



2018 Building Condition Assessment

Minimum Modifications Required To Maintain Existing Building Performance Level

Jean Marc Lalonde Arena



Prepared for:

City of Clarence-Rockland
1560 rue Laurier St. Rockland, ON K4K 1P7

Attention:

Jean-Luc Jubinville
Carole Giroux

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1.0 EXECUTIVE SUMMARY

LRL Engineering Ltd. has produced a report detailing the current condition of the Jean Marc Lalonde Arena with the goal of making recommendation as to which building components are required to be repaired or modified in order to maintain the existing building performance level.

It is understood that the ice making capability of the area, is to be eliminated due the age of the refrigeration equipment and the desire to eliminate the risk associated with it's continued operation. The intent is that the rink area will become a multi-use space suitable for year-round use.

1.1 General Description

This is a single pad arena built between 1972 and 1973 according to the NBC 1970 building code. The front entry vestibule enclosure was added later and the roof was replaced in 2000. It is a 2 storey building (3,825 m²) with a the ground floor dedicated to the arena and support areas, and a 2nd floor used a community hall.

1.2 General Physical Condition

The building is in reasonably good condition overall but has many deficiencies. In general, the deficiencies requiring immediate consideration are related to;

- a. Site improvements such as pavement and concrete sidewalks.
- b. Waterproofing of Exterior Cinder Blocks Wall.
- c. Meeting current code requirements with respect to accessibility and safety.

1.3 Assessment Results

Part 4 of this report contains summary of observations onsite where items identified as required by code or needed to support the minimum modifications necessary for the continued use of the area.



2.0 INTRODUCTION

2.1. Survey Team

An inspection team from LRL Engineering Ltd., performed a Property Condition Assessment for the facility July 26, 2018. The Municipal Facility Manager and staff were also onsite to provide access and answer the survey team's questions. The survey is based on the process, scope and intent of the Request for Proposal and Term of Reference – City of Clarence. Each observer has experience commensurate with the subject property type and scope.

2.2. Published Standards and Codes

The following published standards, codes and guidelines were used for the property assessment survey

- .1 ASTM E 2018-01 - Standard Guide for Property Assessments: Baseline Property Condition Assessment Process - American Society of Testing Materials International - This guide defines customary practice for conducting a baseline property condition assessment to identify and communicate physical deficiencies to a user in a Property Condition Report.
- .2 NFPA 101 Life Safety Code - ASNI/NFPA 101, 2018 Edition - National Fire Protection Association - This code provides minimum requirements, with regard to function, for the design, operation and maintenance of new and existing buildings and structures to protect occupants by providing for safety from fire and similar emergencies.
- .3 Ontario Building Codes 2012, Latest Edition
- .4 RS Means Building Construction Cost Data, 60th Edition – 2018 - The basis in part for determining unit and construction assembly values for probable costs related to work included in this report.
- .5 Ontario Electrical Safety Code, 26th Edition 2015
- .6 American Societies of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
- .7 NFPA 96 – 2017 Edition, Standard for ventilation control and fire protection for commercial cooking operations. This standard provides the minimum fire safety standards and requirements (preventative and operative) as related to the design, installation, operation, inspection and maintenance of public and private non-residential systems.
- .8 Ontario Fire Code, 2015 as further more so referenced to the baseline standard for requirements being the Ontario Building Code of 2012 .



2.3. Property Assessment Survey Requirements

An initial walk-through property assessment survey was conducted during the field observers' site visit of the subject property to ascertain material physical deficiencies of the subject properties and opinions of probable costs for remediation. Additional visits to the sites and investigations within the scope of this report were also done on an as-needed basis. Data obtained from the survey permitted an objective and impartial evaluation of the general condition of the buildings, site, and other improvements at the referenced location.

2.4. Analysis

An analysis of the facilities was required to determine the current physical condition, noting deficiencies, codes violations, and any unusual features and subsequently providing opinions of probable costs of remediation for the building and system component in accordance with appropriate standards and guidelines as listed previously. Replacements are also required as system/components reach the end of their useful life, defective due to maintenance, weather, operating conditions and other factors. This report is based on the evaluators' judgment of the physical condition of the components, their ages, effective age and their expected useful life (EUL). It is understood that the conclusions to be presented shall be based upon the evaluators' professional judgment. The actual performance of individual components may vary from a reasonable expected standard and will be affected by circumstances that occur after the date of the evaluation.

Based upon observations during our site visits and information received from our interviews with building management and service personnel, cost estimates have been provided with the proposed remedy for the deficiencies noted. Such remedies and their associated costs were considered commensurate with the municipalities' position in the market and prudent expenditures. These estimates are for components of systems exhibiting significant deferred maintenance issues, and existing deficiencies requiring major repairs or replacement.

