

# CFSA news

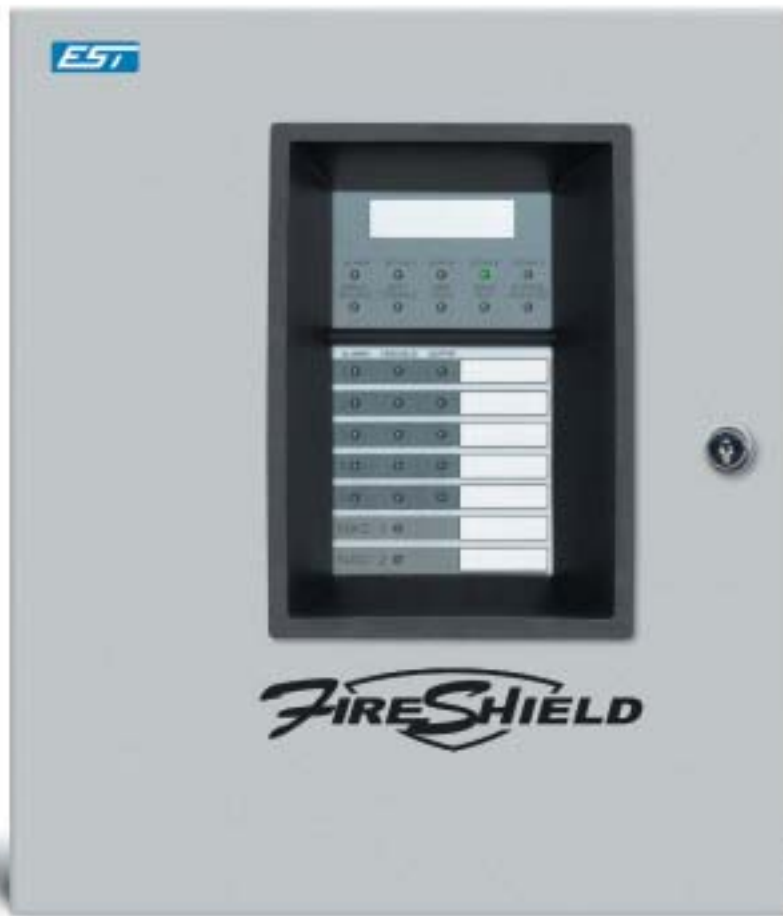
CANADIAN FIRE SAFETY ASSOCIATION

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OCTOBER 2006

## **Introduction of the new 2006 Ontario Building Code**





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### Editor: Matteo Gilfillan

The CFSA News Magazine is published 4 times per year – Summer, Fall, Winter, Spring

### Advertising Rates

Membership has its benefits, and advertising is a key advantage to getting your company and product information out to other members in the industry. The CFSA has decided to make advertising in the CFSA Newsletter a definite advantage for members. Pricing has been revised to include the following rates:

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Prices listed are for each issue and do not include GST. Corporate members receive a 10% discount.

**For more information** regarding advertising in the CFSA Newsletter, please contact Mary Lou Murray at (416) 492-9417 or [cfsa@taylorenterprises.com](mailto:cfsa@taylorenterprises.com).

### Closing dates

for submissions are as follows:  
Issue #1 – May 20 Issue #3 – Nov. 19  
Issue #2 – Aug. 19 Issue #4 – Feb. 17

All general enquiries and advertising materials should be directed to the CFSA office at:

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Toronto, Ontario M2J 1W8

Your comments, suggestions and articles are welcome.

Please send them to the attention of:

The Editor

Canadian Fire Safety Association  
2175 Sheppard Ave., E., Suite 310  
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Views of the authors expressed in any articles are not necessarily the views of the Canadian Fire Safety Association.

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Janet O'Carroll

# PRESIDENT'S message

It has been a busy summer for the Canadian Fire Safety Association (CFSA). We have been reviewing several sections of the association with the goal of enhancing the benefits offered to our membership.

The Membership Committee has created a new membership category for those individuals, companies, regulatory authorities, etc., outside of Ontario who are interested in creating a Chapter for their region. This is an exciting prospect as the CFSA will be looking to expand across Canada and become a truly national organization.

The Dinner Meetings Committee has selected a new venue (trial basis) and has altered the dinner format to include time and space for a reception prior to dinner, in order to provide participants the opportunity to network in a friendly environment. The first dinner meeting of the year took place on September 20, 2006 at Le Park Conference and Convention Centre, at which Kim Bailey of the Office of the Fire Marshal discussed Section 9.9 "Hotels" from the Ontario Fire Code.

Upcoming events include the 35th Anniversary Gala Dinner, which is scheduled for October 18, 2006, Dr. Jim Young will be the keynote speaker and the entertainment will be provided by the Ontario Pipes and Drums Band. Also on the calendar for November 1, 2006, Rick Florio of Tyco Thermal Controls will be presenting Fire Protection of Life Safety Electrical Circuits in High-rise Buildings and on November 16, 2006, the International Firestop Council will be presenting Inspections of Firestop Systems.

A new Committee has been formed to explore additional training seminars/other events and partnership opportunities with other associations. To this end, the CFSA is working towards partnering with the National Fire Protection Association (NFPA) to offer courses on NFPA standards across Canada.

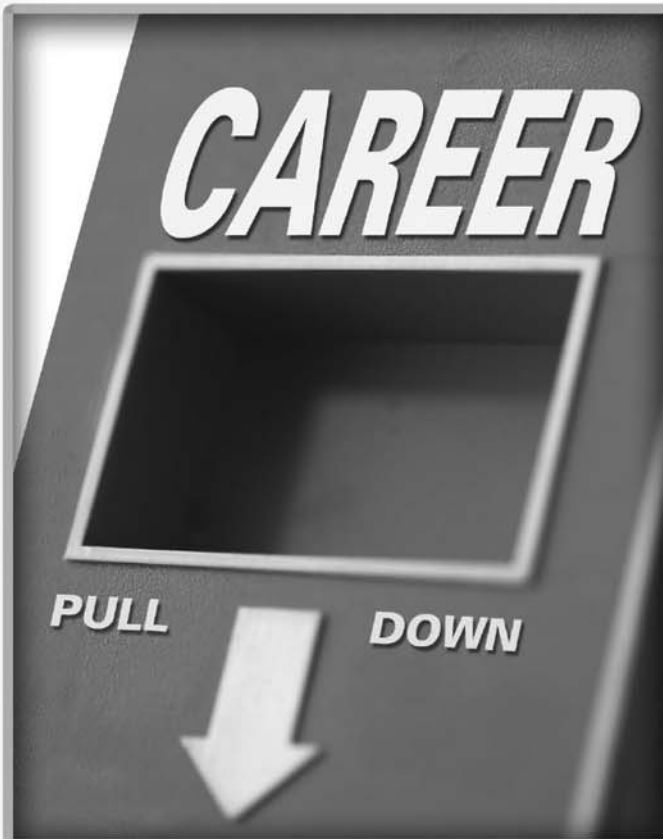
Many of these changes and event notices can be found in this edition of the CFSA News or on the website at [www.canadianfiresafety.com](http://www.canadianfiresafety.com).

I look forward to meeting many of you at the events we have planned for this year.

A handwritten signature in cursive script that reads "J. O'Carroll".

Janet O'Carroll, C.E.T., CFPS  
CFSA President

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Matteo Gilfillan

## EDITOR'S note

I would like to take this opportunity to introduce myself, as I am new to the CFSA Board of Directors as well as to the post of *CFSA News* editor. My name is Matteo Gilfillan, and I am an Assistant Project Manager at Randal Brown & Associates Ltd., a fire and life safety consulting engineering firm located in Toronto, Ontario.

I am honored to be included in the illustrious company of individuals that comprise the CFSA Board of Directors. I have never met a group of people so driven to bringing information to the masses regarding fire and life safety. I thank them once again for electing me to the Board.

It is an exciting time to be a part of CFSA, with the Building and Fire Codes of Canada shifting to an objective-based format, new developments in fire and life safety technology constantly surfacing, and an ever-increasing appreciation of the importance of public awareness. I am sure there will be no shortage of topics for our Association's dinner meetings and morning technical sessions!

The theme of this edition of the *CFSA News* is the introduction of the new 2006 Ontario Building Code (OBC, O.Reg. 350/06). In addition to providing a general overview of the 2006 OBC, we sought to delve a little deeper into the changes from the 1997 OBC regarding barrier-free accessibility and energy conservation. A special thanks goes out to the Ministry of Municipal Affairs and Housing, who are not only offering free information sessions regarding the new technical changes and format of the OBC for all interested parties, but have also published a myriad of articles on their website ([www.mah.gov.on.ca](http://www.mah.gov.on.ca)) to provide clarity on the impact of the changes in the new edition of the Code (some of which are featured in this edition of the *CFSA News*).

Also featured in this edition of the *CFSA News* are articles on smoke alarm battery capacity, Fire Prevention Week in Ontario, regulatory amendments to the Ontario Fire Code (i.e., hotel fire safety), and many more.

The *CFSA News* journal committee is looking for articles and topics for articles from our membership. If you are interested in providing an article or would like to see a specific topic discussed in the *CFSA News*, please contact me.

A handwritten signature in black ink, appearing to read 'Matteo Gilfillan'.

Matteo Gilfillan, C.E.T., CFPS

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# Barrier-Free Accessibility in the 2006 Ontario Building Code

*Matteo Gilfillan is an Assistant Project Manager at Randal Brown & Associates Ltd., a building code and fire protection consulting engineering firm. He is also the editor of the CFSA Journal.*

The changes in the 2006 Ontario Building Code have refined the standards for barrier-free accessibility in an effort to support the overall goal / intent of the Accessibility for Ontarians with Disabilities Act, 2005 (AODA), which is to create improved accessibility for everyone in the Province of Ontario.

The following is a list of the significant changes from the 1997 Ontario Building Code (O.Reg. 403/97) to the 2006 Ontario Building Code with respect to barrier-free accessibility (all references noted below are with respect to the 2006 Ontario Building Code):

**3.8.1.2.(5):** Additional regulation which requires the path of travel between two barrier-free storeys in different buildings connected via walkways or pedestrian bridges to be barrier-free.

