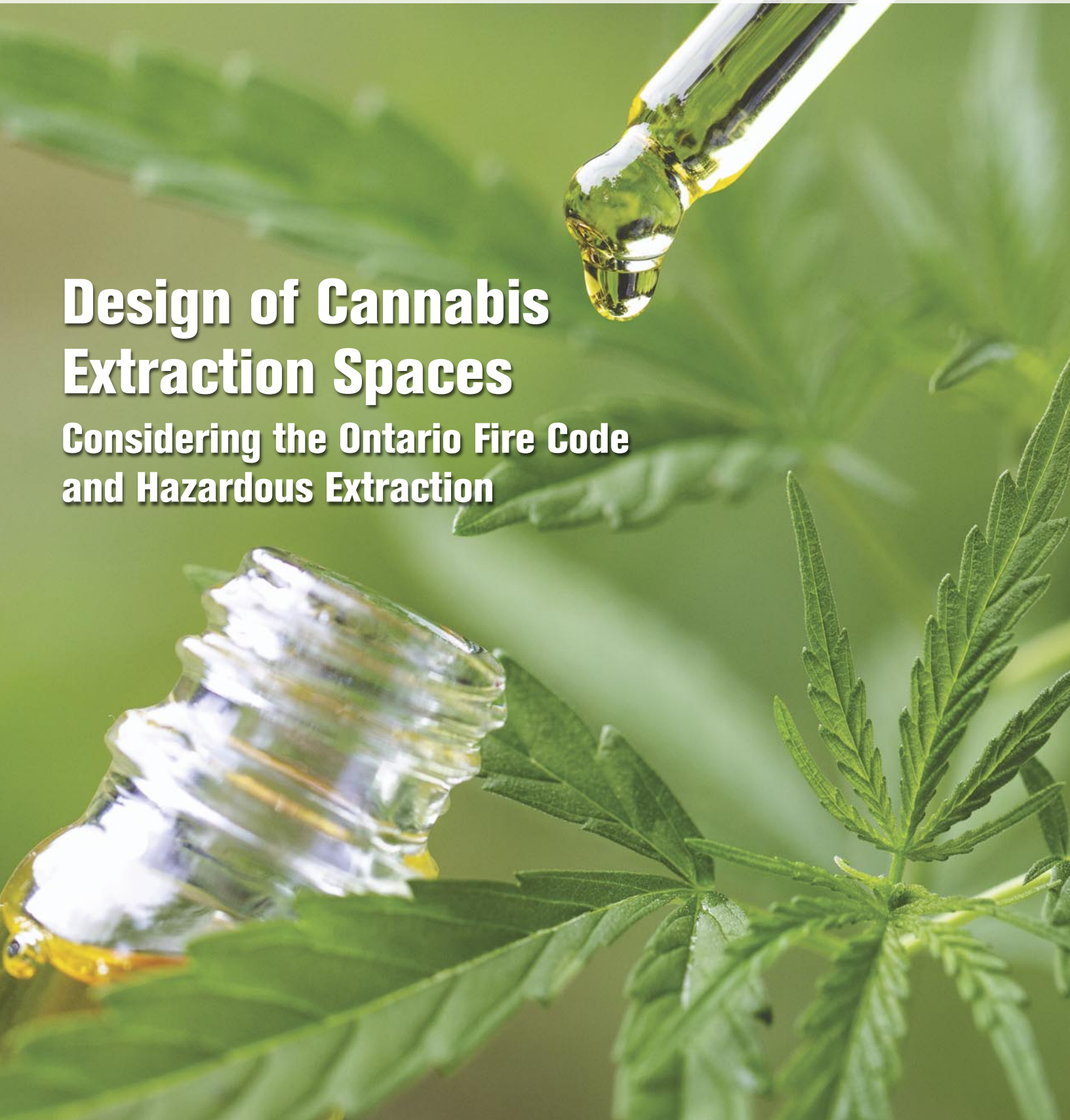
CFSA NEWS
CANADIAN FIRE SAFETY ASSOCIATION
Fire Safety is Everybody's Business
WINTER 2020



Design of Cannabis Extraction Spaces

Considering the Ontario Fire Code and Hazardous Extraction

CFSA
CANADIAN FIRE SAFETY ASSOCIATION
NEWS
Fire Safety is Everybody's Business
WINTER 2020

Inside This Issue

Editor: Lesley-Anne Coleman
The CFSA News Magazine is published 4 times per year: Winter, Spring, Summer and Fall.

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:

	Member Rate	Non-Member Rate
Back Cover	$250	$750
Full Page	$200	$600
1/2 Page	$100	$300
1/4 Page	$50	$150
Business Cards	$25	$75

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

For more information regarding advertising in the CFSA News please contact Beth McKenzie at (416) 492-9417 or Beth@associationconcepts.ca

All general inquiries and advertising materials should be directed to the CFSA Office.

We welcome your comments, suggestions and articles. To submit information, please contact us at Tara@associationconcepts.ca attention of The Editor.

Views of the authors expressed in any articles are not necessarily the views of the Canadian Fire Safety Association. Also, the advertisements are paid advertising and are in no way recognized as sponsored by the CFSA.

CFSA Chapters
Interested in forming a new chapter?
Call CFSA at (416) 492-9417

LIKE US ON facebook
http://goo.gl/Wp0uuQ

Follow us on twitter
@CFSA_CANADA

President's Message

Now that the calendars have already turned to 2020, I wanted to wish everyone a Happy New Year. With 2019 behind us, we are often left to reflect on our accomplishments and misses, while we consider setting new goals in both our professional and personal lives. However your calendar fills up, you are likely left with a sense of being "busy". While this word is frequently used as much as some people use a period at the end of a sentence, it can become our go to descriptive term for how we feel "busy". With meetings, appointments, and other obligations, finding time for personal and professional needs becomes very challenging.

Consider this - What is the difference between attending a meeting, participating in a meeting, and contributing in the meeting? Although all these actions did include a meeting, the outcomes are vastly different. Many of you will have reread this first sentence again, trying to catch a subliminal message. There is none intended; the wide contrast within the meetings is related to time and the productive use of that precious element. Given that some meetings are naturally more productive than others, I would be remiss if I did not admit that I can place myself into all three categories also. Attending, participating and contributing are inherently action words, but not all lead to action. My personal and professional challenge for 2020 is to flip the order of these words so that they can lead my actions versus occupy my time.

As I look at the Canadian Fire Safety Association, the Board of Directors, our members, and the over 50 new student members, I would encourage you to join me. Turning the table on our calendars so that we can make our time even more productive as we work towards making Canada one of the more resilient and fire safe countries in the world.

Be sure to follow or connect with us using Twitter @CFSA_NextGen along with @CFSA_Canada. Please feel free to contact me at any time at Scott.Pugsley@SenecaCollege.ca

Stay safe,
Scott Pugsley
CFSA President

CANADIAN FIRE SAFETY ASSOCIATION
ASSOCIATION CANADIENNE DE SÉCURITÉ INCENDIE

What is The CFSA?

The Canadian Fire Safety Association is a non-proit organization established in 1971, to promote fire safety through the use of seminars, safety training courses, information newsletters, scholarships, and regular meetings.

Our Mission Statement

"To disseminate fire and life safety information and promote a fire safe environment in Canada."

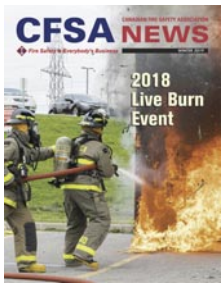
www.canadianfiresafety.com

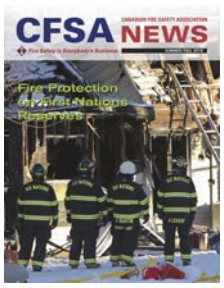
CFSA CANADIAN FIRE SAFETY ASSOCIATION NEWS

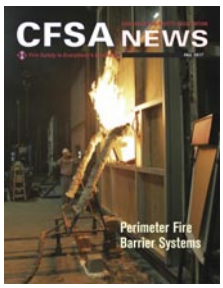
The Canadian Fire Safety Association (CFSA) produces a quarterly News magazine which is distributed electronically to all members and is available for download from the CFSA website.

The CFSA News provides articles on industry related information, updates on codes & standards and overviews of various CFSA educational seminars provided throughout the year. In addition, Corporate Members and their selected representatives are recognized.

Click on a cover below to view that issue online ...