Improvements or modifications required meeting provincial or municipal regulations or by-laws should be implemented within an appropriate time as determined by the authority having jurisdiction. Photographs have been taken to provide a record of general conditions of the facilities, as well as the specific deficiencies observed.

2.5 Survey Methods

The survey was based on the field observers' visual observations of representative areas and materials while walking through the subject property. The survey included interviews with administrative and facilities personnel, review of available construction documents together with prior assessment reports and records that have been made available.



The survey consisted of non-intrusive visual observations of various external and internal building and system components. These systems included architectural, civil, structural, mechanical, plumbing, life safety, and electrical, which were readily accessible and easily visible. The survey was not technically exhaustive, excluded the operation of equipment and was conducted without the use of special protective clothing. The scope of work did not include removal of materials, testing, or use of equipment, such as scaffolding, metering/testing equipment or other devices.

2.6 Out-of-Scope Considerations

Out of scope considerations include, but are not limited to:

- a. Temporary maintenance buildings.
- b. Entering crawl or confined spaces.
- c. Accessing spaces requiring special training and equipment.
- d. Determination of plumbing pressures, flow rates or fixture counts.
- e. Observation of flue connections, interiors of chimneys, flues or boiler stacks.
- f. Removal of electrical panel and device covers of operating electrical devices.
- g. Examination of elevator cables, sheaves, controllers, motors inspection tags or entering pits or shafts.
- h. Determining NFPA hazard classifications, except as noted.
- i. Classifying, or testing fire rating assemblies, except as noted.
- j. Operating appliances, equipments or fixtures.
- k. Determining sound transmission coefficient (STC) ratings, flammability issues or regulations.
- l. Engineering calculations to determine any system's adequacy or compliance with any specific or commonly accepted design requirements. Obvious deficiencies requiring further investigation have been noted.
- m. Kitchen appliances, freezers and coolers.
- n. Hockey equipment, nets, rink enclosure, Zamboni vehicle etc.

2.7 Professional Services

The survey is not a professional Architecture or Engineering service and the resulting report and opinion of probable costs is not subject to laws governing the professional practice of Architecture or Engineering. As such, no documents will bear a seal.

2.8 Opinion Probable Construction Costs (OPCC)

The costs associated with each item is based on a Class D opinion of probable construction cost (OPCC) to correct noted deficiencies. These costs may be used for preliminary budgeting purposes.



The sources of cost information utilized have been determined from one or more of the following resources:

- a. User provided unit costs;
- b. Owner's historical experience costs;
- c. Consultant's cost database or cost files;
- d. Commercially available cost information such as published commercial data;
- e. Third party cost information from contractors, vendors, or suppliers; or
- f. A reasonable expectation of the cost of the work.

If the solution to a deficiency is too complex to develop an opinion of probable cost using the quantity and unit cost method, a lump sum opinion of probable costs for that particular line item will be used. In general opinions of probable costs are limited to construction related costs; those types of costs that are commonly charged by contractors who perform the work. In some cases, additional investigation or design work will be required to fully develop solution a solution to a particular deficiency. In this case the cost of such investigation or designs is presented.

3.0 DESCRIPTIONS

This section contains a description of the property and building in general.

3.1 Site

3.1.1 Topography, Groundwater and Storm Water Drainage

- a. The prevalence of a large knoll from west to east across the site is indicative of the known rise and fall of the bedrock below.
- b. The parking area has minimal cover to bedrock in some places with varying degrees of fill to create proper grading and drainage.
- c. The rock to the east face of the arena is as little as 1m below grade and in excess of 3.5m below grade to the northwest.
- d. It is reasonable to assume that the descending rock strata proceeding west from the arena to the ball field (150 ft) can be ascertained visually.
- e. The evidence of peat soils would suggest historic excavation below the ball park to the west that may require de-watering during and construction work should any construction be considered in this area. This process may affect surrounding properties if not planned and controlled accordingly.
- f. Storm water drainage is principally by surface grading to the site perimeter except for the parking lot which has catch basins.



3.1.2. Paving, Curbing, Sidewalks, Steps and Parking

- a. The pavement and concrete sidewalks and curbs are generally in poor condition.
- b. The existing parking area has a capacity of 172 standard cars and 2 handicap spaces, with an overlap of 2 stalls at the signed loading area.

3.2 Structural Frame and Building Envelope

3.2.1 Foundation & Bearing

- a. The North $\frac{1}{2}+/-$ of the West foundation wall is located atop a major concrete grade beam set up on substantial diameter concrete piers o.c. The steel frame grid is set to bedrock at depths of up to 3.5m. The depths vary from $+/-$ 2m to less than 1m of soil cover. The remainder is direct to bedrock.

3.2.2 Building Frame

- a. The concrete foundations, floors and bleacher assemblies are composed of reinforced concrete.
- b. The superstructure consists of a steel frame.
- c. The structure is robust given its age but may need reinforcement to comply with current OBC 2012, Part 4 structural requirements. Such analysis is outside of the scope of this report but may be examined independently should circumstances arise.
- d. Some rusting was noted on the steel columns and base plates within the westerly rooms below the sloped seating. The corrosion is likely due to a combination of systems, environmental operating conditions and infiltration of winter air at numerous vent fans producing high, humidity levels. Cleaning, preparation and painting is advised.
- e. The two storey front section supports a second floor concrete flat slab steel open web joists at roof above. The concrete foundations & floor with load bearing interior and exterior concrete block walls and steel frame system above appear to be performing as anticipated.

3.2.3 Facades & Curtain Wall

- a. The exterior wall assemblies at the two storey section are insulated with 2" rigid foam, sandwiched between structural concrete blocks and either interior block veneer or a gyproc facing (R-14 assembly $+/-$)
- b. The exposed 10" structural and infill block work are of both smooth and split-faced units with small sections of veneer block capping steel columns
- c. The interior blocks exposed within the insulated walls are 4" veneer units
- d. The main arena is nominally un-insulated except for 2" rigid insulation at the roof (R12 assembly $+/-$)



3.2.4 Roof

- a. The current roof was installed in 2000, it is an adhered single ply EPDM (rubber) membrane atop 2" rigid foam insulation mechanically bonded over vapour barrier to the steel roof deck system.

3.3 Miscellaneous Interior Elements

3.3.1 Interior Finishes

- a. Paint application is the primary interior finish on cinder blocks exterior wall and interior partition.
- b. Suspended T-bar ceiling system is installed in the vestibule, offices, kitchens, stairwell, washrooms, changing rooms, and activity room.
- c. Modular carpet tile is installed in the vestibule area; ceramic tiles are installed in the offices, kitchens, stairwell, and activity room. Floor paint is applied in washrooms, changing rooms, and arena seating area.

3.4 Mechanical, Plumbing, and Electrical Systems

3.4.1 Plumbing Supply and Waste Piping

Domestic hot water productions for lavatories, sinks and shower heads;

Two indirect domestic hot water tanks, located in the ground floor boiler room, provide hot water for the lavatories, sinks and shower heads. The source of the hot water is provided by the gas fired hot water heating boilers located in the same room.

3.4.2 Plumbing Fixtures

The plumbing fixtures consist of a number of water closets, lavatories, urinals, sinks and shower heads to satisfy the sanitary requirement of the building. Total numbers of plumbing fixtures installed in the building as follows;

Water Closet:	12 Fixtures
Lavatory:	8 Fixtures
Urinal:	3 Fixtures
Janitor Sink:	1 Fixture
Kitchen Sink:	2 Fixtures

3.4.3 Domestic Hot and Cold Water Piping Distributions:

The domestic hot and cold water distributed throughout the building using copper piping with fibreglass insulation.



3.4.4 Waste Piping

Sanitary and storm drain from plumbing fixtures and roof are connected to municipal sewer by gravity. The piping is made of combination of cast iron and plastic pipes.

3.4.5 Heating Ventilation and Air Conditioning (HVAC)

The space heating and cooling within the building is provided by a combination of rooftop AC units, central gas fired boilers and gas fired infrared heaters. Exhaust fans have been provided to meet the building code requirement and/or for the purpose of cooling.

a. Rooftop HVAC Units

A total of four (4) rooftop air conditioning units have been provided for the second floor multipurpose room cooling system and for the main floor suite of rooms below. Each unit is equipped with a built-in direct expansion cooling coil and air cooled condensing unit.

It appears that the units use the R22 type of refrigerant, which contribute to ozone depletion. Under the terms of the Montreal Protocol, an international environmental agreement, established requirements is to begin the worldwide phase-out of ozone-depleting cfcs (chlorofluorocarbons). By January 2020 the refrigerant manufacturers will no longer be able to produce R-22 to service existing air conditioners and heat pumps.

b. Heaters and Fan Coils

The space heating is provided by a combination of hot water base board, convection heaters, hot water forced flow heaters and electric force flow heaters and fan coil units. Hot water for space heating equipment is produced by central gas fired heating boilers, located in the ground floor boiler room.

c. Natural Gas Fired Infrared Heaters

A total of 6 (six) natural gas fired infrared heaters are installed in the arena spectator seating area, providing space heating directly to the spectators without affecting the ice rink. Additional 1 (one) natural gas fired infrared heater has been installed above the ice rink recently.

d. Kitchen Hood Ventilation Systems

Kitchen hoods are provided over commercial kitchen appliances located at the ground and second floor kitchen. Each kitchen hood is equipped with filters. The kitchen hood located in the ground floor kitchen is made of stainless steel and equipped with a fire suppression system. The kitchen hood located in the second floor kitchen is made of galvanized sheet metal and not equipped with a fire suppression system. Each kitchen hood is connected to roof exhaust fan for cooking fume and vapor/grease removal.



e. Heating Boilers

The facility is equipped with a total of three gas fired hot water heating boilers, which is located in the ground floor boiler room. The boiler is manufactured by "Hydrotherm" model MR900B, heating input capacity of 900MBH and heating output capacity of 700 MBH. The boiler supplies hot water for space heating and domestic hot water. The boiler is connected to the hot water distribution piping. Circulation pumps are used to cycle the hot water to convectors, fan coil units and domestic hot water tanks.

f. Circulation Pumps & Sump Pumps

Circulation pumps are installed in the ground floor boiler room to circulate hot water from the boiler to the domestic hot water tank and space heating equipments throughout the building. Sump pumps are provided in the ground floor mechanical room sump pit.

g. Public Washrooms Exhaust:

A total of 2 (two) centrifugal roof exhaust fans has been provided for the Public washrooms exhaust systems.

h. Hockey Arena Ventilation:

Two wall propeller exhaust fans are installed in the arena to provide ventilation for the occupant in the arena.

i. Garage Exhaust:

A wall mounted centrifugal exhaust fan with aluminum shroud is provided for the garage and vestibule ventilation system.

j. Change & Shower Rooms Exhausts: - West Wall Rooms

Two wall mounted propeller exhaust fans are provided for the ground floor change and shower rooms exhaust facing west.

k. Refrigerant System for Ice Rink

The ice rink is equipped with a central mechanical refrigeration system located in the ground floor mechanical room. The system consists of the following major components: Reciprocating refrigerant compressors, Evaporative air cooled condenser, located outdoor behind the mechanical room exterior wall, Heat exchanger, Cold brine pump, Domestic hot water tank to provide hot water supply to Zamboni, Exhaust fans and air intake damper, Controls, Ice rink distribution piping and headers.

The ice rink facility is no longer used and the system has been abandoned. Due to safety reason, it recommends that the refrigeration system should be decommissioned and remove all the above components from the facility, including the brine solution, except the piping distribution under the concrete slab

I. Walk-in Cooler

Walk-in Cooler in the 2nd floor multipurpose has been in operation beyond the normal life expectancy (25 years). The system is no longer working.

3.4.6 Electrical System

The building is equipped with electrical power provided by Hydro One. The electrical power is distributed throughout the building through electrical distribution panels, protective devices, switches and a cable network.

a. Main Electrical Service

The incoming electrical service for the building is single service with metering and rated at 347/600V, 3-phase, 4-wire. The main electrical distribution equipment consists of a 400A, 600V ITE main fusible disconnect switch feeding multiple disconnects switches.

b. Electrical Power Distribution and Panels

The electrical distribution consists of two types of voltage, 600/347 volts and 120/208 volts. Two step-down transformers provide the 120/208V, 3-phase power that is required within the building. One is located in the main electrical room and the other is located on the 2nd floor storage / electrical room. The electrical power is distributed to each mechanical and electrical device with either a disconnect switch or circuit breaker in the electrical panel.

c. Interior Lighting

The general public area lighting consists mainly of 1'x4' fixtures with two T8 ALTO lamps. The closed office lighting consists of fluorescent fixtures. The lighting over the ice surface consists of high bay HID fixtures.

d. Exterior Lighting

The exterior lighting consists of wall mount HID fixtures installed on the exterior walls.

3.6.7 Life Safety and Fire Protection

a. Fire Alarm Systems

A single stage fire alarm system is provided for the building in accordance with the OBC. The fire alarm control panel (FACP) is an old conventional type from Simplex. Manual fire alarm pull stations, heat detectors and fire alarm bells have been provided throughout the building.



b. Emergency Lighting

The battery powered battery packs with emergency lighting units and remote heads installed throughout the building interior to provide the emergency lighting during normal electrical power interruption.

c. Exit Signs

The illuminated exit signs are provided throughout the building at the designated exit doors in accordance with the OBC. The exit signs are connected to the emergency battery packs and normal electrical power sources.

4.0 ASSESSMENT RESULTS

This section is provided in the attached Appendix A.

5.0 CLOSING

We trust that this submission provides the requested information, but if you should have any further questions or comments, please do not hesitate to contact the undersigned.

Yours truly,

LRL Associates Ltd.

Stephane Leclerc, P.Eng, Principal.



4.0 ASSESSMENT RESULTS

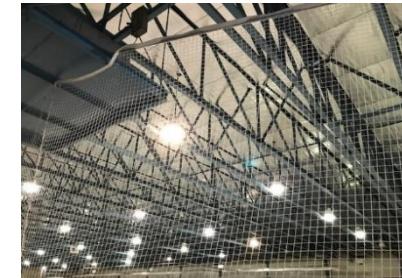
4.1 Civil

Table 1: Paving and Concrete Sidewalks and Curbs

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Asphalt Pavement	Fair to Poor	<p>Section of the asphalt pavements at the main entrance to the parking lot is in poor condition and will require re-paving in the very short term.</p> <p>The remainder of the asphalt pavement is in fair to good condition and will require patching and maintenance in the short to medium term.</p>	<p>Asphalt repaving at the main entrance.</p> <p>Some patching of sections of the parking lot and regular maintenance (i.e. crack sealing).</p>	\$20,000.00	
2	Concrete Curbs and Sidewalks.	Fair to Poor	<p>Curbs, sidewalks and pavers along the east side are in poor condition and will require re-construction in the near future.</p> <p>We recommend that the pavers be removed and that a monolithic cast-in-place sidewalk-curb be poured instead.</p>	Removal and replacement of the entire east side curbs, sidewalk and pavers.	\$20,000.00	
Sub Total					\$40,000.00	
20% Contingency					\$8,000.00	
TOTAL Paving and Concrete Sidewalks and Curbs					\$48,000.00	

4.2 STRUCTURAL

Table 2: Foundation and Superstructure

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Foundation.	Good	Exposed portion of foundation walls appears to be in good condition with no visible signs of distress or movement.	None required.	-	
2	Building Frame / Steel Superstructure.	Fair	Exposed portion of the superstructure appears to be performing as intended with minor maintenance required (painting / rust removal).	Rust removal and painting.	\$10,000.00	
3	Infill Block Walls	Good	Given the robust nature of materials employed, the building shell is in good condition and sound and will only require regular nominal maintenance.	The seal should be repaired at the 'laddering' in the mortar of the east wall.	\$20,000.00	
Sub Total				\$30,000.00		
20% Contingency				\$6,000.00		
TOTAL Foundation and Superstructure				\$36,000.00		

4.3 Architectural

Table 3: Building Envelope and Building Accessibility

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Cinder blocks wall (Vestibule)	Good	In good condition.	None required.	-	
2	Exterior wall surface under one exterior light fixture. (on north facing wall)	Poor	Sign of water penetration and mold growth.	Wash and remove molded area with heavy-duty cleaner	\$800.00	



3	Exterior wall surface under drainage pipe (on north wall)	Poor	Clear sign of spalling due to freeze-thaw while saturated with water.	Clean damage surface; Apply a layer of epoxy adhesive and patch the area with concrete. Install downspouts and direct water away from building.	\$3,500.00		
4	Exterior wall surface under lighting fixtures and around door lintel	Fair	Sign of water penetration.	Clean surface and apply sealer. Further investigation of door lintel condition is recommended.	\$1,800.00 Including investigation		

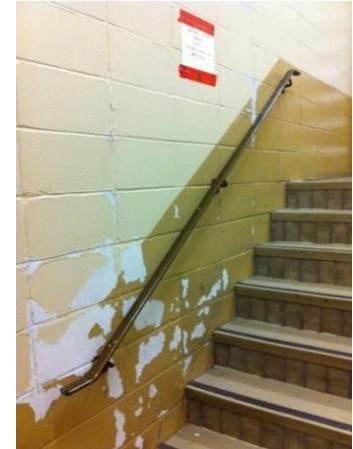
5	Roofing membrane	fair	Water leaks into the building when it rains.	Conduct roof leak investigation to locate the source. Proper repair method will be determined and undertaken depending on the finding.	\$15,000.00 (for investigation) \$80,000.00 (for repairs)	
6	Roof drain (main roof)	fair	Due to clogged roof drain strainers, ponding of water on south side of the main building roof	Unclog drain strainers. Regular cleaning and maintenance is highly recommended to prevent ponding.	\$1,500.00	
7	Roof drainage issue (vestibule)	fair	No sign of roof leak in the vestibule. However, ponding of water on north side of the vestibule roof due to insufficient roof slope	Remove existing modified Bitumen roofing (about 8 feet from the north edge) and correct roof slope (min. 2%) with fiberboard. Install new bit-mod roof membrane to match existing.	\$8,500.00 (For design and construction)	

