



**SAFETY CODES COUNCIL**

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**COUNCIL ORDER No. 0015437**

**BEFORE THE BUILDING TECHNICAL COUNCIL**

**On December 10, 2013**

**IN THE MATTER OF** the Safety Codes Act, Revised Statutes of Alberta 2000, Chapter S-1.

**AND IN THE MATTER OF** the Order dated August 30, 2013 issued by an Accredited Municipality (the Respondent) against a Health Care Provider. (the Appellants).

**UPON REVIEWING** the Order **AND UPON HEARING** the Appellants and the Respondent; **THIS COUNCIL ORDERS THAT** the Order is **VARIED**.

**FROM:**

Building must comply with Clause 3.4.6.15.(4)(e), Division B on or before October 11, 2013.

**TO:**

You are hereby ordered to ensure the building complies with Clause 3.4.6.15.(4)(e), of Division B of the Alberta Building Code 2006, prior to building occupancy.

**Issue:**

1. The appeal concerns a 3930 m<sup>2</sup> sprinklered, two-storey building of combustible construction. The building is divided into 4 separate buildings by firewalls having a fire resistance rating of not less than 2 hours. The building is intended to house people who are assessed and placed there as Supportive Living Level 4 (SL-4) or Supportive Living Level 4 Dementia (SL-4D) residents through Alberta Health Services. The supportive living classifications are under Alberta Health Services and bear no direct correlation to Alberta Building Code occupancy classifications. Construction is near completion with occupancy scheduled for January 2014.

2. The issues on appeal are:
  - 1) The Appellants have installed electromagnetic locking devices (Mag Locks) in the building to be used to secure dementia residents who will live in the SL-4D unit(s) of the building. The Mag Locks on the doors are not compliant with Clause 3.4.6.15(4)(e) of Division B of the Alberta Building Code 2006 (ABC 2006), as the Mag Locks will not release after 15 seconds when pressure is applied.
  - 2) By not complying with the requirements of Clause 3.4.6.15(4)(e) of Division B of the ABC 2006, an impeded egress zone is created which then requires the building to be constructed in conformance with Article 3.2.2.19. of Division B of the ABC 2006.
  - 3) The Appellants propose an alternative solution to the requirements of Clause 3.4.6.15.(4)(e) of Division B of the ABC 2006. The proposed solution is listed on page 6 of the Appellants' *Mag Lock Alternative Solution Report*. (The Record item 8(g)b).
  - 4) Whether the alternative solution proposed by the Appellants provides an equivalent or greater level of safety to persons and property as required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions as required by Article 1.2.1.1. of Division A of the ABC 2006.

**Appearances, and Preliminary, Evidentiary or Procedural Matters:**

3. Appearing for the Appellants, the Appeal Panel heard from the Project Manager with the health care provider, an architect, a security consultant and a building services manager with an engineering company.
4. Appearing for the Respondent, the Appeal Panel Heard from two building safety codes officers employed by the accredited municipality.
5. At the commencement of the hearing, the Appellants and Respondent confirmed that there were no objections to any members of the hearing panel, and that the Safety Codes Council in general and the Appeal Panel in particular had jurisdiction to hear and decide the appeal.
6. During introductions, the Appellants and Respondent confirmed that there were no objections to the technical advisor attending the appeal hearing to advise the Appeal Panel on technical matters. The Appeal Panel Chair iterated that the technical advisor does not participate in deliberations.
7. The Appeal Panel Chair read out a list of the written material before the panel, consisting of the documents listed below in paragraph 8. The Appellants and the Respondent confirmed that there were no objections to any of the written material submitted to the panel prior to the hearing.