Board of Directors

EXECUTIVE

PRESIDENT: Scott Pugsley
Seneca College
416-491-5050 ext. 22525 | scott.pugsley@senecacollege.ca

PAST PRESIDENT: David Morris
Firetronics 2000 Inc.
905-470-7723 | davidmorris@firetronics.ca

1st VICE-PRESIDENT: Sandy Leva
Underwriters Laboratories of Canada
416-757-5250 ext. 61521 | sandy.a.leva@ul.com

2nd VICE-PRESIDENT: Anthony Rago
Jensen Hughes
647-557-3671 | arago@jensenhughes.com

SECRETARY: Jim Stoops
Toronto Fire Services
416-338-9376 | jstoops@toronto.ca

DIRECTORS

Lesley-Anne Coleman, Toronto Fire Services
416-338-7379 | lesleyann.coleman@toronto.ca

Randy de Launay, Office of the Fire Marshal and Emergency Management, Toronto, ON
647-329-1241 | randy.delaunay@ontario.ca

Alana Detcheverry, Toronto Community Housing
647-209-8081 | Alana.Detcheverry@torontohousing.ca

Janet O'Carroll, Innovative Fire Inc
416-221-0093 | ocarroll@innovativefire.com

Randy Panesar, Durham College
905-721-2000 ext. 3456 | randy.panesar@durhamcollege.ca

Murray Pham, Matteo Gilfillan & Associates
647-946-2475 | mpham@gmacodes.com

Kathryn Schramm, Fire & Emergency Services
Town of Bradford West Gwillimbury
905-775-7311 ext. 4114 | kschramm@townofbwg.com

Anthony Van Odyk
647-501-2313 | ahvanodyk@mac.com

Alex Yarmoluk, Arencon Inc.
905-615-1774 ext. 230 | ayarmoluk@arencon.com

CFSA OFFICE

2800 14th Avenue, Suite 210, Markham, ON L3R 0E4
416-492-9417 | Fax: 416-491-1670

ADMINISTRATOR: Carolyne Vigon
carolyne@associationconcepts.ca

EVENT COORDINATOR: Beth McKenzie
Beth@associationconcepts.ca

Kitchen Suppression Systems Workshop

CFSA Technical Session held May 8, 2019

By: Lesley-Anne Coleman

On Wednesday May 8th the Canadian Fire Safety Association held a Technical Session on Kitchen Suppression Systems. The event was well attended and "sold out" very quickly.

The presenter was Doug Bailey, Director of Sales and Business Development-Canada for Johnson Controls Fire Protection Products who has been in the Fire Protection profession for just over 31 years, the last 18 of them with Ansul. He is responsible for the Canadian business under such brands as Ansul, PyroChem, Chemguard and Williams Fire and Hazard Control as well as Tyco Fire Products (sprinkler).

Doug provided the attendees with statistics showing the importance of restaurant fire protection.

In the US, restaurant statistics between 2010 and 2014 showed that there were 7,140 restaurant fires reported each year. These fires resulted in associated annual losses of 3 civilian deaths, 110 civilian injuries and $165 million in property damage. Fire originating in restaurants accounted for the most reported incidents in the category of "assembly area".

The threat of restaurant fires are very real due to inadequate or no fire protection, the amount of fuel in deep fat fryers, the hazards associated with other cooking equipment and failure to clean the equipment, filters and the build-up of grease laden vapors. Restaurant fire protection and maintenance is extremely important to reduce the risk of catastrophic damage.

Restaurants must have the following:

- A listed pre-engineered restaurant fire suppression system in accordance with ANSI/UL 300/ULC/ORD 1254.6-1995, and
- Proper hand portable fire extinguisher.

Listings, Codes and Standards:

ANSI/UL 300 test procedures affect fryers, grills ranges, char-broilers and woks. While the testing procedures is officially called ULC/ORD-1254.6-1995 in Canada, it is commonly referred to as the ANSI/UL 300 which is the American Standard. ANSI/UL 300 became a Standard in 1994. While all manufacturers are now UL 300 listed, the listing information is on the name plate. If it is pre ANSI/UL 300, the listed system should make reference to ULC/ORD-1254.6. A system that is not listed as meeting ULC/ORD-1254.6 or ANSI/UL 300 should be removed.

ANSI/UL 300 outlines the performance testing or pre-engineered fire suppression system for listing/certification. That includes testing for each hood, duct and appliance test to ensure the restaurant fire suppression system completely extinguishes the fire and causes no splashing.

Where a system or products fall outside of the normal types of kitchen suppression systems, appliance specific testing can be completed to obtain ANSI/UL 300 listed protection for those appliances that do not have a test protocol listed in the standard and produce grease laden vapors.

Other Codes and Standards that apply to kitchen suppression systems are NFPA 96 NFPA 96 "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations" for the construction of the canopy, NFPA 17A "Standard for Wet Chemical Extinguishing Systems" which addresses the chemical and NFPA 10 "Standard for Portable Fire Extinguishers" for the portable fire extinguisher.

NFPA 96 requires commercial cooking equipment operations and producing grease laden vapors to be provided with an exhaust system that complies with all the equipment and performance requirements of the standard. In addition, an extinguishing system is required to be installed to protect the cooking equipment. Note: this standard also references inspection of extinguishing system, inspection of the exhaust for cleaning, etc.

NFPA 17A – provides all the minimum requirements for the proper maintenance, monthly inspections, semi-annual/annual inspections and the 12 year inspection and maintenance. A log of such inspections should be kept at the establishment.

continued…

Kitchen Suppression Systems Workshop Cont'd

NFPA 10 – provides the requirements to ensure that portable fire extinguishers will work as intended against fires of limited size. The extinguisher should only be used after activating the extinguishing system.

Doug provided detailed information to the group on restaurant fire protection technologies including pollution control units, overlapping appliance protection, wet chemical and dual agent. He spoke about the R-102 restaurant fire suppressions system, Ansul Piranha system and Kitchen Knight II. Doug also provided information on each systems components such as nozzles and sizes, fusible links, cartridges, agents, tanks, pull stations and releasing devices.

Inspection and Maintenance of Systems:

Another key area covered that was also of interest to the attendees was the maintenance and inspection guidelines.

Monthly Inspection guidelines include:

- Inspection to ensure the seals and inspection tags are in place.
- Inspection to ensure that there are no obstructions blocking access to the manual pull station, and
- Visually inspecting pressure gauges and that the system is still in the cocked position.

This includes looking for obvious signs of damage that may prevent proper operation of the system, ensuring that the nozzle caps are in place and validating that the hazard has not changed.

Semi Annual/Annual Test and Inspection includes:

- Validating the equipment or hazards have not change since the installation of the system,
- Examining all components,
- Testing the mechanical operation of the system,
- Replacing fusible links (semi-annually),
- Verifying the agent distribution piping and nozzles are not obstructed, and
- Checking the agent for the liquid level and agent colour where it is applicable.

12 Year Inspection & Maintenance:

For applicable systems - This service should be performed by a certified and trained Ansul/Pyro-Chem Distributor and includes:

- Hydrostatic testing for agent tanks, cartridge expellant hoses, regulators, and agent distribution hoses,
- Existing R-102 and Piranah steel tanks must be replaced with stainless steel tanks, and
- A review of the system status with the manager/owner/operator once the service has been completed.

Therefore, in order to ensure a restaurants fire suppression system is adequate, monthly inspection, semi-annual/annual inspections and the 12 year inspection and maintenance is required to be performed.

Doug completed an exercise with the group, by having attendees design each type of extinguishing system (Ansul R-102 and Piranah) to protect a pre-selected exhaust hood and cooking appliance. The group was required to determine required nozzle sizes, spacing and tank size.

The workshop was well received by all those that attended. For more information regarding Ansul systems, visit www.ansul.com.

Please visit the Canadian Fire Safety Association website for details regarding upcoming Technical Sessions/Workshops at https://canadianfiresafety.com/

◆

Upcoming Events

CFSA Annual Education Forum
April 2, 2020
https://canadianfiresafety.com/events/upcoming-events

OAFC 2020, Ontario Association of Fire Chiefs
April 30 – May 2, 2020
International Center, 6900 Airport Rd., Mississauga
https://www.oafc.on.ca/event/oafc-2020-attendees#conference_venue_information_&_shuttle_tab

OMFPOA Training and Education Symposium
June 7-11, 2020
https://www.omfpoa.com/symposium/

NFPA Conference and Expo
June 15-18, 2020
Orlando, FL
https://www.nfpa.org/conference/

Security Canada 2020 - Central
October 21 & 22, 2020
http://www.canasa.org/CANASA/CANASA/News_and_Events_Pages/CANASA_News/CANASA_News_2019/10_October_2019/Announcing__2020_Security_Canada_Dates_.aspx

Construct Canada
December 2-4, 2020
Metro Toronto Convention Center
https://www.thebuildingsshow.com/en/product-sectors/construct-canada.html

More information regarding events and registration can be found by visiting:
http://canadianfiresafety.com

Randy Panesar
Director

Public Education Committee, Membership Committee, Education Forum Committee

Program Coordinator & Professor of the Fire and Life Safety Technician Program – Durham College.

