

# City of Ottawa Recreation Facility Infrastructure Standards

## ICE MAJOR BUILDING COMPONENTS

Parks and Facilities Planning Services  
Recreation, Cultural and Facility Services  
February 2019

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## **ICE-01 Multi Pad Arena**

**Date: March 2018 Version: v1-0**

### **Description**

City standard is a twin pad facility with two (2) NHL size boarded refrigerated ice surfaces. A 3<sup>rd</sup> or 4<sup>th</sup> ice surface may be added depending on demand and budget. An option may include substituting one NHL size ice surface with one International size boarded ice surface to permit short track speed skating and figure skating competitive programming. The Multi-Pad Arena is composed of the following program spaces: two Ice Surfaces, REC-15 Lobby, ICE-03 Ice Surface Viewing Area, ICE-04 Ice Surface Spectator Seating, REC-10 Multi-Purpose Room and REC-09 Meeting Room. The multi-pad arena will also include the following support spaces: REC-23 Washrooms, ICE-02 Arena Change Rooms, ICE-04 Ice Surface Spectator Seating, ICE-05 Arena Administration, REC-21 Vending Space, ICE-6 Rink Service Area, REC-24 Electrical Room, REC-26 IT Closet, REC-22 Janitor Room, REC-27 Garbage/Recycling Room and REC-28 Service/Delivery Space.

### **General**

- Ice Surfaces to be laid out side to side with change rooms located between the two surfaces
- Each ice surface to have minimum 250 spectator bench seating capacity
- Access to the ice surfaces to be via two corridors from the change room corridor
- Access to change room corridor from lobby and ice level viewing area
- Two rink viewing areas and supporting services: one (1) located in a mezzanine and between two (2) ice surfaces and one located in the lobby at ice level at one end of multi ice surfaces
- Rink service and operations area located at opposite end of the rink viewing area of the two ice surfaces
- Access to defibrillator
- Building envelope to be built for 12 month; highest best use should be to allow for year round operation

### **1.0 Area**

- 1.1** Gross Floor Area: 6,500 m<sup>2</sup>
- 1.2** Ice Surfaces
  - 1.2.1** NHL size 61 m x 26 m (200 ft x 85 ft)
  - 1.2.2** International size 60 m x 30 m (1800 m<sup>2</sup>)
- 1.3** Spectator seating (per ice surface): 120 m<sup>2</sup>
- 1.4** Two players benches (per ice surface): each 13.2m x 2,250 mm (29.7 m<sup>2</sup>)
- 1.5** Penalty boxes (per ice surface): 2,700 mm x 1,650 mm (4,460 mm<sup>2</sup>)
- 1.6** Time keeper (per ice surface): 2,700 mm x 2,250 mm (6,080 mm<sup>2</sup>)
- 1.7** Rink Viewing Areas: upper level (mezzanine) 250 m<sup>2</sup>; Ice level (lobby) 250 m<sup>2</sup>
- 1.8** Ice Surface Details

- 1.9 Board height: 1,200 mm
- 1.10 Glass height: 1,750 mm, total height (boards and glass) 2,950 mm
- 1.11 Ceiling height: 12.5 m to roof decking; 10.25 m to bottom of roof trusses
- 1.12 Safety netting positioned between the top of the rink glass and the bottom of the roof truss around the circumference of the rink, except for the player benches, penalty boxes and timekeeper's area.

## **2.0 Access**

- 2.1 Complete access around entire ice surface, barriers for Ice resurfer area

### **2.2 Interior**

- 2.2.1 2,800 mm double doors to the ice surfaces from the dressing rooms
- 2.2.2 Single door access from operations area to ice surfaces
- 2.2.3 1,066.8 mm overhead door from operations area to ice surfaces

### **2.3 Rink Boards (per ice surface)**

- 2.3.1 Two 1,050 mm wide doors on the dressing room side of the ice surface aligned with access corridors
- 2.3.2 Two 1,050 mm wide doors from each end of players' benches, one access door for each penalty box and one access door to the corridor surrounding the rink.
- 2.3.3 One 3,000 mm wide barn style access door for the ice surfacing machine at one end of the rink

### **2.4 Exterior**

- 2.4.1 Two emergency exit doors to exterior per ice surface
- 2.4.2 One 3,000 mm wide barn style access door for the ice surfacing machine at operations end of the ice surfaces

## **3.0 Relationships – Interior**

### **3.1 Adjacent**

- 3.1.1 Lobby to the Ice Level Viewing Area, Washrooms, Staff Offices, Meeting Room, Change Room Corridor, and Vending Space
- 3.1.2 Upper Level Viewing Area to the Multi-Purpose Room
- 3.1.3 Ice Surface Machine Room to the Ice Surfaces
- 3.1.4 Mechanical Room to the Ice Surface Machine Room,
- 3.1.5 Garbage/Recycling Room to the Service/Delivery area

### **3.2 Close**

- 3.2.1 Lobby to the Upper Viewing Area
- 3.2.2 Spectator Seating to the Lobby
- 3.2.3 Change Rooms to the Ice Surfaces
- 3.2.4 Janitor Closet

## **4.0 Relationships – Exterior**

### **4.1 Adjacent**

- 4.1.1 Lobby to the Main Entrance/Drop-Off
- 4.1.2 Kiosk/reception desk
- 4.1.3 Skate Sharpening/vendor space
- 4.1.4 Garbage/Recycling Room to the Service Ramp/Bay

## 11.0 Data

- 11.1 High speed fibre optic connection
- 12.0 **Security**
  - 12.1 As per Corporate Security Standards
- 13.0 **Storage**
  - 13.1 See individual program space and support space standards
- 14.0 **Equipment, Millwork and Furnishings**
  - 14.1 Equipment
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  - 14.2 Millwork
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## **ICE-02 Arena Change Rooms**

**Date:** February 2018      **Version:** v1-0

### **Description**

Rink Change Rooms are spaces within ICE-01 Multi-Pad Arenas for individuals and teams to change into and out of skates and equipment for on-ice programs, games and training. Door less entrances are recommended.