**The Record:**

8. The Appeal Panel considered, or had available for reference, the following documentation:

- a) Appeal Hearing Brief from the Respondent (undated), with attachments:
  - a. Letter from the project manager of July 23, 2013
  - b. Letter from the project manager of October 20, 2013
  - c. E-mail from Respondent to the architect of March 21, 2012
  - d. E-mail from the security consultant to the Respondent of December 18, 2012
  - e. Copy of Standata 97-IB-019R1 of March 2000
- b) Written Notification of Appeal Hearing dated November 1, 2013
- c) Appeal Hearing Brief Preparation Guide
- d) Stay Letter dated October 25, 2013
- e) Request to stay the order dated October 20, 2013
- f) Acknowledgement Letter dated October 25, 2013
- g) Copy of Notice of Appeal dated October 1, 2013 with attachments:
  - a. Request for specific variance
  - b. Mag Lock Alternative Solution Report with Appendices A to E
- h) Copy of Cover Letter and Order dated August 30, 2013, issued by the Respondent
- i) Copy of letter dated July 23, 2013 from the Appellants to the Respondent

**Provisions of the Safety Codes Act:**

- 9. The Safety Codes Act provides:

Part 1 Responsibilities

Owners, care and control

5 The owner of any thing, process or activity to which this Act applies shall ensure that it meets the requirements of this Act, that the thing is maintained as required by the regulations and that when the process or activity is undertaken it is done in a safe manner.

Part 5 Orders, Appeals

Council considers appeal

52(2) The Council may by order

- (a) Confirm, revoke or vary an order, suspension or cancellation appealed to it and as a term of its order may issue a written variance with respect to any thing, process or activity related to the subject-matter of the order if in its opinion the variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by this Act.

**Provisions of the Safety Codes Act Building Code Regulation**

- 10. Code in Force

1. The *Alberta Building Code 2006*, as established by the Safety Codes Council and published by the National Research Council of Canada, is declared in force with respect to buildings, with the variations set out in the Schedule.

## Provisions of the Alberta Building Code 2006 (ABC 2006):

11. The Alberta Building Code 2006 Division B thereto provides, *inter alia*:

### **Division A, Article 1.4.1.2. Defined Terms**

*Impeded egress zone* means a supervised area in which occupants have free movement but require the release, by security personnel, of security doors at the boundary before they are able to leave the area, but does not include a *contained use area*.

### **Division B**

### **Part 3 Fire Protection, Occupant Safety and Accessibility**

#### **3.2.2.19 Buildings Containing Impeded Egress Zones**

1) A *building* containing an *impeded egress zone* and conforming to the appropriate requirements of Articles 3.2.2.20. to 3.2.2.83. is not required to conform to the requirements of Articles 3.2.2.36. and 3.2.2.37. for a Group B, Division 1 *major occupancy* provided

- a) the *building* is *sprinklered* throughout,
- b) it is not more than 1 *storey* in *building height*,
- c) it does not include
  - i. a *contained use area*,
  - ii. sleeping accommodation,
  - iii. a *high-hazard industrial occupancy*, or
  - iv. a *mercantile occupancy*,
- d) the *building area* is not more than 6 400 m<sup>2</sup> if the *building* includes a *medium-hazard industrial occupancy*,
- e) the *impeded egress zone* does not extend beyond the boundaries of the *fire compartment* in which it is located, and
- f) the *occupant load* of the *impeded egress zone* is not more than 100.

#### **3.2.2.36 Group B, Division 1, Any Height, Any Area, Sprinklered**

- 1) Except as permitted by Article 3.2.2.37., a *building* classified as Group B, Division 1 shall conform to Sentence (2).
- 2) Except as permitted by Article 3.2.2.16, the *building* referred to in Sentence (1) shall be of *non-combustible construction*, and
  - a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
  - b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
  - c) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
  - d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

### **3.2.2.37 Group B, Division 1, up to 3 Storeys, Sprinklered**

- 1) A *building* classified as Group B, Division 1 is permitted to conform to Sentence (2) provided
  - a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18(2), the *building* is *sprinklered* throughout,
  - b) it is not more than 3 *storeys* in *building height*, and
  - c) it has a *building area*
    - i) that is not limited if the *building* is not more than 1 *storey* in *building height*,
    - ii) not more than 12 000 m<sup>2</sup> if 2 *storeys* in *building height*, or
    - iii) not more than 8 000 m<sup>2</sup> if 3 *storeys* in *building height*
- 2) Except as permitted by Article 3.2.2.16., the building referred to in Sentence (1) shall be of *noncombustible construction*, and
  - a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
  - b) *mezzanines* shall have a fire-resistance rating not less than 1 h, and
  - c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