As program coordinator & lead professor I manage all fire and life safety affairs related to the academic program which include program development, curriculum design, faculty support/enrichment, student development, industry outreach, cooperative education, and community affairs. I am also involved in several research projects related to post-secondary education and fire and life safety.

Outside committee involvement:
Former Vice President of the Canadian Fire Alarm Association-Ontario Chapter. Currently Director at large with the Canadian Fire Alarm Association. Member with the National Fire Protection Association.

Contact:
Randy Panesar
Randy.Panesar@DurhamCollege.ca
905 721 2000 ext 3456
2000 Simcoe Street North,
Oshawa, Ontario
L1G 0C5
Twitter @PanesarRandy

Murray Pham
Director

Public Education, Public Relation Committees

Project Manager
Matteo Gilfillan & Associates Inc.

Provides managerial support to clients and staff, ensuring professional and quality consulting on various projects, including drawing review analysis,
Ontario Building Code report preparation, authority negotiations, Fire Code inspections, fire safety planning, and
alternative solutions.

Outside committee involvement:
Ontario Association of Certified Engineering Technicians

Contact:
Email: mpham@mgacodes.com
Tel: 647-946-2475
10 Director Court, Suite 203,
Vaughan, Ontario L4L 7E8

Alexander Yarmoluk, FPET, C.Tech.
Executive Member – Secretary

Public Relations (NextGen), Membership, Chair of Social Media

Fire and Life Safety Consultant
Arencon Inc.

Project experience as a fire and life safety consulting technologist which includes project management, fire suppression system design and review, hydraulic calculations, Fire & Life Safety Audit and Commissioning, and Building and Fire Code Compliance Analysis.

Outside committee involvement:
Individual Member of Society of Fire Protection Engineers (SFPE) – Southern Ontario Chapter, Certified Technician (C.Tech) within Ontario Association of Engineering Technicians and Technologists (OACETT).

Contact:
Email: ayarmoluk@arencon.com
Tel: 905-615-1774 Ext. 230
1551 Caterpillar Road, Suite 206,
Mississauga, ON L4X 2Z6

2019 Live Burn

"Not Every Hero Wears a Cape. Plan and Practice Your Escape!"

By: Han Joon Lee

It was that time of the year again, when the National Fire Protection Association (widely known as NFPA) hosted its annual Fire Prevention Week, a campaign for advocating awareness of fire in the household since 1922. Held from October 6th to October 12th, this year's theme was "Not Every Hero Wears a Cape. Plan and Practice Your Escape!" Seemingly, the 'hero' is defined for individuals who acknowledge how their basic behaviors can make a life-saving impact. Setting an escape route, understanding the risk of fire, visiting a community Open-House are all heroic actions in taking steps of creating a safe environment from fire. However, installing fire protection components in a household is also a heroic act of guarding against negligence, and the 2019 Live Burn promoted such.

In respect to Fire Prevention Week, the School of Seneca Fire Protection held the honor of presenting its 5th Live Burn, led by Seneca Industry Coordinator, Professor Scott Pugsley.

Although this was my third time participating in the event as one of the student volunteers, I'm always excited to see organizations such as Viking Fire Protection, Home Fire Sprinkler Coalition, Seneca Pre-service, etc. coming together with a strong purpose. I was also notably amazed and surprised that Kevin Frankish, a former Breakfast Television Host on channel CP24 was present throughout the event and actively commentating through his live online broadcast on Twitter. It's not everyday you find a TV personality that you've watch every morning for years in front of your eyes.

To briefly explain the purpose of the event, the Live Burn is an outdoor, public education demonstration to raise awareness of house fires by providing firsthand experience for spectators of how quickly a fire can spread and be lethal, and how effective a single fire sprinkler can be in suppressing a fire.

The event was staged outside Seneca College Newnham Campus Building E with two identical bedrooms set up side by side and furnished with presumable components anyone can find in single dwelling unit: a wooden desk, a chair, a bedroom covered with fabric bedsheets, a curtain, a sofa and a computer monitor each in a wood-framed cell.

continued…

Both cells were labelled based on the level of protection, eg. "NOT PROTECTED" for the cell with only a smoke alarm installed and no sprinkler coverage and the other "FIRE SPRINKLER PROTECTED" for the cell with both sprinkler protection and a smoke alarm.

To start the burn demo, a well-trained Seneca Pre-service instructor simulated a fire ignition located at the backside of the wall. The first cell ignited was the non-protected cell. Within 5 seconds or so, the smoke immediately turned darker, a phenomenon of releasing toxic chemicals from anthropogenic and natural soot. At 13 seconds in, the smoke alarm activated even before the sofa was completely engulfed with flames.

Speaking of the sofa, I was taught that the polyurethane foam in cushion material is a great fuel for causing rapid fire but I had never had the opportunity to understand the magnitude of a burning sofa and was shocked that the sofa itself was enough to fill the whole cell with deadly heat and smoke. Although; the cell was open faced and well ventilated with oxygen unlike a room with closed doors and windows. Nonetheless, it showed how quickly fire can spread and witnessing the flashover turn the cell into a mini blast furnace was dreadful.

At 1 minute and 22 seconds, one of the pre-service firefighters had to intervene and extinguish the fire with water from the hose connected to a local hydrant. According to a student volunteer with a thermal imaging camera (TIC), the maximum temperature recorded was at 365-degrees Fahrenheit, 185-degrees Celsius. Sitting across from the cell about 30 feet away, I could feel the warmth on my face and felt a little dizzy from the smoke residue blowing in the air. When the pre-service firefighting students dismantled the burnt furniture, there were still small sparks of fire rekindling beneath the furniture. The fire took approximately 5 minutes to be extinguished completely.

After the fire in the first cell, the second cell equipped with both sprinkler coverage and a smoke alarm was ready to go. The specification of the sprinkler head installed was a regular residential sprinkler head positioned as a pendent, directing the orifice downward to the floor from the ceiling. Sprinklers of this type discharge a minimum of 15 gallons per minute (GPM) once activated at 155-degrees Fahrenheit. Sprinklers are independently activated and are automatically operated by a temperature sensitive liquid. This means unlike what we typically see in movies where all sprinkler heads are being discharged at the same time, sprinklers are locally activated only where fire has occurred. Surrounding sprinkler heads will only discharge if they too are exposed to heat and reach their temperature limit.

Within 30 seconds after the fire was ignited, the smoke alarm activated with constant shrilling beeps. The (TIC) displayed a temperature of 150-degrees Fahrenheit. At approx. the 1 minute mark, the sprinkler popped spraying water over the fire area. I expected the sprinkler to solely extinguish the fire but noticed the fire was constantly trying to rekindle in a dampening cell even after a minute and a half of the sprinkler being activated. The fire was suppressed by both the sprinkler and pre-service students eventually. The experiment really showed how persistent a fire can be.

The furniture and wall withstood the fire and remained intact. The only damage I could find were the leather seats on the sofa being partially burnt and charred. The demonstration showed how effective a small residential sprinkler can be against fire in a room and the importance of installing and maintaining smoke alarms.

Living in a condominium where the fire alarm system is tested frequently and the smoke alarm is sometimes triggered by something as small as burnt toast, I am sometimes tempted to take out the batteries from the device but remind myself of what could happen if I did based on what the live burn showed me. The smoke alarm must never be disconnected as it provides early notification that there is an emergency.

continued…

2019 Live Burn Cont'd

I really appreciated participating and seeing the Live Burn on Campus as it proves to me my responsibilities to my family and my community. It's all about fire protection as fire can happen anytime and anywhere.

The day of the event was cold and windy and the weather really wasn't conducive. Arriving on scene, I was surprised by the number of staff, student volunteers, and fire-industry personnel present to make this event as valuable and educational to the public as it could be. I would like to give credit to all the members of the Seneca Fire Protection Student Association, Professor Scott Pugsley and all other participants who dedicated their time for the Seneca 2019 Live Burn. ◆

Direct links to the video footage can be found here:

Accessible Passenger Elevating Devices Vis-à-Vis Provisions of the Model National Building Code of Canada

(A study on Vertical Platform Lifts Versus LULA Passenger Elevators)

By: Avinash Gupta, P.Eng., CBCO, CRBO, LBO
Brent Stuntzner, LEED GA, CSI CDT, Assoc. AIA
Dominic Esposito, P.Eng.

According to demographic projections, seniors in Canada could represent between 23% and 25% of the total population by 2036 and the number of seniors could reach between 9.9 and 10.9 million (www150.statcan.gc.ca). With this surge in the aging population, the need for understanding and designing accessible buildings-both commercial/public and residential is of paramount significance for many professions.

Accessibility is not limited to accessing the upper and/or lower levels or for transporting persons in wheelchairs from one level of a building to another. Instead, accessibility is the ability of everyone, regardless of whether they have a disability or not, to access, use, and benefit from everything within their environment. It can be viewed as the "ability to access" and benefit from a system or entity. Accessibility addresses the degree to which products, devices, services or environments are available to as many people as possible. In simple words, accessibility means, enabling independent living and full participation in all aspects of life for people of all ages with differing physical and sensory abilities.

The defined term "barrier-free" used in the current Model National Building Code (NBC) is expected to be replaced with the term "accessible" in the 2020 edition of the NBC. The principle of accessible design has been included in the Appendix Note to Section 3.8. of the NBC-2020.

Canada ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in March 2010. Article 9 of the UNCRPD addresses accessibility and shifts from the medical model to the social model of disability.

Voluntary installation of an accessible wheelchair platform lift or a LULA passenger elevator does not waive other provisions of the NBC.

While a wheelchair ramp is an example of construction often used to assist people with limited mobility, the term 'accessible' extends to things such as Braille signage, elevators, audio signals at pedestrian crossings, walkway counters, website design, reading accessibility, and all other aspects of societies such as work, education, sports, etc.

Regarding elevating devices, there are various types available to owners, developers, and professionals to choose from, such as conventional passenger elevators, limited-use/limited-application (LULA) passenger elevators, inclined platform lifts (IPLs), vertical platform lifts (VPLs), and stair lifts.

An elevator is a type of vertical transportation that moves people (irrespective of their health conditions) and items between floors of a building. A LULA elevator is defined as a power passenger elevator in which its use and application is limited by size, capacity, speed, and rise. It does not require to be separated from all other portions of each adjacent storey by a fire separation having a required fire-resistance rating under the following conditions: (1) when it is located in an interconnected floor space with special protection features and its machine room is located in a room separated from the remainder of the building by a fire separation having a required fire-resistance rating or (2) when it is located in a sprinklered two storey interconnected floor space with limitations on occupancy. (Refer to NBC Sentence 3.2.8.2.(6))
VPLs and IPLs, on other hand do not need to be separated from the remainder of the building at each storey by a

continued…

fire separation having a required fire-resistance rating, where they meet specific conditions (i.e., sprinklered two storey interconnected floor space as noted above and with limited size openings. {Refer to NBC Sentence 3.2.8.2.(5) and 3.2.8.2.(6)}

A stair lift, also called a stair chair lift, is a device that enables people with disabilities (or those with limited mobility) to move between different floor levels. It is made up of a chair, which is attached to a mechanical rail that ascends/descends the staircase, by electrical power. A stair lift cannot accommodate a person in a wheelchair, thus making its application limited in commercial buildings.

The accessible path of travel applies to floor areas and cars/cabs of passenger elevators and platform-equipped elevating devices are not considered to be exempted from the barrier-free path of travel for persons in wheelchairs.

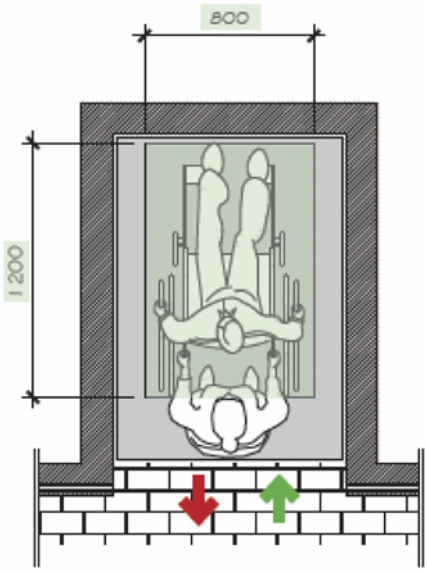
Both the terms "lift" and "elevator" refer to a platform or compartment housed in a shaft for raising and lowering people or things between different levels. Platform lifts, also known as wheelchair lifts, are standalone units specifically designed to accommodate people using a wheelchair or other mobility device that prevents them from using stairs. The wheelchair lifts are used for transporting individuals from one level to another. Both vertical and inclined platform lifts are used to transport people using wheelchairs or other mobility devices, allowing them to travel between floor levels. The difference between the two is the way in which they travel between levels. In the case of a VPL, the platform moves vertically up and down along the tower. In contrast, an IPL transports its passengers diagonally across a barrier rather than over it.

This article intends to limit its study to 'Application of VPLs and LULA Passenger Elevators Vis-à Vis the Accessible Provisions of the NBC-2015' and the proposed changes expected to be included in NBC-2020. The standard that applies to lifts is CAN/CSA B355 "Lifts for Persons with Physical Disabilities" and the elevator standard is ASME A17.1/CSA B44 "Safety Code for Elevators and Escalators" unless different provincial/territorial regulations or municipal bylaws apply.

Section 5.2 of ASME A17.1/CSA B44 allows an elevator classified as a LULA elevator to be used in buildings to facilitate transporting persons with disabilities from one floor level to another. The expected provision to the NBC-2020 exempts LULA elevators and lifts from the space requirement to accommodate a patient stretcher (2100 mm X 610 mm) in the prone position and therefore traditional elevators are to be used in a building that requires transferring patients in a stretcher from one floor to another. LULA elevators are designed and installed in accordance with ASME A17.1/CSA B44 and not to CAN/CSA B355, but it has similarities with the lift standard.

As tabulated below, both VPLs and LULA elevators have limitations in terms of maximum vertical travel/rise, weight capacity, platform area, travel speed and accessible requirements of the NBC.

The type of operation is one of the key defining differences between a VPL and an elevator. Both are electrically operated, however an elevator is automatic, while a lift is operated with the use of a key and the continuous holding of a button for maintaining a constant pressure. Automatic operation means simply pressing a button to select a floor once and the elevating device moves to the desired floor level automatically. On the other hand, a VPL requires pressing and holding the control button continuously until it reaches the desired floor level. This means that a VPL may not be a good option for a person whose disability limits their ability to press and hold the control button for a period of time. It may also mean that a person cannot use this type of device unless they are accompanied by an attendant.



Entrance and Exit from Same Sides

VPLs are generally used to cater to a small section of residents or occupants of a building with minimal use by members of the general public. Some owners, developers, and professionals opt for LULA elevators instead of VPLs for a building that houses a greater number of persons using a wheelchair.

continued…

Elevating Device	Maximum Floor Area	Maximum Weight Capacity	Maximum Travel Speed	Maximum Travel Distance
VPL	2.0 m^2	635 kg	0.25 m/s	7.0 m
LULA	1.67 m^2	635 kg	0.15 m/s	7.6 m

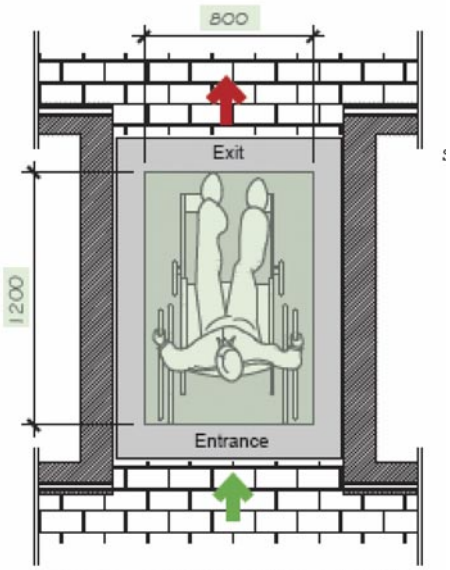
Voluntary installation, in the context of administering the NBC means an installation of something that is not a mandatory requirement of the NBC. Good engineering practice is to be exercised to ensure that the level of public safety established by the NBC requirements is not reduced by the voluntary installations. Voluntary installation of an accessible wheelchair platform lift or a LULA passenger elevator does not waive other provisions of the NBC.

Accessible Provisions of the NBC
An accessible path of travel from building entrances is to be continued throughout the storey and within all other normally occupied floor areas that are served by a passenger elevator, LULA elevator, escalator, inclined moving walk, or other platform-equipped passenger-elevating device.

A passenger-elevating device that is a part of the accessible path of travel conforming to CAN/CSA B355, is permitted by the NBC. As per the proposed change in the NBC-2020, interior dimensions of the cabin are to be minimum 1500 mm long by 1000 mm wide and have entry doors with a clear width of minimum 850 mm in the open position where located in the short wall and minimum 1000 mm where located on the long wall of the cabin.

Accessibility as per NBC means to accommodate the ability to access and use a building by people with diverse abilities throughout their life span. The way NBC has been written, accessibility means, a person can use the building and its facilities independently without an assistance unless requested by the user.