### **General**

A typical Twin (2) Pad Arena will include the following

- Five (5) standard change rooms
- Five (5) accessible change rooms
- Two (2) alternate needs change rooms
- One (1) referee change room
- One (1) storage room
- One (1) skate sharpening room

### **1.0 Area**

#### **1.1 Dimensions**

- 1.1.1** Overall 23m x 5,800 mm 800 m<sup>2</sup> (8,600 ft<sup>2</sup>)
- 1.1.2** Accessible change room: 9,900 mm x 5,900 mm, 58 m<sup>2</sup>
- 1.1.3** Standard change room: 9,100 mm x 5,900 mm, 54 m<sup>2</sup>
- 1.1.4** Alternate needs change room: 6,500 mm x 5,900 mm, 38m<sup>2</sup>
- 1.1.5** Referee change room: 6,200 mm x 5,900 mm, 37m<sup>2</sup>
- 1.1.6** Storage room 4,600 mm x 5,900 m, 27m<sup>2</sup>
- 1.1.7** Skate sharpening room 3,800 m x 3,300 mm, 13m<sup>2</sup>

### **2.0 Access**

#### **2.1 Exterior**

- 2.1.1** Relationships: lobby area, ice surfaces, rink operations
- 2.1.2** Daylight: not essential
- 2.1.3** View in: not applicable
- 2.1.4** View out: n/a

### **3.0 Amenities**

#### **3.1 Standard Change room**

- 3.1.1** 20 linear metres of seating
- 3.1.2** One toilet stall
- 3.1.3** Wall mounted sink, mirror, soap dispenser etc.
- 3.1.4** Gang shower with three heads
- 3.1.5** Drying area with towel hooks and hand/hair dryer
- 3.1.6** Optional: hockey stick holder
- 3.1.7** Garbage and recycling bins

#### **3.2 Accessible change room**

- 3.2.1** 20 linear m of seating
- 3.2.2** Accessible shower

- 3.2.3 Standard shower (one head)
- 3.2.4 Accessible toilet stall
- 3.2.5 Standard toilet stall
- 3.2.6 Accessible sink, mirror, soap dispenser, hand/hair dryer
- 3.2.7 Optional: hockey stick holder
- 3.2.8 Garbage and recycling bins
- 3.3 Alternate needs change room
  - 3.3.1 12 linear m of seating
  - 3.3.2 Gang shower with two showerheads
  - 3.3.3 Standard toilet stall
  - 3.3.4 Wall mounted sink, mirror, soap dispenser, hair/hand dryer etc.
  - 3.3.5 Optional: hockey stick holder
  - 3.3.6 Garbage and recycling bins
- 3.4 Referee change room
  - 3.4.1 5 linear m of seating
  - 3.4.2 Two change cubicles
  - 3.4.3 Two combination washrooms, shower and sink rooms with doors
  - 3.4.4 3 x 3-tiered wallet lockers
  - 3.4.5 Garbage and recycling bins

#### **4.0 Accessibility**

- 4.1 Accessible corridors to ice surfaces (less than 5% slope)
- 4.2 Lower tier bench for sledge hockey (players bench and penalty boxes)
- 4.3 Bench doors flush with the rink surface
- 4.4 Viewing panels through boards from player's benches for sledge hockey players
- 4.5 Viewing panels in the boards

#### **5.0 Lighting**

- 5.1 General
  - 5.1.1 Ceiling mounted fluorescent light fixtures with protective cages located over the ice surface
  - 5.1.2 Fixtures mounted in pairs, four rows of six paired fixtures with four of the paired fixtures connected to the emergency power supply

#### **6.0 Electrical**

- 6.1 Voltage
- 6.2 Outlets: consider outlets with built-in USB ports
- 6.3 Emergency: four (4) of the paired ceiling light fixtures connected to the emergency power supply

#### **7.0 Mechanical**

#### **8.0 Heating/Ventilation /Cooling**

- 8.1 Dedicated HVAC system for each rink (should be housed in penthouse units for ease of access and health and safety of maintenance workers)
- 8.2 Ceiling mounted supply ducts run lengthwise along the main corridor and return ducts run parallel through the same space.



8.3 Supply air distributed in each change room with return air collected from showers/washrooms

**9.0 Water supply**

**10.0 Fire suppression**

10.1 Multiple ceiling mounted sprinkler heads located in each enclosed space (6-9 in each change room)

**11.0 Finishes**

**11.1 Flooring**

11.1.1 Change areas, washrooms, corridors, skate shop: rubber sports flooring

11.1.2 Storage, janitor rooms: sealed concrete

11.1.3 Showers: ceramic tile

**11.2 Ceilings**

11.2.1 Change areas; open painted ceiling

**11.3 Walls**

11.3.1 All walls with exceptions noted below: concrete block (unfinished or painted)

11.3.2 Shower walls, walls behind sinks, toilets: ceramic tile

**12.0 Communications**

**12.1 Telephone**

**12.2 Data**

**12.3 Intercom**

**12.4 AV Systems**

12.4.1 Audio system with controls located at the timekeeper bench

**13.0 Security**

13.1 As per Corporate Security Standards

**14.0 Storage**

**14.1 Area/Dimensions**

**14.2 Access**

**14.3 Floor and Wall finishes**

**15.0 Equipment, Millwork and Furnishings**

**15.1 Equipment**

**15.2 Millwork**

15.2.1 Benches: polyethylene plank surfaces

15.2.2 Lockers

**15.3 Furnishings**

**15.4 Special requirements**

**16.0 Examples/Best practice**

16.1 Minto Recreation Complex

## **ICE-03 Ice Surface Viewing Area**

**Date:** April 2018    **Version:** v1-0

### **Description**

Ice Surface Viewing Areas are interior public spaces in ICE-01 Multi-Pad Arenas with good views to the ice surfaces in the facility. Ice Surface Viewing Areas are located outside of rink surface spaces with separate climate control.

