R·RITZ
ARCHITECT INC.
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Municipality of South Huron
PO Box 759, 322 Main Street South
Exeter, Ontario, N0M 1S6

Attention: Mike Rolph CBCO, Director of Building and Planning,
Chief Building Official 519-235-0310 x 241 cbo@southhuron.ca
Project: South Huron Stephen Arena,
69625 Airport Line, Huron Park, ON N0M 1Y0
Re: Change of Use Review

Mike,

Based on drawings of the existing building provided by you, the following is a review of the Ontario Building Code (Code) with respect to the size and construction of the existing building, the present Arena type occupancy and it's related uses and, the requirements for a proposed change to an Assembly occupancy and related it's uses. This review notes the required construction upgrades, so the building conforms to the Code to accommodate the increased hazard of the proposed Assembly occupancy. Budgets for the upgrades are also provided as part of this report.

Executive Summary

The review concludes with the following, if this building is used for any purpose other than its current use the Construction Index (C.I.) (how the building is constructed) will have to increase from a value of 4 to a value of 6. To achieve this a sprinkler system will be required in the building that also requires a one-hour fire resistance rating.

Through an Alternative Solution, the CBO may consider the building's conformance with 3.2.2.32. which regulates a new building of this size and type. In this option the existing building would require the roof to have a 45 min. fire resistance rating since the building is combustible construction. The CBO could also consider the use of a sprinkler system in lieu of the required roof rating as per 3.2.2.17. Sprinklers in Lieu of Roof Rating. (A new building of this size and type would be permitted to have a combustible roof with a sprinkler system.)

In addition to life safety upgrades other upgrades are required for health and comfort specially an HVAC system to provide tempered fresh air as required for the occupancies proposed.

Present Uses

Under the Ontario Building Code (OBC), as a **new structure**, this building is an arena type building intended for occasional use for trade shows and similar exhibition purposes (3.1.2.3.(1)) shall be classified as Group A, Division 3 (A3) occupancy.

With that said, the existing building does not conform to the building size and construction relative to this occupancy. This means it does not conform to code because it is too big for a building that does not have a fire rated roof. However, the building exists and has been used without incident for the last 23 years.

FEBRUARY 22, 1985
35
YEARS
OAA MEMBER
R. Ritz
Architect

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Since the building does exist, under the OBC it can continue to be used and occupied for what it was designed for, a hockey rink which could also be used for broomball, floor hockey, inline hockey, figure skating, public skating, curling and a roller rink.

As an **existing building** this building is classified as Arenas (No Occupancy On Activity Surface), Ice Rinks (No Occupancy On Activity Surface) and Enclosed Stadia or Grandstand (seating portion only).

Similar facilities are used for sports such as indoor lacrosse, indoor soccer or pickle ball (if nets can be mounted without affecting the concrete pad) require a 24'-30' ceiling height. This buildings rink area's 15' clear height limits these sports.

During the off season the dressing rooms are not appealing for any type of assembly use.

During the off season the lobby, if airconditioned, could be used as an area to play cards with a maximum capacity of 30. Although technically 30 persons is an assembly occupancy typically any group under 30 is not considered an assembly occupancy because 3.1.2.6. in the code does not require a restaurant to be an assembly use if it's capacity does not exceed 30 persons.

The building's non conformance to the Code weighs heavily on what additional occupancies may be permitted in the building.

Proposed Uses

It has been suggested that the rink area be used for exhibition purposes and community events with an assembly of people such as Exhibition Halls, Dance Halls, Concert Halls, Community Halls, Licensed Beverage Establishments, Restaurants. These types of uses would be classified as Group A, Division 2 (A2) occupancy. Also suggested were Daycare Centres however they require a large amount of natural light and the layout of the lobby portion of the building cannot accommodate this requirement.

Classification of the Existing Building

The building is classified as a Group A, Division 3 (A3) - Assembly occupancies of the arena type,

Existing Building Size

The original building ice rink – 192' x 105' = 20,160 sf = 1,872.925 sm. O.L. 394 Persons

The original mechanical room – 30'-4" x 13'-3" = 401.8725 sf = 37.335 sm.

The lobby and dressing room addition – 141'-10" x 63'-6" = 8 371.416 sf = 777.73 sm.

The Zamboni room addition 20'x30' = 600 sf = 55.742 sm.

The total building area is 2,743.732 sm or 2,687.99 sm with out the Zamboni Room

Classification According to Construction and Occupancy for New Structures (How a new building with this use should be constructed if it is built today)

If this was a new building it would be required to comply with 3.2.2.32 Group A, Division Three, one story, increased area which would have a maximum of 3,000 square meters if facing 2 streets. A building of this size can be of combustible and non-combustible construction. The roof assembly shall have, if of combustible construction, a fire resistance rating of not less than 45 minutes. The Code also states that if the occasional use is for trade shows and similar exhibition purposes the building requires a sprinkler system since it is more than 1500 square meters in building area.

Classification According to Construction and Occupancy for Existing Structures

Construction Index (A value for how an existing building is constructed)

Floors over Basement 45 min., Other Floors 45 min., Roof 0 h, Type of Construction Combustible, C.I. 4

Change of Major Occupancy (Change from its present use to another use)

This building is subject to a change of major occupancy (use) and shall conform to the requirements regarding ventilation as per 6.2.2.1.(2) and the return air system as per 6.2.4.7.(1). This leads to Part 11. (The renovation section of the code where some grandfathering is permitted)

Reduction in Performance Level (When the new use requires a building with more life safety features than the present use)

The following is a review of the different applications prescribed by the Code to ensure the existing building meets life safety requirements.

