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APPEAL SUMMARY

Status: Decision Rendered

Appeal ID: 18788	Project Address: 350 SW Jefferson St
Hearing Date: 12/19/18	Appellant Name: John Heinen
Case No.: B-013	Appellant Phone: 5035720476
Appeal Type: Building	Plans Examiner/Inspector: John Cooley / Joe Thornton (FM) / Corey Stanley (FM)
Project Type: commercial	Stories: 6 Occupancy: B Construction Type: 1A
Building/Business Name: Wells Fargo Center	Fire Sprinklers: Yes - Throughout building
Appeal Involves: Alteration of an existing structure, Addition to an existing structure	LUR or Permit Application No.: 18-208035-000-00-CO
Plan Submitted Option: pdf [File 1] [File 2]	Proposed use: Office Building

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	2016 City of Portland Fire Code Section 508.1.4 and 2014 OSSC Section 911.1.4
Requires	A layout of the fire command center and all features required by this section to be contained therein shall be submitted for approval prior to installation.
Proposed Design	<p>This appeal pertains to the remodel of an existing data center building, otherwise known as the Exchange Block, in the Wells Fargo Center located in downtown Portland between SW 3rd and 4th Avenues and SW Columbia SW Jefferson, built in early 1970's. The building is six floors above grade and one floor with three levels of parking spaces below grade. The construction is Type is 1A and the occupancy is Business Group B.</p> <p>The Wells Fargo Center Remodel leaves most of the existing building intact. New work includes an extension of the existing floor on level 1 to the west toward 4th Avenue, and a new curtain wall at the perimeter on levels 1 and 2 which will enclose the current exterior plaza space. The fire life safety systems for the Exchange Block remodel tie back to existing systems in the Wells Fargo Tower across the street. A site plan is included in the attached report.</p> <p>The security desk in the Wells Fargo Tower serves as the fire command center (FCC) for the entire Wells Fargo Center. Many features of the FCC will be updated to conform to the Portland Fire Code Section 911 but some features are proposed to remain as outlined below. Additional information and a full analysis of all FCC features is provided in the attached report by Code Unlimited. Our proposed design is described more fully in part 4 Conclusions in the attached report. Below is a summary of all the non-conforming items and our proposed design approach. Please see the related separate appeal for other non-compliant FCC items at the Wells Fargo Center FCC.</p>

The existing layout and location of equipment at the security desk and pay phone alcove is logical and readily accessible. We propose the existing security desk can remain as is with equipment relocated as indicated herein and in the attached report.

Reason for alternative The construction project is limited to the Wells Fargo Exchange Block and fully upgrading the FCC in the Wells Fargo Tower is not commensurate with the scope of the project. The proposed improvements bring the FCC Exchange Block features to a level of substantial compliance with current code. Proposed improvements to the FCC will serve the entire Center will significantly improve access to information and control of fire/life safety system for the fire department.

Appeal item 2

Code Section 2016 City of Portland Fire Code Section 508.1.5 and 2014 OSSC Section 911.1.5

Requires 911.1.5 required features for a Fire Command Center lists status indicators and controls for air distribution systems as item 5.

Proposed Design Please see Appeal Item 1 for a summary of the existing building, the scope of new work and additional information on the reason we are appealing PFC/OSSC Section 508.1.5/911.1.5 Status indicators and controls for air distribution systems.

The existing status indicators for controls and air distribution systems are not provided at the FCC. However, a Siemens BMS status panel is available in Engineering Office, Tower floor 39. This interface allows building engineers to control the HVAC system as needed. A BMS panel in the FCC is not a specific requirement and will not provide significant value to fire operations for this building. We propose the existing non-conforming condition can remain as is.

Reason for alternative The construction project is limited to the Wells Fargo Exchange Block and fully upgrading the FCC in the Wells Fargo Tower is not commensurate with the scope of the project. The proposed improvements in other appeal items bring the FCC Exchange Block features to a level of substantial compliance with current code. Proposed improvements to the FCC will serve the entire Center will significantly improve access to information and control of fire/life safety system for the fire department.

Appeal item 3

Code Section 2016 City of Portland Fire Code Section 508.1.5.6 and 2014 OSSC Section 911.1.5.6

Requires 911.1.5 required features for a Fire Command Center lists fire-fighter's control panel required by 909.16 for smoke control systems installed in the building as item 6.