### **General**

- Ice Surface Viewing Areas can be in two locations in Multi-Pad Arenas:
  - Ground-level Lobby space, with glazed views to multiple ice surfaces
  - Upper-level Mezzanine space between ice pads, with glazed views to two (2) ice surfaces
- Informal seating may be included along windows with views to ice pads
- Elevator access is required for raised mezzanine viewing areas
- Garbage, recycling, organics
- Universal and public washrooms in warm zone of arena

#### **1.0 Area**

1.1 Minimum 1,000 m<sup>2</sup> for all viewing areas in a multi-pad arena

1.2 Can double as circulation space

#### **2.0 Access**

##### **2.1 Interior**

2.1.1 From main entrance to lobby viewing area

2.1.2 From lobby to mezzanine viewing area via stairs and elevator

##### **2.2 Exterior**

2.2.1 Per OBC emergency exit requirements

#### **3.0 Relationships**

##### **3.1 Adjacent**

3.1.1 Lobby Viewing Area: Ice Surfaces, Main Entrance, Change Room Corridor

3.1.2 Mezzanine Viewing Area: Ice Surface Spectator Seating

##### **3.2 Close**

3.2.1 Washrooms, universal washrooms, Change Rooms, Vending, Customer Service/Reception, Meeting Room, Multi-Purpose Room, Arena Administration

##### **3.3 Daylight**

3.3.1 Desirable

##### **3.4 Views To**

3.4.1 Ice Surfaces

##### **3.5 Views From**

3.5.1 Ice Surface, lobby, ice surface spectator seating

#### **4.0 Accessibility**

**4.1** Provide clear areas in front of windows to ice surfaces to accommodate a minimum of sixteen (16) wheelchairs

**4.2** Elevator access required for upper mezzanine viewing area

## **5.0 Lighting**

**5.1** Ceiling mounted Energy efficient light fixtures for lobby and mezzanine viewing areas

## **6.0 Electrical**

**6.1** Voltage

**6.2** Outlets

**6.3** Emergency: four of the paired ceiling light fixtures connected to the emergency power supply

## **7.0 Mechanical**

**7.1** HVAC separate from ice surface envelopes

## **8.0 Finishes**

**8.1** Sealed and polished non-slip concrete floors

**8.2** Ensure glare from exterior windows does not affect ice surfaces

**8.3** Glazing on walls facing ice surfaces

**8.4** Optimized resilient upper wall finish and incorporate sound transmission class (STC) rated acoustic panels

## **9.0 Communications**

**9.1** PA System

**9.2** Public Wi-Fi

## **10.0 Data**

**10.1** N/A

## **11.0 Security**

**11.1** As per Corporate Security Standards

## **12.0 Equipment, Millwork and Furnishings**

**1.1** Short benches and/or fixed small tables with seating

## **2.0 Special Requirements**

**2.1** N/A

## **3.0 Examples/Best Practice**

**3.1** Minto Recreation Complex – Barrhaven

## **ICE-04 Ice Surface Spectator Seating**

**Date:** April 2018    **Version:**    v1-0

### **Description**

Ice Surface Spectator Seating is the tiered bench seating located along one or both sides of an ice surface in ICE-01 Multi-Pad Arenas.

### **General**

- Tiered bench seating is normally located above shared dressing rooms between ice surface in twin or multi-ice pad facilities
- Lowest tier of spectator seating to be raised minimum of 1000 mm above ice level and centred on centre line of ice surface.
- Spectator seating to be accessible from facility lobby
- Seating capacity can range between 250 to 2,000 spectators per ice surface. Access to the ice surfaces to be via two corridors from the change room corridor
- Provide minimum of sixteen (16) wheelchair accessible spectator platform spaces per ice surface

### **1.0 Area**

1.1 Gross Floor Area minimum 120 m<sup>2</sup> per ice surface (250-person capacity)

1.2 Benches: width: 450 mm, height: 40 mm

### **2.0 Access**

#### **2.1 Interior**

2.1.1 From facility lobby and change room corridor

#### **2.2 Exterior**

2.2.1 Minimum two (2) emergency exit doors to exterior per ice surface per OBC

### **3.0 Relationships**

#### **3.1 Adjacent**

3.1.1 Lobby, Change Room Corridor, Ice Surface Viewing Area, Washrooms

#### **3.2 Close**

3.2.1 Change Rooms, Vending, garbage/recycling/organics

#### **3.3 Daylight**

3.3.1 N/A

#### **3.4 Views To**

3.4.1 Ice Surface

#### **3.5 Views From**

3.5.1 Ice Surface, lobby, ice surface viewing area

### **4.0 Accessibility**

4.1 Provide minimum of sixteen (16) wheelchair accessible spectator platform spaces per ice surface

4.2 Handrail requirement as per AODA

- 4.3 Consider a range of needs (ex. fold down seating and open space for devices)

## **5.0 Lighting**

- 5.1 Ceiling mounted Energy efficient linear light fixtures with protective cages located over the ice surface

## **6.0 Electrical**

- 6.1 Ceiling mounted radiant heaters above tiered seating

## **7.0 Mechanical**

- 7.1 see ICE-01 Multi-Pad Arena

## **8.0 Finishes**

- 8.1 Benches attached to sealed, non-slip concrete tiers
- 8.2 Benches to be made of high-density plastic material
- 8.3 Ensure glare from exterior windows does not affect ice surfaces
- 8.4 Optimized resilient upper wall finish and incorporate sound transmission class (STC) rated acoustic panels

## **9.0 Communications**

- 9.1 PA System for ice surfaces

## **10.0 Data**

- 10.1 N/A

## **11.0 Security**

- 11.1 N/A

## **12.0 Storage**

- 12.1 N/A

## **13.0 Equipment, Millwork and Furnishings**

- 13.1 Tiered bench seating using durable materials such as high density recycled plastic or sealed hardwood
- 13.2 Equipment
  - 13.2.1 Ceiling mounted radiant heaters above tiered seating
- 13.3 Special Requirements
  - 13.3.1 N/A

## **14.0 Examples/Best practice**

- 14.1 Minto Recreation Complex – Barrhaven
- 14.2 Bell Sensplex

## **ICE-05 Arena Administration**

**Date:** April 2018    **Version:**    v1-0

### **Description**

Arena Administration Space acts as the programming and operational centre of ICE-01 Multi-Pad Arenas. They are located adjacent to multi-pad arena lobbies.

### **General**

- Administration Space is composed of a small open, flexible office space for part-time and occasional facility staff and one (1) closed offices for facility operational supervisor.
- Administration Space also includes areas for records, printing and reproduction.

### **1.0 Area**

- 1.1 Open office floor area: per occupant load and City open office accommodation standards
- 1.2 Closed office: per City closed office accommodation standards
- 1.3 Records storage space: 2,000 mm<sup>2</sup>
- 1.4 Ceiling Height: 3,000 mm
- 1.5 Ceiling Details: acoustic tiles

### **2.0 Access**

- 2.1 Interior
  - 2.1.1 Accessible from lobby with a controlled, operable entry door
- 2.2 Exterior
  - 2.2.1 Not required

### **3.0 Relationships**

- 3.1 Adjacent
  - 3.1.1 Lobby
- 3.2 Close
  - 3.2.1 Washrooms, meeting room, multi-purpose room, change rooms, garbage/recycling/organics
- 3.3 Daylight
  - 3.3.1 Desirable
- 3.4 Views In
  - 3.4.1 From lobby
- 3.5 Views Out
  - 3.5.1 To lobby and exterior

### **4.0 Accessibility**

- 4.1 per AODA (I) and City of Ottawa Accessibility Standards

### **5.0 Lighting**

- 5.1 Energy efficient ceiling mounted fixtures

### **6.0 Electrical**

- 6.1 Voltage: 120
- 6.2 Duplex outlets

### **6.3 Open Office**

**6.3.1** Above open work counter and for copiers, printers, scanners, etc.

### **6.4 Closed Office**

**6.4.1** Per office layout; Consider outlets with built-in USB ports

### **6.5 Outlets integrated into work station wall systems**

### **6.6 Emergency**

**6.6.1** One (1) emergency wall mounted double-headed battery powered lighting packs and one (1) fire alarm pull station.

### **6.7 Wall mounted power source for Network Clock**

## **7.0 Mechanical**

**7.1** Controls: BAS

## **8.0 Ventilation**

**8.1** Air Changes / hour in accordance with ASHRAE standards

## **9.0 Heating**

**9.1** Dedicated heating and cooling system, air supply from ceiling mounted ducts, one air return located on wall. Energy efficient heating. Natural gas preferred

## **10.0 Cooling**

**10.1** Required. Central forced air preferred.

## **11.0 Water Supply**

**11.1** N/A

## **12.0 Fire Suppression**

**12.1** One (1) wall mounted fire extinguisher; wall mounted fire alarm bells

## **13.0 Finishes**

### **13.1 Floor**

**13.1.1** Resilient flooring with firm, stable, slip-resistant, matte finish.

### **13.2 Ceilings**

**13.2.1** Acoustic tiles

### **13.3 Walls**

**13.3.1** Drywall

### **13.4 Windows**

**13.4.1** Ensure glare from exterior windows does not affect ice surfaces

## **14.0 Communications**

### **14.1 Data**

**14.1.1** Wi-Fi, voice/data outlets to suit desk/work station layout

### **14.2 Intercom**

**14.2.1** Ceiling mounted speakers

## **15.0 Security**

**15.1** As per Corporate Security Standards

## **16.0 Storage**

**16.1** Records Storage Area: shelving and file cabinets

## **17.0 Equipment and Furnishings**

**17.1** Office furniture, systems furniture and office equipment (computers, printers, copiers) per City office accommodation standards

## **18.0 Examples/Best practices**

### **18.1 ??**



## **ICE-06 Rink Service Area**

**Date** March 2018 **Version:** v1-0

### **Description**

Support area that houses rink mechanical systems, ice surfacing equipment, storage, workshop and staff support spaces like lockers and washrooms.

### **General**

- Rink Service area located at the end of the two ice surfaces
- Refrigeration room: Compressors for ice surfaces Independent compressor
- Ice resurfacer Garage with two spaces: parking, refueling of Ice resurfacers, depositing and melting of ice shavings
- Storage: enclosed storage area with a lockable door for tools and equipment
- Workshop: operations staff
- Locker Room: operations staff
- Circulation: connecting corridors

### **1.0 Area**

**1.1 Dimensions:** Minto – need to check

**1.2** Rink Support Area: 580m<sup>2</sup>

**1.3** Refrigeration/Compressor Room: 110m<sup>2</sup>

**1.4** Ice resurfacer Garage 1 per Ice resurfacer: 185m<sup>2</sup>, requires a 10 m turning radius for the Ice resurfacer

**1.5** Storage: 25m<sup>2</sup>

**1.6** Workshop: 32 m<sup>2</sup>

**1.7** Staff Locker Room: 16m<sup>2</sup>

**1.8** Boiler Room:        m<sup>2</sup>

**1.9** Garbage/Recycling Room        m<sup>2</sup>

**1.10** Circulation: 10m<sup>2</sup>

**1.11** Ceiling Height: minimum of 4000 mm height in the Ice resurfacer garage

### **2.0 Access**

**2.1** Access doors to the dressing room corridor: 1,900 mm double doors

**2.2** 3,600 mm x 2,200 mm wide overhead garage doors from each Ice resurfacer Garage to rink

**2.3** 3,600 mm x 2,200 mm overhead garage door from one Ice resurfacer Garage to exterior

**2.4** 1,900 mm double doors from refrigeration room to exterior; health and safety; standard on double door

**2.5** 900 mm wide single doors from each Ice resurfacer Garage to rink; check accessibility requirements

### **3.0 Relationships**

**3.1** Direct

**3.1.1** Exterior, rinks, staff parking area

### **3.2 Indirect**

**3.2.1** Lobby, dressing room corridor, washrooms

### **3.3 Daylight**

**3.3.1** Not essential

### **3.4 View in**

**3.4.1** Not applicable

### **3.5 View out**

**3.5.1** Not applicable

## **4.0 Accessibility**

**4.1** All floor slopes less than 5%

**4.2** No doorsills - flat

## **5.0 Lighting**

**5.1** General: ceiling mounted Energy efficient light fixtures

## **6.0 Electrical**

**6.1** Voltage 220; required for trade shows and competitions on rink surface

**6.2** Outlets

**6.3** Emergency

**6.3.1** Paired ceiling light fixtures connected to the emergency power supply

**6.4** Energy efficient ceiling mounted unit heaters in ice resurfacer garages

**6.5** Powered overhead garage doors in Ice resurfacer Garages

## **7.0 Mechanical**

### **7.1 Heating/Ventilation/Cooling**

**7.1.1** Ceiling mounted supply ducts run lengthwise along one wall and return ducts run the same direction on the opposite wall.