### **3.2.2.40. Group B, Division 2, up to 2 Storeys, Sprinklered**

- 1) A *building* classified as Group B, Division 2 is permitted to conform to Sentence (2) provided
  - a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
  - b) it is not more than 2 *storeys* in *building height*, and
  - c) it has a *building area* not more than
    - i) 2400 m<sup>2</sup> if 1 *storey* in *building height*, or
    - ii) 1600 m<sup>2</sup> if 2 *storeys* in *building height*.
- 2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
  - a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
  - b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, and
  - c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

### **3.3.1.13.(6) through (10) Doors and Door Hardware**

- 6) An egress door in an *access to exit* serving a *contained use area* or an *impeded egress zone* is permitted to be equipped with locking devices that can be released either locally or remotely in conformance with Sentence (7) or (8). (See Appendix A)
- 7) Local locking devices permitted by Sentence (6) shall be operable by a key from both sides of the door.

- 8) Controls for the remote release of door locking devices permitted by Sentence (6) shall be located in an area readily available to security personnel.
- 9) Locking devices permitted by Sentence (6) that are electrically operated shall be
  - a) designed to operate on emergency power, and
  - b) capable of manual release by security personnel.
- 10) Except as stated in Sentence (6), electromagnetic locks are permitted to be used on egress doors located in an *access to exit* provided
  - a) the locks and doors are installed in conformance with Sentence 3.4.6.15.(4), and
  - b) if electromagnetic locks are also used on the *exit* doors in the same *means of egress*, then the total time delay for all electromagnetic locks in the *means of egress* is not more than 30 s.

#### **3.4.6.15.(4)(e) Door Release Hardware**

- 4) Electromagnetic locks that do not incorporate latches, pins or other similar devices to keep the door in the closed position are permitted to be installed on *exit* doors other than doors leading directly from a *high-hazard industrial occupancy*, provided
  - a. the *building* is equipped with a fire alarm system,
  - b. the locking device, and all similar devices in the *access to exit* leading to the *exit* door, release upon actuation of the fire *alarm signal*,
  - c. the locking device releases immediately upon loss of power controlling the electromagnetic locking mechanism and its associated auxiliary controls,
  - d. the locking device releases immediately upon actuation of a manually operated switch readily accessible only to authorized personnel,
  - e. a force of not more than 90 N applied to the door opening hardware initiates an irreversible process that will release the locking device within 15 s and not relock until the door has been opened,
  - f. upon release, the locking device must be reset manually by the actuation of the switch referred to in Clause (d), and
  - g. a legible sign is permanently mounted on the *exit* door to indicate that the locking device will release within 15 s of applying pressure to the door-opening hardware.

(See Appendix A.)

### **Position of the Parties**

#### *Appellant*

12. The Appellants' position is that:
13. SL-4D clients may present elopement or wandering tendencies and are required to be monitored within a secure environment. The building has electromagnetic locking devices (Mag Locks) installed on 8 doors within the building. The electromagnetic locks prevent residents from wandering away from their assigned areas because the locks do not release when the door operating device is pushed. Through programming the doors operate as described in different stages of fire alarm activation identified in appendix D of the Appellants' *Mag Lock Alternative Solution Report* (The Record item #8(g)(b) and

when care staff determines it is safe to permit the door to open or when a code is applied on a key pad adjacent to the door by a visitor or staff member.

14. A home environment is necessary for the well-being of dementia residents and current code limitations require adapting a different form of building which would have impact on the Appellants' goal of creating a residential and homelike setting.
15. The Order frames two issues:
  - 1) The first issue is relative to Clause 3.4.6.15.(4)(e) of Division B of the Alberta Building Code. The Appellants propose a request for variance to allow the installed Mag Locks to remain locked from other areas of the building and outside, without the code required 15 second release.
  - 2) The second issue is relative to Clause 3.2.2.19(1)(b) and Subclause 3.2.2.19.(1)(c)(ii) of Division B of the Alberta Building Code. This issue relates to the construction of the building. The Appellants state that they do not believe these code references are appropriate as they see these code references as specific to Group B Division 1 major occupancies.
16. The Appellants position is that any reference to the buildings construction methodology becomes a moot point if the first issue is rectified.

