

CONSTRUCTION FIRE SAFETY PLANNING GUIDELINES

- Review the following information pertaining to Construction Fire Safety Planning:
 - B.C. Building Code Sections 8.1 up to and including Subsection 8.2.3
 - B.C. Fire Code Sections 2.8, & 2.14 and Part 6.
- Keep in mind that the Construction Fire Safety Plan applies to the *construction area*; however, where the construction is an addition, the plan must address facilities in the existing building, where facilities such as exiting, fire separations, or fire systems are altered, and impact on the safety of occupants in the existing building.
- Complete Pages 2 through 5 of the 14 pages attached to these guidelines, and ensure the information is accurate (Revise where necessary).
- Prepare diagrams (8 1/2" x 11 " size is preferable - Added after Page 14) to support the Construction Fire Safety Plan by showing the following information:
 - Existing buildings and proposed construction.
 - Contractor's hoarding and fences.
 - Fire access routes and driveways.
 - Fire fighting equipment such as fire hydrants, and siamese connections to sprinklers or standpipes.
 - Temporary exiting from existing building where existing exits are obstructed (Will be approved by the Commercial Section).
- Submit electronic copy of the plan to the Fire Prevention Office for approval
Fireprevention@surrey.ca
- The fire department will provide an approved copy of the plan to the Commercial Section and where an existing building is a school, the school's principal. All other necessary copies shall be provided by the plan preparer.

CONSTRUCTION
FIRE SAFETY PLAN

PHASE: _____

EFFECTIVE DATE RANGE: _____

AFTER-HOURS FIRE EMERGENCY PHONE: _____

BUILDING NAME

BUILDING ADDRESS

SURREY

PLAN PREPARER & DATE

PROJECT PERSONNEL

	Company Name	Phone Number
Building Owner/rep.	_____	_____
Architect	_____	_____
Structural Engineer	_____	_____
Mechanical Engineer	_____	_____
Electrical Engineer	_____	_____

FIRE EMERGENCY PROCEDURES

NAME: _____

ADDRESS: _____

SURREY

IF YOU DISCOVER A FIRE

- **FIGHT** the fire **ONLY** if it is **SMALL** and you are **NOT** alone.
- **EVACUATE** via the nearest safe exit.
- **NOTIFY** other persons of the fire emergency on-route.
- **SOUND** fire signal (3 blasts with air horn) outside the construction areas.
- **PROCEED** to the existing building and activate a fire alarm pull station located in a safe location or **ENSURE** that occupants in existing areas are aware of incident.
- **PHONE 9-1-1** to report a fire at your address.
- **REPORT** to the fire department officer at scene.

IF YOU HEAR A FIRE ALARM

- **EVACUATE** via the nearest safe exit.
- **ASSIST** disabled persons to reach the nearest safe exit.
- **ASSEMBLE** clear of the building and arriving fire apparatus.
- **PHONE 9-1-1** to report a fire at your address.
- **ENSURE** that the **ALARM SYSTEM** in the existing building is operating by **ACTIVATING** a fire alarm pull station or **ENSURE** that occupants in existing areas are aware of fire.

CONSTRUCTION FIRE SAFETY PLANNING

Fire safety planning during construction has 3 objectives:

- **FIRE HAZARD CONTROL**
- **FIRE PROTECTION EQUIPMENT MAINTENANCE**
- **EMERGENCY EVACUATION**

Meeting these objectives may eliminate or control the occurrence of fire by emphasizing:

- Good housekeeping
- Site security
- Installation of new fire protection systems as construction progresses
- Preservation of existing systems during alteration or demolition
- Rapid communication
- Consideration of special hazards

FIRE EMERGENCY EVACUATION

During a fire emergency, a fire alarm shall be sounded throughout the building, and all occupants will evacuate via the nearest safe exit. The Fire department will be notified by telephone of the fire emergency, and upon arrival should be assisted by the Construction Fire Safety Director.