Proposed Design Please see Appeal Item 1 for a summary of the existing building, the scope of new work and additional information on the reason we are appealing PFC/OSSC Section 508.1.5.6/911.1.5.6 fire-fighter's control panel required by 909.16 for smoke control systems installed in the building.

The existing smoke control panel is not readily accessible and does not meet current code. We propose to upgrade and relocate the panel to a fully conforming fire-fighter's smoke control panel for the Wells Fargo Exchange Block at the pay phone alcove adjacent to the FCC. The smoke control panel serving the Wells Fargo Tower will also be relocated to the pay phone alcove and graphically upgraded for improved clarity for fire department operations but will retain the current (limited) functionality. Positive confirmation of airflow, for example, would not be provided for the Tower stair and elevator systems but the new panel and existing functionality would be tested and recommissioned. There will be two panels, located side by side in the pay phone alcove, that

provide clear sight graphics and visual depictions that will be intuitive to fire fighters indicating there are two buildings.

Reason for alternative The construction project is limited to the Wells Fargo Exchange Block and fully upgrading the FCC in the Wells Fargo Tower is not commensurate with the scope of the project. The proposed improvements bring the FCC Exchange Block features to a level of substantial compliance with current code. Proposed improvements to the FCC will serve the entire Center will significantly improve access to information and control of fire/life safety system for the fire department.

Appeal item 4

Code Section 2016 City of Portland Fire Code Section 508.1.5.14 and OSSC Section 911.1.5.14

Requires 911.1.5 required features for a Fire Command Center lists a work Table as item 14.

Proposed Design Please see Appeal Item 1 for a summary of the existing building, the scope of new work and additional information on the reason we are appealing PFC/OSSC Section 508.1.5.14/911.1.5.14 Work table.

The existing security desk and pay phone alcove counter can serve as the work table. We propose the existing condition can remain as is.

Reason for alternative The construction project is limited to the Wells Fargo Exchange Block and fully upgrading the FCC in the Wells Fargo Tower is not commensurate with the scope of the project. The proposed improvements in other appeal items bring the FCC Exchange Block features to a level of substantial compliance with current code. Proposed improvements to the FCC will serve the entire Center will significantly improve access to information and control of fire/life safety system for the fire department.

Appeal item 5

Code Section 2016 City of Portland Fire Code Section 508.1.15 and 2014 OSSC Section 911.1.5.15

Requires PFC 508.1.5 and OSSC 911.1.5 required features for a Fire Command Center lists generator supervision devices, manual start, and transfer features as item 15.

Proposed Design This appeal pertains to the remodel of an existing data center building, otherwise known as the Exchange Block, in the Wells Fargo Center located in downtown Portland between SW 3rd and 4th Avenues and SW Columbia SW Jefferson, built in early 1970's. The building is six floors above grade and one floor with three levels of parking spaces below grade. The construction is Type is 1A and the occupancy is Business Group B.

The Wells Fargo Center Remodel leaves most of the existing building intact. New work includes an extension of the existing floor on level 1 to the west toward 4th Avenue, and a new curtain wall at the perimeter on levels 1 and 2 which will enclose the current exterior plaza space. The fire life safety systems for the Exchange Block remodel tie back to existing systems in the Wells Fargo Tower across the street. A site plan is included in the attached report.

The security desk in the Wells Fargo Tower serves as the fire command center (FCC) for the entire Wells Fargo Center. Many features of the FCC will be updated to conform to the Portland Fire Code Section 911 but some features are proposed to remain as outlined below. Additional information and a full analysis of all FCC features is provided in the attached report by Code Unlimited. Our proposed design is described more fully in part 4 Conclusions in the attached report. Below is a summary of all the non-conforming items and our proposed design approach.

See related Building Appeal #18788 for additional appeal items.

Currently no features exist at the FCC but status is available in Engineering Office, Tower floor 39. We propose this code provision upgrade, if required by City, will be met within three years of completion of the Exchange Block Renovation project.

Reason for alternative The construction project is limited to the Wells Fargo Exchange Block and fully upgrading the FCC in the Wells Fargo Tower is not commensurate with the scope of the project. The proposed improvements bring the FCC Exchange Block features to a level of substantial compliance with current code. Proposed improvements to the FCC will serve the entire Center will significantly improve access to information and control of fire/life safety system for the fire department.

