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INTRODUCTION

Many people do not really understand fire, and television and movies have only complicated the issue. They show people stumbling around in burning buildings with timbers and ceilings falling down around them. That may be good theatrics but it is far from real. Fires can grow really fast and smoke can travel faster than you can run (well, at least faster than I can run).

The heat from a relatively small fire can quickly raise room temperature to several hundred degrees. This can lead to a condition called flashover in which everything in the room ignites; no one can survive flashover. Seconds count, you need to get out ASAP!

The losses in lives and injuries due to fire are exceeded only by those due to traffic accidents. Fire caused property losses are in far excess of those caused by all classes of crime, and rival those produced by hurricanes and earthquakes.

No dollar figure can accurately record or compensate for the loss in lives and injuries.

Many people have not taken the time to think about what they would really do in a fire situation. This book has been written as a general introduction to fire safety and emergency procedures. It is hoped that if you are reading this you have started to think about fire and are seeking to know more in order to protect yourself, your fellow workers and your family.

In today's environment, organizations must cope with many challenges. These range from increased operational costs, reliability of services and increased insurance costs to avoidance of incidents and accidents, to numerous health and safety regulations. Throw corporate image and environmental stewardship into the mix and these issues take on global implications in the marketplace. A fire, with lives lost, loss of production, and a negative environmental impact is the last thing you need.

This book is not the be all and end all when it comes to fire safety, but will hopefully provide usable fire safety information and assist you in generating emergency procedures relative to your workplace and home. Don't be afraid to contact the fire prevention office of your local fire department for specifics for your site.

Background of Fire Safety

Fire has been vital to the development of civilization. With fire, people could see at night and scare away nocturnal predators. Fire provided them with warmth, allowing them to expand their

hunting and gathering areas into cooler climates. From the time of the Neolithic Revolution (8,000-5,000 BC), also known as the agricultural revolution, people all over the world had access to fire. The use of fire goes back sometime. Some even believe that fire has been used by people for 400,000 years. Over the years, civilization has discovered fire to be indispensable. You'd think that after all these years' people would have a better grasp of fire safety. You'd think.

Fire Statistics

In my time in the fire protection industry I have seen numerous instances of our failure to control fire and the after effects of these failures. In Canada there is an average of 53,590 dollar loss fires reported annually. Dollar loss fires are fires that cause property damage. Fires such as garbage fires or grass fires that do not cause property damage are not included in these figures. This works out to on average 147 property damage, dollar loss fires per day. These fires cost Canadians approximately $1,489,012,263 each year! Beyond the property damages are the deaths and injuries with their own associated expenses and trauma, as well as the cleanup costs, lost revenue from down time and increased insurance costs. On average approximately 304 Canadians die each year fire deaths with another 2,547 approximate injuries!

In addition to the direct losses are the incalculable indirect fiscal costs.

All fires are investigated to determine their cause and to help prevent similar occurrences from happening in the future. If you are negligent in maintaining your building and/or its fire protection equipment, this too, will come out. Often, in cases where the owner has failed to properly maintain his building, the insurance company will refuse to pay the claim or only pay a portion of it. Of course, as mentioned above, a fire will increase you insurance rates. Accordingly, it pays to be fire safe!

Further, failure to maintain fire protection equipment is a violation of the Fire Code and could lead to 10's of thousands of dollars in fines and up to a year in jail!

TABLE 6.2.6.B.

Forming part of Article 6.2.6.7. of the Ontario Fire Code

Grade of Hazard	Basic Minimum Extinguisher Rating per Unit	Maximum Travel Distance to Extinguishers, m
Light	5B	9
	10B	15
Ordinary	10B	9
	20B	15
Extra	20B	9
	40B	15

Sentence 6.2.1.3.(1) of the Fire Code states: "Portable fire extinguishers shall be located so that they are easily seen and shall be accessable at all times, except as permitted in Sentences (2) and (3)."

*Article 6.2.1.4. of the Code States: "Portable extinguishers shall be located in or adjacent to corridors or aisles that privide **access to esits**.*

*Article 6.2.1.5. The location of portable extinguishers shall be prominently indicated by signs or markings in large **floor areas** and in locations where visual obstructions cannot be avoided.*

Article 6.2.1.6. Portable extinguishers in proximity to a fire hazard shall be located so as to be accessible without exposing the operator to undue risk.

Article 6.2.4.2. Portable extinguishers with a gross weight greater than 18kg shall be installed so that the top of the extinguisher is not more than 1.1m above the floor when the extinguisher is not equipped with wheels.