**3.8.1.3:** Every barrier-free path of travel is required to be provided with an unobstructed width of at least 1100 mm for the passage of wheelchairs. The 1997 OBC only required a 1060 mm unobstructed width for barrier-free passage.

**3.8.1.4.(2):** Additional regulation which requires the route from an escalator or inclined moving walk to the barrier-free path of travel that leads from floor to floor to be clearly indicated by appropriate signs.

**3.8.1.5.(1):** The control for the operation of building services or safety devices, intended to be operated by the occupant and located in a barrier-free path of travel is required to be accessible to a person in a wheelchair, operable with one hand and mounted at not more than 1200 mm above the floor. The 2006 OBC also requires that the minimum mounting

height of these controls to be not less than 900 mm above the floor.

**3.8.1.5.(2):** Additional regulation that requires a sign intended for the public to indicate the operation of a building security system that controls access to a building is required to consist of an audible and visual signal.

**3.8.2.1.(1) and 3.8.2.1.(4):** Barrier-free path of travel from the designated barrier-free entrances is required to be provided throughout the entrance storey and within all other normally occupied floor areas served by a passenger elevator, escalator, inclined moving walk, or other platform equipped passenger elevating device. The 1997 OBC permitted the barrier-free entrance to be waived from within a suite of residential occupancy. The 2006 OBC requires that in a Group C major occupancy apartment building (which will include a condominium), not less than 10% of all residential suites are required to be provided with a barrier-free path of travel from the suite entrance door to the doorway to at least one bedroom at the same level, and to the doorway to at least one bathroom having an area not less than 4.5 m<sup>2</sup> at the same level and conforming to Sentence 9.6.3.3.(1).

**3.8.2.3.(3)(c):** Washrooms are not required to be barrier free accessible provided they are located in an individual suite having an area of less than 300 m<sup>2</sup> in buildings where such suite is completely cut off from the remainder of the building so that there is no access to the remainder of the building, and in individual suites used for a business and personal services occupancy, a mercantile occupancy or an industrial occupancy. The 1997 OBC does not require the suite to be used



for a business and personal services occupancy, a mercantile occupancy or an industrial occupancy for washrooms to be waived from the requirements of Sentence (2).

**3.8.2.4:** Additional regulation that requires at least 10% of the suites of a hotel (to a maximum of 20 suites) are required to have a barrier-free path of travel extending to the inside of each room, and to a balcony where required by Sentence 3.3.1.7.(2) and be distributed among storeys having a barrier-free path of travel. This Article further states that a suite having a barrier-free path of travel mentioned above, is required to have a bathroom that conforms to the requirements of Clauses 3.8.3.12.(1)(a) to (i); has an unobstructed area at least 1200 mm in diameter extending the full height of the room, and has a bath or shower that conforms to the requirements of Article 3.8.3.13.

**3.8.3.1.(1)(b):** Where a building is required to have a barrier-free entrance to accommodate disabled persons, signs incorporating the International Symbol of Accessibility is required to be installed where necessary to indicate the location of that entrance. The 2006 OBC also requires that the sign mentioned above is to



be provided at the location of ramps located in a required barrier-free path of travel serving that entrance.

**3.8.3.1.(5):** Additional regulation which states that characters, symbols or pictographs on tactile signs are required, and if wall mounted, are to be located not less than 1200 mm and not more than 1500 mm above the floor.

**3.8.3.2.(1)(g):** Exterior walks that form part of a barrier-free path of travel are required to have a level area adjacent to the entrance doorway conforming to Clause 3.8.3.4.(1)(c), which requires a level area of at least 1670 mm x 1670 mm at the top and bottom of a ramp. The 1997 OBC only requires a 1500 mm x 1500 mm level area at the top and bottom of the ramp.

**3.8.3.2.(3)(a):** A barrier-free curb ramp is required to have a slope of 1:10 to 1:12 for a vertical rise of 75 to 200 mm and a slope of 1:8 to 1:10 for a vertical rise of less than 75 mm. The 1997 OBC permitted a maximum gradient of 1 in 7.5, regardless of the vertical rise.

**3.8.3.3(1):** Every doorway that is located in a barrier-free path of travel is required to have a clear width of not less than 850 mm when the door is in the open position. The clear width was increased from 810 mm in the 1997 OBC to 850 mm in the 2006 OBC.

**3.8.3.3(10):** Unless equipped with a power door operator, a door in a barrier-free path of travel is required to have a clear space on the latch side extending the height of the doorway and not less than 600 mm beyond the edge of the door opening if the door wings towards the approach side, and 300 mm beyond the edge of the door opening if the door wings away from the approach side. The 1997 OBC required this 300/600 mm clearance to be provided on every door equipped with a closer in a barrier-free path of travel whereas the 2006 OBC permits only doors with power door operators to be waived of this 300/600 mm clearance.

**3.8.3.3.(13):** Additional regulation which states that except as provided in Clause 3.8.3.4.(1)(c), the floor surface on each side of a door in a barrier-free path of travel is required to be level within a rec-

tangular area as wide as the door plus the clearance required on the latch side by Sentence (10) and whose dimension perpendicular to the closed door is not less than the width of the barrier-free path of travel but need not exceed 1500 mm.

**3.8.3.3.(16):** Additional regulation that requires the power door operator required by Sentences (4) and (5) are required to allow persons to activate the opening of the door from either side.

**3.8.3.3.(17):** Additional regulation that requires the controls for a power door operator required by Sentences (4) and (5) are required to :

- a) have no face dimension less than 100 mm,
- b) have its centre located not less than 1000 mm and not more than 1100 mm from the floor level or ground,
- c) be located not less than 600 mm beyond the door swing where the door opens towards the control, and
- d) contain the sign incorporating the International Symbol of Accessibility.

**3.8.3.4.(1)(a):** The minimum width between handrails is increased from 870 mm (1997 OBC) to 900 mm (2006 OBC) if the ramp is located in a barrier-free path of travel.

**3.8.3.4.(1)(c):** Ramps located in a barrier-free path of travel are required to have a level area at least 1670 mm by 1670 mm at the top and bottom of a ramp. The 1997 OBC only required a 1500 mm by 1500 mm level area at the top and bottom of a ramp.

**3.8.3.4.(1)(d):** Ramps located in a barrier-free path of travel are required to have a level area at least 1670 mm long and at least the same width as the ramp at intervals of not more than 9 m along its length and where there is an abrupt change in the direction of the ramp. The 1997 OBC only requires a 1500 mm long level area.

**3.8.3.8.(1)(d)(i):** Where a washroom is required to be barrier-free accessible by Article 3.8.2.3, at least 1 water closet stall or enclosure is required to be equipped with grab bars that is at least 760 mm in length and mounted at a 30 degree to 50

degree angle sloping upwards, away from the water closet with the lower end of the bar mounted 750 mm to 900 mm above the floor and 50 mm in front of the toilet bowl, or alternatively, be L-shaped with 760 mm long horizontal and vertical components mounted with the horizontal component 750 mm to 900 mm above the floor and the vertical component 150 mm in front of the toilet bowl. The 1997 OBC required the lower end of the bar to be mounted 230 mm above the toilet seat instead of the 750 mm to 900 mm above the floor.

**3.8.3.12.(1):** The 2006 OBC has renamed this section the “Universal Toilet Room” (formerly Special washroom). A universal toilet room is required to have grab bars conforming to Clause 3.8.3.8.(1)(d), in which the location of the grab bars has been changed from being located 230 mm above the toilet seat to 750 mm to 900 mm above the floor (see previous point). Furthermore, a universal toilet room is required to be provided with a door equipped with a power door operator if the door is equipped with a self-closing device.

**3.8.3.12.(2):** The water closet and lavatory provided in the special washroom described in Sentence (1) may be counted as part of the plumbing fixtures required for males and females in Subsection 3.7.4.

**3.8.3.13:** The 2006 OBC has renamed this section “Shower and Bathtubs” (formerly Showers). Except within a suite of residential occupancy, if showers are provided in a building, at least one shower stall in each group of showers is required to be barrier-free and have a hinged seat that is not spring-loaded or fixed seat that is required to be not less than 450 mm wide and 400 mm deep. In the 1997 OBC, this Article only applied to assembly occupancy, not “any” building. The 1997 OBC also required that the shower be equipped with a wall mounted folding seat that is not spring-loaded or provision for a portable seat that is 38 mm to 62 mm less than the shower compartment depth in width by 430 mm in depth. Furthermore, the 2006 OBC only requires the seat to be designed to carry a minimum load of 1.3kN (a decrease from the 1997 OBC requirement of 1.33kN).

# Energy Efficiency in the 2006 Ontario Building Code

This article originally appeared on the website of the Ministry of Municipal Affairs and Housing ([www.mah.gov.on.ca](http://www.mah.gov.on.ca))

The 2006 Building Code enhances Ontario's leadership in energy-efficiency requirements for buildings through the introduction of higher requirements than the 1997 Building Code and previous codes.

The higher energy-efficiency requirements balance energy efficiency with the affordability of a home. For example, the extra cost to build a home in 2007 to the new higher energy-efficiency standards will be recovered in three years through reduced energy bills. This will result in substantial long-term savings for Ontario households as well as reduced greenhouse gas production.

Over the next eight years alone, the Building Code's increased energy-efficiency requirements will save enough energy to power 380,000 homes and reduce greenhouse gas emissions equal to 250,000 fewer cars on Ontario's roads.

## Houses

A typical new house built in 2007 under the new Building Code will be over 21 per cent more energy efficient than one built under the current Building Code. This will be achieved through requirements for:

- More energy efficient windows (67 per cent increase in energy efficiency)
- Higher insulation levels (ceilings are being increased by 29 per cent, walls by 12 per cent and foundation walls by 50 per cent)
- High-efficiency gas and propane-fired furnaces (efficiency rating of 90 per cent).

Further Building Code changes related to energy efficiency will be phased in:

- New houses built under permits applied for in 2009 will require near-full-height basement insulation.
- New houses built under permits applied for in 2012 will be required to meet standards substantially in accordance with the national guideline, *EnerGuide 80*. (See Table 1)

## Non-residential and Larger Residential Buildings

Energy-efficiency requirements are being increased for non-residential buildings and larger residential buildings built under the new Building Code in 2007.