Appeal item 6

Code Section 2016 City of Portland Fire Code Section 508.1.17 and 2014 OSSC Section 911.1.5.17

Requires PFC 508.1.5 and OSSC 911.1.5 required features for a Fire Command Center lists elevator fire recall switch in accordance with ASME A17.1 as item 17.

Proposed Design Please see Appeal Item 1 for a summary of the existing building, the scope of new work and additional information on the reason we are appealing PFC/OSSC Section 508.1.17/911.1.17 Elevator fire recall switch in accordance with ASME A17.1.

The existing elevator recall switches are provided at FCC for all tower elevators. The existing elevator recall switches for the Exchange Block are located on the first floor of that building only. This arrangement provides substantial compliance for the Exchange Block building. We propose no change is required for this existing non-conforming condition.

Reason for alternative The construction project is limited to the Wells Fargo Exchange Block and fully upgrading the FCC in the Wells Fargo Tower is not commensurate with the scope of the project. The proposed improvements in other appeal items bring the FCC Exchange Block features to a level of substantial compliance with current code. Proposed improvements to the FCC will serve the entire Center will significantly improve access to information and control of fire/life safety system for the fire department.

APPEAL DECISION

1. Location of Fire Command Center to remain at existing security desk: Granted as proposed.

2. Existing Fire Command Center status indicators for controls and air distribution systems to remain: Granted as proposed.

3. Relocation of smoke control panel to alcove adjacent to FCC: Granted as proposed.

Note: The final layout of FCC / smoke control panel will be to the satisfaction of the Fire Marshal's Office as determined at time of Fire plan review.

4. Existing FCC work table to remain: Denied. Proposal does not provide equivalent Fire / Life Safety protection.

5. Partial upgrades to FCC with completion by 3 years from completion of Exchange Block Renovation: Granted as proposed.

Note: The final layout of FCC / smoke control panel will be to the satisfaction of the Fire Marshal's Office as determined at time of Fire plan review.

6. Location of elevator recall switches to remain in Exchange Block building: Granted as proposed for the scope of this permit.

Appellant may contact John Butler (503 823-7339) with questions.

For the items granted, the Administrative Appeal Board finds that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.



Wells Fargo Exchange Block

Fire Command Center Assessment

John Heinen, SERA Architects

Property Address: 338 NW 5th Ave, Portland, OR 97209

Date: 12/11/2018

Table of Contents

1. PURPOSE	3
1.1 Purpose.....	3
1.2 Applicable Codes and Standards	3
1.3 Key Issues	3
2. BACKGROUND	4
2.1 Building Overview.....	4
2.3 Building Systems.....	5
3. FIRE COMMAND CENTER FEATURES	6
3.1 Summary of Features	6
3.2 FCC Features and Equipment.....	7
4. CONCLUSIONS	16
5. FLOOR PLANS.....	20

1. PURPOSE

1.1 Purpose

The project goal is to provide detailed information about the features of the Wells Fargo Center fire command center (FCC) to support a formal appeal to the City of Portland so that the permit for the Exchange Block renovation may be obtained.

1.2 Applicable Codes and Standards

- IBC 2014 Oregon Structural Specialty Code (OSSC), including the recently adopted Appendix N which references the International Fire Code.
- 2016 Portland Fire Code
- NFPA 72

1.3 Key Issues

The security desk located at the Wells Fargo Center building main lobby serves as the current FCC for the entire Wells Fargo Center. The lack of a dedicated fire rated room will be appealed to continue as a non-conforming existing condition per Appeal #18514. Existing FCC equipment and features systems are not well documented and additional information is being requested by the City of Portland for the permit application. This City may require some feature to be upgraded as a condition of approving the permit for the Exchange Block renovation.

2. BACKGROUND

2.1 Building Overview

The Wells Fargo Center is an existing high-rise building in Portland, OR that consists of two buildings on a common underground parking structure that includes three levels of parking. The Tower building is 39 stories while the exchange Block is six stories. It was originally constructed in the early 70's and many fire and life safety systems have been provided and upgraded over the life of the building. The six story Exchange Block building, also a high-rise building by definition, is being renovated and expanded at grade level. While the Center is one building, it has two addresses as follows: Tower -1300 SW 5th Ave, Portland OR 97201, and Exchange Block – 350 SW Jefferson, Portland, OR 97201.