FIRE PROTECTION SYSTEMS

Existing fire protection systems such as fire alarms, sprinklers or standpipes will remain in operation during the construction period (YES/NO): _____

If No, explain when the systems will be down and what precautions will be taken to offset the hazard to the occupants:

APPOINTMENT OF THE
CONSTRUCTION FIRE SAFETY DIRECTOR
ANNOUNCEMENT

DATE: _____

NAME: _____

TITLE: _____

WORK ADDRESS: _____

HOME ADDRESS: _____

OFFICE PHONE: _____

HOME PHONE: _____

PAGER NUMBER: _____

CELLULAR PHONE: _____

WORK HOURS: _____

I hereby appoint _____ as Construction Fire Safety Director,
responsible for fire safety at the construction site as specified in the B.C. Fire and Building
Code Regulations, and authorized to fulfil the duties outlined in the Construction Fire Safety
Plan for: _____

APPOINTING OFFICER (Building Owner)

NAME: _____

POSITION: _____

ADDRESS: _____

PHONE: _____

Section 2.14. Construction and Demolition Sites

2.14.1. General

2.14.1.1. Application

- 1) This Section applies to *buildings* or parts of *buildings* undergoing construction or demolition operations and includes renovations.
- 2) The degree of application of this Section to each construction project and each demolition project shall be determined as part of the fire safety plan prior to the commencement of operations. (See Appendix A.)

2.14.1.2. Fire Safety Plan

- 1) Prior to the commencement of construction or demolition operations, a fire safety plan conforming to Section 2.8. shall be prepared for the site.
- 2) The fire safety plan shall include
 - a) the designation and organization of site personnel to carry out fire safety duties, including fire watch service if applicable,
 - b) the emergency procedures to be used in the case of fire, including
 - i) sounding the fire alarm,
 - ii) notifying the fire department,
 - iii) instructing site personnel on procedures to be followed when the alarm sounds, and
 - iv) fire fighting procedures,
 - c) the control of fire hazards in and around the *building* (see Appendix A), and
 - d) maintenance of fire fighting facilities (see Appendix A).

2.14.1.3. Fire Safety

- 1) Fire safety at construction sites and demolition sites shall conform to Part 8 of the British Columbia Building Code.

Section 2.8. Emergency Planning

2.8.1. General

2.8.1.1. Application

- 1) Fire emergency procedures conforming to this Section shall be provided for
 - a) every *building* containing an *assembly* or a *care or detention occupancy*,
 - b) every *building* required by the British Columbia Building Code to have a fire alarm system,
 - c) demolition and construction sites regulated under section 2.14. of this Code,
 - d) storage areas required to have a fire safety plan in conformance with Articles 3.2.2.6. and 3.3.2.9.,
 - e) areas where *flammable liquids* or *combustible liquids* are stored or handled, in conformance with Article 4.1.5.6., and
 - f) areas where hazardous processes or operations occur, in conformance with Article 5.1.5.1.

2.8.1.2. Training of Supervisory Staff

- 1) *Supervisory staff* shall be trained in the fire emergency procedures described in the fire safety plan before they are given any responsibility for fire safety. (See Appendix A.)

2.8.1.3. Keys and Special Devices

- 1) Any keys or special devices needed to operate the fire alarm system or provide access to any fire protection systems or equipment shall be readily available to on-duty *supervisory staff* .

2.8.2. Fire Safety Plan

2.8.2.1. Measures in a Fire Safety Plan

- 1) In *buildings* or areas described in Article 2.8.1.1., a fire safety plan conforming to this Section shall be prepared in cooperation with the fire department and other applicable regulatory authorities and shall include
 - a) the emergency procedures to be used in case of fire, including
 - i) sounding the fire alarm (see Appendix A),
 - ii) notifying the fire department,
 - iii) instructing occupants on procedures to be followed when the fire alarm sounds,
 - iv) evacuating occupants, including special provisions for persons requiring assistance (see Appendix A),
 - v) confining, controlling and extinguishing the fire,
 - b) the appointment and organization of designated *supervisory staff* to carry out fire safety duties,
 - c) the training of *supervisory staff* and other occupants in their responsibilities for fire safety,
 - d) documents, including diagrams, showing the type, location and operation of the *building* fire emergency systems,
 - e) the holding of fire drills,
 - f) the control of fire hazards in the *building*,
 - g) the inspection and maintenance of *building* facilities provided for the safety of occupants, and
 - h) a copy of the records of inspections, maintenance procedures or tests as required by Article 1.1.1.6.

(See Appendix A.)

- 2) The fire safety plan shall be reviewed at intervals not greater than 12 months to ensure that it takes account of changes in the use and other characteristics of the *building*.

2.8.2.2.Care or Detention Occupancies

- 1) A sufficient number of *supervisory staff* shall be on duty in *care or detention occupancies* to perform the tasks outlined in the fire safety plan described in Clause 2.8.2.1.(1)(a).

2.8.2.3.Assembly Occupancies

- 1) In Group A, Division 1 *assembly occupancies* containing more than 60 occupants, there shall be at least one *supervisory staff* member on duty in the *building* to perform the tasks outlined in the fire safety plan in Clause 2.8.2.1.(1)(a) whenever the *building* is open to the public.

2.8.2.4.High Buildings

- 1) In *buildings* within the scope of Subsection first 3.2.6. of the British Columbia Building Code, the fire safety plan shall, in addition to the requirements of Sentence 2.8.2.1.(1), include
 - a) the training of *supervisory staff* in the use of the voice communication system,
 - b) the procedures for the use of elevators,
 - c) the action to be taken by *supervisory staff* in initiating any smoke control or other fire emergency systems installed in a *building* in the event of fire until the fire department arrives,
 - d) instructions to the *supervisory staff* and fire department for the operation of the systems referred to in Clause (c), and
 - e) the procedures established to facilitate fire department access to the *building* and fire location within the *building*.

2.8.2.5.Retention of Fire Safety Plans

- 1) The fire safety plan shall be kept in a location, designated by the *authority having jurisdiction* within the *building*, for reference by the fire department, *supervisory staff* and other personnel.
- 2) The fire safety plan for a *building* within the scope of Subsection first 3.2.6. of the British Columbia Building Code shall be kept at the central alarm and control facility.

2.8.2.6.Distribution

- 1) A copy of the fire emergency procedures and other duties for *supervisory staff*, as laid down in the fire safety plan, shall be given to all *supervisory staff*.

2.8.2.7.Posting of Fire Emergency Procedures

- 1) At least one copy of the fire emergency procedures shall be prominently posted on each *floor area*.
- 2) In every hotel and motel bedroom the fire safety rules for occupants shall be posted showing the locations of *exits* and the paths of travel to *exits*.
- 3) Where a fire alarm system has been installed with no provisions to transmit a signal to the fire department, a sign shall be posted at each manually actuated signalling box requesting that the fire department be notified, and including the telephone number of that department.
- 4) All *buildings* served by one or more elevators shall have a permanently mounted fire safety sign or symbol on each floor level at each elevator entrance, which indicates that the elevator is not to be used in case of fire. This symbol shall be at least 100 mm in height and width and shall be designed in accordance with NFPA 170.

2.8.3.Fire Drills

2.8.3.1.Fire Drill Procedures

- 1) The procedure for conducting fire drills shall be determined by the person in responsible charge of the *building*, taking into consideration
 - a) the *building occupancy* and its fire hazards,
 - b) the safety features provided in the *building*,

- c) the desirable degree of participation of occupants other than *supervisory staff*,
 - d) the number and degree of experience of participating *supervisory staff*,
 - e) the features of fire emergency systems installed in *buildings* within the scope of Subsection first 3.2.6. of the British Columbia Building Code, and
 - f) the requirements of the fire department.
- (See Appendix A.)

2.8.3.2. Fire Drill Frequency

- 1) Fire drills as described in Sentence 2.8.3.1.(1) shall be held at intervals not greater than 12 months for the *supervisory staff*, except that
 - a) in day-care centres and in Group B *major occupancies*, such drills shall be held at intervals not greater than one month,
 - b) in schools attended by children, total evacuation fire drills shall be held at least 3 times in each of the fall and spring school terms, and
 - c) in *buildings* within the scope of Subsection first 3.2.6. of the British Columbia Building Code, such drills shall be held at intervals not greater than 2 months.

Part 8 — Safety Measures at Construction and Demolition Sites

Section 8.1. — General

8.1.1. — Scope

8.1.1.1. Scope

- 1) The scope of this Part shall be as described in Section 2.1.
- 2) This Part applies to fire safety and the protection of the public during the construction, *alteration* or demolition of every *building*, including any incompleted or abandoned *building*.

8.1.1.2. Definitions

- 1) Words that appear in italics are defined in Part 1.

8.1.1.3. Demolition Procedures

- 1) Measures shall be taken during demolition to protect the public in conformance with CSA S350-M, "Code of Practice for Safety in Demolition of Structures" and Subsection 8.2.2.

8.1.2. — Application

8.1.2.1. Application

- 1) Where a *building* is undergoing construction, *alteration* or demolition, measures shall be taken at the *building* site in conformance with this Code. (See Appendix A.)

8.1.2.2. Protection from Risk

- 1) Precautions shall be taken to ensure that no person is exposed to undue risk.

Section 8.2. — Protection of the Public and Fire Safety

8.2.1. — Fencing and Barricades

8.2.1.1. Covered Way Exceptions

- 1) Where the construction may constitute a hazard to the public, work shall not commence on the construction, *alteration* or repair of a *building* until a covered way has been provided as described in Article 8.2.1.2. to protect the public, except where
 - a) the work is done within a solid enclosure,
 - b) the *building* is at a distance of 2 m or more from a *public way* used by pedestrians, or
 - c) site conditions warrant a distance greater than provided in Clause (b).

8.2.1.2. Covered Way Construction

- 1) A covered way shall
 - a) have a clear height of not less than 2.5 m,
 - b) have a clear width of not less than 1.5 m or the width of the *public way*, whichever is the lesser,
 - c) be designed and constructed to support safely all loads that may be reasonably expected to be applied to it, but in no case less than 2.4 kPa on the roof,
 - d) have a weathertight roof sloped towards the site or, if flat, be equipped with a splash board not

- less than 300 mm high on the *street* side,
- e) be totally enclosed on the site side with a structure having a reasonably smooth surface facing the *public way*,
 - f) have a railing 1 070 mm high on the *street* side where the covered way is supported by posts on the *street* side, and
 - g) be adequately lighted when the *public way* is lighted.

8.2.1.3.Fencing, Boarding or Barricades

- 1) When a construction or demolition activity may constitute a hazard to the public and is located 2 m or more from a *public way*, a strongly constructed fence, boarding or barricade not less than 1.8 m high shall be erected between the site and the *public way* or open sides of a construction site.
- 2) Barricades shall have a reasonably smooth surface facing the *public way* and shall be without openings, except those required for access.
- 3) Access openings through barricades shall be equipped with gates which shall be
 - a) kept closed and locked when the site is unattended and
 - b) maintained in place until completion of the construction or demolition activity.

8.2.1.4.Special Hazards

- 1) Where any special hazard exists from which it is not possible to protect the public by other means, persons shall be employed to prevent the public from entering the danger zone at any time of the day or night.

8.2.1.5.Work Shutdown

- 1) When work on a construction site is suspended or ceases so that it will not be occupied during normal working hours, the hazardous part of the construction site shall be protected by
 - a) covering all windows, doors and other openings located within 3 m of the ground which may give access to the *building* with a securely fastened barricade, or
 - b) a fence or barricade constructed according to the requirements of Article 8.2.1.3.

8.2.2. — Fire Safety at Demolition Sites

8.2.2.1.Application to Demolition Sites

- 1) This Subsection applies to *buildings* or parts of *buildings* undergoing demolition. (See Appendix A.)
- 2) The degree of application of this Subsection to each demolition activity shall be determined prior to the commencement of demolition as part of the fire safety plan. (See Appendix A.)

8.2.2.2.Fire Safety Plan

- 1) Prior to the commencement of demolition, a fire safety plan conforming to Section 2.14. of the B.C. Fire Code shall be prepared for the demolition site.