Article 6.2.4.3. Portable extinguishers having a gross weight of 18kg of less shall be installed so that the top of the extinguisheer is not more than 1.5m above the floor.

Article 6.2.1.2. of the Fire Code states: "Portable fire extinguishers shall be kept operable and fully charged.

*Sentence 6.2.7.1.(1) maintenance and **testing** of portable extinguishers shall be in conformance with NFPA 10, "Portable Fire Extinguishers".*

*Article 6.2.7.2. Portable extinguishers shall be **inspected** monthly.*

An annual check and inspection is also required; this is done be a fire protection company.

Sentence 6.2.7.4.(1) each portable extinguisher shall have a tag securelly attached to it showing the maintenance or recharge date, the servicing agency and the signature of the person who performed the service.

Using a Fire Extinguisher

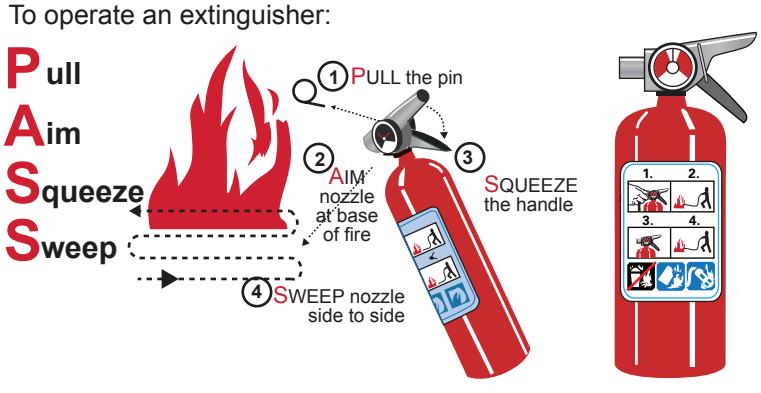
Portable fire extinguishers are really easy to use; however there are a few things to keep in mind.

1. Sound the alarm of fire before attempting to fight the fire.
2. Never try to fight a fire alone.
3. Have the right portable fire extinguisher.
4. The fire must be small. Never attempt to fight any fire greater in size than a waste basket.

Portable Fire Extinguisher Operation

The acronym most often used in PASS:

- **Pull** the pin
- **Aim** at the base of the fire
- **Squeeze** the handle
- **Sweep** back and forth



Portable fire extinguisher operation

A couple of last points on portable fire extinguishers: they must be visible and available at all times, and must be maintained in working condition. Portable fire extinguishers are required to be wall mounted in paths of exit travel and adjacent to the various fire hazards in a building. Do not place equipment or anything else in front of them. And they are not a place to hang your jacket!

FIRE DRILL RECORD
ADDRESS:
DATE:
TIME:
ADMINISTRATOR:
STAFF PRESENT:
DEVICE ACTIVATED:
DEFICIENCIES FOUND:
GENERAL COMMENTS:

MAINTENANCE REQUIREMENTS

Fire Prevention Officers may check at anytime to ensure that the required checks, inspections and testing are performed.

CHECK means a visual observation to ensure the device or system is in place and is not obviously damaged.

INSPECT means a physical examination to determine that the device or system will apparently perform in accordance with its intended function.