**7.1.2** As per ASHREA standards

### **7.2 Water supply**

**7.2.1** Fire suppression and workshop function

**7.2.2** Dedicated water supply for ice resurfacer with temperature re: manufacturing spec

## **8.0 Ice Resurfacer room**

**8.1** Ice melt pit; separate pit / ice pad

**8.2** Health & Safety eye wash stations

## **9.0 Refrigeration / Compressor Room**

**9.1.1** Separation of space for safety leading into the refrigeration/compressor room from the main rink service area – TSSA standard

**9.1.2** Emergency exhaust system; based on gas sensor equipment

**9.1.3** BAS controlled

**9.1.4** Health & Safety eye wash stations

## **10.0 Boiler Room**

**10.1** Hot water boilers, domestic water storage, ice resurfacer water storage, domestic heating boilers, various pumps, expansion tanks

- 10.2 Floor drain
  - 10.3 Ventilation and exhaust required (TSSA)
- 11.0 **Garbage recycling Room**
  - 11.1 Separate ventilation
  - 11.2 Roll-up door to exterior
  - 11.3 Floor drain, finishes have ability to be hosed down
  - 11.4 Close Ice resurfacers room
  - 11.5 Refrigeration air conditioner for health and safety
- 12.0 **Workshop space**
  - 12.1 Work benches with outlets
  - 12.2 Tool lock-up area
- 13.0 **Finishes**
  - 13.1 Floors
    - 13.1.1 Sealed concrete floor sloped to drains in the rink service area
  - 13.2 Ceilings
    - 13.2.1 Unfinished
  - 13.3 Walls
    - 13.3.1 Painted concrete block, steel siding (upper wall surfaces)
  - 13.4 Above fine for staff area; All player areas; rubberized surface
- 14.0 **Communications**
  - 14.1 Telephone
  - 14.2 Data
  - 14.3 Intercom
  - 14.4 AV Systems
- 15.0 **Security**
  - 15.1 As per Corporate Security Standards
- 16.0 **Storage**
  - 16.1 Area/Dimensions (external and internal)
  - 16.2 Outside propane storage; fenced and secured;
  - 16.3 If site permits, resurfacers ice disposal to exterior; area to be fenced with limited public access (Health & Safety) and adequate drainage
  - 16.4 Access
- 17.0 **Floor and Wall finishes**
  - 17.1 Concrete (poured or block) floor and walls or other very durable material, open ceilings
- 18.0 **Equipment, Millwork and Furnishings**
  - 18.1 Staff locker area: includes wall mounted lockers and bench, may be a located in a closed or open area
  - 18.2 Workshop: workshop table and chair(s)
- 19.0 **Special Requirements**
  - 19.1 Health and safety missing; required for refrigeration room; need exterior warning light/wind sleeve and alarm for ammonia; emergency shut off for

compressor system; minimum of every entry point to that room interior / exterior

## **20.0 Examples/Best practices**

### **20.1 Minto Recreation Complex-Barrhaven**

## **ICE-07 Curling Rink**

**Date:** April 2018    **Version:**    v1-0

### **Description**

A Curling Rink is an indoor facility housing multiple sheets of ice for curling, along with associated program, administrative and operational spaces. Curling rinks can be located as part of REC-01 Recreation Complexes, REC-02 Community Centres and AQU-01 Natatoriums or can be developed as stand-alone facilities.

### **General**

- Locate on ground floor
- Provide adjacent to the Viewing Area
- The Curling Rink should contain a minimum of 4 sheets of ice

### **1.0 Area**

#### **1.1 Gross Floor Area**

- 1.1.1** 1,043 m<sup>2</sup> (based on 4 sheets of ice with ice dimensions of 45.72 m x 4,750 mm)

#### **1.2 Dimensions**

- 1.2.1** Ice dimensions: 44.50 m to 45.72 m long x 4,320 mm to 4,750 mm wide for each sheet of ice

#### **1.3 Provide an 1,800 mm wide raised walkway at the end of the Curling Rink adjacent to the Viewing Area, and 1,200 mm wide raised walkways at the scoreboard end and at the sides of the Curling Rink**

#### **1.4 Ceiling Height**

- 1.4.1** Minimum of 5487 mm to 6096 mm

#### **1.5 Ceiling Details**

- 1.5.1** Exposed roof trusses, above lighting

### **2.0 Access**

#### **2.1 Interior**

- 2.1.1** Located off Viewing Area with 2 entry doors located at the corners of the Curling Rink adjacent to the Viewing Area
- 2.1.2** Power door operators to be provided at both access doors
- 2.1.3** A mechanical boot brush must be provided outside the Curling Rink at the entrance(s) to allow players to remove dirt from footwear prior to entering the Curling Rink

#### **2.2 Exterior**

- 2.2.1** As required by the OBC (I)

### **3.0 Relationships**

#### **3.1 Adjacent**

- 3.1.1** Viewing Area, Mechanical Room

#### **3.2 Close**

- 3.2.1** Universal Washroom, Male Dressing Room, Female Dressing Room, Lounge/Bar, Kitchen, Office

### **3.3 Daylight**

#### **3.3.1 No**

### **3.4 Views In**

#### **3.4.1 From Viewing Area**

### **3.5 Views Out**

#### **3.5.1 To Viewing Area**

## **4.0 Accessibility**

### **4.1 per AODA (I) and City of Ottawa Accessibility Standards**

## **5.0 Lighting**

### **5.1 Energy efficient ceiling mount**

## **6.0 Electrical**

### **6.1 Voltage:120**

### **6.2 Outlets**

### **6.3 Emergency**

### **6.4 Power source for Network Wall Clock**

## **7.0 Mechanical**

### **7.1 Controls: BAS**

## **8.0 Heating/Ventilation /Cooling**

### **8.1 Dedicated HVAC system for each rink (roof top units)**

### **8.2 Ceiling mounted supply ducts run lengthwise along one wall and return ducts run the same direction on the opposite wall.**