*Respondent*

17. The Respondent's position is that:
  - a) The electromagnetic locks on exit doors 1 through 7 will not release after 15 seconds when pressure is applied to the release mechanism, causing an impeded egress zone. This is in contravention of Clause 3.4.6.15.(4)(e), Division B of the Alberta Building Code.
  - b) The building is constructed under Article 3.2.2.40., Division B of the Alberta Building Code, up to 2 storeys, sprinklered. The building is of combustible construction and does not meet the exceptions of Article 3.2.2.19. of Division B of the Alberta Building Code and therefore does not permit an impeded egress zone.
    - a. 3.2.2.19.(1)(b) requires that the building is not more than 1 storey in building height. The building is 2 storeys.
    - b. 3.2.2.19.(1)(c)(ii) prohibits sleeping accommodation. The building has sleeping accommodations.

**Reasons for Decision (Findings of Fact and Law):**

The Appeal Panel makes the following findings:

18. The parties do not dispute the following facts, and the Appeal Panel finds them to be proven:

- i) A Standata issued in March 2000 (Standata 97-IB-019R1) allowed, with conditions, the use of electromagnetic locking devices on exit doors that serve the cognitively impaired;
  - ii) The Standata 97-IB-019R1 did not apply to egress doors;
  - iii) Standata 97-IB-019R1 was not reissued upon implementation of the 2006 Alberta Building Code;
  - iv) The Appellants submitted a *Request for Specific Variance* to the Respondent in November 2012;
  - v) In a letter dated July 23, 2013 the Appellants advised the Respondent that they intended to proceed with installing the Mag Locks as outlined in their proposed alternative solution acknowledging that their solution was “not with the current intent of the Alberta Building Code” (The Record Item 8(i));
  - vi) The Order was issued on August 30, 2013 by the Respondent, in response to the Appellant’s letter of July 23, 2013, where the Appellant indicated their intention to proceed with installing the Mag Locks without the 15 second delay. (The Record item 8(h));
  - vii) In testimony, the Appellants indicated that occupancy is scheduled for January 2014;
  - viii) The Appellants intend to house SL-4D residents in an area contained on the second floor (Doors 1 through 6) of the facility and propose to lock the doors separating the dementia wards from the other areas of the building and from the outside;
  - ix) The Appellants also propose to expand the SL-4D area to an area within the Main Level by providing locking devices on Doors 7 and 8 to be activated only if the additional capacity is required in the future (Mag Lock Alternative Solution Report Page 2);
  - x) The Alberta Building Code requirements are not based on staffing levels provided to operate a building;
19. The Appeal Panel finds that the Appellants’ proposed alternative solution to the mag lock requirements causes an impeded egress zone. The measures listed as (1) through (13) on pages 6 to 8 of the Mag Lock Alternative Solution Report lack sufficient evidence of achieving at least the level of performance required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions required by the Alberta Building Code 2006.
20. Section 2.4 on Page 6 to 8 of the *Mag Lock Alternative Solution Report*, contains proposed measures for the Appellants’ Proposed Alternative Solution. The Appeal Panel reviewed measures 1-13 and finds that all of the measures combined do not meet the ABC 2006 and where the Appellants have indicated staffing requirements as a solution, the Appeal Panel finds that staffing requirements are not regulated by the ABC 2006 and does not provide an equivalency to, or better level of safety than what is required in the ABC 2006.
21. The Appeal Panel disagrees with the Appellants approach, as the use of the Mag Locks without a 15 second delay creates an impeded egress zone as defined in the Alberta



Building Code 2006. The Appellants have not adequately addressed the impeded egress zone requirements of the Alberta Building Code 2006, for combustible structures, nor demonstrated equivalency.