Figure 1 - Wells Fargo Center, Exchange Block Building in Forefront

2.2 Fire Command Center

A fire command center (FCC) located on the ground floor of the 39 story Tower building serves the entire Wells Fargo Center. While the building features two separate towers (Tower and Exchange Block) it is a single building with a single FCC. The FCC includes many of the required features outlined in the Oregon Fire Code (OFC) §911. This report provides detailed information with respect to these features. The FCC is incorporated with the building's security desk.

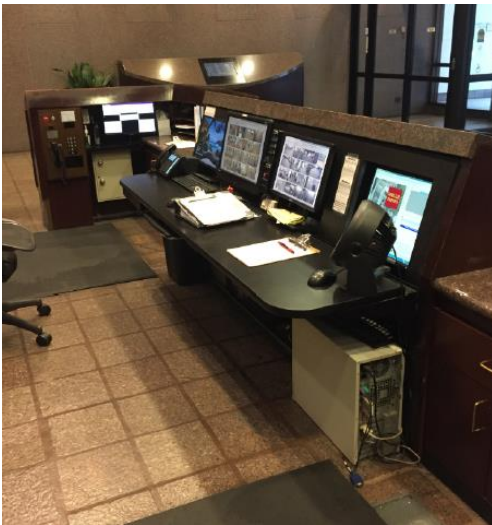


Figure 2 - FCC from Right

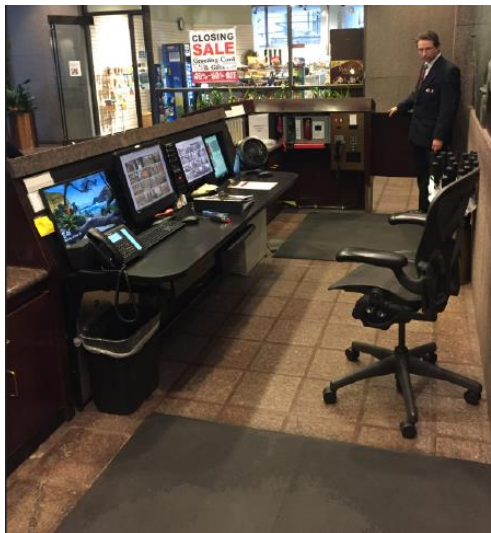


Figure 3 - FCC from left

2.3 Building Systems

The building is fully sprinkler protected and shares common fire protection, fire alarm, emergency power, uninterrupted power supply, fire department communication system, HVAC control system, fire-fighter's smoke control system, and other systems as outlined herein.

Most of the fire sprinkler systems are wet-pipe type but dry-pipe systems protect the parking garage area. Pre-action systems are provided in some sensitive areas. There are three fire pumps; two serve the tower and one fire pump serves the Exchange building.

A single addressable analog networked fire alarm panel serves the entire complex. The system is monitored at the constantly attended security desk, it is not monitored by a central station. This system includes automatic detection and notification devices (speakers and strobes), firefighter communication system, a voice alarm communication system, and control of elevators, HVAC, and stair door locking devices. It also monitors the fire pumps and emergency/standby power systems.

Four emergency generators providing emergency and standby power and an uninterruptable power system provide power to life safety systems. A repeater antenna is also provided for operational use to boost radio signal strength within the building.

The engineering office on the 39th floor also has some controls and annunciation that are redundant, and in some cases supplemental, to that of the FCC.

3. FIRE COMMAND CENTER FEATURES

3.1 Summary of Features

Table 1 summarizes existing features and equipment associated with the security desk at the Wells Fargo Center per OFC §911. Additional information is provided in the section that follows.