New non-residential and larger residential buildings built under permits applied for in 2012 will be required to meet standards 25 per cent higher than the Model National Energy Code for Buildings. (See Table 2)

## Green Technologies

New provisions will promote the use of green technologies such as:

- solar photovoltaic systems
- active solar hot water systems
- rooftop storm water retention
- storm and grey water use.

These changes come into force immediately.

The Ministry of Municipal Affairs and Housing held province-wide public consultations on the energy-efficiency changes from February to April 2006. A technical advisory committee comprising designers, builders, regulators, manufacturers, and energy suppliers and advocates reviewed the input from these consultations. The technical committee's recommendations were reviewed and are closely reflected in the Building Code changes.

**Table 1**

Estimated Increased Capital Costs, Energy Savings and Payback Periods for Houses

|                   | Estimated Energy Savings* | Estimated Increased Capital Cost* | Simple Payback Periods |
|-------------------|---------------------------|-----------------------------------|------------------------|
| December 31, 2006 | 21.5%                     | \$1,600                           | 3.0 years              |
| December 31, 2008 | 28%                       | \$2,700                           | 4.4 years              |
| December 31, 2011 | 35%                       | \$5,900 - 6,600                   | 6.9 - 7.9 years        |

Note: Figures are based on a typical 2000 square foot gas-heated house in the Greater Toronto Area  
\*Compared to the 1997 Building Code

**Table 2**

Estimated Increased Capital Costs, Energy Savings and Payback Periods for Non-residential and Larger Residential Buildings

|                   | Estimated Energy Savings* | Estimated Increased Capital Cost* | Simple Payback Periods |
|-------------------|---------------------------|-----------------------------------|------------------------|
| December 31, 2008 | 16 - 18%                  | \$0.98 - 1.11/ft <sup>2</sup>     | 3.3 - 4.7 years        |
| December 31, 2011 | 25%                       | \$1.40 - 3.46/ft <sup>2</sup>     | 5.0 - 7.7 years        |

Note: The range depends on the size, climatic location, quality and method of construction of the building. Estimated cost increases are based on typical high-rise residential and high-rise office buildings.  
\*Compared to the 1997 Building Code

# Ontario's New Building Code

*Matteo Gilfillan is an Assistant Project Manager at Randal Brown & Associates Ltd., a building code and fire protection consulting engineering firm. He is also the editor of the CFSA Journal.*



Buildings are an integral component of our society and as such, are required to achieve a minimum level of life safety through construction for the safety of their occupants. Towards this end, prescriptive building codes have been created to provide definitive requirements as to how this acceptable level of life safety is achieved. However, with the emergence of new technologies and the constant research in fire and occupant behaviour, the prescriptive approach may not always necessarily be the most effective solution.

For this reason, the Government of Ontario (namely, the Ministry of

Municipal Affairs and Housing (MMAH)) has recently introduced the 2006 Ontario Building Code (OBC, O.Reg. 350/06). The new edition of the OBC underwent a dramatic reconfiguration into an objective-based format, the intent behind which is to develop a Building Code that is clearer and more accommodating to innovation as well as to existing buildings. This re-formatting concept was recently applied to the 2005 National Construction Codes.

## What's New?

The reconfigured 2006 Ontario Building Code is a combination of performance and prescriptive codes, the result of

which is the formation of objective-based codes. The objective-based format offers significant advantages to the user, such as:

- providing a clearer understanding of the scope of the codes,
- clearer explanation of the intent behind each code requirement,
- more information for evaluating alternative approaches,
- more accommodation to innovation, and
- easier application to renovation.

As well as going to an objective-based format, over 700 technical changes have been included in the 2006 Ontario Building Code, including increases in

energy efficiency requirements, augmented barrier-free accessibility requirements, and small care home design and construction flexibility. As well, the structure of the OBC has undergone extensive renovation in order to accommodate the objectives set forth for the new 2006 OBC in a clear and concise manner.

In summation, more information has been added to the existing prescriptive code (now known as “acceptable solutions”) and the document structure has been refined, allowing for clearer understanding of the requirements as well as tools for interpretation and evaluation of equivalencies.

The new 2006 Ontario Building Code has been harmonized with the model National Building Code (2005 edition). The resulting similarity in documentation structure and regulations promotes a fluid transition for those working in the construction industry in various jurisdictions throughout Canada.

### **Objective Based Codes: Structure**

As part of the new organizational layout, the 2006 Ontario Building Code is subdivided into three divisions: Divisions A, B and C. These divisions are based on the following components:

- overall objectives,
- functional statements,
- intent statements, and
- application statements.

Each technical provision is linked to an objective statement, a functional statement, at least one intent statement and an application statement.

Division A includes the general compliance requirements (application; terms; abbreviations) as well as the objective and functional statements for each code provision. The objectives describe the goals that the particular requirement is intended to achieve, and the functions outline how to fulfill these objectives.

Division B contains the “acceptable solutions” (previously referred to as prescriptive requirements). The wording of these technical provisions will remain essentially unchanged, thereby aiding the transi-

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*more information has been added to the existing prescriptive code (now known as “acceptable solutions”) and the document structure has been refined*

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tion from the previous editions of the Ontario Building Code.

Division C includes administrative provisions currently found in Part 2 of the Ontario Building Code.

### **Objectives**

The requirements of the 2006 Ontario Building Code are linked to one or more of the following seven top-level objectives:

- Safety
- Health
- Accessibility
- Fire, Structural, Water and Sewage Protection of Buildings
- Resource Conservation
- Environmental Integrity
- Conservation of Buildings

These objectives are outlined in the Codes for the purposes of achieving an acceptable level of risk in terms of occupant injury and illness, structural integrity, resource depletion, and environmental degradation as well as an acceptable level of accessibility to persons with physical or sensory limitations.

### **Code Enactment**

The majority of the requirements of the 2006 Ontario Building Code will come into effect on December 31, 2006, allowing for a “transition” period for designers, building officials, builders and other Code users to familiarize themselves with the objective-based format and the new technical provisions. However, a separate “transition” regulation (O. Reg. 349/06) that amends the current Building Code (O. Reg. 403/97) was introduced on June 28, 2006 and took effect immediately. This “transition” regulation includes technical changes that promote the use of

select green solutions / technologies and afford more flexibility in the construction of small care homes.

In addition, the 2006 Ontario Building Code offers a “transition” period for permits issued before December 31, 2006, and for working drawings, plans and specifications that are substantially completed before December 31, 2006, and for which an application for a permit is submitted before March 31, 2007 and construction begins 6 months following receipt of the building permit.

Further Code changes related to energy efficiency are proposed to be introduced in the near future.

### **Publication**

Copies of Ontario Regulation 350/06 (not including supplementary standards, appendices and related materials) are available for purchase from Publications Ontario at a cost of \$35.00. Ontario Regulation 350/06 is also available for download on the E-Laws website (<http://www.e-laws.gov.on.ca>).

The complete publication of the 2006 Ontario Building Code will be available in binder and soft-cover formats in the fall of 2006.

### **Information Sessions**

The Ministry is holding one-day Public Information Sessions across the province throughout August and September of 2006 to introduce the objective-based format and highlight the major changes to the new Code to designers, building officials, builders and other Code users.

For more information, please visit [www.obc.mah.gov.on.ca](http://www.obc.mah.gov.on.ca)

# What You Should Know About The 2006 Ontario Building Code

*This article originally appeared on the website of the Ministry of Municipal Affairs and Housing ([www.mah.gov.on.ca](http://www.mah.gov.on.ca))*

## Ontario Households and Businesses Will Save Energy and Money

The changes to the Building Code balance energy efficiency with affordability. Purchasers of houses built to the new energy efficiency standards that become effective at the end of this year will recoup energy cost-savings equivalent to the extra cost of the upgrades within three years.

Ontario businesses also will save energy and money through increased energy-efficiency standards for non-residential buildings.

The Building Code will now require that:

- Insulation levels of ceilings in houses be increased by 29 per cent
- Insulation levels of basement walls of houses be increased by 50 per cent
- Window energy efficiency in houses be increased by 67 per cent
- All gas and propane-fired furnaces in houses also will need to have a high-efficiency rating.

Over eight years, the Building Code changes will:

- Save enough electricity to serve 380,000 homes or enough to power the entire City of London
- Reduce greenhouse gas emissions equal to 250,000 cars off Ontario's roads.

## Ontario Will Have More Accessible Buildings

The 2006 Building Code will enable Ontarians with disabilities to stay in their own communities.

The new Building Code will make Ontario buildings more accessible to people of all ages and abilities. For example:

- Public corridors will be built to accom-



modate modern wheelchairs

- New tactile signs will make it easier for the visually impaired to navigate through buildings
- Ten per cent of the units in a new apartment building or hotel will have to include accessible features.

## Ontario Leads the Way

Ontario already leads building regulation in Canada in setting minimum energy-efficiency requirements for buildings.

By the end of this year, changes to the Building Code' energy-efficiency standards will:

- Increase home energy efficiency over the current code by more than 21 per cent
- Continue to be the highest energy-efficiency standards in Canada
- Be 13 per cent higher than have ever existed in Ontario.

The new Building Code standards for wall and ceiling insulation, high-efficiency furnaces and energy efficient windows are

significantly higher than previous Ontario standards. The standards for homes with electrical heating have also been raised. Homes built under permits applied for in 2009 will have to meet even higher standards that:

- Mandate the construction of near-full-height basement insulation
- Will see homes 28 per cent more energy efficient than today.

Ontario is the first jurisdiction to mandate EnerGuide 80 levels. This means that homes built in 2012 will have a 35 per cent increase in energy efficiency over today's Building Code.

The changes to the Building Code further Ontario's leadership in energy efficiency standards for buildings.

The new Building Code also moves Ontario building standards closer to those to be adopted in other provinces, making made-in-Ontario building products more easily exportable to other jurisdictions.

# Battery Capacity Requirements for Smoke Alarm Applications

*This article was provided by Cezary Jaronczyk of Underwriters' Laboratories of Canada (ULC)*

The Life Smoke Alarm safety issue is one of increased interest among the general public. The focus of attention includes an important group of devices classified as smoke alarms. Every home has at least one such device, and the owners feel confident that it is reliable and infallible because it carries the UL or ULC certification mark.