The accessible path of travel applies to floor areas and the cars/cabs of passenger elevators and platform-equipped elevating devices are also required to meet the accessibility requirements of the NBC. However, there are a few additional specific exceptions included in the NBC-2020 where an accessible path of travel for persons in wheelchairs is not required. {Refer to 3.8.2.3.(2)(g), (h) and 3.8.3.7.-NBC 2020}. Therefore, its configuration and size are to be selected for meeting the fluctuating and varying accessibility needs of persons (except patients requiring transportation in a horizontal position, but including persons in wheelchairs) for independent living without an assistant unless requested.



Entrance and Exit from Opposite Sides

Conformance to 'protection on floor areas with an accessible path of travel' is required for every floor area above or below the first storey for a building that is not sprinklered throughout. To meet this provision of the NBC, designing and installing a LULA elevator or any other passenger-elevating device is one of the many options for meeting the above requirement. {Refer to NBC Clause 3.3.1.7.(1)(b)}

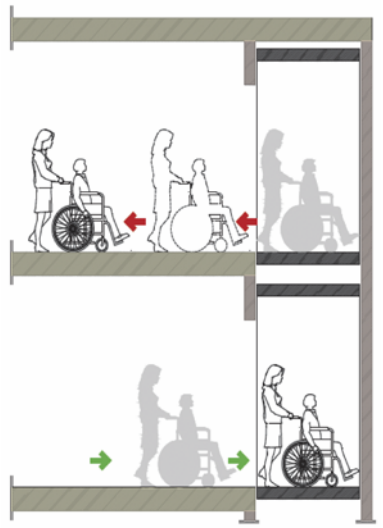
LULA elevators have an automatic operation and can be provided with an automatic emergency recall feature, when required by the NBC. Therefore, LULA elevators of a size sufficient to accommodate a footprint area of a manual wheelchair with one opening to enter from the front and the other opening on the rear for exiting may be a better option for meeting the independent living and accessibility provisions of the NBC.

LULA elevators are significantly similar to enclosed platform lifts conforming to CAN/CSA B355, however, LULA elevators are required to meet the provisions E-1 and E-3 to E-17 of Appendix E of ASME A17.1/CSA B44. (Refer to Article 3.5.4.1. of NBC-2020}

The floor area required for a person using a manual wheelchair is 1200 mm long X 750 mm wide and 1500 mm

continued...

long X 750 mm wide for a power wheelchair. However, some references use a footprint area of 1200 mm long X 800 mm wide for a manual wheelchair that includes additional side space to

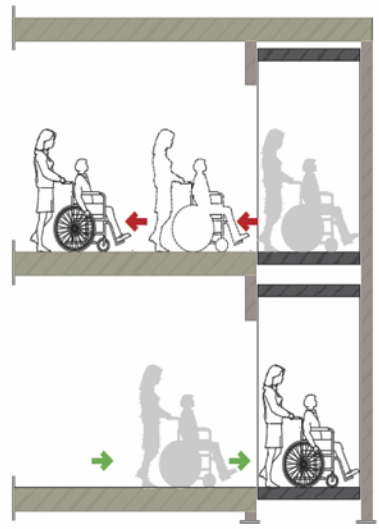


Entrance and Exit from same Side

accommodate the hand motion that propels a manual wheelchair. The clear width of an elevator door is to be minimum 914 mm. For the purposes of this article, a footprint area for a manual wheelchair has been taken as 1200 mm long X 800 mm wide to examine the suitability of a VPL and a LULA elevator for a person in a wheelchair.

VPL and a LULA Elevator

As noted earlier in this article, LULA elevators and other platform-equipped passenger elevating devices are required to



Entrance and Exit from same Side

be part of the accessible path of travel. LULA elevators and VPLs are available in different configurations to suit the needs of a specific building. Each configuration has a variety of car sizes. The most common and easily available on the market for LULA elevators is 1295 mm x 1295 mm (door openings are at 900 to each other).

The other size is 1067 mm x 1524 mm, which has two options. One option is having a single door opening, which means the entrance and exit are on the same side which means; movement in the reverse direction is required for exiting as shown in the above sketch. The other option is having two door openings located opposite to one another meaning entering from the front and exiting to the rear as shown in the Sketch. VPLs are also available with the same configuration as that of LULA elevators, and the most common car sizes available on the market being 914 mm x 1219 mm, 914 mm x 1371 mm, 914 mm x 1524 mm, 1067 mm x 1219 mm, 1067 mm x 1371 mm, and 1067 mm x 1524 mm.

The turning radius required to comfortably maneuver in a single motion is 1500 mm diameter (1700 mm diameter as per the proposed change to the NBC) and the exit is required to open in the direction of exit travel as per the NBC. Therefore, entering and exiting from the same door for both LULA elevators and VPLs should be discussed with the Authority Having Jurisdiction (AHJ) at the conceptual stage of a project. The footprint area for a manual wheelchair is 1200 mm x 800 mm and

continued…

In conclusion, independent living and accessibility design are the major defining differences between a Limited use/Limited Application elevator and a vertical platform lift.

VPL	LULA Elevator
It is a key operated lift.	It is automatic and requires pressing a floor selection button once.
It requires pressing and holding a button to maintain a constant pressure for the VPL to move.	Once the button is pressed, it moves to the desired floor level automatically.
An attendant may be required for a VPL if a person cannot press and hold the button for it to move.	No attendant is required for the operation of a LULA elevator if a person can press the floor selection button by themselves.
It cannot be provided with an emergency recall feature.	An emergency recall feature can be provided, when required by the NBC or local regulation.

the minimum size of the door as noted above is 914 mm and therefore a car size of 1067 mm x 1524 mm for a LULA elevator and 1067 mm x 1524 mm or 1067 mm x 1371 mm for a VPL is considered reasonable from the wheelchair footprint consideration for the doors located opposite one another. The designer may like to work with the AHJ to select the car size for an available L-shape turning space within the car platform for maneuvering the entrance and exit doors located at 900 to one another.

Controls in the accessible path of travel are to be operable with one hand in a closed fist position, without requiring tight grasping, pinching with the fingers, or twisting of the wrist. A vertical platform lift, however, may not meet the above provisions because not all people with disabilities are able to press and hold a control button until it reaches the desired floor level. Also, when required by the NBC, VPLs are not capable of providing an automatic emergency recall feature. Therefore, it is suggested to work with the local AHJ to understand and determine the interpretation of the NBC specific to the configuration of a VPL as each local municipality may have a different perspective.

Nevertheless, LULA elevators have an automatic operation and can be provided with an automatic emergency recall feature when required by the NBC. Therefore, LULA elevators of a size sufficient to accommodate a footprint area of a manual wheelchair with one opening to enter from the front and the other opening on the rear for exiting may be a better option for meeting the independent living and accessibility provisions of the NBC.

In conclusion, independent living and accessibility design are the major defining differences between a Limited use/Limited Application elevator and a vertical platform lift.

All the writers are experienced professionals and currently working in the building code industry. The views expressed by the authors are for educational purposes only. ◆

Increased Cannabis Legalization Spotlights Safety Concerns

In case you missed the news, cannabis is rapidly losing its taboo status around the world. Evolving attitudes along with growing legalization are driving market growth – the global legal marijuana market size is projected to expand at a CAGR of 23.9% by 2025.

"Currently 41 countries have legalized cannabis for medical or recreational use, or both," said Joe Hosey, general manager of UL in Canada. "Most industry experts expect this growth to double in the next 12 to 18 months. You're likely going to have more than 80 countries that are going to have a legal cannabis industry."

While cannabis is still in the early days of decriminalization and legalization in the U.S., as of August 2019, two-thirds of U.S. states have given the green light to the production and distribution of cannabis in some capacity. Hosey expects large growth in the industry and ongoing legalization efforts of both medicinal and recreational cannabis worldwide.

Legalizing cannabis

The rise of the cannabis industry is serious business with cannabis extracts emerging as the most lucrative segment. Global cannabis extracts represent a market opportunity that has already crossed into existing industries such as food and beverage, cosmetics, healthcare and more.

However, history has shown time and time again that wherever there's rapid growth in an industry, safety can suffer – case in point, hoverboards, dietary supplements and USB cables.

Everyone, from commercial growers, product development facilities, distribution networks, storefront retailers and beyond, wants to optimize growth through increased production and supply chain efficiency.

Many new entrants, however, may be unaware of the occupational challenges present throughout the cannabis industry. The preeminent issue now is how to protect workers and support industry growth.

What's the danger?

