



BUILDING CODE COMMISSION

IN THE MATTER OF Subsection 24(1) of the *Building Code Act*, S.O. 1992, c. 23, as amended.

AND IN THE MATTER OF Article 3.4.4.4. of Regulation 403, as amended by O. Reg. 22/98, 102/98, 122/98, 152/99, 278/99, 593/99, 597/99 and 205/00 (the "Ontario Building Code").

AND IN THE MATTER OF an application by Ferdinand Regier, Chapman Murray Associates Architects Inc. for the resolution of a dispute with Mel Brown, Chief Building Official, City of Niagara Falls, to determine whether the exit stair, which contains an opening for an elevator that is proposed to have a pressurized elevator shaft, provides sufficiency of compliance with Article 3.4.4.4. of the Ontario Building Code at the Minolta Tower, Niagara Falls, Ontario.

APPLICANT Ferdinand Regier
Chapman Murray Associates Architects Inc.
Niagara Falls, Ontario

RESPONDENT Mel Brown
Chief Building Official
City of Niagara Falls

PANEL Kenneth Peaker, Chair
John Guthrie
Donald Pratt

PLACE Toronto, Ontario

DATE OF HEARING August 2nd, 2001

DATE OF RULING August 2nd, 2001

APPEARANCES Rick Mori
Leber/Rubes Inc.
Toronto, Ontario
Agent for the Applicant

RULING

1. The Applicant

Ferdinand Regier, Chapman Murray Associates Architects Inc., has applied for a building permit under the *Building Code Act*, S.O. 1992, c. 23, as amended, and is proposing renovations to the Minolta Tower in the City of Niagara Falls, Ontario.

2. Description of Construction

The Applicant is undertaking renovations to the Minolta Tower building, which has most recently been used as an observation tower with associated restaurant uses. The building is a 30 storey structure and will be classified as having Group C and Group A, Division 2 occupancies. The tower is of noncombustible construction and is partially sprinklered. In addition, the building is equipped with a fire alarm and a standpipe and hose system.

The building itself is a unique structure. The first floor of the structure is at grade level whereas the next accessible storey is located 64.62 m (212 ft) above ground on the 25th floor. There are currently two fire separated exit stairs, one that serves from grade level to the 26th floor and another that serves up to the 30th floor. In addition, there is also an open stair that leads from the 26th floor through to the 30th floor. The upper floors of the tower are also served by three elevators, equally spaced around the building's interior. One of the elevators runs from the basement level to the top of the tower. The other two are only accessed at ground level and progress to the upper storeys.

The renovations to the building will maintain the two levels of restaurant use on the 25th and 26th floors while the observation levels on floors 27 through 30 will be converted to hotel suites. In light of the alterations being undertaken, the open stair must now be considered as a required exit. As a result, this stair will be enclosed with a fire separation and will cross over and link with the exit stair that stops at the 26th floor. The construction in dispute involves the elevator opening that would be present within the egress route at this crossover location. In linking the two stairs for use as a required exit, and given the configuration of the building and location of the elevator openings in proximity to the exit stairs, the doors to one of the elevators lies between the two stairways and would be included within the enclosure.

The Applicant has proposed to pressurize the elevator shafts as a measure to compensate for the opening within the required exit. Pressurization in these areas would exceed the Code requirements in this building.

3. Dispute

The issue at dispute between the Applicant and Respondent is whether the exit stair, which would contain an opening for an elevator where it is proposed that the elevator shaft will be pressurized, provides sufficiency of compliance with Article 3.4.4.4. of the Ontario Building Code (OBC).

Article 3.4.4.4. outlines the provisions for ensuring that the integrity of exits is maintained. Sentence (1) of this Article provides that fire separations that separate an exit from the remainder of the building shall have no openings. There are several exceptions to this provision, none of which include a door to an elevator hoistway. Sentences (2) through (10) of Article 3.4.4.4. outline prohibitions on the use of an exit area and proscribe any openings, penetrations or appliances from being located within a required exit.

The renovations proposed for the building in dispute would include an elevator opening within the required exit area. However, as compensation for this penetration it is proposed that the building's elevators shafts will be pressurized. An analysis of the early warning and evacuation systems of the building under Part 11 of the OBC reveals that, in a sprinklered building, under Measurement A of the Supplemental Guidelines, the elevator shafts are not required to be pressurized. Given that this is an existing building, the anticipated renovations fall within these provisions of the Code.

4. Provisions of the Ontario Building Code

3.4.4.4. Integrity of Exits

(1) A *fire separation* that separates an *exit* from the remainder of the *building* shall have no openings except for

- (a) standpipe and sprinkler piping,
- (b) electrical wires and cables, totally enclosed *noncombustible* raceways and *noncombustible* piping that serve only the *exit*,
- (c) openings required by the provisions of Subsection 3.2.6.,
- (d) *exit* doorways, and
- (e) wired glass and glass block permitted by Article 3.1.8.14.