Like any electrical device, a smoke alarm requires a power supply, which is often provided by batteries. The UL or ULC standard for smoke alarms unequivocally requires that the batteries that power a smoke alarm have one year of reliable performance. The standard for smoke alarms also defines additional conditions the battery must satisfy in order to ensure proper function of the smoke alarms.

Described below is how the ULC Signal Laboratory tests and evaluates batteries that power smoke alarms according to the requirements set by the standard for smoke alarms CAN/ULC-S531-02.

Modern electronics use advanced miniaturization which allows for the small physical dimensions of the smoke alarms, and small batteries, which have smaller energy storage known as capacity, than the batteries which had been commonly used until nowadays. Smoke alarm devices are characterized by three states which influence the battery current consumption.

The first state is the Standby state, during which small current, in  $\mu\text{A}$ , is drained in a form of continuous short pulses. This is the sensing mode, which continues during the entire time of battery use, and during which the battery voltage is

measured to determine the threshold required for generating the Battery Trouble Signal.

The second state is the Alarm Signal state, when a smoke alarm reacts after detecting the presence of smoke, generating an alarm signal. During this state, the current consumption from the battery increases to the level of mA, which is a thousand times higher than in the Standby mode. We can assume that the Alarm Signal state occurs not more often than once a month for a few minutes.

The third state occurs when the user checks whether the smoke alarm is functioning properly. A test button is pressed at an estimated frequency of once a week. In this state we can also include the sporadic warning state, which indicates that a malfunction has been detected, or that the Battery Trouble Signal was generated. The latter informs the user that the battery needs to be changed because it is not capable of supplying sufficient current due to high degree of battery depletion. The current consumed during this stage is of a similar level as that during the Alarm Signal state.

At the end of the battery life, when the battery is almost depleted and the smoke alarm activates the Battery Trouble Signal, the alarm signal volume is required to be at a minimum of 85dB.

One can calculate if a battery has enough energy capacity to ensure proper smoke alarm function over one year, based on the battery type and technical data such as the initial capacity in milliampere hours (mAh), and including in the calculations the average yearly current consumption

by the smoke alarm.

This however is not an accurate method, because the actual battery capacity used to power smoke alarms is only a fraction of capacity given by the battery manufacturer. This becomes an issue at the end of battery life when we want to ensure that required alarm signal loudness can still be achieved.

How to correct this serious problem is the main subject of this article.

First of all, an important matter is to describe the character and level of internal battery resistance, especially for the voltage at which the Battery Trouble Signal is generated. The resistance must be higher than that required for the alarm signal to achieve the minimum loudness of 85dB. The standard describes that before a test is conducted, the Battery Trouble Signal has to be on for seven consecutive days. The measurement of the alarm signal loudness is then taken after the fourth minute of activation.

The inner resistance of a battery increases as a battery is being depleted. Initially the resistance increase is almost linear, however after a certain level of battery discharge, resistance begins to increase rapidly. This specific moment should be the reference point used to estimate the effective energy capacity of the battery. If the internal battery resistance is too high, it will decrease the level of current available for the Battery Trouble Signal, so that the signal volume will fall well below 85 dB.

For example, below is a graphic representation of the results of the internal battery resistance measurement and the

input load profile characteristics on the smoke alarm for two extreme measurement points. One, at the battery voltage level during the Battery Trouble Signal, when the internal resistance is zero, and the other, when the battery is at its rated voltage and at the same degree of internal resistance as during the generation of the Battery Trouble signal.

As shown in the chart below (9 V Battery), the intersection point of the battery internal resistance and the smoke alarm input load curve is still located within the linear section of the internal battery resistance. Its extrapolation to the plot of battery capacity depletion over time, at given load, is used to find the correct value of the battery capacity, which satisfies the smoke alarm power consumption requirements. Below is a graph showing measurements of the battery discharge profile characteristics at an increased rate at the resistance load of 300 Ohms, taken at several time intervals. It shows the pattern of changes

in the battery voltage readings and the associated depletion time values. One can observe that for voltage readings below 7.8 V, the battery still has a certain capacity, because the depletion curve continues. However, the battery capacity level required for the correct functioning of the smoke alarm is limited to the value that is found only at a voltage level of 7.8V, which should be the one that triggers the Battery Trouble Signal.

Other test results indicate that as batteries of a small physical size discharge, their internal resistance increases much faster, and consequently, the voltage threshold for initiation of the Battery Trouble Signal will be higher. This in turn decreases the effective energy capacity of the battery, which in extreme cases are lower than 50% of the initial value. Measurements indicate that a typical equivalent of the resistance load for a battery at the Alarm state is about 300 to 650 Ohms.

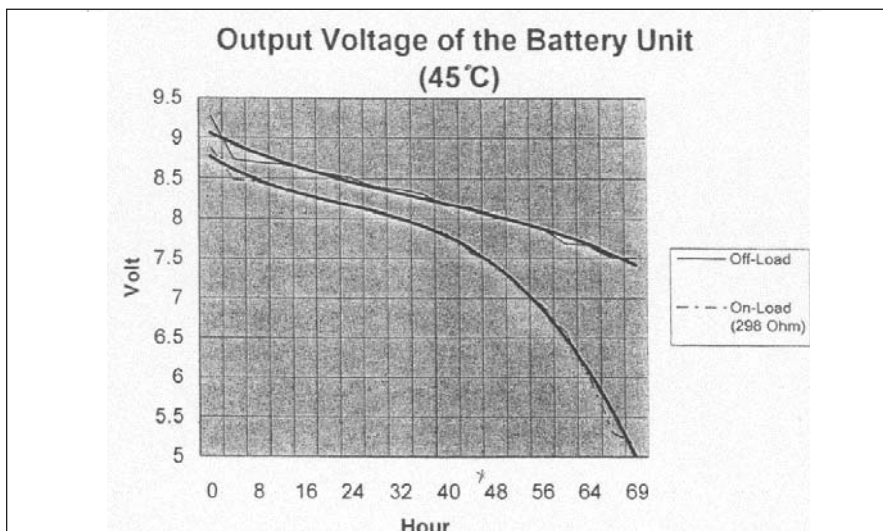
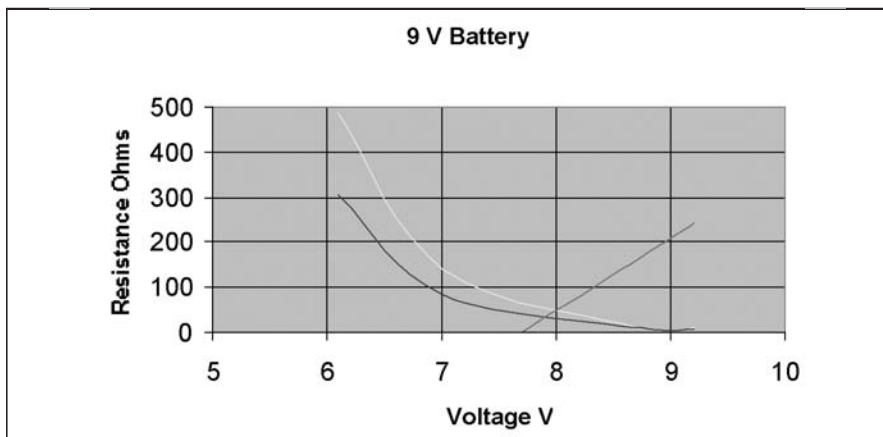
Measurements sometimes indicate that modern design of smoke alarms results in the generation of the Battery Trouble Signal at the battery voltage levels at which the internal battery resistance is so high that the alarm volume is below the required minimum of 85 dB. In such a case, the construction of the smoke alarm must be changed by the manufacturer so that the level of voltage required to trigger the Battery Trouble Signal is set at the voltage level for which the internal battery resistance is much lower. This condition naturally requires that the useable battery capacity required for the correct function of the smoke alarm is smaller than the one which is defined by the battery manufacturer's technical data.

If a smoke alarm design could measure the voltage level required to trigger the Battery Trouble Signal at the moment when the battery supplies the amount of energy equivalent to load in the instant of the alarm signal generation, then the time when the battery needs to be changed for a new one, would be determined unambiguously. Of course the battery would still need to be changed at least once a year.

An additional factor which decreases the battery energy capacity is temperature, and it also needs to be considered as a reason for fire alarm failure. In an extreme case, a sudden decrease in the battery energy capacity due to a decrease in temperature to below 0 degrees Celsius, can result in a situation when the Battery Trouble Signal is not noticed by the building occupants due to a dead battery or poor battery condition. The typical standard environment temperatures for proper tests of the functioning of smoke alarm batteries are 23, 49 and 0 degrees Celsius.

In conclusion, it is strongly suggested that battery manufacturers provide detailed internal battery resistance characteristics data, especially for batteries used to power devices such as smoke alarms.

Since this article is the first attempt to determine additional requirements for the study of batteries used in modern smoke alarms, I eagerly invite anyone to discuss and contribute ideas to this important issue.



# Private Member's Bill 120

Bill 120, "An Act to require the Building Code and the Fire Code to provide for fire detectors, interconnected fire alarms and non-combustible fire escapes", is a response to the tragic fire deaths of Linda Elderkin and Paul Benson of Toronto, Ontario, on January 16th, 1999.

The Bill sets out to ensure that every residential building with two or more dwelling units has fire detectors in common areas and interconnected fire alarms that can be heard throughout the building. The Bill also requires that the fire escapes of residential buildings with two or more dwelling units are built from non-combustible material (currently, several buildings have existing wooden fire escapes).

Bill 120 is a step towards recognizing that early warning and safe exiting are the best tools we have to prevent needless deaths and injuries.

The Bill was introduced into the Legislature on June 1, 2006, and has gone through 2nd reading on August 23, 2006.

# Potential Building Code Revision Cycle

There has been some major movement by the Canadian Commission on Building and Fire Codes (CCBFC) to change the publication date for a new model National Building Code to a three year cycle (from the current five year cycle). It is intended that in this manner, the model Building Code will be able to be upgraded more frequently in order to incorporate new developments arising from objective-based approaches to achieving the prescriptive requirements of the Building Code (Division B).

The joint task force responsible for reviewing the Code cycle is proposing to shorten the Code cycle after the 2010 model National Building Code is published. As part of the new Building Code cycle timeframe, an annual public consultation for any proposed changes is also being proposed.