Hosey identified two known risks impacting worker safety:

- Security is almost always a large concern for a business, and the cannabis industry is no exception. Retail robberies and stolen products during deliveries mean that third-party tested and certified security systems, including vaults and access control measures, should be installed by the business.

For those in the medical cannabis industry, many jurisdictions treat the drug as a controlled substance with high-security requirements. "Canada, for example, requires remote access monitoring and card access control measures along with an integrated fire system," he said.

- Occupational hazards include everything from potentially harmful ultraviolet (UV) exposure to explosions and fires at cannabis processing facilities. In the past five years, at least 10 fires have occurred at facilities that extract cannabis oil for use in edible products. "Nearly all resulted in serious injuries for production-line staff," Politico reported in February 2019.

"This is a newly legalized industry," Hosey said. "Workers in this industry should be afforded the same levels of safety as any other industry."

Meeting a high standard

Standards for the cannabis industry range from horticultural lighting equipment, oil extraction equipment, building fire safety, security systems and air quality. As a new industry, it is facing new regulations, which aren't the same across the board, yet.

"It was really an outreach from regulatory authorities across Canada that are struggling with all these operations popping up all over the country," Hosey said. "There seemed to be no consistency for what authorities were looking at. It was only natural that UL is the company that everyone turned to for help with safety and security."

continued…

Due to the combustibility of the fuels used in the extraction process, companies have been turning to UL to test extraction equipment in our explosive atmospheres laboratory, according to Milan Dotlich, Europe and America's vice president of Energy and Power Technologies at UL.

It should be noted that the extraction process of cannabis is like that of any essential oil, similar to how other safety requirements may apply to indoor horticulture as a whole. Extracting oil from a plant is dangerous because it typically requires highly-flammable butane or some other volatile solvent to strip and collect the oil for product development.

"More than just the physical safety of workers and locations, we offer services for the entire supply chain," Dotlich said. "Whether it's verifying the source of the products, engaging in anti-counterfeiting activities or delivering analytics and tracking the movement of products, UL can meet the needs of this emerging market."

To learn more about our work with the cannabis industry visit us at www.Canada.UL.com/cannabis or contact Ryan.Harper@ul.com or (416) 288-2241. ◆

Design of Cannabis Extraction Spaces – Considering the Ontario Fire Code and Hazardous Extraction

By: Melinda Amador, P. Eng.
CodeNext Inc.

Edibles, and topicals, and dabs - oh my! As products of cannabis extraction will be available to the general public in Canada in the next few months, we are working with designers to make new extraction facilities safe.

With developing legalization of consumer cannabis products manufactured using hazardous solvent extraction technology, there is a need for designers, Authorities Having Jurisdiction, and owners to understand design restrictions and options available under the Ontario Fire Code (OFC). While the OFC is not the only governing regulation for cannabis extraction processes, it is one element that, if not considered in the early stages of the facility design, can slowdown or halt permit and licence approvals for a project.

As an appetite for exploring cannabis extraction production grows in industry, it's important to consider how the scale of production, process flow, equipment, extraction solvent, and existing or new building infrastructure will be regulated under the OFC. In our experience, well-informed design and thoughtful consideration of fire protection and life safety elements at the feasibility stage of a project are the most likely indicators of permit success.

Recent Changes to the Ontario Fire Code

One of the elements regulated by the Ontario Fire Code is the storage, handling, and use of hazardous materials. Primarily, the OFC regulates liquids that pose fire or explosion risks under Part 4, *"Flammable Liquids and Combustible Liquids"*, while other hazardous materials such as flammable gases are regulated under the umbrella of Part 5, *"Hazardous Materials, Processes and Operations"*.

Recent changes to the Ontario Fire Code have been enacted to specifically address hazardous extraction operations, which include, but are not limited to, extraction processes using cannabis. The term *"hazardous extraction"* is now defined as *"...a process to remove or separate a substance from a solution or mixture that involves the use of flammable liquids, combustible liquids or flammable gases as solvents in the process"*. The new definition recognizes the need for extraction activities to be appropriately identified and protected in buildings, including those otherwise regulated under the National Farm Building Code of Canada.

A key element of the new definition is the inclusion of flammable gases as an extraction solvent. For those not familiar with the OFC regulations for flammable gases - they are somewhat limited and focus primarily on the storage of flammable gases in cylinders. Typically, where high pressure transfer piping systems and flammable gases are present in an industrial facility, the installations are subject to compliance with the Technical Standards and Safety Authority (TSSA) regulations, and are outside the purview of the OFC requirements. By including flammable gases in the definition for hazardous extraction activities, the OFC requirements can now be applied directly to extraction processes that use solvents such as butane and pentane (flammable gases) as the primary extraction solvents.

What is Cannabis Extraction?

At a basic level, cannabis extraction technology focuses on concentrating desirable elements from cannabis plants into an oily product. Specifically, the technology can be developed to generate chemically concentrated extracts that can have high potency tetrahydrocannabinol (THC) and cannabidiol (CBD), in precisely balanced amounts. The end product can be further refined and introduced into topicals, sprays, edible, vapable, or otherwise consumable products. As a point of reference, historically dried cannabis plants have yielded 3% THC, with some strains

continued…

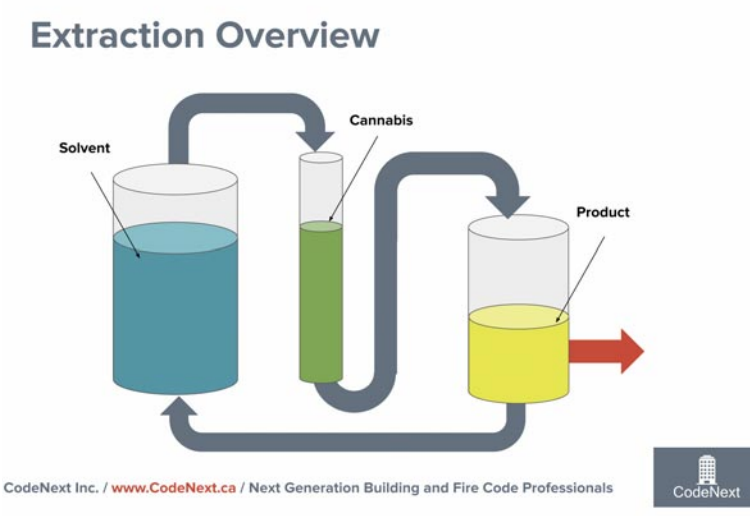
today yielding up to 30% THC. Products generated from solvent extraction can result in oils yielding 90% THC. The opportunity for producers of cannabis oils is significant. These high potency, versatile products of extraction are in demand and will soon be legalized for public consumption.

There are numerous cannabis extraction technologies available, most of which rely on a flammable solvent as the primary extraction medium. Flammable solvents include flammable liquids such as ethanol (consumable alcohol) and flammable gases such as butane and propane (lighter fluid or common barbeque fuel) or Liquified Petroleum Gases (LPG).

The acceptable forms of extraction are referred to as *"closed-loop systems"* (see figure). Unlike the *"open-loop systems"* or *"open-blasting"* extraction techniques, which are not considered to be safe, closed-loop extraction technologies process the cannabis materials in a way that limits the release of hazardous, flammable vapours or gases from the equipment, into the environment.

Even though the technology is called closed-loop, flammable solvents will often be released during equipment filling, product capture, and waste removal activities. These vapours present a fire and explosion hazard and must be protected appropriately.

It's important to clarify that not all extraction technologies use flammable solvents. Extraction systems can rely on less hazardous solvents such as water or carbon dioxide (non-flammable, non-toxic gas) or may use mechanical processing techniques instead. However, when considering highly potent extraction products, and the demands of the consumer market, flammable solvents are often necessary.



Design Pathways

To illustrate some of the different ways that extraction processes can be regulated under the OFC, consider an existing industrial building that incorporates a new cannabis extraction activity using ethanol as the extraction solvent. As previously mentioned, the design of facilities using flammable gas solvents such as butane and propane will be subject to requirements under both the OFC and TSSA regulations.

For the ethanol extraction case, recall that the storage, handling, and use of flammable liquids such as ethanol are regulated under OFC Part 4. The requirements applicable to cannabis extraction using ethanol will generally depend on the type of building housing the activity and the amount of ethanol present. Based on the classification of an activity under Part 4, the design requirements will focus on similar, fundamental building elements, but will mandate varying degrees of protection based on the magnitude of risk that an activity presents.

We often consider three different design categories for ethanol extraction facilities:

1. Process Plants - OFC Section 4.8.,
2. Laboratories - OFC Section 4.12, or
3. Incidental Use - OFC Subsection 4.2.8.

By definition, the "Process Plant" category applies to industrial processes involving flammable liquids or small-scale unit chemical processes. Typically, a process plant designation can be applicable to a "craft-scale" production, a

continued…

pilot or proof-of-concept activity, or a bulk manufacturing facility. A unique design element associated with this classification is that the OFC requires a Fire and Explosion Risk Assessment to support the design of the facility or room. This evaluation is necessary to determine if material properties, quantities, operating conditions, equipment arrangement, and facility practices present case-specific risks.

