Evacuation Area/Warming Center an the Emergency Response Plan

SVCA Regulated areas

SVCA Regulated areas



Accessibility

- Accessibility is a concern
- The only entrance accessible entrance without stairs at the east side of the Community Center
- The “Lift” requires staff assistance to gain access
- Form inside, patrons must leave the building to gains access to the elevator

Accessibility

- There is one barrier free washroom located on the lower level near the east entrance
- This room doubles as a coaches change room, first Aid room, girls change room, and referees room on occasion.
- There is another Barrier Free washroom on the 2nd level
- It is questionable however, if the fixtures and counter tops are to acceptable standards

Accessibility

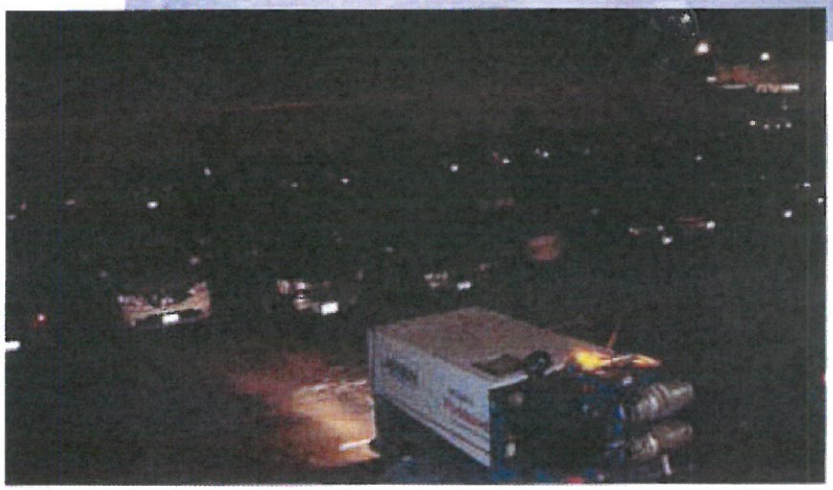
Other than the second level, there are only two viewing areas that are wheelchair accessible.

One is in the arena, and the other in the lobby. There is only one "unofficial" space in each area, typically occupied by able bodied persons.

In 2015, public and private organizations will need to meet accessibility requirements when constructing and maintaining new or redeveloped elements of public spaces.

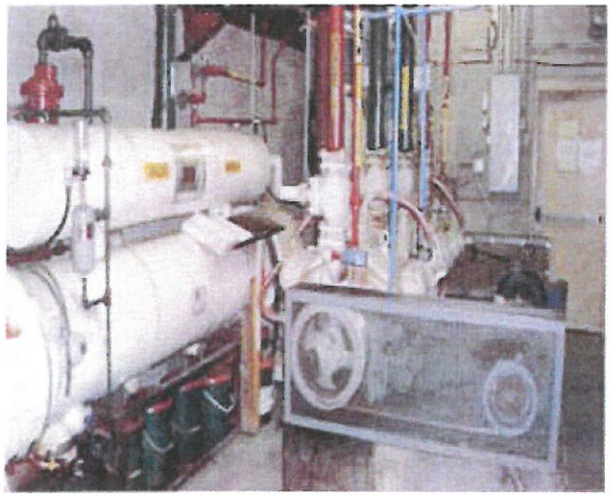
Safety and Design Deficiencies

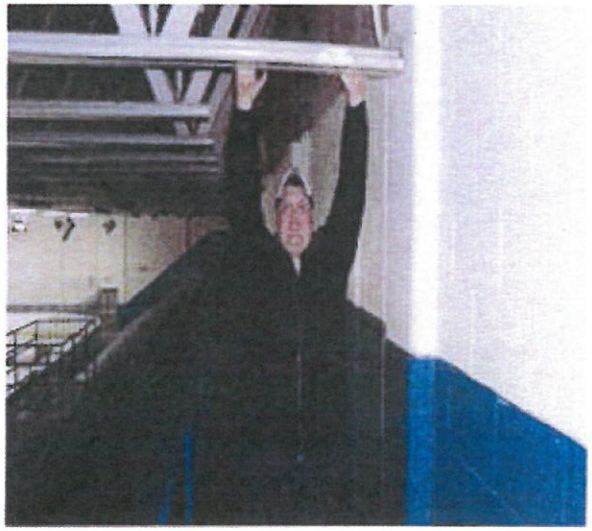
- The ice resurfacer is required to reverse on to the ice and exits the ice surface through heavy pedestrian traffic area in the spectator seating area
- There is also a concern when the ice resurface exits the building into the parking area, again through vehicular and pedestrian traffic
- Ice shavings from the ice Resurfacer are dumped outside through the parking lot area, which contain contaminants, such as blood or bodily fluids in the ice shavings are dumped outside