It is unknown as to whether the Ministry of Municipal Affairs and Housing will follow suit and revise the code cycle in Ontario.

Since the introduction of objective based National Building Code of Canada in 2005, only two provinces have adopted the objective-based codes, but by the end of this year (2006), it is projected that all of Canada's provinces will have adopted the new model Building Code.

# New Edition of NFPA 13 Standard

The 2007 edition of NFPA 13, "Standard for the Installation of Sprinkler Systems" is due out this fall (October 2006) and will include significant changes driven by the rapid development of the fire protection industry. These changes will include:

- Revised hanging and bracing provisions meet or exceed the seismic requirements of ASCE 7: Minimum Design Loads for Buildings and Other Structures and building code requirements.
- Eight new chapters address storage of specific commodities.
- Chapter 11: Design Approaches clarifies design options.
- Rules for sprinklers in combination with draft stops around vertical openings correlate with the 2006 NFPA 5000 ® and NFPA 101 ® : Life Safety Code ® .

As well, the residential sprinkler installation rules in 2007 NFPA 13 incorporate new research into system effectiveness.

For more information, visit  
[www.nfpa.org](http://www.nfpa.org)







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# Fire Prevention Week, October 8 – 14, 2006

## “Prevent Cooking Fires – Watch What You Heat”

*This article originally appeared on the website of the Ontario Fire Marshal ([www.ofm.gov.on.ca](http://www.ofm.gov.on.ca))*

Cooking equipment is ranked as the number one cause of preventable home fires in Ontario. The average number of cooking related fires per year between 2000 and 2004 was 1,492. This number is 31% less than the average number of cooking related fires per year between 1995 and 1999.

Cooking fires rank first in the number of injuries and second in the number of fire fatalities. Many fires that occur in the kitchen result in major property damage. Some are less destructive and are never reported to the fire service. The frequent occurrence of cooking fires supports the need and importance of emphasizing safe cooking practices.

This year's Fire Prevention Week theme is “Prevent Cooking Fires - Watch What You Heat”. This theme is timely and ties in quite nicely with several activities and programs that the Office of the Fire Marshal (OFM) and the Fire Marshal's Public Fire Safety Council have been working on during the past two years.

In 2004, the Fire Marshal's Public Fire Safety Council established the Stovetop Fires Working Group. This multi-stakeholder working group continues to research and exchange information on current and developing technology that may help to mitigate and even prevent altogether serious stovetop fires. The committee assisted in the development of the Stovetop Fire Survey, which was conducted for a one-year period, from August 2005 to July 2006.

A subcommittee was created to find public education opportunities and to develop effective public education resources. The subcommittee will review the results of the survey to determine which educational

messages and tools need to be developed for the fire service and the public to promote safe cooking practices.

### Public Service Announcements

The Council and the OFM have developed public service announcements (PSAs) to remind people of some important fire safety precautions:

- Never leave cooking unattended
  - Up in Smoke (television PSA)
  - Cacophony (television PSA)
  - Stand by your Pan (print PSA and radio script)
  - Dinner's Ready (print PSA)
- Do not cook when under the influence of alcohol
  - A Dangerous Mix (print PSA)
  - Up in Smoke (television PSA)
- Run cool water over a burn
  - Cool a Burn (print PSA, in English only)
- Wear tight fitting sleeves when cooking
  - Don't Reach for Danger (print PSA)

These PSAs, available in English and in French, can be downloaded from the Council's Web site, [www.firesafetycouncil.com](http://www.firesafetycouncil.com). Up in Smoke and Cacophony are also available on the videocassette compilation that was sent to all fire departments in June 2006.

### Fire Prevention Week One-stop Shopping Kits

The Fire Marshal's Public Fire Safety Council is pleased to offer once again the Fire Prevention Week One Stop Shopping kits to fire departments. This has been made possible with the support of the Enbridge Gas Distribution Inc., Energizer Canada Inc., Garrison/Canadian Tire Corporation, Kidde Canada, the Technical Standards and Safety Authority, and Underwriters' Laboratories of Canada.

The kit can be purchased from the Council for the price of \$399.00. Additional items may be purchased individually. Please fill in the attached order form and fax it to 1-866-379-6667. Fire chiefs who have already completed an order form at the Ontario Association of Fire Chiefs annual conference do not need to send in another one.

### World's Largest School Fire Drill, October 11, 2006, between 10 a.m and 3:00 p.m.

The Fire Marshal's Public Fire Safety Council is encouraging all fire departments to challenge every principal, custodian, volunteer, teacher and student in their communities to get out of school safely on October 11, 2006, between 10 a.m. and 3:00 p.m.

Participating schools will be eligible to win prizes: \$1000 as 1st prize, \$500 as the 2nd prize, and \$250 as the 3rd prize. In addition, the fire department of the school that wins one of these prizes will win a matching prize in the form of a credit in the same amount at the Council's Distribution Centre, to be used for the purchase of educational materials. For more details, visit [www.firesafetycouncil.com](http://www.firesafetycouncil.com).

### Canadian Tire Safety Day – October 7, 2006

To launch Fire Prevention Week, fire departments are invited to team up with their local Canadian Tire Stores to promote fire safety on Fire Safety Day on Saturday, October 7th from 10:00 a.m. to 2:00 p.m. The Council will provide a free special educational kit, containing handout materials, to participating fire departments for this event. A representative of the Council will be contacting fire departments to find out if they would like to participate and to provide further information.

# Firefighting Apparatus – Is it Certified to the Right Canadian Standard?

*This article originally appeared in the Canadian Consulting Engineers magazine.*



A fire truck is one of the single largest capital investments a fire department will make. To protect that investment, purchasers should take every precaution to ensure they are not only getting value for their money, but also getting what they wanted in the first place. No matter what process is used, the piece of equipment that arrives at the fire hall should be exactly what was ordered. There are two ways to get that level of confidence: first,

the equipment should be certified by an accredited certification organization; and second, the certification of the equipment should be in full conformance with the appropriate standard.

Equipment “certified” by an accredited certification organization is not necessarily the same thing as equipment that “conforms to” or “meets” a certain standard. There is a difference. Being certified by an accredited product certification body communicates to prospective buyers that the supplier is committed to safety. It also shows that the manufacturer has met the requirements for performance, safety and/or quality, as described by a nationally recognized standard. This process includes an audit of the facility and testing of the product. A product that meets the necessary criteria may be “listed,” and a description of the supplier, along with a list of products and services, is displayed on a certified product list. The online version of this list is accessible to all, including purchasers, government, corporations, retailers and the public.

Even if equipment has been certified, purchasers still need to consider what organization certified it. Any company can say that a firefighting apparatus meets a standard, but is the company actually qualified to make this statement? If so, by whom? However, if that piece of firefighting apparatus is certified by an independent third-party organization accredited in Canada by the Standards

Council of Canada (SCC), it has been done so by a qualified body. How can this all be verified? Simple — a piece of firefighting apparatus that has been certified by Underwriters’ Laboratories of Canada (ULC) will have a label complete with a

certification mark. Furthermore, the purchaser can always request a copy of the report from the manufacturer.

ULC has published a completely revised standard for firefighting apparatus, CAN/ULC-S515, Automobile Fire Fighting Apparatus. This Standard defines the minimum performance requirements for new automobile firefighting apparatus, such as pumpers, water tank trucks, ladder trucks and aerial devices used for structural firefighting in a municipal fire service. With input from key stakeholders, including manufacturers, fire authorities, insurance industry, regulators and the general public, the Standard reflects the needs of Canadian fire departments. It includes unique Canadian requirements, such as road performance test requirements that specify balance and weight distribution, for the safety of both firefighters and the general public. A new requirement is that automatic or manual engine shutdown is no longer mandatory. This is left as an option for the purchaser. However, some local regulatory authorities and insurance groups may take steps to make this requirement mandatory.

The preface of the Standard also recommends that firefighting apparatus “be certified by an independent third-party certification organization accredited by the Standards Council of Canada,” thereby reinforcing earlier statements. For more information on issues that face the fire and security community in Canada, contact Jack Robertson in Victoria, British Columbia, by phone at (250) 598-1286; or by e-mail at [Jack.Robertson@ca.ul.com](mailto:Jack.Robertson@ca.ul.com).

# Regulatory Amendments to the Ontario Fire Code – Hotel Fire Safety Requirements

*Reprinted with permission from the author. Most recently, this article appeared in its entirety in the August/September issue of the Ontario Fire Service Messenger.*

On May 3, 2006 a regulation made under the Fire Protection and Prevention Act, 1997 (FPPA) was filed amending the Ontario Fire Code to consolidate comprehensive fire safety requirements for hotels. O.Reg. 144/06 comes into force on January 1, 2007.

The Regulation includes the new Retrofit Section 9.9 Hotels, as well as companion changes throughout Parts 1 to 8 and Section 9.1 of the Ontario Fire Code (OFC). These changes include revoking Article 1.1.6.2. which was an interim arrangement for integrating portions of the original Hotel Fire Safety Act (HFSA) and the related Regulation 640 into the Ontario Fire Code. The result of this change is that OFC requirements now apply to hotels. Other changes include amendments intended to clarify the application of the Fire Code, new definitions and some changes to accommodate transferring provisions from Regulation 640 made under the Hotel Fire Safety Act.

## Section 9.9 Hotel Retrofit

Retrofit Section 9.9 applies to every hotel establishment that includes at least one building that contains four or more suites (providing sleeping accommodation for the traveling public or for recreational purposes) and exceeds either one storey or 300 m<sup>2</sup> in building area. These retrofit requirements, however, do not apply to hotels constructed in compliance with the Ontario Building Code (OBC) on or after July 1, 1993 as those requirements would meet or exceed Section 9.9 requirements.

Section 9.9 may not apply to facilities known as “bed and breakfast” or “apartment hotels”, as other Part 9 retrofit sections may already regulate them. Small

hotels to which Section 9.9 does not apply, may be regulated by Section 9.3.

The regulation maintains the status quo for most requirements, and as a result these have a January 1, 2007 compliance date. However a few new requirements, which include certain features previously exempted for hotels constructed prior to September 1971, are also included. Compliance times for these new requirements range from one to five years.