As extraction processes are relatively new to the legal cannabis production industry, it is anticipated that extraction process plants will experience significant growth and changes in the years to come. The Fire and Explosion Risk Assessment provides a live document to track and monitor these changes over the lifetime of the extraction process space, to effectively manage and mitigate risks that would not otherwise be commonly captured under the prescriptive framework of the OFC. While the design of these types of spaces is the most cumbersome from a building construction standpoint, it promotes the greatest end-user flexibility and growth opportunity.

"Laboratories" regulated under the OFC typically house chemical processes that are easily and safety manipulated by one person, on a non-production basis, and are usually limited to testing, analysis, research, and instruction purposes. For cannabis extraction applications, laboratories are often associated with a separate extraction space and are used to support post-extraction refinement or activities that further concentrate finished products. Laboratories can also be used as the primary extraction environment where liquid volumes and production scale are small. Typically, flammable liquid containers in laboratories are limited to 25 L in capacity and process activities are required to be conducted inside a fume hood. For bulk production purposes, these restrictions are impractical. However, laboratories do enjoy a relaxation in the requirements for fire protection and life safety systems, based on this volume restriction, and can be an appropriate design approach for smaller-scale extraction needs.

As fire protection and life safety professionals, we have the knowledge and the tools to facilitate these design projects and a responsibility to promote the best practices available to this growing sector.

An alternative and unique option for extraction process design is categorization under the "Incidental Use" requirements of the OFC. These requirements are suitable for industrial environments where the handling of the ethanol is considered secondary to the principal activity of the facility. For a building otherwise regulated under the National Farm Building Code of Canada, this design pathway may be an acceptable classification. This regulation category does not limit the quantity of liquids present in the extraction process; however, the extraction area is subject to restrictive design elements such as isolation from ignition sources, dedicated drainage systems, and mechanical ventilation systems that are similar to the restrictions associated with a process plant categorization.

Design Elements to Expect

Regardless of the design pathway that is selected for the cannabis extraction process, there are a few common design elements that should be anticipated by designers, AHJ, and owners when designing and constructing an extraction project. For example, elements that may be expected to apply to an extraction space are as follows:

- Fire-rated separations for extraction rooms,
- Spill containment or drainage systems,
- Methods for controlling fire fighting water,
- Mechanical ventilation systems,
- Electrical classifications for hazardous locations,
- Explosion venting or explosion protection of equipment,
- Automatic sprinkler protection and standpipe systems,
- Fire alarm, early warning, and combustible gas detection systems, and
- Reduced travel distances and outward-swinging doors in egress facilities.

Other Guidelines and Standards

The OFC is not the only, or the most restrictive regulation applicable to cannabis extraction processing spaces. As an example, the insurance provider for a site may stipulate greater protection of building elements depending on the nature of the extraction process proposed. Additionally, new standards have been recently published and are pending publication: CAN/ULC-S4400, *"Standard for Safety of Buildings and Facilities Utilized for the Cultivation, Processing and Production of Cannabis"*, and ANSI/CAN/UL/ULC 1389, *"Plant Oil Extraction Equipment for Cannabis Use".* These standards are expected to be adopted in future publications of the OFC to regulate the design of new and existing extraction spaces.

It may also be relevant to consider cannabis-related guidance from other,

continued…

international standards such as NFPA 1: Fire Code, Chapter 38, *"Marijuana Growing, Processing, or Extraction Facilities"*, and the International Fire Code, Chapter 39, *"Processing and Extraction Facilities"*. While these standards cannot be applied directly in Canada, they provide valuable context for the design of spaces housing similar hazards.

What's Next?

Cannabis oils, and products derived from these oils, are in tremendous demand and will soon be a legal consumable for the public. The buildings and spaces in which these materials are produced present fire and explosion risks that can be managed and mitigated under the requirements prescribed in the Ontario Fire Code, and other applicable regulations. We can expect to see continued growth in the demand for new extraction spaces. To meet the anticipated market expectations, extraction spaces need a design environment that promotes solvent selection adaptability and equipment flexibility, and that facilitates production scale-up capacity.

As fire protection and life safety professionals, we have the knowledge and the tools to facilitate these design projects and a responsibility to promote the best practices available to this growing sector. Extraction technology is not novel to the cannabis industry and the use of flammable solvents is found commonly throughout industrial facilities in Canada. Through education, collaboration, and fire safety design principles, we can develop common design practices that are appropriate to the risks associated with cannabis and hazardous extraction technologies.

About the Author

With over 10 years' experience in the consulting industry, Melinda is a Project Engineer at CodeNext Inc. with a background in chemical safety and risk analysis. Melinda specializes in Fire Code Compliance. With the recent growth in the cannabis extraction industry Melinda has had the opportunity to engage with facility owners, local building and fire department officials, as well as policy task groups to develop an appreciation for the challenges present for new spaces and renovation construction projects. ◆

Cannabis Fire Safety

RESPONSIBILITY GROWS **HERE.**

IMPAIRMENT *INCLUDES* CANNABIS

Cooking while under the influence of alcohol, prescription drugs or cannabis can result in a fire.

Don't put yourself or your family at risk. Always remain alert when cooking.

Keep a close eye on anyone attempting to cook or smoke while impaired.

SMOKING IS SMOKING

Smoking is the **leading cause of residential fire deaths** in Ontario.

Encourage smokers to smoke outside. **Never smoke or toke in bed.**

Whether it is tobacco or cannabis, cigarettes and joints need to be properly extinguished in **large, deep ashtrays.**

HAZARDOUS EXTRACTION OF CANNABIS OIL CAN CAUSE EXPLOSIONS AND FIRES

Extracting cannabis oil with flammable solvents is extremely hazardous. It can result in the uncontrolled release of flammable vapours. If ignited, these vapours lead to explosions and fires that can cause serious injury or death.

Hazardous extraction in basements is particularly dangerous because flammable vapours can accumulate in higher concentrations leading to even more powerful explosions.

Hazardous extraction using flammable materials such as butane is against the law in homes and in basements.

TOO MANY WIRES CAN CAUSE FIRES

Extension cords should be used only as a **temporary connection**. If permanent wiring is required, have additional outlets installed by a licensed electrician. **Extension cords should not be linked together.** Instead, use an extension cord that is long enough to do the job.

Avoid running cords under rugs, which can damage the cord and cause a fire.

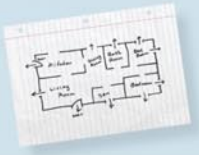
Avoid overloading a circuit with "octopus outlets". If additional outlets or circuits are required, have them installed by a licensed electrician.

Ensure that all electrical appliances such as grow lamps are **certified by an accredited testing agency** like ULC or CSA. And make sure they are operated according to manufacturer's instructions.

Don't put yourself or your family at risk of fire.

SMOKE ALARMS SAVE LIVES!

Only working smoke alarms give you the early warning you need to safely escape a fire. Install **smoke and carbon monoxide alarms** in your home. **Test them every month.**



Practice a **home fire escape plan** so everyone in your home knows what to do when the smoke and carbon monoxide alarms sound in an emergency.

FOR MORE INFORMATION, CONTACT YOUR LOCAL FIRE DEPARTMENT

Office of the Fire Marshal and Emergency Management
ontario.ca/firemarshal

CANADIAN FIRE SAFETY ASSOCIATION
ASSOCIATION CANADIENNE DE SÉCURITÉ INCENDIE

CFSA Scholarship Program

Your Opportunity to Support Our Students

The CFSA is very proud of its scholarship program and each year we present financial awards to deserving post-secondary students enrolled in a Fire Safety program.

It is important to recognize the achievements of those students who stand out amongst their peers and to assist them with the cost. Completing this 3-year program can be as high as $24,000.

As a scholarship sponsor, you will:

- provide the criteria for your award
- present the award at our Annual Education Forum
- be recognized in the CFSA Newsletter and on the CFSA website
- help a deserving student in their quest to become a fire safety professional

The following corporations have generously signed on to provide annual scholarships:

- LRI Engineering Inc.
- Jensen Hughes Consulting Canada
- Nadine International Inc.
- Underwriters' Laboratories of Canada Award
- City of Markham, Buildings Standards Department
- Siemens Canada Ltd.
- Firetronics 2000 Inc.
- FCS Fire Consulting Services
- The Mircom Group

Please add our company's name to this prestigious list of scholarship sponsors:

Name _____

Company _____

Email _____ **Phone** _____

Scholarship Committee Chair, Jim Stoops, will contact you to discuss opportunities for your company's participation.