Table 1 – Fire Command Center (Security Desk) Features			
Code Citation	Exists		Notes
	Tower	Exchange	
§911.1.1 Location and access. The location and accessibility of the fire command center shall be <i>approved</i> by the fire chief.	Y	Y	Existing condition. One common FCC at the security desk. (Separate Appeal 18514)
§911.1.2 Separation. The fire command center shall be separated from the remainder of the building by not less than a 1-hour <i>fire barrier</i> constructed in accordance with Section 707 or <i>horizontal assembly</i> constructed in accordance with Section 711, or both.	N	N	Not Separated. (Separate Appeal 18514)
§911.1.3 Size. The room shall be a minimum of 200 square feet (19 m2) with a minimum dimension of 10 feet (3048 mm).	Y	Y	One common FCC at the security desk and the area exceeds 200 SF.
§911.1.4 Layout approval. A layout of the fire command center and all features required by this section to be contained therein	Y	Y	Existing condition
§ 911.1.5 Required features. The fire command center shall comply with NFPA 72 and shall contain the following features:			
§911.1.5.1 The emergency voice/alarm communication system control unit.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.2 The fire department communications system.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.3 Fire detection and alarm system annunciator.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.4 Annunciator unit visually indicating the location of the elevators and whether they are operational.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.5 Status indicators and controls for air distribution systems.	N	N	Not Available at FCC. Siemens BMS status panel available in Engineering Office, Tower floor 39.
§911.1.5.6. The fire-fighter's control panel required by §909.16 for smoke control systems installed in the building. Portland Amendment: §909.16 The smoke control panel for high-rise buildings shall include a visual depiction of the building showing typical floor plan(s) with locations of exit enclosures and elevator shafts. The panel shall also include section views of the building to show the extent of travel for each exit enclosure and elevator. Exit enclosures and elevator shafts shall be labeled on the plan section views to match the labeling used in the building itself.	N	N	An existing nonconforming system serves the entire Wells Fargo Center.
§911.1.5.7 Controls for unlocking <i>stairway</i> doors simultaneously.	N	N	No switch available at the FCC. Manual control available in Engineering Office, Tower floor 39.
§911.1.5.8 Sprinkler valve and waterflow detector display panels.	Y	Y	Common system serving the entire Wells Fargo Center. Annunciation through the

			EST-3 fire alarm panel and Fireworks display
§911.1.5.9 Emergency and standby power status indicators.	N	N	Not available at FCC except for run signal via EST-3 alpha-numeric display, but not on Fireworks Panel. Status is available in Engineering Office, Tower floor 39.
§911.1.5.10 A telephone for fire department use with controlled access to the public telephone system.	Y	Y	Red phone at security desk. Dial tone available.
§911.1.5.11 Fire pump status indicators.	N	N	Not provided at FCC but run indication via the EST-3 fire alarm system Fireworks display
§911.1.5.12 Schematic building plans indicating the typical floor plan and detailing the building core, <i>means of egress</i> , fire protection systems, fire-fighting equipment and fire department access and the location of <i>fire walls</i> , <i>fire barriers</i> , <i>fire partitions</i> , <i>smoke barriers</i> and smoke partitions.	N	N	Available at FACP in basement below security desk
§911.1.5.13 An <i>approved</i> Building Information Card.	N	N	Not available
§911.1.5.14 Work table.	N	N	No work table but alcove counter available
§911.1.5.15 Generator supervision devices, manual start and transfer features.	N	N	No features exist at the FCC but status is available in Engineering Office in the Tower Building on floor 39
§911.1.5.16. Public address system, where specifically required by other sections of this code.	Y	Y	Common system serving the entire Wells Fargo Center. Integral part of the EST-3 fire alarm panel
§911.1.5.17 Elevator fire recall switch in accordance with ASME A17.1.	Y	N	Recall switch provided at FCC for all tower elevators including parking elevators. Elevator recall switches for the Exchange Building are located on the first floor of that building only.
§911.1.5.18 Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.	Y	N	Three power selector switches are provided for the three elevator banks serving the Tower (parking, floors 1-21, and floors 22-39).
§911.1.5.19 <u>Portland Amendment</u> : On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm, and tank fill signals.	NA	NA	No on-site water tank.

3.2 FCC Features and Equipment

Additional information on FCC features and equipment are outlined below.

1. FCC Location and Access (§911.1.1)

FCC is combined with the security desk on the first floor of the Tower Building near the 4th Ave Entrance. This is an existing nonconforming condition.

2. Separation (§911.1.2)

The FCC is not separated from other areas of the building with fire rated construction per 911.1.2. This is an existing nonconforming condition.

3. Size (§911.1.3)

The security desk and surrounding area exceeds 200 sq. ft. but it is not a separate room. This is an existing nonconforming condition.

4. FCC Layout (§911.1.4)

The layout of the fire command center is an existing condition that is illustrated on the attached drawing(G651).

5. Voice Alarm/Communication System (§911.1.5.1)

The emergency voice/alarm and communications unit is an element of the ESC-3 fire alarm system. The system serves the entire center and includes prerecorded message providing instruction to evacuate alarmed areas and reassemble elsewhere, typically three stories below the affected area.