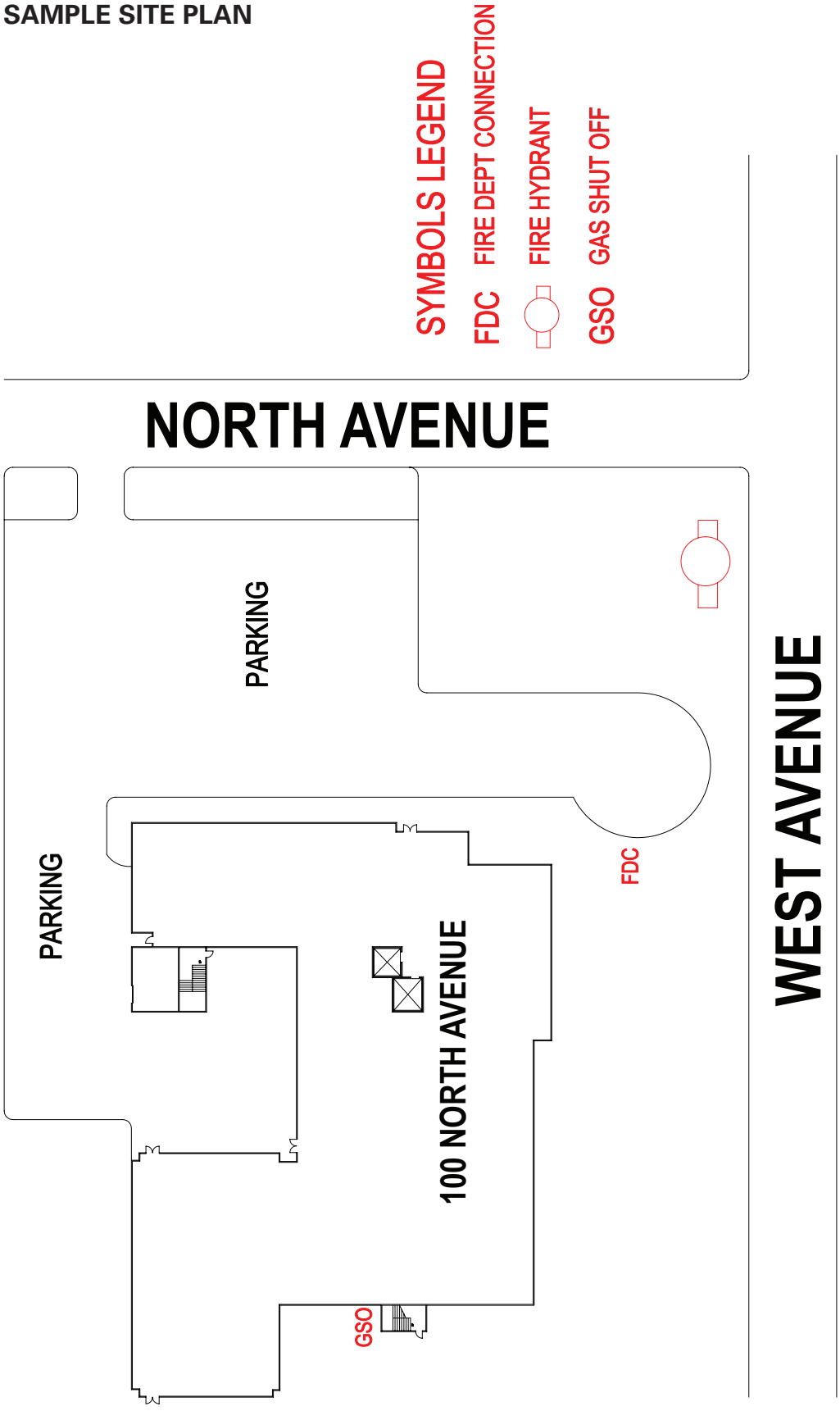
TEST means the operation of a device or system to ensure that it will perform in accordance with its intended operation or function.