(2) *Exits* within scissors stairs and other contiguous *exit* stairways shall be separated from each other by a smoke-tight *fire separation* having a *fire-resistance rating* not less than that required for the floor assembly through which they pass.

(3) *Fire separations* separating contiguous stairs described in Sentence (2) shall not be pierced by doorways, ductwork, piping or any other openings that affect the continuity of the separation.

(4) A fuel-fired *appliance* shall not be installed in an *exit*.

(5) An *exit* shall not be used as a *plenum* for a heating, ventilating or air-conditioning system.

(6) An *exit* shall be designed for no purpose other than for exiting, except that an *exit* is permitted also to be designed to serve as an access to a *floor area*.

(7) A *service room* shall not open directly into an *exit*.

(8) Storage rooms, washrooms, toilet rooms, laundry rooms and similar ancillary rooms shall not open directly into an *exit*.

(9) *Service spaces* referred to in Sentence 3.2.1.1.(7) shall not open directly into an *exit*.

(10) In elementary and secondary schools, an *exit* shall be designed so that it does not serve as an access from one portion of a *floor area* to another portion of the same *floor area*.

5. Applicant's Position

The Agent for the Applicant submitted that the Minolta Tower is a unique structure that was constructed prior to either the Ontario Building Code or the National Building Code. He described the structure as a long tower with a "goblet-like" top. There are presently two fire rated stairs in the tower; one running from the ground level to the 26th storey and the other running from ground level to the 30th.

There is also an open stair that runs between floors 26 and 30. When originally constructed, these stairs were to serve the restaurants and observation decks at the top of the tower.

As part of the current renovations it has been a goal of the Applicant to make the building as Code compliant as possible. The second required exit stair that would serve the residential hotel suites must cross over at the 26th floor between stairwells. This area will be fire separated from the remainder of the floor area, however, an elevator opening is located within the proposed exit route between the two stairs. The Agent recognized that an elevator opening within a required exit space is not usually permitted but advised that the elevator in question is a prime elevator needed to access the restaurant uses on the 25th and 26th floors.

The Agent argued that, because of the spatial limitations within the tower, they had no other option than to include the elevator within the required exit route between the two stairwells. As a measure to compensate for this penetration, however, they are proposing to pressurize all of the elevator shafts. In their analysis of the building, and based on the renovations proposed, it was concluded that the hazard index would not be increased, therefore, pressurization would not be required. The compensating measure would, therefore, be in excess of the OBC requirements in this instance.

The Agent further submitted that a proposed Fire Safety Plan could address the issue of when pressurization of the elevator shaft would be warranted. He stated that, as a result of the change in major occupancy from an assembly use to residential hotel suites, there will be fewer people on the upper floors that would require evacuation in an emergency. In fact, he advised that the fire department anticipated that people would likely wait in their rooms for evacuation by fire department personnel.

In terms of the added value of pressurizing the elevator shaft, the Agent submitted that his research concluded that several literary sources supported the protection of an exit using pressurization. In addition, he argued that there is little possibility of a fire starting below the 26th floor. He also advised that the elevator cabs themselves are fairly fire resistant being comprised of a marble floor, steel ceiling and essentially noncombustible walls. He emphasized that most fires that start in elevators do not originate from the mechanical systems but from vandalism of the cabs.

In summation, the Agent submitted that in his opinion, pressurization of the elevator shaft would adequately maintain the integrity of the exit at this crossover location. He submitted that the shaft of the elevator is much larger than the cab and that pressurization would be quite effective. In addition, the elevators are all fully manned and can be recalled to the ground level if required. He stated that the elevator in question is required for patrons to access the restaurant levels. To remove the elevator opening on the 26th floor would pose a hardship for the restaurant operators.

6. Respondent's Position

The Respondent chose not to attend the hearing and as a result the Building Code Commission relied on his written submission only.

In his summarization of the dispute the Respondent advised that “(i)n accordance with 3.4.4.4. Integrity of Exits, an opening for an elevator shaft in an exit is not a listed exception.” In this instance the exit stair at the 26th floor contains an elevator door opening to the shaft and cannot be accepted as code compliant by the municipality.

7. Commission Ruling

It is the decision of the Building Code Commission that the exit stair, which contains an opening for an

elevator that is proposed to have a pressurized elevator shaft, does not provide sufficiency of compliance with Article 3.4.4.4. of the Ontario Building Code at the Minolta Tower, Niagara Falls, Ontario.

8. Reasons

- i) The integrity of the required exit is compromised by the elevator opening.
- ii) The proposed compensating measure, while making the elevator safer, does not adequately address the problem of the exit's integrity.

Dated at Toronto this **2nd** day in the month of **August** in the year **2001** for application number **2001-40** .

Dr. Kenneth Peaker, Chair

Mr. John Guthrie

Mr. Donald Pratt