Safety and Design Deficiencies

- There are several health and safety concerns for staff and patrons that have been created by the construction design and built environment

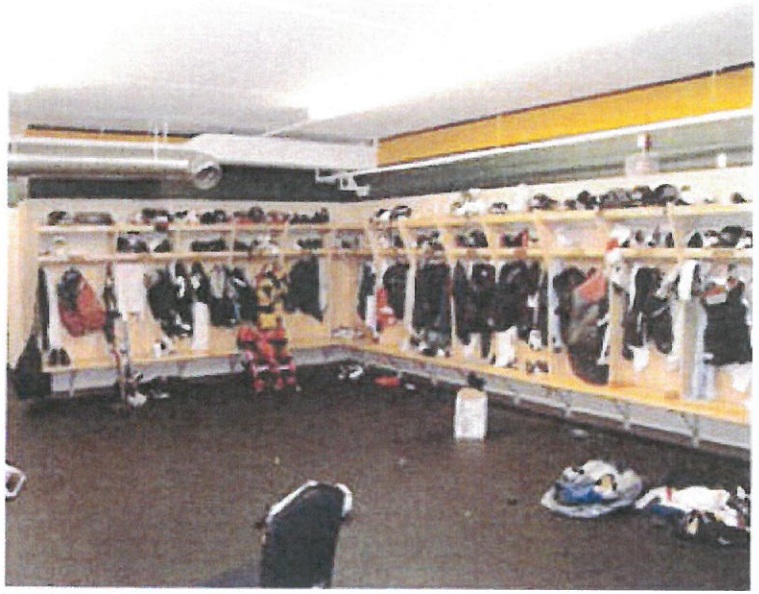




Structural and Design Deficiencies

Dressing Rooms

- There are 4 Dressing rooms, approx. 14 ft X 16". located in the front of the facility
- Rooms 5 and 6 were constructed in1990's under the bleachers, and are typically used of the home teams
- The average dressing rooms for new facilities are closer to 30' x 40', with no blind spots and adequate showers, water closets and ventilation
- Width of the Hallways are unsafe in the event of Fire or emergency evacuation



Energy Deficiencies

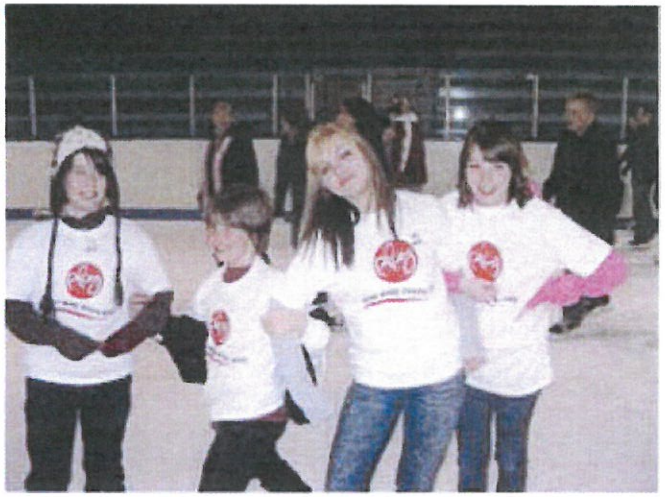
- There are several design options and energy efficiency considerations today that were not available in 1972, when energy cost were not a concern
- The most wasteful system by design in aging facilities is the refrigeration process
- The energy purchased and used is transferred from the refrigeration process and currently dispersed to the atmosphere through the condenser
- This is actual Power and energy that has been purchased but not utilized to it maximum potential
- In modern applications, this wasted by-product of the refrigeration cycle is capable of heating entire building complexes including meeting spaces, offices, indoor pools, snow melting pits, spectator seating, dressing rooms and in-floor heating.
- The older the refrigeration plant , the greater the deficiencies and waste of purchased energy
- Next to staffing costs, energy and utility costs are the greatest expense to any facility
- Although some retrofits have been realized in lighting and water consumption, aging facilities were not designed for energy efficiencies in the 70's with extended ice seasons an increased use
- This energy inefficiency in our plant is even greater by the energy used to supply power to the older "horse palace"