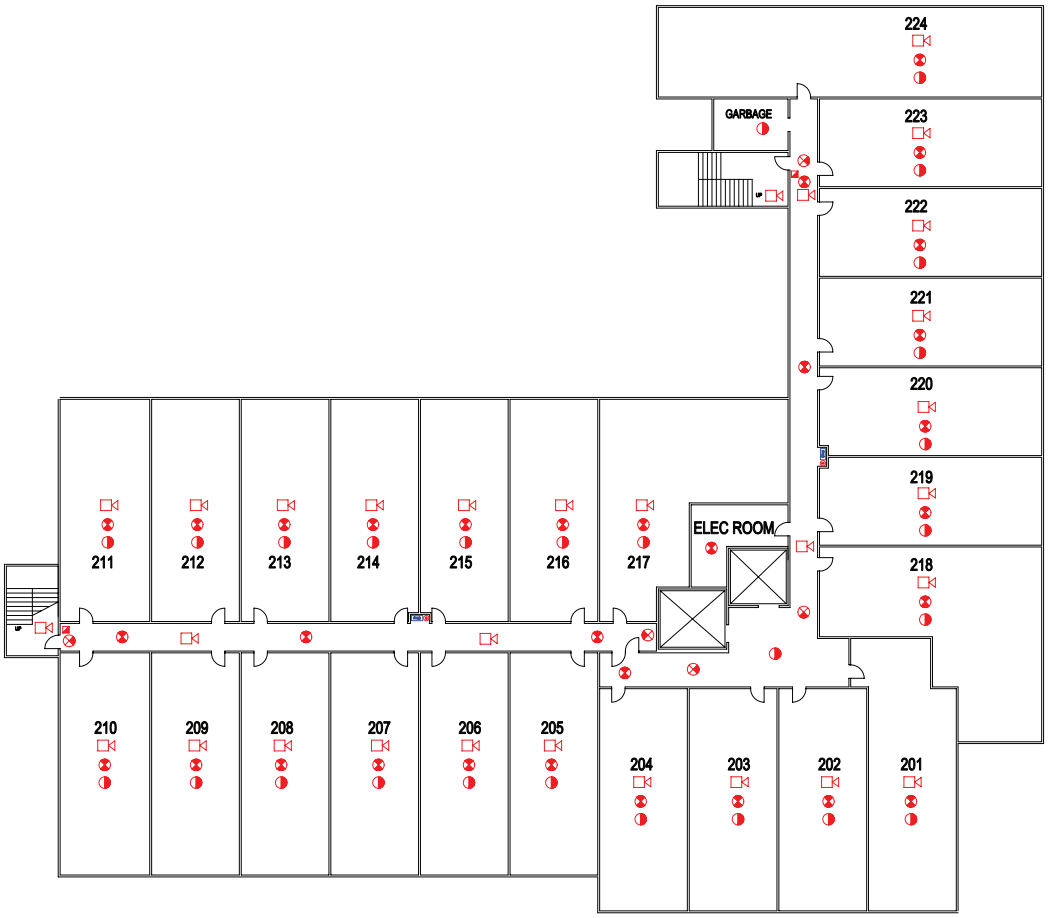
Records of all checks, inspections and tests must be kept on site for a minimum period of two years after they are performed. These records are to be available upon request to the local fire department.

NOTE: *The following is a list of items for a typical building. Please note that your building may have more, less, or different equipment.*

DAILY CHECKS		
CHECK	Streets, yards, Fire Access Routes are clear for fire department access	Maintenance
CHECK	Exit lights operable; hallways, aisles, and exits are clear	Maintenance
CHECK	Fire alarm A/C power and trouble lights.	Maintenance
WEEKLY		
INSPECT	Sprinkler system pressures are proper and control valves are open and properly supervised	Maintenance
INSPECT	Inspect and operate fire pump	Maintenance
INSPECT	Storage batteries	Maintenance
INSPECT	All components of emergency power generator and operate under 50% load for 30 minutes	Maintenance
MONTHLY		
INSPECT	All doors in fire separations	Maintenance
INSPECT	Emergency lighting unit equipment	Maintenance
TEST	Emergency lighting unit equipment for operation upon failure of primary power	Maintenance
INSPECT	Portable fire extinguishers	Maintenance
INSPECT	Fire alarm batteries	Maintenance
TEST	Fire alarm system	Maintenance
INSPECT	Fire hose cabinets to ensure hose is in position, valve is not leaking, and equipment is in place	Maintenance
TEST	Sprinkler alarm function	Maintenance
EVERY THREE MONTHS		
INSPECT	Conduct fire drill in high-rise building	Maintenance
TEST	Fire safety devices in high-rise buildings	Maintenance
TEST	Firefighters elevator for proper operation	Maintenance
SEMI-ANNUALLY		
INSPECT	Elevator with smoke shaft	Contractor
INSPECT	Check and clean crankcase, breathers, governors and linkages on emergency power generator	Contractor
TEST	Gate valve supervisory switches and other sprinkler and fire protection system supervisory devices.	Contractor
ANNUALLY		
INSPECT	Chimneys, flues and flue pipes, and clean as necessary	Contractor
INSPECT	Fire dampers and fire stop flaps	Contractor
INSPECT	Disconnect switches for mechanical air conditioning	Contractor

SAMPLE SITE PLAN





TYPICAL FLOOR

MANUAL PULL STATION

FIRE SPEAKER

SMOKE DETECTOR

HEAT DETECTOR

FIRE EXTINGUISHER (E)

FIRE HOSE CABINET (FHC)

KEY BOX (K)

EMERGENCY LIGHT W / EXIT LIGHT

EMERGENCY LIGHT

SPRINKLER RISER (SP)

EXIT LIGHT

FIRE ALARM ANNUNCIATOR (FAA)

FIRE ALARM CONTROL PANEL (FACP)

FIRE SAFETY PLAN (FSP)

FIRE SAFETY PLAN
100 NORTH AVENUE
TORONTO, ONTARIO

DATE:

SCALE: NTS

FILE: