Fire Safety Plan Guideline For Construction and Demolition Sites

The purpose of this guideline is to provide the construction and demolition industry with an easy to follow checklist to assist them in meeting the fire safety requirements of British Columbia's building and fire codes. The goal is to prevent fires in and around construction/demolition sites and reduce the fire risk to life and property.

This guideline covers provincial building and fire code requirements. Specifically:

- British Columbia Building Code, Division B, Section 8.1 makes reference to the British Columbia Fire Code (BCFC), Division B, Section 5.6 which applies to buildings, parts of buildings, and associated areas undergoing construction or demolition operations, including renovations.

- BCFC, Division B, Section 5.6.1.3 (1) states: "...prior to the commencement of construction, alteration or demolition operations, a fire safety plan shall be prepared for the site..."

The owner, or owner's authorized agent, is responsible for carrying out the provisions of the BCFC, which includes establishing a work site fire safety plan to ensure that:

- Fire hazards will be controlled.
- Emergency responders will be notified of a fire emergency.
- Emergency responders will not be delayed in carrying out their duties.
- Firefighting operations will be managed effectively, without unnecessary delays.
- Designated supervisory staff will be appointed and organized to respond to fire emergencies.
- Instructions including schematic diagrams describing the type, location and operation of building fire emergency systems will be established.
- Building facilities, systems, equipment and devices will be properly inspected and maintained.
- The fire safety plan not only reflects the unique characteristics of building, operation and construction techniques (including the construction/demolition trades), but also considers the available firefighting infrastructure. For this reason, the fire safety plan must be prepared by the owner or owner's authorized agent in cooperation with the local fire department and other applicable regulatory authorities.

Prior to commencing any work at a site, it's important for the owner or authorized agent of the owner to:

- Ensure they are also in compliance with the laws, regulations and requirements of the BCBC, the BCFC, local government and other regulatory authorities; and
- Consult the local fire department and other regulatory authorities such as the British Columbia Safety Authority and WorkSafeBC.
- Fire safety planning and risk management assessments of the site done prior to, during and after building construction/demolition is completed, are essential to prepare for and manage fire hazards. Planning and assessment will identify and lead to methods and processes that will minimize or contain potential fire hazards. All site safety activities should be coordinated through the planning and assessment process.
- BCFC provisions are included in the fire safety plan and are applied depending on the project's scope and conditions of the site, e.g. the size and type of the building and its proximity to adjacent buildings.

At a minimum, a fire safety plan should include the following information:

1. Emergency procedures and information needed to plan for an emergency:

Is the site identified by signage identifying the:

- civic address visible from the access route at the entrance to the site?
- floor level, stair location, and civic address posted at each floor in the construction access stairway?
- Who is the designate and backup person responsible to sound the fire alarm (horn)?
- Who is the designate and backup person responsible to notify the fire department (9-1-1)?
- Is instruction given to site personnel on the procedure to follow when an alarm is sounded?
- re exit routes clearly visible within the site and on all floors?
- Is the muster point (or meeting place) known by all site personnel?
- Is there a list of on-site personnel, and is it updated and current? (Can everybody on-site be accounted for?)
- Are there assigned personnel to meet the fire department upon arrival and give information, such as the location of the fire, persons that are unable to evacuate, or injured person(s)?
- Are there persons assigned as site fire wardens (ensuring various trades are represented)?
- Are there personnel directed and trained to confine or control the fire?
- Are designated smoking areas clearly identified and located more than 3 meters from the building undergoing construction, demolition, or alteration, and from other combustible materials?

2. Training of site personnel on evacuation procedures:

Is site orientation provided?

- Are regular site fire safety meetings a part of regular safety meetings?
- Are simulated fire drills conducted when applicable and warranted?

3. Assigned site personnel must be responsible to carry out fire safety duties such as:

- Controlling combustible waste:
- Is there more than a 3 meter clearance between combustible refuse containers and the exits?
- Are disposal chutes constructed of non-combustible material, or if combustible, do they terminate more than 2 meters above the disposal bin?
- General site housekeeping.
- Removing excess pallets, garbage/waste material and other combustibles on a regular basis.
- Maintaining separation of combustibles from open flame devices.
- Maintaining clear unobstructed access route(s) for fire department apparatus and to fire hydrants.
- Designating and maintaining at least one exit from every floor.
- Separating access routes from materials stored on-site, combustibles, etc.
- Parking of vehicles or delivery trucks should not obstruct fire department access to the site, and
- Adjacent buildings (off-site parking and storage may be considered).

