CITY OF VANCOUVER
FIRE & RESCUE SERVICES - OFFICE OF THE FIRE CHIEF
Ray Holdgate, General Manager

OPERATIONS MANUAL GUIDE

Operations Manuals contain building information useful to Vancouver Fire & Rescue crews.
The office of PreFire Planning is responsible for the review, approval and installation of these books in the **Operations Box**, located near the alarm panel inside the building.
Initial submission for review is to be in **PDF file format**. Preferred method is by email. Or by CD.
Upon approval of the **PDF file**, **ONE hard** copy labeled **Operations Box** is to be submitted for final review. The PDF file is for archive purposes and to be available to the responding firehall via Firenet.
Upon final review and acceptance, acceptance letters will be issued.
The following guide is supplied for individuals and businesses to standardize the production of Operations Manuals presented to the Pre-Fire Planning office. Use of this guide will facilitate the acceptance and use of the finished manual. **Note**: strict adherence to format and order is mandatory.

Operations Manuals consist of 2 basic parts:
Part l – Directory: contains written information about the building's layout and fire safety systems.
Part ll – Diagrams: contains graphic drawings that illustrate and support the written portion. The finished manual allows review of the building by fire crews, allowing them the opportunity to preplan for future incidents and provide important information at the site if needed in an emergency situation.

PLEASE NOTE: Fire Safety Plans or Equivalencies are no longer required in the Operations Manual. This includes the hard copy and PDF file. Any questions regarding this change please call Pre-Fire Planning at (604) 665-6085

DESIGN & LAYOUT OF OPERATIONS MANUALS:

Binder:

The Operations Manual will consist of a RED vinyl four ring binder measuring 14 ½" long x 10" wide x 1 ½" thick. The title on the front of the manual will be "FIRE DEPARTMENT OPERATIONS MANUAL" in ½" yellow letters. Below the title will be the Fire Department logo measuring 3 ½" x 3 ½".
Under the logo the buildings **Smoke Control - Yes or No.**
The **building address** will be listed as well as the location of the manual - **Operations Box.**
The **address** will also be placed on the books' spine.

Information Sheet:

The first page inside the book will be an 8 ½" x 14" sheet titled "Fire Department Operations Manual Information Sheet." This sheet will contain the **name** of the **company** producing the manual with their address, telephone and fax numbers. This sheet will also contain the date, building address, contact person, **contact's email address**, company (owner or mgmt.) name, address, postal code, phone and fax number.
To be included: **Is the Operations Manual Box installed? Yes or No** and location
Lock Box installed? Yes or No and location

Title Page:
After the information sheet the operations manual begins with a Title Page. Include the title **Fire Department Operations Manual**, building address, **common building name**, if applicable, and Fire Safety Planners' name and address.

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Part 1

Divider labeled: **LEGEND**

Provide a one or two page, color coded symbol legend (Appendix A).
Operations manuals will show all symbols used in the manual on the legend/key page.
Note: If for any reason an additional symbol is required and used, but not shown on the legend/key, then the symbol must be shown and explained on the same page where it is used on the drawing.

Divider labeled: **DIRECTORY**
Following the legend page, the written information about the building's layout and fire safety systems will be listed in **bulleted point form**. Following is the order in which the items will be listed as well as the details that each section will include.

Construction:

Building construction and date of construction will be provided. Under the construction heading indicate the following.

- Building type
- Number of stories
- Number of suites
- Date of construction
- Materials of construction
- Exterior finish
- Roof Construction
- Interior construction and finish
- Number of underground parking levels - (drawings must reflect this)

Fire Alarm System:

- Make and Model plus year of installation if available.
- Number of stages – with explanation of typical building alarm, ie: sequence and activation.
- Location: state location and support with symbol on diagram.
- Supervised……..yes or no?
- Monitoring company name and phone number.

Initiating Devices: List Areas

- Pull stations
- Heat detectors
- Smoke detectors
- Sprinkler / standpipe flow

Heat Detector locations: List Areas

- Elevator shafts
- Mechanical rooms

Smoke Detector locations: List Areas

- Tops of stairways
- Electrical rooms
- Telephone / cable room
- Residential suites. Include pertinent information, ie: smoke alarms are local alarms and are not connected to the alarm system.