6. Fire Department Communication System (§911.1.5.2)

A fire department communication system that is integrated into the ESC-3 fire alarm panel is provided at the FCC. This system serves the entire Center including the stairs and elevators in both the tower and exchange building. Five fire fighter handsets are available for fire department use.

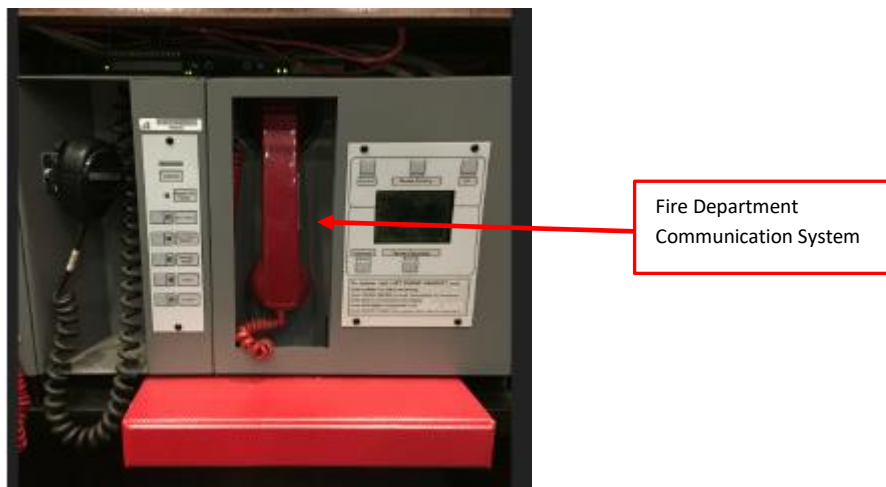


Figure 4 - Fire Fighter Communication System

7. Fire Detection and Alarm System Annunciation (§911.1.5.3)

The fire detection and alarm system is an addressable analog distributed panel system that function as a single system for the entire Center. Each building has a fire alarm riser with control panels on every third or fourth floor. Each control panel has a battery and is also connected to the building emergency power system. A remote annunciator for the fire alarm system is provided at the FCC. The Exchange Block buildings does not have a remote annunciator panel.

The FCC annunciator panel shows systems that are disabled and supervisory and trouble conditions for each floor. Alarm conditions are annunciated via a small alpha-numeric display that provides limited information. The adjacent Fireworks display and associated computer is listed as part of the ECT-3 fire alarm system. While it is not provided with a local UPS, it is powered by the building UPS system that is located on the Exchange buildings. The display provides a log of events, supervisory and trouble conditions and the ability to drill down for more specific alarm condition information. The default screen indicates the general zone of alarm (Upper Tower, Lower Tower, and Exchange Block). The next screen may be selected to illustrate the alarmed floor and the floor may be selected that provides a floor plan and illustrates all initiating devices and their status as indicated in Figures 5-7.

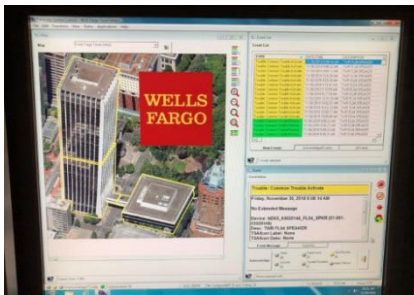


Figure 5 - Main (Default) Screen Showing Zones

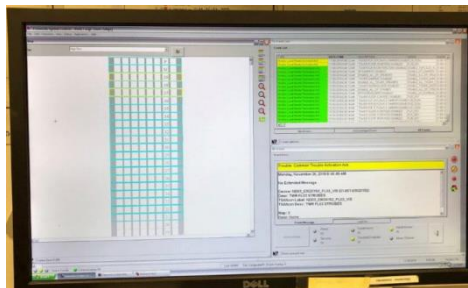


Figure 6 - Elevation View Indicating Alarmed Floor

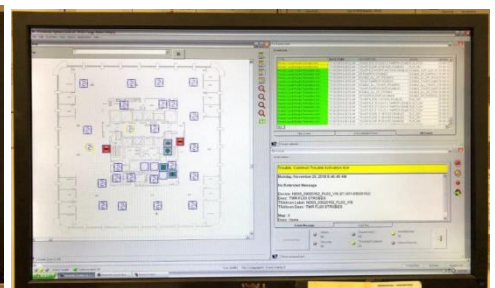


Figure 7 - Floor View Indicating Location and Type of Initiating Device

8. Annunciator unit visually indicating the location/operation of the elevators (§911.1.5.4)

An elevator status panel is provided at the FCC that indicates the operational status and location of all elevators in the building except for the Exchange Block freight elevator. This elevator is manually operated with no fire recall and a status indicator is not required. See item 21 for more information on fire recall. A non-functional older panel also exists next to the existing smoke control panel below the counter of the security desk. See Figure 8.