4. Firefighting Services – Water Supply, Hydrant, Hose Connection, Sprinkler, Access Route:

- Is the required water supply for firefighting provided?
- Are the hydrants clearly identified by signage and accessible by more than 2m of unobstructed clearance?
- Are the hydrants and sprinklers installed, tested and activated at the start of construction?
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- Are firefighter access route(s) to the building provided?
- Are standpipes and hose connections maintained and accessible?
- Do drawings provided to the fire department show the location of firefighting systems as they become operational?
- Is the site address sign (when required by local bylaw) visible and legible to emergency crews from the street?

5. Fire Extinguishers:

Is there sufficient quantity and type on-site? Such as:

- 2-A:10-B:C on movable equipment?
- 4-A:40-B:C in all other locations?
- Is the servicing up–to-date (within the last year)?
- Are they provided at or near fuel operated equipment?
- Are they mounted with proper signage at exit locations within the required travel distance?
- Are they adjacent to any hot works operations (e.g. cutting torch, welding, torching, etc)?

6. Hot Works Operations:

- Is the area clear of flammable and combustible materials?
- Is a fire watch assigned during a hot works operation and for 60 minutes after its completion?
- Is there a final inspection of the hot works area 4 hours after completion?
- Are the hot works in the proximity of combustible or flammable materials?
- Have provisions been made for protection of combustible or flammable materials by using a non-combustible/ thermal barrier or other means?
- Is the work being performed by trained or certified personnel?
- Is a fire extinguisher present at all times? Such as:
    - 2-A:10-B:C on movable equipment?
    - 4-A:40-B:C in all other locations?
- Is proper ventilation provided as required?
- Are the hot tar pots on-site complete with fire extinguishers, trained personnel, and located away from combustible materials?

7. Flammable and Combustible Storage:

- Are flammable and combustible liquids properly stored, handled and used in and around the building?
- Are non-petroleum based compressed gases properly stored, handled and used in and around the building?
- Is the storage area separated from combustible material by 3 metres?
- Is the storage area locked and vented?
- Is the storage area protected from vehicular/ industrial motorized traffic?
- Do containers and/or storage areas have proper signage/placards in place?

- Is there a current or updated list of dangerous goods on-site such as material safety data sheets (MSDS), as per the Workplace Hazardous Materials Information System (WHMIS)?
- Are portable extinguishers provided in close proximity to storage and work areas such as:
  - 2-A:10-B:C on movable equipment?
  - 4-A:40-B:C in all other locations?
- Is the storage area away from egress and access routes to the site?

8. Electrical Installations and Petroleum Gases:

- Do the electrical installations, storage and use of petroleum gases comply with the requirements of the Safety Standards Act and pursuant regulation? (Contact the British Columbia Safety Authority.)

9. Security

- What type of on-site security is provided: e.g. locked gate, monitored alarm and/or CCTV, 24 hour or nightly walk around?
- Do security personnel have knowledge of and understand their role in the site's fire safety plan?
- Can the fire department effectively communicate with the security personnel during an emergency?
- Do security personnel have access (keys) to locked areas?
- Is the required security fence, boarding or barricade:
  - strongly constructed,
  - erected around the perimeter of the construction or demolition site, and
  - not less than 1.8 meters high?
- Do the provided barricades have:
  - A reasonably smooth surface facing the outside?
  - no openings other than those required for access?.
- Are the access openings through barricades equipped with gates that are:
  - kept closed and locked when the site is unattended?
  - kept in place until completion of the construction or demolition activity?
  - Is the fencing, boarding and barricades constructed and maintained so that they do not restrict access to the construction or demolition site for firefighting purposes or to the fire protection equipment?

10. Contact Personnel:

- Is there a list of names and telephone numbers of persons to be contacted during and after normal operating hours or in the event of an emergency?
- Are the contact personnel able to respond in a timely fashion?
- What is their estimated response time?

11. Building Diagrams

- Are diagrams available on-site? These diagrams should indicate:
- Plans of each floor area
- Muster point(s)
- Location of nearest hydrant(s)
- Location of fire protection equipment
- Exit paths, and
- Service rooms

The fire safety plan must be reviewed and updated as construction/demolition progresses and then periodically afterwards to provide the greatest value. The plan that is developed for a building construction site should evolve into the plan that will be used to maintain and protect the building and its occupants after completion. It's very important that all supervisory staff remain familiar with the plan throughout the process so they are aware of how it pertains to their responsibilities. The fire safety plan must be retained on site for review by the fire department, supervisory staff, personnel, and other applicable regulatory authorities.

Even though the BCFC does not regulate the format of a fire safety plan, the Township of Esquimalt Fire Department has a preferred format for creating a Fire Safety Plan. You will find the information at www.esquimalt.ca/public-safety/fire-department/fire-safety-plans.

It may also be beneficial to owners to obtain the services of a consultant who specializes in fire safety planning and risk management assessments. This consultant would oversee the fire safety plan's development and implementation. This is especially useful to owners who have neither the time nor the expertise to develop their own plan.

The BCFC is available online for general public access, and available at local Public Libraries.