The performance level of the building is **not reduced** since the existing structural floor and roof framing systems and their supporting members are **adequate** to support the proposed dead loads and live loads of the new major occupancy that the building is to support.

The performance level of the building is **not reduced** since the early warning and evacuation systems requirements of the building **do meet** the early warning and evacuation systems requirements set out in Table 10.3.2.2.A. for the new major occupancy that the building is to support.

The performance level of the existing building is **not reduced** since the change in use **will not result** in a change of the major occupancy of the existing building to another major occupancy of a greater hazard index.

Change of Use

Since there is no increase in Occupant Load the performance level of the building **is not reduced** since the proposed construction **will not increase** the occupant load of an existing building by more than 15%.

Capacity

The current Occupant Load (OL) of the ice surface for hockey 12 players and 4 officials for a total of 16.

Seating capacity based on stands capacity 394 persons. 187 persons exit through the Lobby.

Lobby and dressing room capacity based on exiting (284 less 187) 97 persons.

11.4.2.3. Change of Major Occupancy

(1) The performance level of the existing building is reduced for the proposed construction will result in (a) the change of the major occupancy of all or part of the existing building to another major occupancy of a greater hazard index.

The construction index of this building is 4.

The hazard index for its current use “Arenas” (with no occupancy on the activity surface) is 6.

If the use of the ice surface is changed to a community hall or exhibition hall without sales the hazard index would be 6.

Not applicable since there is no increase in the Hazard Index of the new occupancy.

(2) For the purpose of this Article and Sentences 11.4.2.1.(1) and 11.4.2.5.(4), the change of use set out in Clauses (1)(b) to (g) (structural adequacy for the proposed loads) is also deemed to constitute a change in major occupancy.

Not applicable since the structural is adequate to support the proposed dead loads and live loads.

(3) The performance level of an existing building is reduced where the early warning and evacuation systems (fire alarm and exit width) requirements of other Parts for the proposed major occupancy exceed those of the existing building.

Not applicable since existing early warning and evacuation systems requirements comply with other Parts.

(4) The performance level of an existing building is reduced where the proposed major occupancy in the building is not separated from the adjoining major occupancies by fire separations having fire-resistance ratings conforming to Tables 3.1.3.1. and 11.4.3.4.B.

Not applicable since it is not a multiple occupancy building.

(5) The performance level of an existing building is reduced where the occupancy of all or part of an existing building of combustible construction is changed to a new major occupancy that would require the building, if it were a new building, to be of non-combustible construction or to be constructed in accordance with Article 3.2.2.43A. or 3.2.2.50A.

Applicable since it could not be a combustible structure without a roof rating and as such it would have to be a non-combustible structure.

(6) Despite Clause (1)(a), the performance level of an existing building is reduced where proposed construction will result in the change of the major occupancy of all or part of an existing building to a Group C major occupancy in a building over 3 storeys in building height, except in a building conforming to Subclause 3.2.2.44.(1)(a)(ii) and having an egress facility conforming to Sentence 3.3.4.4.(8).

Not applicable since it will not be changed into a Group C occupancy.

11.4.3.4. Change in Major Occupancy

(5) Where the performance level is reduced under Sentence 11.4.2.3.(5), the requirement for the building to be of non-combustible construction or to be constructed in accordance with Article 3.2.2.43A. or 3.2.2.50A. is satisfied if the building is sprinklered.

Sprinkler Budget

Area per head 100 sf. Cost per head: Arena with sloped roof $750, Lobby flat ceiling with attic $500. Cost for water service and sprinkler room equipment $100,000.

Existing Building Size

The original building ice rink – 192’ x 105’ = 20,160 sf / 100sf = 201.6 x $750 = $152,200

The original mechanical room – 30’-4” x 13’-3” = 401.8725 sf / 100 sf = 4.01 x $500 = $2,005

The lobby and dressing room addition – 141’-10” x 63’-6” = 8,371.416 sf / 100 sf = 83.71 x $500 = $41,855

The Zamboni room addition 20’x30’ = 600 sf - Sprinklers are existing.

Sprinkler budget total $296,000

HVAC Budget

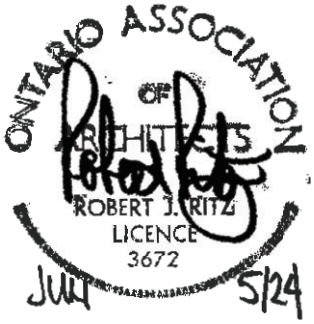
Arena – 30 Ton Cooling $150,000 if it has dehumidification $165,000.

Dressing Rooms - Replace existing Make up Air Unit (MUA) is estimated at 9 tons with cost of $3,000/ton or $27,000.

Conclusion

If this building is used for any purpose other than its current use the C.I. will have to increase to 6. To achieve this a sprinkler system and a ventilation system will be required in the building.

Sincerely,
R. RITZ ARCHITECT



Robert Ritz,
B. Arch., OAA