8.2.2.3.Access for Fire Fighting

- 1) Unobstructed access shall be maintained to fire hydrants and to fire department connections for standpipe and sprinkler systems.
- 2) Where practicable, access routes to the demolition site shall be provided for fire department vehicles. (See Appendix A.)
- 3) Where a demolition site is fenced so as to prevent general entry, provision shall be made for access by fire department equipment and personnel.

8.2.2.4.Portable Extinguishers

- 1) Portable extinguishers shall be installed and maintained in conformance with Part 6 of the B.C. Fire Code.
- 2) In addition to the requirements of Sentence (1), portable extinguishers shall be provided
 - a) adjacent to cutting or welding operations,

- b) in areas where *combustibles* are stored,
 - c) near or on any internal-combustion engines,
 - d) adjacent to areas where *flammable liquids* or gases are stored or handled, and
 - e) adjacent to temporary oil-fired or gas-fired equipment.
- 3) The minimum rating for extinguishers required by Sentences (1) and (2) shall be
- a) 2-A:10-B:C on moveable equipment, and
 - b) 4-A:40-B:C in all other locations.

8.2.2.5. Standpipe Systems

- 1) Where a *building* being demolished floor by floor is equipped with a standpipe system, such system, together with fire department connections and valves, shall be maintained in operable condition on all *storeys* below that being demolished except the *storey* immediately below it. (See Appendix A.)

8.2.2.6. Cutting and Welding Operations

- 1) Cutting and welding operations shall conform to Section 5.2. of the B.C. Fire Code.
- 2) Areas on a demolition site where cutting and welding operations have taken place shall be kept under supervision for not less than 1 h after the operations have been completed.

8.2.2.7. Egress Provision

- 1) At least one stairway shall be maintained in usable condition at all times.

8.2.2.8. Fire Warning

- 1) A system shall be provided to alert site personnel of fire in a *building* being demolished.
- 2) The system required by Sentence (1) shall be capable of being heard throughout the *building*.

8.2.2.9. Building Service Shut-Off

- 1) Except as required by Sentence (2), and except for water supplies for fire fighting, *building* services shall be shut off and gas and fuel lines shall be capped in a *building* being demolished.
- 2) Temporary electrical installations shall be installed in conformance with the requirements of the *Electrical Safety Act* and pursuant regulations.

8.2.2.10. Clearance to Combustible Materials

- 1) Internal-combustion engines shall be located so that the exhaust discharges not less than 500 mm from *combustible* materials.
- 2) Where exhaust from internal-combustion engines is piped outdoors, a clearance of not less than 150 mm shall be maintained between the exhaust pipe and *combustible* material.

8.2.2.11. Fuel Supply Installation

- 1) Fuel supplies for heating equipment and internal-combustion engines shall conform to
 - a) CAN / CSA-B139-M, "Installation Code for Oil Burning Appliances and Equipment",
 - b) the British Columbia "Gas Safety Act" and pursuant regulations for the installation of natural gas and propane burning equipment.

8.2.2.12. Tank, Piping and Machinery Reservoir Safety

- 1) Tanks, piping and machinery reservoirs containing *combustible liquids* or *flammable liquids* or which are likely to contain flammable vapours shall be drained and, except as permitted by Sentence (2), removed prior to demolition of the *building*.
- 2) Where it is impracticable to remove tanks, piping or machinery reservoirs from the *building* prior to demolition, such equipment shall be conspicuously identified and removed as soon as conditions permit.
- 3) Tanks, piping and machinery reservoirs referred to in Sentences (1) and (2) which contained *combustible liquids*, *flammable liquids* or flammable gases shall be purged with inert materials prior to demolition to prevent an explosion. (See Appendix A.)

8.2.2.13. Fire Separations in Partly Occupied Building

- 1) Where part of a *building* continues to be occupied during demolition, the occupied part shall be separated from that being demolished by a *fire separation* having a *fire-resistance rating* of not less than 1 h.

8.2.2.14. Watch

- 1) A watch, with tours at intervals of not more than 1 h, shall be provided throughout demolition sites when there are occupants in the portion of the *building* not being demolished.
- 2) Facilities shall be provided to enable the watcher to communicate with the fire department.