Arena Ice surface

- Currently 180x180
- Most arenas are regulation 200' x 180'
- This not only limits playing surface, but also restrict spaces for player benches and penalty areas
- Some would argue (Hawks vs. Alliston) playing and practicing on a smaller ice surface puts them at a disadvantage
- The condition of the arena floor is also a concern
- The concrete has settled placing greater demands and pressures on the aging brine pipes in the floor
- The floor will cost hundreds of thousands to replace in the event the aging piping system should rupture

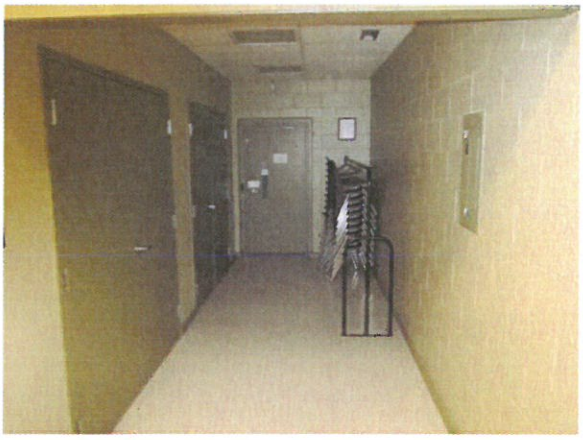
Conclusion

- There are several design deficiencies not mentioned in this presentation that a new facility could remedy
- Although the existing facility has been well maintained and looks good, the life expectancy of original HVAC systems, refrigeration equipment and mechanical systems is unknown.
- RiNC funding provided the opportunity for some "band aid" solutions, but did not, and could not address any design deficiencies or energy saving alternatives of a new building.
- Not knowing when a funding opportunity to replace the existing facility might arise, the integrity of the existing facility needed to be preserved for future generations.

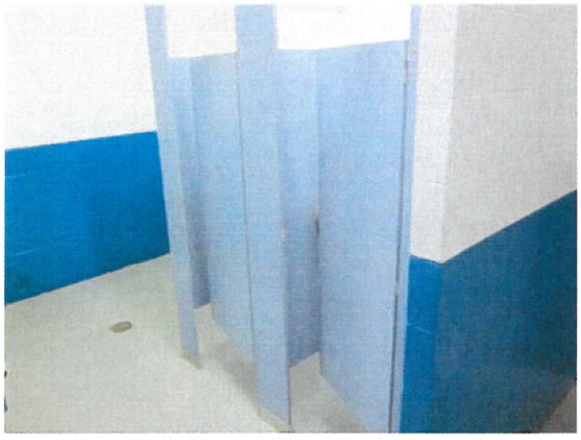


Appendix B

Accessible Elevator
(only accessible from exterior of building)



Accessible Elevator
(access to community hall used for storage)



Lower Level Male Washroom
(no accessible stall)

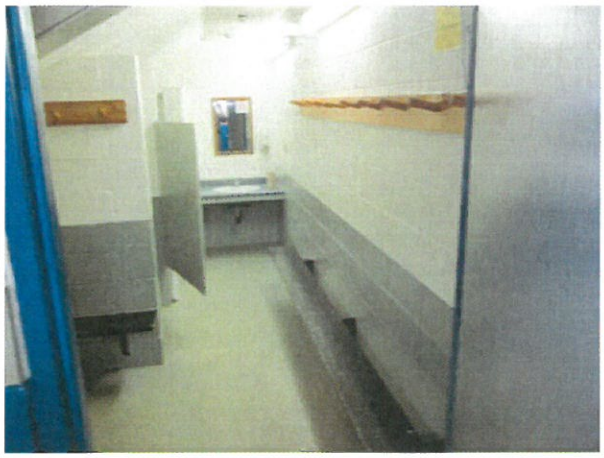
Lower Lever Male Washroom
(no accessible sink)

Existing Bench Seating

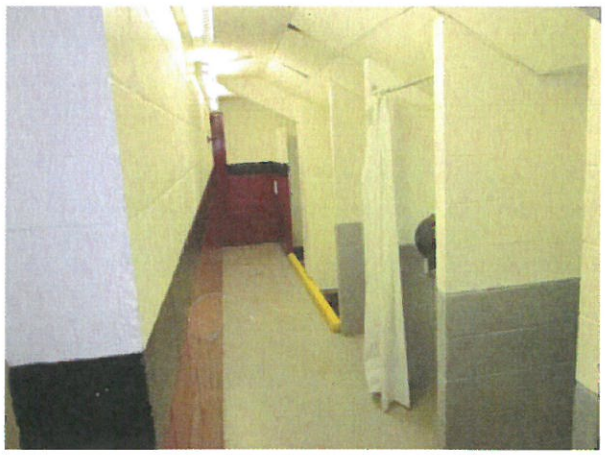
Obstructed Seating

Ice Resurface Access through Seating/Aisles

Ice Resurface Access through Seating/Aisles



Referees' Dressing Room



Players Showers

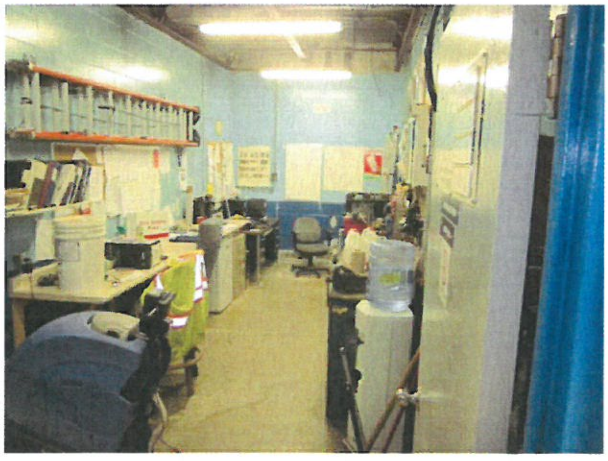
Players' Dressing Room

Players' Dressing Room

Under-Seating Storage

Refrigerator Equipment
(lack of clearance)

Maintenance/Staff Room



Maintenance/Staff Room

West Wall of Arena and Elevated Ground Road

North Wall of Arena and Proximity of Baseball Diamond

Snack Bar

Parking and Snow Dump

Appendix C

ONTARIO RECREATION FACILITIES ASSOCIATION INC.

Determining Your Facilities Replacement

Arena closure throws Orillia minor hockey into turmoil - January 20, 2009

An arena closure in Orillia, Ontario, has sent minor hockey in the region into disarray. The Orillia Community Centre's doors were closed last Wednesday by city council, which cited "structural concerns."

"We are devastated by this news, as the Orillia Community Centre is a well used facility within the city," Orillia mayor Ron Stevens said in a release

Cathy O'Connor, president of the Orillia Minor Hockey Association (OMHA), knows exactly how "well-used" that facility is. "We've lost 54 hours of ice a week," she said. The Orillia Community Centre is one of only two arenas in the city.

Connor, however, describes the situation as "devastating, sickening, and unnecessary." It has had her scrambling to save the house league and rep programs for the season.

"Everybody knew this was coming," she said. "The community centre was on its last legs. It's 50 years old."

O'Connor hopes that the loss of the community centre galvanizes the city to act and build the two-pad arena she thinks the city desperately needs.

"People are outraged, so maybe this is what we needed to get people moving," she said.

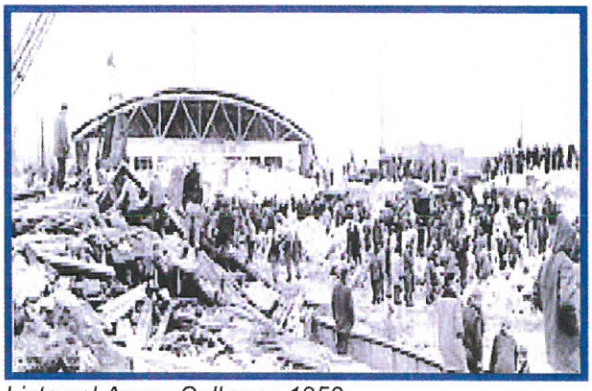
For now, O'Connor wants at least a temporary facility built, to save the OMHA a ton of scheduling headaches next season.

"We're going to be putting a lot of pressure on council to get something up," she said.

Source:
http://www.cbc.ca/sports/hockey/ourgame/story/2009/01/20/orillia-rink-closure.html

It was a Saturday like any other, a winter morning that echoed with the sounds of a community stirring to life. At the arena, a peewee hockey team was practicing. More children were in the dressing room, getting ready for their turn. A handful of adults looked on through the glass. And then without warning, it happened. Heavy snow and poor construction conspired to bring the building down, as an inquiry would ultimately conclude. Three of the walls collapsed out, and the roof crashed down. Source: Canadian Press

On February 28, 2009, 50-years to the day, the Town of Listowel paused to remember the 1959 arena collapse that claimed seven boys that Saturday morning - along with Ken McLeod, Listowel's recreation director. This disaster was instrumental in improving Ontario's recreation infrastructure for years to come!



Listowel Arena Collapse-1959

As much as we would be led to believe that such events no longer occur, the following collapses confirm that this is not true:

- Prince George Civic Arena - 1956
- Hartford Civic Centre - 1978
- Kemper Arena – Kansas City, 1979
- Springhill, N.S. Arena – 2001
- Temagami Arena - 2002
- Fort Chipewyan Arena – 2004
- Bad Reichenall, Germany - 2006
- Fort Nelson BC - 2007
- N. Idaho Ice Arena – 2008
- Le Cheval de Boskydell Arena - 2009

The community of Orillia's programming schedule has been disrupted but when compared to the possible disaster of a building failure community leaders in Orillia must be acknowledged for their leadership. Having parents distraught from a loss of ice time pales when compared to the alternative! What will be brought into light is how the community may have been preparing to meet the needs of the community and how the infrastructure is being maintained – something that you as a reader could be faced with anytime soon. The message thus far is how your aging infrastructure is managed may lead to two separate outcomes based on action or lack of action in respect to ongoing inspection and maintenance.

Fort Nelson Arena Collapse 2007

Snow combined with wind and ice build-up is most often the final stress needed to our aging infrastructure to cause disaster. Additional load that shifts due to weather that is unseasonal causes "moving loads" that can significantly contribute to roof failure. Further compounding of the problem may include innovative architectural design and advancements in building practices and materials. Some are producing unexpected or complex issues relating to the accumulation and control of winter precipitation on buildings. Increased awareness of the effects of snow, ice, freezing rain and melt-water accumulation on buildings is a greater requirement. While national building codes continue to advance, to keep up with the increasing creativity and complexity of modern building structures, there is still the need for expert interpretation of the code and ongoing review of the existing building. Facility managers are reminded that they cannot merely rely on the building code to ensure all potential snow loading patterns on a structure; particularly when there are sloped or curved roofs or otherwise complex shapes!

The ORFA is often contacted to provide guidance and support to members who are trying to determine the life-cycle of their existing recreation infrastructure. Most are looking for firm leadership in determing when a building has exceeded a natural life-cycle. As much as we would like to be able to assist in such projections it would be impossible as there are too many variables at play. We do know through a recent Canadian Recreation Facilities Council (CRFC)/Hockey Canada study that Canadian arenas are getting older and the state of the infrastructure must be carefully addressed. The study revealed that the next generation of facility professionals will be inheriting an estimated 3.7 billion in facility maintenance and improvement debt just to keep the existing building inventory in operation.

Serious consideration does need to be directed to the issue and certain guiding principles applied, including the precautionary principle that Canadian facilities will not last forever!

So, is there a magic building age that should set the planning wheels in motion – some have said **32 years!** This statement is open to debate and as such we will attempt to explain what the proposed age actually identifies and what some of the variables might be to extend the life of the facility. The CRFC/Hockey Canada review of the state of Canada's arenas conducted in 2005 discovered that typically an ice arena's life-cycle was between 30-35 years. In Manitoba, it was stated to be 32-years and as much of Ontario's recreation facilities mirrored Manitoba's design and construction trends, the 32-year marker appears reasonable to adopt. At 32-years of age it does not demand that the infrastructure be torn down, however, at this juncture it is suggested that the original construction costs have now doubled; and technology has significantly improved when compared to the original construction design; and significant changes to building, electrical and plumbing codes have most likely occurred. It is also considered a "tipping point" of where it may be less expensive to tear down the existing facility than to begin replacing original materials such as roofs, siding, HVAC-R equipment in mass

(For example, investing in a new engine and paint job for a 1980 K-car still has someone driving that same "1980" K-car). Further, anyone who has conducted such improvements knows how these projects can quickly escalate in costs as the project starts and new issues are identified that were not part of the original plans for updating.

As we indicated the statement that a typical life expectancy of an arena is 32-years will have many variables. The following information will help clarify this position:

- With the ever-changing outside environmental conditions facilities that did not invest in dehumidification equipment early in the life of the structure will most likely encounter a building that will have significantly reduced life-expectancy.

- Buildings that were made to function outside of the natural capability of the original design (e.g. taking a rink that was designed for a 7-month operational schedule and increasing its operational season) might also have its life expectancy reduced.

- Buildings that are multi-use have more challenges for staff to consider and control. Lack of air balancing between the aquatic and artificial ice pad will further accelerate the buildings demise.

- No or little on-going capital financial investment by the "owners" in the first 30-years will expedite the death of the infrastructure.

- The original construction methods, equipment and materials will greatly influence the longevity of the building.

- And, the final and one of the most important influences is the employee skill to maintain the building on a daily basis through knowledge based upkeep while having the financial resources to meet these needs.

Early investment in these key areas will significantly increase the quality of life for the facility.

A key operational activity that is often tabled due to a lack of resources is the structural integrity report. These professional reviews were mandatory and strictly governed by Ontario's Ministry of Labour as a 5-year requirement. This governance was shifted to the facility "owner" as their obligation to schedule such inspections as required under the Occupational Health and safety Act to maintain a safe work environment at all times. This shift has generated an opportunity to save financial resources and many of Ontario's recreation facilities have failed to conduct any real review in 10+years. This review must be emphasized by ORFA members through the budget process! This "due diligence" by ORFA members is vital toward user and worker safety.

The ORFA continues to recommend that detailed professional engineer inspections on all recreation facilities should take place no less than every 60-months. The inspection should be completed for all steel/concrete designs, while aging wooden structures will require reduced inspection schedules.

US Rink Collapse 2009

Much of Canada's recreation infrastructure has surpassed the 32-year mark and we are very much aware of the looming crisis of Canadian recreation infrastructure. There will be buildings that will significantly surpass 32-years of age in their operation and maintain their form and function, while others will struggle in maintaining a quality recreation experience in their "golden years". The stated age of 32-years should be used as a warning that buildings passing this point will require significant ongoing financial investment to remain safe and serviceable. This

objective needs to be the priority of today's recreation facility management!

The ORFA supports the findings of the CRFC/Hockey Canada report as reasonable timeframes that can be used to generate a more comprehensive site specific life-cycle plan for ORFA members to base their long-term life cycle planning goals on.

As a follow up to this discussion paper, the ORFA contacted the consulting Engineers of Ontario and President John D. Gamble P.Eng. offered the following comments that are re-printed with his permission.

I am in agreement with the general thesis of your document. While I do not presume to comment on the accuracy of any of the specific cases cited or statistics presented, I do believe your document fairly and reasonably addresses many concerns that arise from underinvestment in infrastructure.

From our perspective, we believe the importance of investing sufficiently in professional services at the beginning of a project (engineering and architectural) should also be stressed.

Engineering and architectural decisions have significant ramifications for construction, operations and maintenance over the entire service life of infrastructure assets. Investing in engineering services can potentially reduce capital, maintenance and operating costs and increase innovation, reliability and service life. Conversely, reducing investment at the planning and design stages can result in higher capital, operating and maintenance costs down the road – as well as diminished service life. Therefore, the presumption that obtaining professional services at the lowest price represents the best value to owners and ratepayers is erroneous and short sighted. Price-based competition is especially ill-suited for such professional services such as engineering.

The procurement process recommended by CEO is the Best Practice – Selecting a Professional Consultant developed by the National Guide to Sustainable Municipal Infrastructure (InfraGuide) in 2006. InfraGuide is a collaboration of the National Research Council and the Federation of Canadian Municipalities and has produced over 50 best practices – written by the public sector for the public sector – and is recognized as being the leading national authority on the delivery of infrastructure projects. This Best Practice is available from the Federation of Canadian Municipalities or from www.thebestpractice.ca. It recommends a qualifications-based selection (QBS) method that is endorsed by Ontario's Municipal Engineers Association and by the American Public Works Association. This approach is used extensively across the United States and in Western Canada and has been recently adopted by the City of London in Ontario.

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