The first new requirement that will have to be complied with is the completion and retention of a building fire safety audit to assess the level of compliance with Section 9.9. This will have to be done by January 1, 2008. The second new requirement is the installation of hard-wired or battery operated smoke alarms in guest suites by July 1, 2008. It should be noted that the smoke alarm requirement applies to all hotels with four or more guest suites, whether Section 9.9 regulates them or not.

## Stakeholder Committees

A joint hotel industry, fire service and OFM hotel implementation committee has been established and will continue to provide input on training and communications, as well as advice respecting issues identified during the implementation period.

## Information

The Office of the Fire Marshal website now provides a link to a Hotel sub-website: [www.ofm.gov.on.ca/english/Legislation/Hotel/Default.asp](http://www.ofm.gov.on.ca/english/Legislation/Hotel/Default.asp). This site currently contains links to the hotel regulation on e-laws and Communiqué 2006-17. The information provided on this website will continue to expand to include an audit guideline (as

described above), a self-education package, explanatory notes and other relevant information for the hotel industry and fire service. The site will be updated regularly to provide information on OFM delivered seminars (dates, locations), Questions & Answers, and contact information.

The new regulation, as filed, can be found on the Government of Ontario e-laws website at [www.e-laws.gov.on.ca/DBLaws/Source/Regs/English/2006/R06144\\_e.htm](http://www.e-laws.gov.on.ca/DBLaws/Source/Regs/English/2006/R06144_e.htm). The consolidated version of the Ontario Fire Code, incorporating changes from the new regulation, is available at [www.e-laws.gov.on.ca/DBLaws/Regs/English/970388\\_e.htm](http://www.e-laws.gov.on.ca/DBLaws/Regs/English/970388_e.htm). A loose-leaf consolidation of Regulation and other changes to the Ontario Fire Code is also being prepared for distribution through the Ontario Government Bookstore (contact 1-800-668-9938, or [www.publications.gov.on.ca/english/popular/index.html](http://www.publications.gov.on.ca/english/popular/index.html)). This consolidation is intended to be used as an interim copy of the Fire Code to show relevant portions of Parts 1 to 9, including Section 9.9, to be replaced with the next issue of the Ontario Fire Code.

## Training

Training is being prepared in three formats. First, a self-education power point package will be provided on the OFM website, available to everyone. Secondly, information sessions conducted by the OFM will be available on request by associations willing to host a session. Information on these will be provided on the OFM website ([www.ofm.gov.on.ca](http://www.ofm.gov.on.ca)). As well, the website will provide explanatory notes to the regulation, a Q & A section and an inquiry section.

# NFPA Reminds College Students to Brush Up on Fire Safety

*This article originally appeared on the website of the NFPA ([www.nfpa.org](http://www.nfpa.org))*

As college students migrate to campuses this fall, the National Fire Protection Association (NFPA) is urging them to brush up on fire safety. NFPA estimates that US fire departments responded to an annual average of 2,460 fires in dormitories, fraternities, sororities and barracks during the five-year-period of 1999 to 2003. These fires resulted in an average of five deaths, 73 injuries and \$29.4 million in direct property damage per year.

While many parents have already educated their children about home fire safety; it is equally important for parents to now remind their children how to keep themselves safe from fire when they are away at school. Parents and students should check to make sure that adequate fire protection programs are in place on campus and become familiar with them.

NFPA offers the following fire safety tips to college students:

If students hear a fire alarm, they should leave immediately, close doors behind them, and take their room keys with them because in the event that they can't escape they may need to return to their room.

## Be prepared for a fire

- Your building should have an evacuation plan. Learn it and participate in all fire drills as if they were the real thing. False alarms are no joke – report them.
- Identify and plan for people who may require alternative forms of notification if a fire occurs and those who may need assistance to evacuate the building.
- If you have a disability, make sure you are included in the escape planning for your classroom area and housing.
- Learn the location of all building exits. You may have to find your way out in the dark.

- If a fire occurs, smoke alarms cut your chances of dying nearly in half. Don't disable them or remove their batteries.
- Fire sprinkler systems can save lives and property. They protect their immediate area by extinguishing or containing flame. Don't hang anything from sprinkler pipes or nozzles.
- Portable fire extinguishers can put out small, contained fires. Don't play with them.

## Smoking

- If you must smoke, smoke outside the building and only where it's permitted.
- Use deep, wide, sturdy ashtrays. Ashtrays should be set on something that is sturdy and hard to ignite.
- To prevent a deadly cigarette fire, you have to be alert. You won't be if you are sleepy, have been drinking, or have taken medicine or other drugs.
- Before you throw out butts and ashes, make sure they are out. Dowsing in water or sand is the best way to do that.
- After a party, check under furniture cushions and in other place people smoke for cigarette butts that may have fallen out of sight.

## Candles

- Fire officials are very concerned with the increase in candle fires and fire deaths in the past decade.
- Many schools do not permit candle use. Follow your school's rules. Do not use incense burners or potpourri pots unless they are allowed.
- Don't leave burning candles unattended.
- Keep lit candles away from papers, curtains, and anything that burns.
- Use sturdy candle holders and don't let candles burn down all the way.
- Place candles on a sturdy surface like a table.

- Don't let candles drip onto anything that can burn.
- Extinguish all candles when leaving the room or going to sleep.

## Escape tips

- If you have to escape through smoke, get low and go under the smoke to your exit.
- Before opening a door, feel the door. If it's hot, use your second way out.
- Use the stairs; never use an elevator during a fire.
- If you're trapped, call the fire department and tell them where you are. Seal your door with rags and signal from your window. Open windows slightly at the top and bottom, but close them if smoke rushes in from any direction.
- If you have a disability help identify what kind of assistance you need to alert you and help you leave the area or get you to a safe area within or outside the building.

## Cooking

- Cook only where it's permitted.
- If you use a kitchen, keep it clean and uncluttered.
- If you use electric appliances, don't overload circuits.
- Never leave cooking unattended.
- If a fire starts in a microwave oven, keep the door closed and unplug the unit. Don't try to remove the burning containers from a microwave.

## Electrical

- Check your school's rules before using electrical appliances in your room.
- Use a surge protector for your computer and plug the protector directly into an outlet.
- Never place power cords across traffic paths or under carpets.
- Never tack or nail cords.

For more information, go to [www.nfpa.org](http://www.nfpa.org).

# Strategic Alliances

*This article was provided by Chad Asseltsine of Fire Monitoring of Canada Inc.*

A strategic alliance is defined as...

A mutually beneficial long-term formal relationship formed between two or more parties to pursue a set of agreed upon goals or to meet a critical business need while remaining independent organizations. It is a synergistic arrangement whereby two or more organizations agree to cooperate in the carrying out of a business activity where each brings different strengths and capabilities to the arrangement...(Wikipedia, 2006)

In an era that is quickly becoming associated with terror, whether it is through governmental influences or public paranoia, it brings to light the need for the formation of strategic alliances between all parties who are charged with the safety of this continent. As is stated in the definition provided above, the parties involved in a strategic alliance join to combine their individual expertise in order to achieve a common goal. As the threat of terror increases; safety officials, whether they be governmental or in the private sector must align themselves to provide our continent with the most efficient preventative and reactive safety procedures available.

Over the past few years, strategic alliances in business have come under fire. Bill Robinson (2002) posted an article in Forbes Magazine titled "Why Strategic Alliances Don't Work". His argument was that historically strategic alliances do not amount to anything. Robinson (2002) suggested the main reason strategic alliances have a failing track record is that the parties lack 'trust and respect'.

When first reading the article I thought to myself, but that wouldn't be the case if the strategic alliance was created between

safety providers, or would it? Surely parties/agencies within the governmental and private sector could toss aside competitive differences in order to achieve the collective goal of providing our continent with the most efficient safety procedures available, wouldn't they?

As I thought about the possibilities of the security industry using its technology to work hand in hand with Homeland Security, Police Departments, Fire Departments, Emergency Response Units just to name a few, I became extremely encouraged with the possibilities that are right at our fingertips.

If we could come together to pursue a set of agreed upon goals (the most efficient safety procedures available), while at the same time remaining independent organizations, it would be a strategic alliance at its truest form. The reality is that the technology is available to make this alliance possible, yet as a whole we choose to remain separate entities striving towards a goal which seems unattainable by individual organizations.

The changing of codes is just around the corner, and perhaps this will be the catalyst that we need to bring us together, to align us, the security industry and safety community. The upcoming versions of the Ontario Building Code (OBC) and the Ontario Fire Code (OFC) are each going to reference CAN/ULC-S561-03 which itself directly supports the use of electronic retransmission of fire signals from a Signals Receiving Centre (SRC) to the Fire Department in order to meet the new mandated 30 second time limit. Codes are being put in place to encourage the formation of a strategic alliance between the security industry – namely

ULC listed monitoring stations -- and the safety community in the form of Fire Departments. The OBC and OFC are supporting the concept of bridging the electronic gap between the security industry and Fire Departments, by allowing their separate technologies to become integrated and speak to each other.

It is difficult to understand that in an age of terror and paranoia, with all the technology available to safety providers, we continue to rely on a telephone call or a radio transmission to communicate when we have the ability to be in constant communication. The divisions do not simply lie between the security industry and the safety community, they are within as well. Security providers must align, and strive towards a common goal, providing their customers with the most efficient preventative and reactive safety procedures available. The safety community must do the same. Strive towards providing their citizens with the most efficient preventative and reactive safety procedures available. So I ask, what is it that is stopping us? Does it come down to as Bill Robinson (2002) suggested; a lack of trust and respect?

The reality is that the technology is available. The upcoming changes in the codes are reflecting the need for strategic alliances to be formed between the security industry and safety community. The question that I pose is, are you ready to trust and respect each other?

## References

Robinson, B. (2002, last updated Aug 17). Why Strategic Alliances Don't Work. Retrieved Aug 2006, from [www.forbes.com](http://www.forbes.com)

Wikipedia (2006, last updated Aug 17). Strategic Alliance. Retrieved Aug 2006, from [http://en.wikipedia.org/wiki/strategic\\_alliance](http://en.wikipedia.org/wiki/strategic_alliance)

# Smoke Alarm Installation and Maintenance

*This article originally appeared on the website of the Ontario Fire Marshal ([www.ofm.gov.on.ca](http://www.ofm.gov.on.ca))*

## Choose The Right Alarms

There are smoke alarms available with different features and applications, so choosing the right alarm can be confusing. Some of the features to consider include:

- **Power Source:** Smoke alarms can be electrically powered, battery powered, or a combination of both. If you are installing an electrically powered alarm it is recommended that it have a battery back-up in case of power failures.
- **Technology:** most smoke alarms employ either ionization or photo-electric technology. Ionization alarms may respond slightly faster to flaming-type fires, while photo-electric alarms may be quicker at detecting slow, smouldering fires.
- **Pause feature:** Smoke alarms with a pause button are highly recommended as it permits the alarm to be temporarily silenced without disconnecting the power source.

## Install In The Proper Locations

Smoke alarms must be installed on each storey of the home as well as outside sleeping areas. Because smoke rises, smoke alarms should be installed on the ceiling. If this is not possible, install the alarm high up on a wall. Always follow the manufacturer's instructions when installing smoke alarms.

Avoid putting smoke alarms too close to bathrooms, windows, ceiling fans and heating and cooking appliances.

## Test Smoke Alarms Monthly

Test your smoke alarms every month by using the test button on the alarm. When the test button is pressed, the alarm should sound. If it fails to sound, make sure that the battery is installed correctly or install a new battery. If the alarm still fails to

## INSTALL SMOKE ALARMS IT'S THE LAW!



Most fatal fires occur at night when people are asleep. Often, victims never wake up. A working smoke alarm will detect smoke and sound an alarm to alert you, giving you precious time to escape.

Every home in Ontario must have a working smoke alarm on every storey and outside all sleeping areas.

### Homeowners

It is the responsibility of homeowners to install and maintain smoke alarms on every storey of their home and outside sleeping areas.

### Landlords

It is the responsibility of landlords to ensure their rental properties comply with the law.

### Tenants

If you are a tenant of a rental property and do not have the required number of smoke alarms, contact your landlord immediately. It is against the law for tenants to remove the batteries or tamper with the alarm in any way.

**Failure to comply with the Fire Code smoke alarm requirements could result in a ticket for \$235 or a fine of up to \$50,000 for individuals or \$100,000 for corporations**

sound, replace the smoke alarm with a new one.

## Change The Batteries Every Year

Install a new battery at least once a year, or as recommended by the manufacturer. Install a new battery if the low-battery warning sounds or if the alarm fails to sound when tested.

## Vacuum Alarms Annually

Dust can clog your smoke alarms. Battery-powered smoke alarms should be cleaned by opening the cover of the alarm and gently vacuuming the inside with a soft bristle brush.

For electrically-connected smoke alarms, first shut off the power to the unit, and then gently vacuum the outside vents of the alarm only. Turn the power back on and test the alarm.

## Replace Older Smoke Alarms

All smoke alarms wear out. If your alarms are more than 10 years old, replace them with new ones.

## Handle Nuisance Alarms

Steam from the shower or cooking in the oven, stove or toaster can cause smoke alarms to activate. If these types of nuisance alarms occur, do not remove the battery. There are several options you can try to reduce nuisance alarms.

- Relocate the alarm. Sometimes moving the alarm just a few inches can make the difference.
- Install a smoke alarm with a pause button that will allow you to temporarily silence the alarm.
- Replace alarms located near kitchens with photo-electric types.

## Plan Your Escape

Make sure that everyone knows the sound of the smoke alarm and what to do if it activates. Create an escape plan with the entire household and practice it. Make sure your plan identifies two ways out of each room, if possible, and a meeting place outside. Once outside, stay outside. Never re-enter a burning building. Call the fire department from a neighbour's home or cell phone.

# Mother's Voice May Be Best Fire Alarm

Source: *City News website (www.citynews.ca)*

Smoke alarms save lives – you're required by law to have one on every floor of your residence and outside all sleeping areas - but if a fire broke out in your home the screeching alert may not rouse your children from their sleep.

A small study conducted at the Center for Injury Research and Policy at Columbus Children's Hospital found that the safety devices fail when it comes to children.

So what does work when you want to wake a child up immediately in the middle of the night? According to researchers, the sound of a mother's voice demanding her youngster get up and out of their room.

The results of this study, which included 24 children ages six to 12, reaffirmed past research that indicated smoke alarms don't work for kids.

"Clearly, the strategy that has been tried and true and used for years ... fails miserably for children," said Dr. Gary Smith, one of the co-authors of the report.

The study found that 23 of the 24 kids awoke to the sound of their mother saying "(Child's first name)! (Child's first name)! Wake up! Get out of bed! Leave the room!"

Fourteen kids awoke to the sound of the traditional smoke alarm and one child snoozed through both. Both alarms used a large speaker and sounds measuring 100 decibels, which is about four times louder than normal smoke alarms.

The youngsters who woke up to the voice of their mom did so much faster than those who were roused from their sleep by the beeping - 20 seconds compared to three minutes.

Mother Michelle Mahovich understands the importance of this study. She and her son barely escaped with their lives when their apartment was consumed by fire four years ago.

"The fire alarm was right here next to his room, and he can't hear it," she said. "God forbid anything that can happen. He sleeps right through it, and I can't believe it because I'm up right away."

Dr. Shelly Weiss specializes in children's sleeping patterns and says kids between the ages of 10 and 12 are in their deepest sleep in the first third of the night.

"Chances are that when an alarm goes off in the early hours of the night that they'll be in this deep sleep," she said.

Weiss says a young child can get stuck between a sleep-wake state, much like sleepwalking, so it's crucial to help guide them out of the house and to have a clear escape plan.

"Anything that will alert him that something's not right; something is wrong, that there's a possibility that there's a fire ... you have to get their attention," she said.

The device that allows a parent to record their voice on the detector is currently only available in the United States, but is coming to Canada.

Here's some information on creating a family fire plan and choosing a smoke alarm:

According to Toronto Fire Services, seven out of 10 fires in Canada happen in the home. Here are some steps you should take to ensure your loved ones will get out alive in the event of an emergency:

## Install Smoke Alarms

These safety devices are required by law because they are such an important early warning. Many fires start when people are sleeping.

Smoke alarms should be placed at the top of stairways leading to bedrooms and at the top of the stairs leading to the basement. Every home should have at least one detector on each floor.

Make sure you test your alarm and replace the batteries.

## Plan Your Escape

Draw up a floor plan of your home and highlight all possible exits from each room. Plan escape routes and alternate escape routes from each room, especially the bedrooms.

Make sure you practice your plan as this can reduce confusion and chaos in the event of a real fire. Toronto Fire Services recommends running through your drill every six weeks. The best place to start a drill is in a bedroom. Don't rush - make sure everyone knows what they are doing and discuss what happened afterwards.

Make sure to vary your drills. For example, practice one drill for a fire in the attic, and another with a fire in the kitchen. Make sure you practice different routes.

## Choose A Meeting Place

Decide on a safe place outside the home where you can call 911 in the event of a fire and your family can meet. The best place to meet is in front of your home.

*Information courtesy of Toronto Fire Services.*



## If There Is A Fire

*Courtesy of Toronto Fire Services*

- **Crawl low under smoke:** Heat and smoke rise so the air by the floor is the coolest and clearest. If you encounter smoke or flames while evacuating, stay close to the floor. Get down on your hands and knees and crawl to the nearest safe exit.
- **Test every door:** Before opening any door, make sure it is safe to do so. Reach up with the back of your hand to touch the door, the door handle, and the space between the door and frame. If any of them feel hot, use your alternate exit. If everything feels cool, brace your shoulder against the door and open it carefully. Be ready to close it quickly if heat or smoke rush in. As you leave, close all doors behind you. Closed doors restrain the deadly speed of smoke and fire!
- **If you are trapped:** Close doors between you and the fire. Use blankets or towels to cover vents and cracks between floors and doors. Wait at a window and signal for help by using a flashlight or by waving a bright coloured sheet or cloth. If there is a phone in the room, call 9-1-1, and tell them exactly where you are.
- **In an apartment:** It is important that everyone be able to unlock all locks quickly. Use stairways to leave the building. Don't use an elevator. The heat may activate call buttons and carry you to a fire floor. The elevator may also lose power.
- **In a two-storey house:** Make sure everyone can unlock all locks and open all windows and doors quickly. Know how to escape safely from the second floor. Make appropriate arrangements for small children and people with special needs.
- **Get out fast:** Make sure your family knows to leave immediately when they hear a smoke alarm or someone yelling, "Fire!"

Don't try to take possessions or pets. After you are out, call 9-1-1.

- **Don't go back, no matter what:** Once outside and at the designated meeting place, no one re-enters the burning house. Firefighters are equipped and trained to handle rescue operations and

they will let you know when it is safe to go back into the house. Get out and stay out!

## Things To Consider When Choosing A Smoke Alarm

*Courtesy of London Fire Services*

- Be sure the smoke alarms you buy carry the label of an independent testing laboratory such as ULC or CSA.
- Several types of alarms are available. Some run on batteries, others on household electric current. Some detect smoke using an "ionization" sensor, others use a "photoelectric" detection system. All approved smoke alarms, regardless of the type, will offer adequate protection provided they are installed and maintained properly.
- **Is One Enough?** Every home should have a smoke alarm outside each sleeping area and on every level of the home, including the basement. On floors without bedrooms, alarms should be installed in or near living areas, such as dens, living rooms, or family rooms. Read about new Smoke Alarm Legislation.
- Be sure everyone sleeping in your home can hear your smoke alarms. If any residents are hearing-impaired or sleep with bedroom door closed, install additional alarms inside sleeping areas as well. There are special smoke alarms for the hearing impaired that flash a light in addition to sounding an audible alarm.
- For extra protection, fire departments suggest installing alarms in dining rooms, furnace rooms, utility rooms and hallways. Smoke alarms are not recommended for kitchens, bathrooms or garages - where cooking fumes, steam or exhaust fumes could set off false alarms.

## Where to Install

- Because smoke rises, mount alarms high on a wall or on the ceiling, depending on the manufacturer's instructions.
- In stairways with no doors at the top or bottom, position smoke alarms anywhere in the path of smoke moving up the stairs. But always position smoke alarms at the bottom of closed stairways, such as those leading to the basement, because dead air trapped near the door at the top of a stairway could prevent smoke from

reaching an alarm located at the top.

- Do not install a smoke alarm too near a window, door, or forced-air register where drafts could interfere with the alarm's operation. For the best results, follow the printed instructions that come with the smoke alarm.

## Installation

- Most battery-powered smoke alarms and alarms that plug into wall outlets can be installed using only a drill and a screwdriver by following the manufacturer's instructions. Plug-in alarms must have restraining devices so they cannot be unplugged by accident. Alarms can also be hard-wired into a building's electrical system. Hard-wired alarms should be installed by a qualified electrician. Never connect a smoke alarm to a circuit that can be turned off by a wall switch.

## False Alarms

- Cooking vapours and steam sometimes set off a smoke alarm. To correct this, try moving the alarm away from the kitchen or bathroom or install an exhaust fan. Cleaning your alarm regularly, according to the manufacturer's instructions, may also help. There are also alarms available that have hush buttons that will silence them for a short period of time as cooking or a shower takes place.

If "nuisance alarms" persist, do not disable the alarm. Replace it!

## Maintenance

- Only a functioning smoke alarm can protect you.
- Never disable an alarm by borrowing its battery for another use.
- Following the manufacturer's instructions, test all your smoke alarms monthly and install new batteries at least once a year. A good reminder is when you change your clocks in the spring or fall: change your clock, change your battery.
- Clean your smoke alarms using a vacuum cleaner without removing the alarm's cover.
- Never paint a smoke alarm.
- Smoke alarms do not last forever.

Replace any smoke alarm that is more than 10 years old.



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# CFSA CHANGE OF VENUE

## NEW DINNER MEETING FACILITIES:

### Le Parc Conference and Banquet Facilities

8432 Leslie St., Markham, ON (southwest corner of Leslie and Hwy. 7)

## PROMOTE YOUR FIRM - HOST A RECEPTION!

### BENEFITS:

- Opportunity to show your services/products to the CFSA membership
  - Fire Safety Consultants, Associations, Municipal Building and Fire Service
  - Provincial Government, Manufacturers, Installers
- Reception hour in a dedicated room adjacent to the banquet room
- Guests coming to the Dinner Meeting come directly from parking to the Reception
- Ability to set up a "trade show" for

your firm or Association

- Professional appearance
- Dinner for two representatives
  - Others at member rate

### Costs (based on 50 people):

#### Members

- Basic fare - \$350
- Deluxe fare - \$650

#### Non-members

- Basic fare - \$500
- Deluxe fare - \$1,000

### Other Sponsorship Options:

- Wine at Tables

For details, or to book – call Mary Lou Murray, CFSA (416) 492-9417

# CFSA SCHEDULED EVENTS

## DINNER MEETINGS

### November 16, 2006

Inspection of Firestop Systems  
Speaker: International Firestop Council  
Time: 9:30 a.m.

Location: Le Parc Banquet and Convention Centre

Note: The dinner meeting has been changed to a luncheon format

## TECHNICAL SESSIONS

### November 1, 2006

Fire Protection of Life Safety Electrical Circuits in Highrise Buildings  
Speaker: Rick Florio, C.E.T., Tyco Thermal Controls

## OTHER EVENTS

### November 2, 2006

Society of Fire Protection Engineers – National Capital Region: 25th Anniversary Dinner  
Ottawa, ON

### November 16 - 17, 2006

14th Annual Public Fire and Life Safety Educators' Conference  
Cambridge, ON

### November 23, 2006

Retirement Dinner for Bernard Moyle, Ontario Fire Marshal  
Toronto, ON

### November 29 – December 1, 2006

Construct Canada/PM Expo  
Toronto, ON

### June 3 - 7, 2007

NFPA World Safety Conference  
Boston, MA

### June 3 – June 7, 2007

Fire Chiefs Association of British Columbia  
Annual Conference and Tradeshow  
Kelowna, B.C.

Welcome to the  
following  
**New  
Members**



### **BASIC CORPORATE**

Pressure Steam Ontario Ltd.

### **ASSOCIATE**

J.F. Landry, ER Plus Risk  
Mangement Group

### **STUDENT**

Melissa LaRoche

As of September, 2006

# CFSA New Membership Category

CFSA is proud to announce the creation of a new membership category known as **Provincial/Territorial Chapters**. The intent of this new membership category is to promote a balanced membership in CFSA from the fire protection industry across Canada, including government officials, consultants and industry representatives.

The founder of each Provincial/Territorial Chapter would be expected to write an inaugural article for the *CFSA News* and continue to provide updates in each of the quarterly journals - describing the various roles towards fire protection in that Chapter area and some of the unique challenges. This would serve to educate those in other areas of Canada about that particular region, to unify the membership, and

to perhaps interest some in further exploring that area for opportunities.

This new membership category includes the following:

- 4 individual memberships;
- member rate for all staff at dinner meetings, technical seminars and Annual Education Forum;
- Chapter recognition in each of the four issues (annually) of the *CFSA News* journal.

The annual rate for a **Provincial/Territorial Chapters** member is CDN \$200.00 + GST.

For more information, contact Mary Lou Murray, CFSA (416) 492-9417

## CFSA News in Electronic Format

Since the introduction of the "Members Section" on the CFSA website, the CFSA journal has been made available to all members in a downloadable electronic format.

Now all members who have registered an email address with CFSA will be receiving an electronic copy (PDF format) of the CFSA news instead of a printed copy on a quarterly basis. Those members who have not registered an email address with the CFSA will continue to receive a printed copy of the CFSA News.

For those members who still wish to receive a printed copy of the journal, please fax the form below to (416) 491-1670 attention Mary Lou Murray.

Members who have yet to register an email address with the CFSA can do so by emailing us at [cfsa@taylorenterprises.com](mailto:cfsa@taylorenterprises.com).

I wish to receive a printed copy of the CFSA News.

Name \_\_\_\_\_

Company Name \_\_\_\_\_

Address \_\_\_\_\_

Tel: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_



# Membership Application Form

## Why Corporate Membership?

Corporate Membership is cost effective because it allows any number of individuals from your organization to participate in the many functions provided by CFSA throughout the year. Any number of persons can attend our monthly dinner meetings/technical sessions or our annual conference at the preferred member's rate.

### Basic Corporate

Includes 3 individual memberships; member's rate for all staff at dinner meetings, technical seminars and Annual Education Forum and Trade Show; Company recognition in each of the four issues of the CFSA Newsletter.

### Class 4 Corporate

Same as Basic Corporate as well as one exhibit table at the Annual Education Forum and Trade Show and a Business Card advertisement in each of the four issues of the CFSA Newsletter.

### Class 3 Corporate

Same as Basic Corporate as well as one exhibit table at the Annual Education Forum and Trade Show and a 1/4 page advertisement in each of the four issues of the CFSA Newsletter.

### Class 2 Corporate

Same as Basic Corporate as well as one exhibit table at the Annual Education Forum and Trade Show and a 1/2 page advertisement in each of the four issues of the CFSA Newsletter.

### Class 1 Corporate

Same as Basic Corporate as well as one exhibit table at the Annual Education Forum and Trade Show and a full page advertisement in each of the four issues of the CFSA Newsletter.

### 2006 Membership Fees

|   | Fee         | +6% GST  | Total       |
|---|-------------|----------|-------------|
| <input type="radio"/> Class 4 Corporate | \$ 625.00   | \$ 37.50 | \$ 662.50   |
| <input type="radio"/> Class 3 Corporate | \$ 704.00   | \$ 42.24 | \$ 746.24   |
| <input type="radio"/> Class 2 Corporate | \$ 867.00   | \$ 52.02 | \$ 919.02   |
| <input type="radio"/> Class 1 Corporate | \$ 1,187.00 | \$ 71.22 | \$ 1,258.22 |
| <input type="radio"/> Basic Corporate   | \$ 347.00   | \$ 20.82 | \$ 367.82   |
| <input type="radio"/> Individual        | \$ 65.00    | \$ 3.90  | \$ 68.90    |
| <input type="radio"/> Student           | \$ 25.00    | \$ 1.50  | \$ 26.50    |
| <input type="radio"/> Associate         | \$ 25.00    | \$ 1.50  | \$ 26.50    |

### CFSA Application for Membership

Name \_\_\_\_\_

Company/Affiliation \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Prov. \_\_\_\_\_ Postal Code \_\_\_\_\_

Business Phone \_\_\_\_\_

Business Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Please indicate how you first heard about CFSA: \_\_\_\_\_

Please indicate in the appropriate box the category that best describes your vocation:

- |   |                                       |
|---|---------------------------------------|
| <input type="radio"/> Architect                             | <input type="radio"/> Engineer        |
| <input type="radio"/> Building Official                     | <input type="radio"/> Fire Service    |
| <input type="radio"/> Insurance Industry                    | <input type="radio"/> Fire Consultant |
| <input type="radio"/> Fire Protection Manufacturer/Supplier |                                       |
| <input type="radio"/> Building Owner/Developer/Manager      |                                       |
| <input type="radio"/> Other (please specify)                |                                       |

### Method of Payment:

Cheque Enclosed \$ \_\_\_\_\_



Account # \_\_\_\_\_

Expiry Date \_\_\_\_\_

Signature \_\_\_\_\_

**Please return this completed form with membership fees to:**

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Telephone: (416) 492-9417 • Fax: (416) 491-1670

E-mail: [cfsa@taylorenterprises.com](mailto:cfsa@taylorenterprises.com) • [www.canadianfiresafety.com](http://www.canadianfiresafety.com)

### CFSA Policy Statement

The Federal Government has introduced new privacy legislation effective January 1, 2004. CFSA respects your privacy and has included their privacy statement on the CFSA website at [www.canadianfiresafety.com](http://www.canadianfiresafety.com) for your review.

CFSA does not share your information with any other organization. Paying your membership renewal with CFSA indicates that you wish to continue receiving Association information.

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# Fire safety is more than a matter of code.

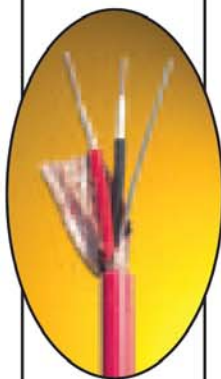
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The 2002 NFPA 72 is clear. When emergency notification circuits are used for partial evacuation or relocation of occupants, the wiring must be fire-survivable. Ignore the code, and you could be facing heavy consequences — not just the financial cost of penalties, but the devastating cost of human life.

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