22. The Alberta Building Code allows for the use of electromagnetic locks in certain circumstances. When the specified requirements for electromagnetic locks are complied with, the building may be constructed as though it does not have an impeded egress zone. When the requirements are not complied with, as in this building, and the locks are still used without a 15 second delay, an impeded egress zone is created. This then creates a situation where the building construction must comply with the requirements of article 3.2.2.19. or demonstrate equivalency.
23. A building with an impeded egress zone is required to be of noncombustible construction unless it meets the exceptions found in Article 3.2.2.19. There are two exceptions that this building does not comply with; it is more than one storey and it includes sleeping accommodation.
24. In an effort to keep the residents of the SL4-D area secure by using the Mag Locks without allowing for the doors to release upon applying pressure, the Appellants have elevated the safety risk to all building occupants, residents, staff, caregivers, and visitors, by removing free access to an exit and without providing increased safety in other ways.
25. An objective of the Alberta Building Code is to limit the probability that a person in or adjacent to the building or facility will be exposed to an unacceptable risk of injury due to hazards. The risks of injury due to hazards addressed are those caused by persons being delayed in or impeded from moving to a safe place during an emergency.
26. In testimony and in the evidence presented, the Appellants stated that the purpose of the Mag Locks is to prevent residents from wandering away from their assigned areas into areas where their safety may be compromised. While the Appeal Panel agrees with this logic of preventing wandering, the Appeal Panel finds that the building's construction does not address the increased safety concerns caused by controlled exiting.
27. The Appellants indicated that they installed the Mag Locks partly because they believed that the measures they were taking complied with proposed changes to the 2015 National Building Code. The proposed changes to the 2015 National Building Code, provided by the Appellants (Page 3 of the *Mag Lock Alternative Solution Report*) deal with the use of Mag Locks on access to exit doors where there is more than one door in an egress path equipped with Mag Locks. The locations of the doors in the Appellants' building are exit doors through firewalls or into exit stairs. The proposed building code changes do not reflect staffing issues nor do they address specifics to occupancies containing cognitively impaired residents. The Appeal Panel finds that the proposed 2015 National Building Code changes, as provided by Appellants, does not address the Appellants' building and does not support their argument.

28. Alternatively, if it were found that the proposed changes to the 2015 National Building Code did address the specifics of the Appellants' building, the Appeal Panel finds that there are no assurances of the adoption of these changes into the 2015 National Building Code.
29. Further, the Appeal Panel finds that the applicable code in Alberta is the Alberta Building Code 2006 and it is expected that the next edition of the Alberta Building Code will be based upon the 2010 National Building Code.
30. The Appeal Panel finds that the Standata 97-IB-019R1 does not provide authority to grant a variance in this case. The Standata is not active and cannot be applied under the 2006 ABC. Previous editions of Standata are specific to the version of the Safety Code that they were issued under. When a new Safety Code, in this case Alberta Building Code, comes into effect, all existing Standata, unless reissued, are obsolete and cannot be used for new construction. When the 2006 Alberta Building Code came into force Standata 97-IB-019R1 was not reissued.
31. The Appeal Panel finds, and the parties do not dispute, that the Appellants were aware that the installation and use of the Mag Locks, in this manner, is in contravention with the Alberta Building Code 2006 and the Appellants were aware that the Authority Having Jurisdiction did not grant a variance to allow it.
32. In testimony the Appellants indicated their interpretation that non-combustible construction was just "bars and concrete" and would not achieve the goal of a home environment necessary for the residents' well-being. The Appeal Panel accepts the Appellants' position that a home environment is necessary for the residents' well-being, but the Appeal Panel does not agree with the Appellants' argument, nor was evidence presented by the Appellants, that a home environment cannot be achieved with non-combustible construction.
33. The Appeal Panel recognizes that there is a need for dementia residences and there is a need to ensure the security of the residents that limits the risk of dementia residents eloping or wandering away from the building which could cause harm to them. The ABC 2006 recognizes and manages the safety risks through prescribed requirements. It is the Appeal Panel's determination that the building must comply with all requirements of the Alberta Building Code 2006, where an impeded egress exists, to provide a level of safety as intended for all occupants – residents, staff, caregivers, and visitors.

Dated at Edmonton, Alberta this 30th day of December 2013

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Chair, Building Technical Council Appeal Panel