## **9.0 Fire suppression**

### **9.1 Ceiling mounted sprinklers**

## **10.0 Ventilation**

### **10.1 Air Changes / hour in accordance with ASHRAE standards**

## **11.0 Heating**

### **11.1 Dedicated heating and cooling system, air supply from ceiling mounted ducts, one air return located on wall. Energy efficient heating. Natural gas preferred**

## **12.0 Cooling**

### **12.1 Required: central forced air preferred**

## **13.0 Water Supply**

### **13.1 Required**

## **14.0 Finishes**

### **14.1 Floor**

#### **14.1.1 Concrete for ice sheets; carpet tile for perimeter walkway**

### **14.2 Ceilings**

#### **14.2.1 Exposed trusses and roof deck painted white**

### **14.3 Walls**

#### **14.3.1 Optimized resilient upper wall finish and incorporate sound transmission class (STC) rated acoustic panels**

## **15.0 Communications**

### **15.1 Telephone**

- 15.2 Data
- 15.3 Intercom
- 15.4 Audio Visual Systems
  - 15.4.1 One ceiling mounted camera per ice sheet installed above the house closest to the scoreboard. One television monitor per ice sheet to be provided on the wall adjacent to the Viewing Area.
- 16.0 **Security**
  - 16.1 Security: As per Corporate Security Standards
  - 16.2 Wallet & Cell Phone Lockers: with USB ports for charging
- 17.0 **Storage**
  - 17.1 **Area**
  - 17.2 Access: single door, lockable
  - 17.3 Floor and wall finish: sealed concrete floor, plywood walls
- 18.0 **Equipment and Furnishings**
  - 18.1 Temperature sensors for reading of the ice temperature, curling stone measurer
  - 18.2 Network wall clock, scoreboards
  - 18.3 Racks, storage rack for spare brooms for new players / guests, shelving for beverages and cell phones, drinking water canisters and cups
  - 18.4 Curling stones, cleaning brushes for brooms, curling ice scraper, backpack sprayer, pebbling can, and ice nipper
- 19.0 **Optional Upgrades**
- 20.0 **Examples/Best practices**

## **ICE-08 Exterior Rink – Boarded**

**Date:** Jan 2018    **Version:** v1-0

### **Description**

Exterior boarded rink facilities generally consist of an ice surface and rink bunker. Some rinks have a skate change trailer or indoor space for skate change. Boarded rinks can have permanent boards and a multi court surface for use in the spring summer and fall, or grass base with removable boards. There are examples of rinks within the City of Ottawa that have a refrigerated base and an example of a rink with a refrigerated base and roof structure - both options require additional external funding.

There should be a Minimum 1.2 km radius distance between the locations of boarded rinks (refer to [ACS2002-PEO-COM-0014 “Outdoor Rink Operational Model”](#)). New rinks and enhancements should be prioritized in wards/areas with the lowest access per capita to outdoor rinks, taking into consideration the physical layout of communities, such as major arteries that need to be crossed or high-density residential areas (high-rise buildings). Outdoor rinks are intended to service the community with a seasonal recreation amenity.

No new outdoor rinks should be built on sports fields.

### **1.0 Area (SDD)**

#### **1.1 Full size multi purpose rink**

**1.1.1** Playing surface dimensions: 50.8m x 21.5m; 836m<sup>2</sup> minimum

#### **1.2 Small multi purpose rink**

**1.2.1** Best practice: Optimiste Park

**1.2.2** Playing surface dimensions: 36.2m x 18.2m

#### **1.3 Temporary boarded rink**

**1.3.1** Boards can be customised for the site

**1.3.2** Playing surface varies 40-52m x 16-21m

#### **1.4 Sens Rink**

**1.4.1** Shared finance and responsibilities between City of Ottawa and Sens Foundation

**1.4.2** Sens rinks are designed and constructed to match our standard outdoor community size rink detail (asphalt surface, permanent boarded rink with lighting and double basketball court) plus an asphalt apron around rink with extended pad at players' benches. Sens rinks that were built to the larger NHL rink size have proven too big and too difficult for rink operators to maintain.

**1.4.3** Sens rinks provide year-round recreational programming including: hockey, skating, ball hockey, basketball, and lacrosse and are in proximity to an existing community center where recreational programming is already in place.



**1.4.4 Rink with refrigerated base and roof structure: best practices:  
Canterbury Park**

**2.0 Orientation**

**2.1 N/A**

**3.0 Access**

**3.1** Access to the site should be relatively flat with slopes not exceeding 5%. An accessible path to the rink is required for a permanent community multi court rink.

**3.2** 3,000 mm of space should be allowed around all outdoor rinks to allow access to maintenance vehicles

**4.0 Grading & Drainage**

**4.1** Ensure positive drainage: On grass or stone dust finished grade 1.5% cross slope. Asphalt or concrete multi court surface finished grade 1% cross slope. Edges to have maximum 5% slope.

**5.0 Surfacing (SDD)**

**5.1** Ice

**5.2** Base for rinks with removable boards: grass, stone dust or asphalt

**5.3** Base for multi court permanent boarded rinks

**5.4** Path surface: accessible material asphalt preferred

**6.0 Water Supply (SDD)**

**6.1** Required standard drawings and details for water supply and chamber

**6.2** All new parks intended to have an outdoor rink must have a winterized water source and water meter located as close as possible to the rink surface and as close as possible to the flat area of the park.

**6.3** Water sources should be fitted with a 38.1 mm “quick connect” male coupling, facing in the direction of the rink (to avoid bending the hose around corners)

**6.4** Water supply should be close to rink and on an accessible route

**7.0 Irrigation**

**7.1 N/A**

**8.0 Electrical (SDD)**

**8.1** Required: standard drawings and details for park electrical.

**8.2** Service: 200amp 120V Hydro Kiosk with push button

**8.3** Heating coils on roof drains for covered rinks

**9.0 Lighting (SDD)**

**9.1** Required, community rink layout and park electrical drawing and details.

**9.2** All lighting must meet the Illuminating Engineering Society of North America (IES) standards and be Energy efficient, typically 4-6 permanent Energy efficient light fixtures, height 6,120 mm.