8.2.2.15. Smoking Restrictions

- 1) Smoking shall be permitted only in conformance with Subsection 2.4.2. of the B.C. Fire Code.

8.2.3. — Fire Safety at Construction Sites

8.2.3.1. Application to Construction Sites

- 1) This Subsection applies to all *buildings* and portions of *buildings* under construction and includes *alterations*. (See Appendix A.)

8.2.3.2. Fire Safety Plan

- 1) Prior to construction, a fire safety plan conforming to Section 2.14. of the B.C. Fire Code shall be prepared for the construction site.

8.2.3.3. Access for Fire Fighting

- 1) Unobstructed access to fire protection equipment, such as hydrants, fire department connections and portable extinguishers, shall be maintained at all times.
- 2) Where practicable, access routes to the construction site shall be provided for fire department vehicles. (See A-8.2.2.3.(2) in Appendix A.)
- 3) Where a construction site is fenced so as to prevent general entry, provision shall be made for access by fire department equipment and personnel.

8.2.3.4. Portable Extinguishers

- 1) Portable extinguishers shall be installed and maintained in conformance with Part 6 of the B.C. Fire Code.
- 2) In addition to the requirements of Sentence (1), portable extinguishers shall be provided
 - a) adjacent to cutting or welding operations,
 - b) in areas where combustibles are stored,
 - c) near or on any internal-combustion engines,
 - d) adjacent to areas where *flammable liquids* or gases are stored or handled,
 - e) adjacent to temporary oil-fired or gas-fired equipment, and
 - f) adjacent to bitumen heating equipment.
- 3) The minimum rating for extinguishers required by Sentences (1) and (2) shall be
 - a) 2-A:10-B:C on moveable equipment, and
 - b) 4-A:40-B:C in all other locations.

8.2.3.5. Standpipe Systems

- 1) Where a standpipe system is to be installed in a *building*, such system shall be installed progressively in conformance with Article 3.2.5.9.

8.2.3.6. Cutting and Welding Operations

- 1) Cutting and welding operations shall conform to Section 5.2. of the B.C. Fire Code.

8.2.3.7.Egress Provisions

- 1) In areas of the *building* in which construction operations are taking place, at least one *exit* shall be accessible and usable at all times.

8.2.3.8.Fire Warning

- 1) A system shall be provided to alert site personnel of fire.
- 2) The system required by Sentence (1) shall be capable of being heard throughout the *building*.

8.2.3.9.Clearance to Combustible Materials

- 1) Clearances between *combustible* material and internal-combustion engines shall conform to Article 8.2.2.10.
- 2) The clearance between *combustible* materials and temporary heating equipment, including *flues*, shall be in conformance with Part 6 or in conformance with the minimum clearances shown on certified heating equipment.

8.2.3.10.Combustible Liquid and Flammable Liquid Storage

- 1) *Combustible liquids* and *flammable liquids* shall be stored and used in conformance with Part 4 of the B.C. Fire Code.
- 2) Bitumen heating equipment shall be provided with metal covers.
- 3) Bitumen heating equipment shall be under constant supervision when in operation.
- 4) Mops used for spreading bitumen shall be kept outside the *building* in a safe location.

8.2.3.11.Watch

- 1) Except where the *building* is provided with a fire alarm system or similar equipment acceptable to the *authority having jurisdiction*, a watch, with tours at intervals of not more than 1 h, shall be provided when a portion of a *building* is occupied while construction operations are taking place.
- 2) In *buildings* which are occupied prior to completion of construction, provision shall be made for the watcher to sound the alarm and notify the fire department.

8.2.3.12.Smoking Restrictions

- 1) Smoking shall be permitted only in conformance with Subsection 2.4.2. of the B.C. Fire Code.

8.2.3.13.Disposal of Combustible Refuse

- 1) *Combustible* refuse in sufficient quantities to constitute a fire hazard shall be moved to a safe location. (See also Subsection 8.2.7.)

8.2.3.14.Temporary Enclosures

- 1) Fabrics and films used temporarily to enclose *buildings* shall be securely fastened to prevent them from being blown against heaters or other ignition sources.