8	Front entrance doors barrier-free accessibility	Poor	No barrier-free access to the building.	Install minimum of one power door operator and push buttons in one door leaf on one of the exterior door and one of the vestibule door (two automatic power door operators in total)	\$4,500.00	
9	Exterior stairs railing and guard	Poor	Existing railing and guard (height, continuity, guards openings) do not meet current O.B.C. section 9.8.	Remove existing railing and guards. Design and install new railing and guards to meet current building code requirement.	\$25,000.00 (For design and construction)	
10	Exit doors (x2) clearance (north side)	Poor	Existing depressed pits for the two exit doors require regular maintenance to maintain adequate clearance of the door swing. Riser and tread dimensions do not meet current code requirement. Danger of blockage from ice or snow creates a hazard for emergency egress	Design and modify existing depressed pits to make the exit doors open onto one step with riser not more than 150mm.	\$6,000.00 (For design and construction)	

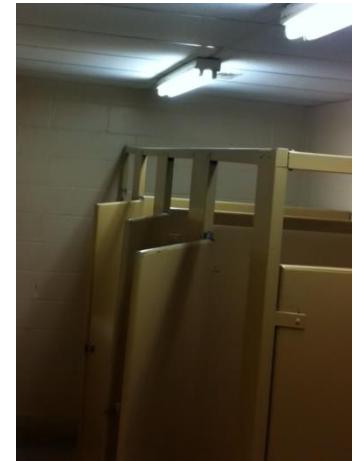
			situations.							
11	Exterior Wall Insulation	Poor	<p>There is no insulation installed in the three exterior walls for the multipurpose area. As the concrete blocks wall itself conducts heat to the outside surface, it dramatically increases heating cost for the building.</p> <p>Install rigid insulation, air barrier, exterior sheathing, metal stud wall with batt insulation, vapor barrier, and drywall panel on the inside face of the exterior walls to prevent water penetration and heat loss. Tape and finish drywall surface.</p> <p>Install new weep holes and flashing in existing concrete block walls.</p> <p>Note: It is recommended that the peeling paint to be removed to avoid blockage of new weep holes.</p>	\$480,000.00						
			Sub Total							
			20% Contingency							
			TOTAL Architectural							

Table 4: Interior Finishes and Fixtures

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Interior wall of vestibule at front entrance	Fair	Peeling paint near the base	Prime and apply acrylic latex paint	\$500.00	

2	Interior walls (kitchen)	Poor	Paint peeling on all four wall surfaces; direct result of moisture in exterior walls.	Remove existing paint; Prime and apply new paint on all kitchen walls.	\$3,000.00	
3	Rusted steel at door frames (north facing stairwell)	Poor	Rusting from water and snow	Replace steel angles and repair damaged concrete blocks	\$3,500.00	
4	Paint finish on stairwell wall (south facing stairwell)	Poor	Paint peeling on all four wall surfaces; direct result of moisture in exterior walls	Remove existing paint; Prime and apply new paint	\$9,500.00	

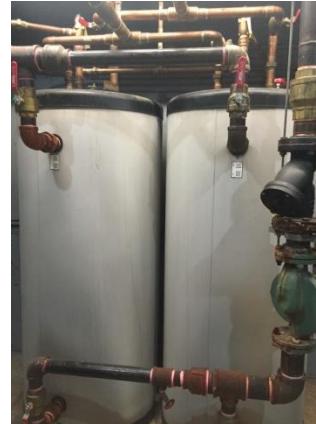
5	Paint finish on Community Hall walls (south and east only)	Poor	Paint peeling on all four wall surfaces; direct result of moisture in exterior walls	Remove existing paint; Prime and apply new paint	\$26,000.00	
6	Changing room (x4) (men's and women's)	Fair	In fair condition.	Not required.	-	 

7	First Floor Washrooms (men's and women's)	Fair	Wall paint is peeling off.	Remove existing wall paint and apply new paint.	\$8,500.00	
8	Second Floor Washrooms (Community Hall) (men's and women's)	Fair	Wall paint is peeling off.	Remove existing wall paint and apply new paint.	\$8,000.00	
9	Ceiling tiles in community hall, electrical room/storage room, coat check room, and stairwells.	Fair	Water damage of ceiling tile (about 70 tiles).	Replace damaged tiles with new tiles to match existing.	\$3,000.00	

10	Janitor room.	Poor	Very poor floor drainage. Bad odor.	See mechanical section for repairs related to damaged plumbing. Clean, prime, and seal floor with epoxy sealer. Prime and pain walls. Install new shelving, and mop sink.	\$5,000.00	
11	Storage Rooms for activity equipment	Poor	Existing storage rooms are constructed of combustible material and without permit.	Remove existing storage rooms.	\$3,800.00 (For demolition and waste disposal)	
12	Paint for new wall (Mutlisurface area)	-	Three new walls are required to be painted.	Apply primer and two coats of paint.	\$70,000.00	
				Sub Total	\$140,800.00	
				20% Contingency	\$28,160.00	
				TOTAL Interior Finishes and Fixtures	\$168,960.00	

4.4 MECHANICAL

Table 5: Plumbing and Waste Piping

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Two indirect Domestic Hot Water Tanks	Good	Both of the hot water tanks are in good working condition	None required.		
2	All Plumbing Fixtures at ground and 2 nd floor	Fair	The water closets and lavatories are in good working condition.	None required.		

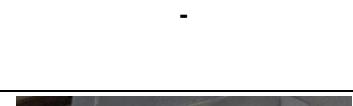
3	Domestic Hot/Cold Water Piping Distributions	Good	There is no double check valve (Backflow preventer) on the main incoming domestic cold water line	Install double check valve on the main incoming domestic water services to meet the OBC Section 7.6.2.6	\$ 8,000.00	-
4	Waste Piping	Poor	Underground sanitary drain is backed up to the ground floor janitor room. Recent camera inspection revealed that the pipe broke at 10" downstream from the floor drain. The physical condition of the entire underground waste piping cannot be determined without camera inspection. Due to the age of the pipes, pipe blockages and failures could occur in the near future.	Broken underground sanitary drain must be repaired. Camera inspection is recommended to investigate and analyze the internal condition of the entire underground sanitary piping. The OPCC for repair/replacement for the entire underground sanitary piping will be determined based on the finding from camera inspection	\$ 16,000.00 (for camera inspection cost and repair the known broken pipe)	
5	Sanitary drains for kitchen sink in the second floor kitchen.	Poor	The kitchen sink sanitary drain does not equipped with grease interceptor which is required by the OBC section 7.4.4.3	Provide grease interceptor for the kitchen sink	\$ 5,000.00	
Sub Total					\$ 29,000.00	
20% Contingency					\$ 5,800.00	
TOTAL Plumbing and Waste Piping					\$ 34,800.00	

Table 6: Heating Ventilation and Air Conditioning (HVAC)

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Four Rooftop HVAC units for the second floor multipurpose room cooling system	Poor	Three out of four units are not functional. One rooftop unit will not provide adequate cooling for the second floor multipurpose room.	Replace all four rooftop HVAC units	\$ 80,000.00	
2	All Unit Heaters and Fan Coils in the building, including 2 nd floor base board heaters	Good	The unit heaters, base board heaters and fan coil units are in good working condition.	None required.	-	

3	Total of 7 (seven) Natural Gas Fired Infrared Heaters in the hockey arena	Poor	Six out of seven units are not functional. One infrared heater will not provide adequate heating for the arena.	Replace all 6 (six) non functional gas fired infrared heaters with new gas fired infrared heaters.	\$ 85,000.00	
4	Kitchen Hood Ventilation system in the second floor multipurpose room	Poor	The second floor kitchen hood is constructed from galvanized steel which appears not to have an adequate thickness (not less than 1.09mm), listed grease filters or a listed label in accordance with NFPA 96. There is no fire suppression system and make up air in the system. The roof exhaust fan and exhaust ductwork for the kitchen hood is not suitable for this type of application and not in accordance with the NFPA 96 requirements	Replace the kitchen hood, exhaust ductwork and exhaust fan with new which will be in compliance with the NFPA 96. Provide make-up air unit on the roof with gas fired heater to preheat the outside air. Provide manual pull station, portable fire extinguisher type K and fire suppression system complete, connected to the fire alarm control panel as separate alarm zone.	\$ 42,000.00	
5	Kitchen Hood Ventilation system in the ground floor kitchen	Poor	The kitchen hood ventilation system does not have make-up air unit. Negative pressure condition could occur in the main entrance vestibule	Provide make-up air unit on the roof with gas fired heater to preheat the outside air.	\$ 25,000.00	-

6	Three gas fired heating boilers	Fair	The boilers are in good working conditions.	None required.	-	
7	Hot Water Heating piping	Fair	There are missing pipe insulation in some pipe sections. Pipe corrosion noted in the mechanical room which should be monitor closely.	Provide pipe insulation on the sections of pipes which have missing insulation.	\$ 8,000.00	

8	Circulation Pumps and Sump Pumps	Good	The circulation pumps and sump pumps are in good working condition	Not Required.	-	
9	First Men & Women Public Washrooms Roof Exhaust Fan	Poor	Surface corrosion on the fan impeller.	Replace roof exhaust fan for the public washroom	\$ 3,000.00	
10	Two wall mounted propeller exhaust fans for Hockey Arena Ventilation.	Good	The fans are in good working condition.	None required.	-	
11	Wall mounted centrifugal fan for Garage and vestibule ventilation system.	Fair	The fans are in good working condition.	None required.	-	

12	Two wall mounted propeller exhaust fans for change and shower room under bleacher.	Fair	The fans are in good working condition.	None required.		
Sub Total					\$ 243,000.00	
20% Contingency					\$ 48,600.00	
TOTAL HVAC					\$ 291,600.00	

4.5 ELECTRICAL

Table 7: Electrical Service

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Main Electrical services: 347/600 Volt, 3-phase 400 Amp Main disconnect switch, and Metering	Good	The components of the main electrical services are in good working condition.	Not required.	-	

2	Electrical Power Distribution and Panels, Disconnect switches, Dry core step-down transformers and panels.	Good	The electrical power distribution components are in good working conditions. Implementing Arch Flash study and safety sign labeling for safeguarding persons or property from hazards associated with electrical installations for shock and arch flash protection is recommended. These requirements indicated on the Ontario Electrical Safety Code 2015, Section 2-306, and CSA Z462-2018, NFPA 70E and ANSI Z535.4.	Perform arc flash study for the electrical distribution system and provide safety signs and labels on all electrical panels and disconnect switches to warn persons of potential electric shock and arc flash hazard present, so employees can be aware of the associated hazards of the equipment and assign appropriate PPE	\$ 15,000.00 (Study)	
2a	Ground Floor electrical panel	Poor	Missing bolts on the electrical panel. Clearance in front of the electrical panel is less than 1 meter which is not in compliance with the Ontario Electrical Safety Code.	Relocate the electrical panel.	\$ 15,000.00	-
3	Ground Floor Hockey Rink Arena Electrical power distribution relocation	Poor	Plywood enclosure for the existing electrical distribution consisting electrical panels, disconnect switches and dry core transformer will be removed due to combustible property of the enclosure material	The electrical distribution components will be relocated on the concrete exterior wall perimeter of the Hockey rink, approximately 5 meters away from their original location. The existing power conductors will be extended and reconnected to the electrical components at the new location	\$ 35,000.00	-
Sub Total					\$ 65,000.00	
20% Contingency					\$ 13,000.00	
TOTAL Electrical					\$ 73,000.00	

Table 8: Life Safety

Item	Element	Condition	Comment	Remediation/Action	OPCC	Photograph
1	Fire Alarm Control Panel (FACP)	Fair	The fire alarm control panel is outdated but it is in good working condition.	None required		
2	Fire alarm devices, i.e.: bell, manual pull station and heat detector	Fair	The fire alarm devices are in good working condition	None Required		
3	Emergency Lighting	Good	The emergency battery pack units with emergency light heads are in good working conditions. Based on the number of emergency lights currently available on site, there are some areas within the building expected to have emergency lighting level below 10 lx which is not in accordance with the Ontario Building Code, Section	New emergency lights should be added to maintain a minimum average lighting level of 10 lx throughout the floors areas, including in the ice rink area.	\$ 20,000.00	

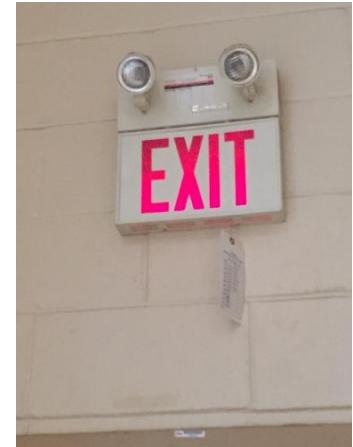
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4	Exit Sign	Good	The illuminated exit signs are in good working conditions. The exit signs do not conform to the CSA C860 regulations and to provide energy efficient exit lighting.	Replace existing exit sign with new LED exits sign with "Green Running Man"	\$ 6,000.00	
Sub Total					\$ 26,000.00	
20% Contingency					\$ 5,200.00	
TOTAL Life Safety					\$ 31,200.00	

Table 9: Cost Summary

Item	Descriptions	Estimated Total Cost
1	<u>CIVIL</u>	
	Paving and Concrete Sidewalks and Curbs	\$ 48,000.00
2	<u>STRUCTURAL</u>	
	Foundation and Superstructure	\$ 36,000.00
3	<u>ARCHITECTURAL</u>	
	Building Envelope and Building Accessibility	\$ 655,920.00
	Interior Finishes and Fixtures	\$ 168,960.00
4	<u>MECHANICAL</u>	
	Plumbing & Waste Piping	\$ 34,800.00
	Heating Ventilation & Air Conditioning (HVAC)	\$ 291,600.00
5	<u>ELECTRICAL</u>	
	Electrical Services	\$ 73,000.00
	Life Safety	\$ 31,200.00
	TOTAL	\$1,339,480.00