

ALTERATIONS AND UPGRADES TO BUILDING LIFE SAFETY SYSTEMS INCLUDING FIRE ALARM, ELEVATOR AND SMOKE CONTROL MEASURES

BCBC 2012 articles 3.2.4.6 and 9.10.1.2, "Commissioning of Life safety and Fire Protection Systems", clarifies that building life safety systems are integrated and must be commissioned as a whole to ensure the proper operation and inter-relationship between the building life safety systems. Permit submissions for alterations or upgrades to life safety systems must include details of the fire life safety systems of the building as a whole.

"This information is provided for convenience only and is not in substitution of applicable District Bylaws or Provincial or Federal Codes or laws. You must satisfy yourself that any existing or proposed construction or other works complies with all Bylaws, Codes or other laws."

Background

All buildings have measures to reduce or limit the impacts of smoke and fire beyond their point of origin. Smoke can spread in buildings through elevator and exit stair shafts and Public Corridors. Measures to limit the impacts of smoke and fire beyond the point of origin can include pressurization of shafts and Public Corridors, exhausting smoke from Basement Parkades, and elevator recall to reduce the risk of people being trapped in smoke filled elevator shafts. Fire doors on electromagnetic hold-opens are also designed to close when a fire alarm is activated. These systems and procedures are triggered by the building fire alarm system, though additional detection and triggering devices may also be present.

Permit submission requirements for changes to building fire safety system

Changes to building life safety systems must be done under a Building Permit, and under the professional design and field review of:

- A Coordinating Registered Professional and
- Professionals of Record for the relevant discipline, including Electrical for fire alarm design, Mechanical for ventilation, Fire Suppression for sprinklering and Architectural for fire separations and closures.

Coordination of all of these disciplines is done by the Coordinating Registered Professional.

Exceptions

Where the work is limited to replacement of field devices such as sprinkler heads, control valves, fire alarm detectors, visual and audible signals, manual stations control units or annunciators, and the work does not alter existing piping, wiring or outlet boxes, and is intended as a straight replacement of devices without altering the functioning the system, then the work may be done under the applicable trade permit only.

Building permit submission requirements

The building permit submission must include:

1. Letters of assurance for design and field review from a Coordinating Registered Professional and the appropriate Registered Professionals.
2. Designs for the changes to the life safety systems, prepared by the Registered Professionals of Record in accordance with the applicable codes and standards.
3. An "Approach to Code compliance" report by suitably qualified professional, and prepared under the direction of the Coordinating Registered Professional, that describes the life safety systems in the building, the proposed changes and how the overall system will be improved.
4. A "Sequence of operation" prepared under the direction of the Coordinating Registered Professional of record, that summarizes the functioning of the Coordinated Life Safety systems, and that can be used by the Authority Having Jurisdiction at the Trip Test once the construction is complete.

General notes

In addition to a Building Permit, all trade work must be done under an applicable trade permit.

The changes that require a Building Permit submission or changes to a fire alarm Annunciator or Central Alarm and Control Facilities, must be followed by submission of new or updated Fire Safety Plan to the DNV Fire Department.

In all cases, new devices must be verified for correct installation and functioning by an independent and qualified verifier. Verification of devices must be done in accordance with the applicable standards including NFPA13 for sprinkler systems, the Canadian Electrical Code and CAN/ULC S524 for fire alarms

Where site inspections reveal unsafe conditions then those unsafe conditions must be rectified before permits are finalled.

Proponents must be aware that many building have "Equivalencies" or "Alternative Solutions" that must be considered in the design of changes to buildings.

While building Life Safety Systems are being repaired or are not functioning, a fire watch must be put in place in accordance with the BC Fire Code.

For questions regading this bulleting plese contact the building Department at 604-990-2480 or email building@dnv.org