**9.3** All boarded rinks should be equipped with adequate rink lighting. The lighting system should be designed, and the equipment specified by a professional electrical engineer.

**9.4** All lights should be on timers and have “push buttons” located in a public place (in a locked enclosure) close to the rink (to keep lights off in mild weather or when building up the rink at the start of the season).

**9.5** Rink lights should be permanent, if possible, to save on annual installation and removal costs.

**10.0 Fencing (SDD)**

**10.1** 1,500 mm chain link fencing on top of boards - black vinyl, 6 gauge.

**11.0 Gates and Openings (SDD)**

**11.1** Community rink layout drawings and details

**11.2** Minimum One (1) “Horse gate” 4,000 mm wide for maintenance access

**11.3** Players entry 1,000 mm wide (minimum 2)

**12.0 Goals**

**12.1** Movable hockey nets

**12.2** Fully boarded permanent rinks with asphalt base: fixed basketball posts and net less hoops; rim height 3,040 mm fixed to boards

**13.0 Furniture**

**13.1** All new parks with boarded rinks should be equipped with permanent park benches near rinks for skate change

**13.2** Alternatively, a mobile trailer or permanent rink shack approximately 6,500 mm x 3,000 mm or converted shipping container (best practice for inexpensive rink shack from shipping containers Meadow breeze Park)

**13.3** Covered refrigerated roofed rink should include players’ benches, penalty box, and bleachers

**21.0 Boards**

**21.1** Boarded rinks should have safety mesh installed above the boards of the short ends where required (close to parking lots, school yards, pathways, etc.)

**21.2** Rink boards should be permanent if possible to save on annual installation and removal costs

**21.3** If temporary boards are used, the City should be responsible for their installation and removal

**21.4** Rink boards (machine gate, with 5 doors)

**22.0 Storage (SDD)**

**22.1** Heated bunker is required for hose and snow blower storage, rink bunker drawings and details

**22.2** 3,500 mm square concrete structure, double doors facing outward, with 2,000 mm clearance at front and 1,000 mm clearance around

**22.3** Accessible path to bunker doors

**22.4** Covered push button mount for lights

**22.5** Internal fit up for hose storage

**22.6** Locate as close as possible to the rink surface

**22.7** If supervision is deemed required, the bunker should be upgraded to a field house

## **23.0 Parking**

**23.1** Parking preferred for permanent boarded rinks: typically, 25 parking spaces including accessible spaces

**23.2** Bicycle parking: recommended at multi court rinks

## **24.0 Safety**

**24.1** Follow CPTED principles, electrical kiosk and storage bunker are locking.

## **25.0 Accessibility**

**25.1** Promote universal accessibility. Ensure all aspects of the site meet all current Accessibility Design Standards for exterior spaces. Ensure accessible path to the rink court with grades not exceeding 5%. Openings onto court/rink surface should match grade and meet City of Ottawa Standards for Accessibility.

**25.2** Path surface preferred asphalt

## **26.0 Options for Multiple Purpose**

**26.1** Temporary boarded rink can share space with, open space, soccer field, baseball field, parking area

**26.2** Multi purpose boarded courts can be lined and equipped for: basketball, floor hockey, pickle ball for use in the spring, summer, fall

## **ICE-09 Exterior Rink - Puddle**

**Date:** January 2018      **Version:** v1-0

### **General**

Exterior puddle rink facilities generally consist of an ice surface, and rink bunker. Puddle rinks have a natural snow border and a base of grass, asphalt or stone dust. Puddle rinks have two specified sizes: single puddle rink and double/ community size puddle. Minimum 0.6 km radius between “double surfaces” (2 unboarded rinks side by side) (refer to [ACS2002-PEO-COM-0014 “Outdoor Rink Operational Model”](#)). Puddle rinks are intended to service neighbourhoods with a seasonal recreational amenity within a 1km radius.

No new outdoor rinks should be built on sports fields.

### **1.0 Area (SDD)**

**1.1** Single puddle rink with natural snow border: drawing and detail for puddle surface layout.

**1.1.1** Surface dimensions: 15 x 28m;

**1.1.2** Area: 150m<sup>2</sup> minimum

**1.2** Double puddle rink with natural snow border: drawing and detail for community ice surface layout ‘double puddle’.

**1.2.1** Surface dimensions: 18.4m x 21.4m;

**1.2.2** Area: 650m<sup>2</sup>

### **2.0 Orientation**

**2.1** N/A

### **3.0 Access**

**3.1** Access to the site should be relatively flat with slopes not exceeding 5%

**3.2** 3,000 mm of space should be allowed around all outdoor rinks to allow access to maintenance vehicles

### **4.0 Grading & Drainage**

**4.1** Ensure positive drainage

**4.1.1** Finished grade 1.5% cross slope. Edges to have maximum 5% slope within 6,000 mm of lights

### **5.0 Surfacing**

**5.1** Ice

**5.1.1** Base: grass, stone dust or asphalt

**5.2** Path Surface: accessible material, asphalt preferred

### **6.0 Water Supply (SDD)**

**6.1** Required, City standard water chamber detail.

**6.2** Close to rink and on an accessible route

### **7.0 Irrigation**

N/A

### **8.0 Electrical (SDD)**

**8.1** Required, 200amp 120V Hydro Kiosk with push button, standard park electrical details.

**9.0 Lighting**

**9.1** Required

**9.1.1** All lighting must meet the Illuminating Engineering Society of North America (IES) standards and be energy efficient.

**9.2** Puddle Rink minimum one permanent Energy efficient light fixture; height 6,120 mm (SDD)

**10.0 Fencing**

**10.1.1** N/A

**11.0 Gates and Openings**

**11.1.1** N/A

**12.0 Goals**

**12.1** Moveable nets

**13.0 Furniture**

**13.1** Location for skate change is required can be exterior benches or mobile trailer

**14.0 Boards**

**14.1** Natural snow border

**14.0 Storage (SDD)**

**14.1** Required: heated bunker is required for hose storage. 3,500 mm square concrete structure, double doors facing outward, with 2,000 mm clearance at front and 1,000 mm clearance around, accessible path to bunker doors, covered push button mount for lights, City standard rink bunker.

**15.0 Parking**

**15.1** Parking not required

**16.0 Safety**

**16.1** Follow CPTED principles, electrical kiosk and storage bunker are locking

**17.0 Accessibility**

**17.1** Ensure all aspects of the site meet all current Accessibility Design Standards. Ensure grades not exceeding 5%.

**18.0 Options for Multiple Purpose**

**18.1** Permanent light can be shared with a soccer or baseball field. Puddle rink can overlay on parking area, soccer or baseball field. Should not be overlaid on sensitive recreation infrastructure such as tennis courts or high-quality baseball or soccer fields.

## **ICE-10 Exterior Rink Bunker**

**Date: March 2018 Version: v1-0**

### **Description**

Exterior Rink Bunker is a stand-alone structure for the storage materials intended for outdoor programming (hose and ice maintenance equipment). The storage space has a 1/3 insulated, heated compartment and 2/3 unheated storage, is fitted with interior lighting, and external push button for rink lights and is accessible from the exterior. City standard detail (ref: Standard Tender Documents for Unit Price Contract: Volume No. 2 of 3: Material Specifications & Standard Detail Drawings)

### **General**

- A rink bunker is located with accessible access to park, water spigot and sport program facility (rink).

### **1.0 Area**

1.1 Gross floor area: 9,500 mm<sup>2</sup>

1.2 Ceiling height: 3,000 mm

### **2.0 Access**

2.1 Double doors open outward over 2,000 mm stone dust apron.

### **3.0 Relationships**

3.1 Adjacent

3.1.1 Rink and water spigot

3.1.2 Accessible path

### **4.0 Accessibility**

4.1 per AODA (I) and City of Ottawa Accessibility Standards

### **5.0 Lighting**

5.1 Interior

5.1.1 Energy efficient ceiling mount high bay fixture

5.2 Exterior

5.2.1 Direct buried pole for rink activated by exterior push button

### **6.0 Electrical (SDD)**

6.1 Voltage: 20W, standard park electrical details.

6.2 Duplex outlets; two (2) interior and exterior

### **7.0 Mechanical**

7.1 N/A

### **8.0 Ventilation**

8.1 Vent opening with grill for snow blower storage

### **9.0 Heating**

9.1 Electrical panel heater

### **10.0 Cooling**

10.1 N/A

### **11.0 Water Supply**

11.1 None to bunker; water supply exterior to and adjacent to bunker.

**12.0 Fire Suppression**

**12.1** One (1) wall mounted fire extinguisher, as per OBC

**13.0 Finishes**

**13.1** Floor

**13.1.1** Concrete with hole for floor drain

**13.2** Walls

**13.2.1** Concrete, rigid insulation glued to concrete walls and ceiling of insulated section, stud wall filled with rigid insulation plywood both sides of divider with insulated 914 x 2032 x 44mm hollow metal door.

**13.3** Exterior doors

**13.3.1** 914 x 2032 x 44 mm insulated hollow metal door (x2)

**14.0 Security**

**14.1** As per Corporate Security Standards

**14.2** Follow CEPTED principles and lockable

**15.0 Storage**

**15.1** 2/3 uninsulated storage; 1/3 insulated heated storage

**16.0 Equipment and Furnishings**

**16.1** Hose hanger in heated compartment

**17.0 Appendix**

## **ICE-11 Exterior Rink Change Facility**

**Date:** April 2018    **Version:** v1-0

### **Description**

An Exterior Rink Change Facility is a stand-alone, heated structure for exterior rink users to change skates. The exterior rink change facility is paired with an ICE-10 Exterior Rink Bunker to support ICE-08 Exterior Rink – Boarded facilities.

### **General**

- Standard is a refurbished steel shipping container placed on a stone dust or concrete pad adjacent to the exterior boarded rink, exterior rink bunker and water spigot.

### **1.0 Area**

1.1 Gross floor area: 24m<sup>2</sup> (11 m x 2,200 mm)

1.2 Stone dust or concrete pad: 15 m x 6,000 mm

### **2.0 Access**

2.1 At grade, two (2) wide doors at each end of the shipping container facing the rink. Doors to open outward over stone dust or concrete pad apron.

### **3.0 Relationships**

#### **3.1 Adjacent**

3.1.1 Rink, rink bunker and water spigot

3.1.2 Accessible pad and path

#### **3.2 Daylight**

3.2.1 Single tempered glass window centered between doors, facing rink

3.2.2 Tempered glass panel in doors

#### **3.3 Views In**

3.3.1 Through window and glass in doors

#### **3.4 Views Out**

3.4.1 Through window and glass in doors

### **4.0 Accessibility**

4.1 Per AODA (I) and City of Ottawa Accessibility Standards

### **5.0 Lighting**

#### **5.1 Interior**

5.1.1 Energy efficient ceiling mount high bay fixtures protected by cage

#### **5.2 Exterior**

5.2.1 Two (2) wall mounted Energy efficient fixture above doors, caged

### **6.0 Electrical**

6.1 Voltage: 120

6.2 Duplex outlets: two (2) interior and one (1) exterior, in lockable boxes

### **7.0 Mechanical**

7.1 N/A

### **8.0 Ventilation**

8.1 Natural ventilation through upper and lower grilles



## **9.0 Heating**

**9.1** Electrical panel heaters (2)

## **10.0 Cooling**

**10.1** N/A

## **11.0 Water Supply**

**11.1** N/A

## **12.0 Fire Suppression**

**12.1** One (1) wall mounted fire extinguisher

## **13.0 Finishes**

**13.1** Floor

**13.1.1** 20 mm treated plywood over steel shell floor

**13.2** Walls

**13.2.1** Metal stud wall filled with rigid insulation glued, 20 mm plywood finish

**13.3** Exterior doors

**13.3.1** 914 x 2032 x 44 mm insulated hollow metal door (x2)

## **14.0 Security**

**14.1** As per Corporate Security standards

**14.2** Follow CEPTED principles and lockable

## **15.0 Storage**

**15.1** N/A

## **16.0 Equipment and Furnishings**

**16.1** Wall hung wood benches along all walls, other than door openings

## **17.0 Examples/Best practices**

**17.1** Meadow breeze Park