SEND TO: 2800 14th Avenue, Suite 210, Markham, Ontario L3R 0E4
Tel: 416-492-9417 Fax: 416-491-1670 Email: cfsa@associationconcepts.ca Website: www.canadianfiresafety.com

SAVE THE DATE!

Canadian Fire Safety Association
Annual Education Forum
"CODES AND COMPLIANCE"

Thursday, April 2, 2020

Paramount Conference & Event Centre
Woodbridge, Ontario

Corporate Members

Abedini Norris Consulting
Member since 2016
Mike Norris
Markham, ON
905-940-2828
www.anconsultinginc.com

Building Reports Canada
Member since 2015
Cindy Leber
Robert Silc
Oakville, ON
416-483-2895
www.buildingreports.ca

City of Markham
Member since 1998
Chris Bird
Tony Boyko
Markham, ON
905-477-7000
www.markham.ca/building

City of Mississauga, Fire & Emergency Services
Member since 2019
Don Casey
Nancy Macdonald-Duncan
Kalpana Rajgopalan
Nigel Robinson
Mississauga, ON
905-615-3200
www.mississauga.ca

City of Toronto, City Hall, East Tower
Member since 1999
John Humphries
Toronto, ON
416-392-2690
www.toronto.ca

City of Vaughan
Member since 1999
Dean Brown
Rita Jiang
Jason Li
Uma Manohara
Michaela Tataru
Raj Tyagi
Joyce Yang
Vaughan, ON
905-832-8510
www.vaughan.ca

Durabond Products
Member since 1998
Guido Rapone
Toronto, ON
416-759-4474
www.durabond.com

Durham College, Fire and Life Safety Technician Program
Member since 2014
Randy Panesar
Oshawa, ON
www.durhamcollege.ca

Fanshawe College
Member since 2017
Frank Donati
London, ON
519-452-4430
www.fanshawe.ca

FCS Fire Consulting Services
Member since 1999
Michele Farley
Max Goss
Andrew Wang
Innisfil, ON
1-800-281-8863
www.fcsfire.com

Fire Detection Devices Limited
Member since 2009
David Duggan
Patricia Duggan
Gordon Duggan
Markham, ON
905-479-7116
www.firedetectiondevices.com

Fire Monitoring of Canada Inc.
Member since 2001
Kevin Allison
Jim Asselstine
St. Catharines, ON
1-800-263-2534
www.fire-monitoring.com

Firetronics 2000
Member since 2010
David Morris
Peter Teolis
Markham, ON
905-470-7723
www.firetronics.ca

Greater Toronto Airports Authority
Member since 2001
Todd Aitken
David Hollett
Frank Lafond
Toronto, ON
416-776-5170
www.gtaa.com

Independent Plumbing & Heating Contractors Association
Member since 2005
Mauro Angeloni
Toronto, ON
416-248-6213
www.iphca.ca

Jensen Hughes Consulting Canada
Member since 1998
Anthony Rago
David Vickers
Toronto, ON
416-492-5886
www.jensenhughes.com/canada

LRI Engineering Inc.
Member since 1986
Nahla Ali
Michael Devine
Eric Esselink
Mike Power
Gary Robitaille
Toronto, ON
416-515-9331
www.lrifire.com

Matteo Gilfillan & Associates Inc.
Member since 2019
Justin Candito *647-946-2473*
Rita Cherniavskaya *647-946-2483*
David Vickers *647-946-2465*
Vaughan, ON
mgacodes.com

Morrison Hershfield Limited
Member since 1995
Daniel Dixon
Dana Scherf
Nepean, ON
www.morrisonhershfield.com

continued…

Nadine International Inc.
Member since 1992
Ajwad Gebara
Karim Gebara
Mississauga, ON
905-602-1850
www.nadineintl.com

National Research Council
Member since 1986
Andre Laroche
Ottawa, ON
613-993-9586
www.nrc-cnrc.gc.ca

Oakville Fire Department
Member since 1999
Max Bertling
Gary Laframboise
Jonathan O'Neil
Oakville, ON
(905) 815-2008
www.oakville.ca

Office of The Fire Marshal & Emergency Management
Member since 1998
Ryan Betts
Mary Prencipe
Toronto, ON
647-329-1100
www.mcscs.jus.gov.on.ca

OFS Fire Prevention
Member since 1998
Ed Herron
Cale McLean
Jeff Ough
Barrie, ON
705-728-5289
www.ofsgroup.com

Pro-Firestop
Member since 2001
John Sharpe
Jeffrey Zamora
Toronto, ON
416-293-0993
www.profirestop.com

Seneca College, School of Fire Protection Engineering Technology
Member since 1971
Derek Gruchy
Scott Pugsley
William Sault
Susan Taylor
Aneetha Vairavanathan
Toronto, ON
416-491-5050
www.senecacollege.ca

Siemens Canada Limited
Member since 1971
Manuel Lopes
Jeffry Tondang
Oakville, ON
905-465-7208
www.siemens.com

Toronto Community Housing Corp.
Member since 2019
Ray Collins
Tim Daley
Flora Pannunzio
Toronto, ON
416-746-6918

Toronto Fire Services
Member since 1988
Lesley-Anne Coleman
James Stoops
Toronto, ON
416-338-9102
www.toronto.ca

Toronto Transit Commission
Member since 1998
Ryan Duggan
Toronto, ON
416-393-2811
www.ttc.ca

Underwriters Laboratories of Canada
Member since 1998
Sandy Leva
Brian McBain
Toronto, ON
416-757-5250
www.canada.ul.com

University Health Network
Member since 2010
John Chartrand
Vito D'Amico
Ed Riley
Toronto, ON
416-340-4800
www.uhn.ca

Vaughan Fire & Rescue Services
Member since 2000
Doug Best
Jon Caruso
Vaughan, ON
905-832-8585
www.vaughan.ca

New Members

Associate
Marc-Andre Langevin
Ben Prince

Corporate
City of Mississauga, Fire & Emergency Services
Matteo Gilfillan & Associates Inc.
City of Vaughan

Individuals
Kevin Alexander
Jerome Arrieta
Darren Coles
Jeanette James
Colin Lahey
Paul Nickerson
Murray Pham
Warren Yao

Students
Aref Ahmed

CFSA

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. Your advertisement in the CFSA journal is circulated to CFSA's membership of over 250 professionals in the Fire Safety Industry.

Corporate
Includes 5 individual memberships; Company recognition in each of the four issues of the CFSA journal.

Corporate Plus
Includes 10 individual memberships; Company recognition and a 1/2 page advertisement in each of the four issues of the CFSA journal.

Individual Member:
Includes four issues of the CFSA journal and discounted rates at Association functions.

Student Member:
Includes four issues of the CFSA journal and discounted rates at Association functions.

Associate Member:
For individuals and companies located beyond a radius of 150 km from the Greater Toronto Area. Includes four issues of the CFSA journal and discounted rates at Association functions.

Provincial/Territorial Chapter:
For groups of members within a province or territory. Includes 4 individual memberships; member rate for all staff at dinner meetings, technical seminars and Annual Education Forum; Recognition in each of the four issues of the CFSA journal. Contributes articles in CFSA journal.

canadianfiresafety.com

CFSA Application for Membership

Name _____

Company/Affiliation _____

Title _____

Address _____

City _____

Prov. _____ Postal Code _____

Business Phone _____

Business Fax _____

e-mail _____

Web site _____

Please indicate how you first heard about CFSA

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

- ○ Architect
- ○ Building Official
- ○ Insurance Industry
- ○ Fire Protection Manufacturer/Supplier
- ○ Building Owner/Developer/Manager
- ○ Engineer
- ○ Fire Official
- ○ Fire Consultant
- ○ Other (please specify) _____

	Rate	+13%HST	Total Rate
○ Corporate Plus (C3)	$ 790.00	$ 102.70	$892.70
○ Corporate	$ 406.00	$52.78	$458.78
○ Individual	$ 82.00	$10.66	$92.66
○ Student	$ 25.00	$3.25	$28.25
○ Retired	$ 25.00	$3.25	$28.25
○ Associate	$ 56.00	$7.28	$63.28
○ Chapter	$ 180.00	$23.40	$203.40

Method of Payment:

❑ Cheque Enclosed $ _____

❑ VISA ❑ MasterCard ❑ American Express

Account # _____

Expiry Date _____

Signature _____

Please make cheques payable to:

Canadian Fire Safety Association
2800 - 14th Avenue Suite 210. Markham, ON L3R 0E4
Telephone (416) 492-9417 Fax (416) 491-1670