Fire Alarm Panel Operation:

PreFire Planning requests condensed instructions to facilitate ease of understanding and operation. Some newer systems use a digital display with abbreviations. Include info regarding the abbreviations in the Operations Manual.

- Normal operation (describe)
- Trouble operation (describe)
- In alarm mode (provide specific info)
- Silencing alarm info
- Alarm reset info (describe and list in sequence the alarm reset procedure)

The above information should be short, concise and in point form.

WATER MAINS: – Hydrants, F.D Connections

Water Mains: Include the Main size serving hydrants adjacent to the property and the size of the mains that serve the building and suppression system.

- Location: this info is to be included on Site Plan in line form to show direction.
- Water main size – ie: size of street main supplying building.
- Combined fire/domestic water service line size.
- Entry point of Service Line. Show in line form to show entry point on Site Plan.

Fire Hydrants:

- Number & Type (public, private, compression etc.)
- Locations: to be included on Site Plan

Fire Dept. Connections:

- Locations: to be included on Site Plan
- Number and type of connections

Fire Pump:

- Location
- Make
- Capacity – gallons per minute
- Connected to alarm system….Yes or No
- Automatic or Manual controls?
- Receive emergency power? (emergency generator)
- Operation of pump (brief outline of pump operation)

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Standpipes:

- Riser locations: state location and reference to diagram(s).
- Riser sizes
- Connection sizes
- Alternate connections – ie: parking area
- Roof static pressure
- PRV's (Pressure Reducing Valve) – include type of valve and info for bypass valve
- Hose cabinets and locations: state locations and reference to diagram(s)

Sprinkler Systems:

Dry:

- Area of coverage: show coverage on diagrams with appropriate symbol
- Location of valves: state location and reference to diagram(s)
- Heated….Yes or No
- Control Valve description(make, model, size)
- Flow and tamper devices
- Air compressor

Wet:

- Coverage
- Control Valve location: state location and reference to diagram(s).
- Control Valve description(make, model & size)
- Is Valve alarmed…Yes or No
- Flow and tamper devices
- Sprinkler Floor Isolation Valve locations (support this with symbol on diagram)

Emergency Power: (emergency generator)

- Make / model
- Output
- Fuel - labeled hazard symbol on drawings. Please list in Hazard heading also.
- Location (indicate which drawing shows it)
- Battery power? If so include description.

Supplies Power to (in case of emergency) include all that apply.

- Fire Alarm panel
- Emergency lights
- Exit signs
- Fire pump
- Firefighter Elevator
- Pressurization fans
- Fire dampers
- Electrical room
- Smoke exhaust fans

Elevators:

- Number of elevators
- Make
- Weight/person capacity
- Floor locations serviced
- Freight elevator
- Service company – name and phone number.

Firefighter Elevators:

Converted elevators offer VFRS crews less than current code. Operations Manuals alert our crews to converted systems by indication in the written portion of the manual and by showing the appropriate symbol on the drawings, a letter **C** shown in the firefighter elevator symbol (Firefighter helmet).
Elevators identified by the helmet symbol with the letter **F** indicate firefighter elevator operation is to code. All drawings will show the location of the firefighter elevator by use of the appropriate symbol. Symbols used on the drawings to identify the firefighter elevator must support the information given in the written portion of the manual.

- Which elevator is the designated firefighter elevator?
- If there is no firefighter elevator in the building, simply write **No Firefighter Elevator**
- Does it receive emergency power?
- Recall switch locations ie: remote console / elevator shaft
- Alternate recall level / floor
- Operation when building is in alarm ie: recall floor?

Operation of Firefighter Elevator

Include a step by step instruction of firefighter elevator operation in point form.

- Outline control of shaft and operation of car under firefighter mode.
- Outline recall mode of system and provide alternate recall information
- Outline system reset procedures

Communication:

- Public address system and main control site
- Firefighter telephone locations. Support with symbols on drawings.
- Outline use of communication system

If there is no communication system for the building then state **No Communication System**

Firefighter Telephone

Provide step by step operational basics of Firefighter telephone use. Include direction for emergency use with instructional reference to building page, zone page or inter zone communication and accompanying status changes at the panel.

Public Address

Provide step by step explanation about the operation of the system and include information about accessing sites and alarm silencing. Provide additional direction if the system relies on abbreviations or uses digital codes

Evacuation:

- Provide any special information regarding stairs, crossover floors, etc.
- Outline any security measures and their locations that may hamper emergency personnel. ie: magnetic door locks
- Special information regarding roof access.
- Area of Refuge zones (red triangle with R in it) 

Ventilation: Smoke Control

- **Smoke Control - Yes or No.** Indicate type of smoke control.

Older buildings will have a **Smoke Measure.** Please indicate correct measure.
Newer Buildings: indicate compliance with current Building and Fire By-laws.
The Cover of the Manual will show the presence of Smoke Control for the building.

Include a fan activation schedule to illustrate operation of the system under normal conditions after the fire alarm system has been activated. Also include directions for manual control of the system showing the function of auxiliary switches at the CACF (Central Alarm Control Facility), the effect upon air supply, smoke dampers, exhaust fans and the effect on the ventilation system overall. Explain all abbreviations used.

Areas of Use: Description of the various usage areas.

- Parking Level 2 ie: parking, storage.
- Parking Level 1 ie: bikes, telephone room, electrical/sprinkler room etc.
- Ground Floor ie: main entry etc.
- 2nd Floor ie: residential suites

Utilities:

Provide one Utilities heading with **Gas, Water** and **Electrical** as sub headings. Refer directly to the drawing that shows these locations. ie: see P-l level drawing for electrical shut-off. These controls must be shown on the Site Plan as well.

Hazards:

Hazards such as PCB's, fuels, extinguishing systems (Halon, CO2) etc. will be listed under this heading. Quantity of hazardous material must be listed as well as UN number if applicable(to be listed in Directory as well as on the diagram.)

If the regular numerical floor sequence of the building is interrupted, the manual will reflect this under this heading as well as on the corresponding diagrams.
ie: Elevation drawing – drawing showing floor sequence –12 & 14 – **note: there is no 13th floor.**

Diagrams will display a hazard symbol according to the listed hazards: showing where, what and quantity of the hazard on appropriate drawing(s) including the UN# if listed. Include explanation of symbol if not listed on Legend.

Part ll (Drawings)

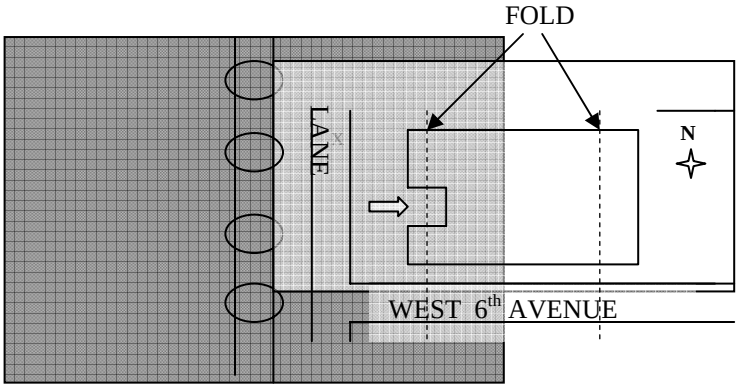
A key element necessary for the approval of Operations Manuals concerns **graphic support** of the written material. When reference is made in the Directory (**Part l**) to an Index Section Diagram (**Part ll**) the text should direct the reader to the appropriate drawing. For example, if the manual indicates that a control is found in the Parking section Level one (P-1) the reader should expect to turn to the tab section **Parking Levels** for level **P-1** and have the text verified by the location of the appropriate symbol. Instructions/information in the written portion of the manual will support graphics and vice versa.

Drawings must include all the information we would normally see in association with a particular view of the building, area or level being depicted. For example, simply because the gas control symbol has been used once to show it's location on the Site Plan drawing does not mean it shouldn't be shown again. In fact, a symbol should be included on every diagram if we would normally see it in the view depicted.
Underground parking entry and building entry points must be shown on all appropriate drawings. Fire safety systems such as Fire Dept. connections must be shown on all diagrams where we would normally see them.

Important: Where the written portion of the manual refers (by a given name or term) to a specific portion or area of a building, the same term or name must continue to be used to identify or label the drawing of that area. For example – if a reference is made to a given level or area as the 'Basement', then the drawing for that level or area must be labeled 'Basement'. Similarly, written directory instructions must be consistent with diagram index labels. If the reader is directed to 'Parking Levels' in the written portion of the directory then the diagram index label should read 'Parking Levels'. Consistent labeling and identification will speed the review and approval process and prevent confusion in the field.

Orientation:
Compass orientation of drawings must remain constant throughout the manual with each drawing shown facing the same. Compass North must be shown on **every** drawing.

Drawings will be presented on an 11 x 17 inch page in the landscape format – with the drawing covering the larger 17" portion of the page and the 11" side of the page inserted into the ring binder. (see diagram below)



Two vertical folds, so the page does not protrude outside the manual cover or obscure index tabs.
The office of Pre-Fire Planning encourages use of a scale suitable to take advantage of the large page size. Text size of 12 – 14 points is expected.

Order of Drawings

Elevations: Divider label
Main and alternate entries are to be indicated with the appropriate symbol. Elevation drawings will show main or alternate entry points as the view dictates. ie – if the main entry is on the south face of the building then the symbol will be on the site plan drawing as well as on the south elevation drawing. Likewise for other pertinent information such as Fire Dept. connections, gas control, etc.

Elevation drawings will show change in grade as the views move around the building. Building elevation drawings must include below grade representation. A separate building cross section will show **ventilation, elevator and stair shafts** to be shown with the following color coding.
Ventilation…Blue Elevator…Orange Stairs…Green
The quality of the elevation drawings is to equal to rest of drawings. The exterior configuration of the building is to closely resemble the view shown with enough detail to confirm the elevation shown.

Site Plan: Divider label (do not confuse Site Plan with Ground/Main Floor drawing)

Site plans will portray the building in relation to the surrounding streets and neighboring property including lane shape and parking entry. This streetscape with **street names shown,** in their proper alignment with the structure, will show **hydrants** in place as well as **water main size** for both the street main and the water supply to the building. **Water shut off control** at the **interior and exterior** of the building will be shown on the appropriate drawing.
Site plan drawing will display other critical control info such as:

- Fire Dept. connections
- Gas shut off
- Main and alternate entry
- Lockbox location
- Central Alarm and Control Facility (CACF)
- Underground parking entry
- Water shut-offs

Parking or Basement level: Divider label

Show the various parking levels starting with the lowest level. Show all shut offs, mechanical rooms, sprinkler rooms, etc.

Main or Ground Floor: Divider label
Show entry points, central control, Firefighter Elevator, Firefighter Telephone, AS Valves etc.

Mezzanine Level: Divider label - if required

2nd Floor to….. Divider label

When the floor plan remains the same for many stories ie: floors 2 – 18, it is acceptable and preferable to show one typical floor plan instead of repetitions of the same floor. However, if there is specific information on any particular floor then a **separate drawing must** be produced for that floor.
ie: hazards, floors out of numerical order (no 13th floor).
It is unacceptable to produce a single typical floor drawing and note any irregularities. This is to ensure accurate identification of the floor in question.

Roof: Divider label
Show roof hydrants, equipment on roof, mechanical rooms, access etc.

NOTE: Fire Safety Plan: No longer required.

SYMBOL LEGEND

FIRE ALARM CONTROL PANEL (FACP)
COMPLETE TO PRESENT CODE REQUIRMENTS

FIRE ALARM CONTROL PANEL (FACP) IS NOT
COMPLETE TO PRESENT CODE REQUIRMENTS

FIRE DEPARTMENT CONNECTION TO STANDPIPES
AND/OR SPRINKLER SYSTEMS

AREA FULLY SPRINKLED

AUTOMATIC SPRINKLER **MAIN** VALVES

AUTOMATIC SPRINKLER **FLOOR ZONE** VALVES

STANDPIPE CONNECTION

HOSE CABINET

COMBINATION – STANDPIPE & HOSE CABINET

FIRE HYDRANT

FIRE ALARM ANNUNCIATOR PANEL

ELEVATOR ANNUNCIATOR (CONTROL) PANEL

FULL FIREFIGHTER'S ELEVATOR SERVICE
(as to code requirements)

CONVERTED FIREFIGHTER'S ELEVATOR
(DOES NOT HAVE FULL F.F. SERVICE)

AREA OF REFUGE

HAZARD LABEL

FIREFIGHTER'S TELEPHONE

MAIN ELECTRICAL SWITCH

MAIN WATER CONTROL VALVE

MAIN GAS CONTROL VALVE

MAIN & ALTERNATE ENTRY POINTS