Figure 8 - Elevator Location and Operation Status Panel and non-functional legacy panel.

9. Status indicators and controls for air distribution systems (§911.1.5.5)

There is no status indication or control at the FCC for the building air distribution system. The Siemens BMS provides air distribution status via a display panel in Engineering Office on the 39th floor of the Tower. See Figure 9. The BMS is connected to two sources of power, normal building power and emergency power. The general sequence of operation for alarm activation is to close dampers to stop supply and recirculation of air on the fire floor, the floor above, and the floor below the fire floor. There is no smoke control using floor pressurization. Both the Tower and Exchange Block building are provided with tempered glass windows on each of the four faces of the building on every floor that may be broken out by the fire department for overhaul operations to ventilate the affected area.

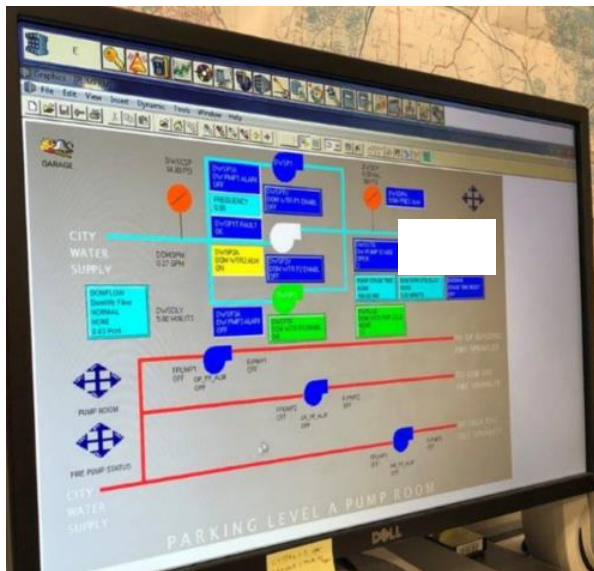


Figure 9 - Siemens BMS HVAC Status, Engineer's Office, Tower - Floor 39

10. Fire Fighter's Smoke Control Panel (§911.1.5.6)

The fire fighter's smoke control panel controls elevator and stair pressurization fans. There is no smoke control utilizing floor pressurization. The existing system for smoke control and annunciation at the FCC is associated with original construction and does not have all required provisions of §911.1.5.6 and §909.16. It is located below the counter of the security desk and difficult to access. The panel includes status lights and manual control for fans in both Tower and Exchange Block as outlined below in Table 2 and as illustrated in Figure 10. Functionality is tested periodically as part of the fire alarm test

The building features a Siemens Apogee - Insight Rev 3.15 building management system (BMS) which is UL 864 (UUKL) for smoke control and capable of providing a conforming fire fighter's smoke control panel for the Exchange Block building. The Siemens system is interconnected with the fire alarm control panel and integrated with other control systems.

The wiring to the smoke control panel is original and while power is reportedly derived from the BMS system and is not currently supervised. The lights associated with each switch may only indicate switch position rather than positive confirmation of airflow. The on-off-auto fan control, open-auto-close damper control, control priorities, confirmation of airflow and visual depictions of the building per 909.16 are not provided. Stair and elevator pressurization fans start automatically through a signal from the fire alarm system. Any alarm condition reportedly activates all fans. Override control included at the FCC reportedly have priority over the automatic control.

Table 2 – Existing Smoke Control Panel		
Fan Number	Fan Location	Description
E1	T40	Central Pressure Elevator Shaft
E2	T40	W Stair Exhaust
E3	T39M	E Stair Exhaust
E4	T40	W Stair Vestibule Pressure
E5	T39M	E Stair Vestibule pressure
E6	T23	Elevator Machine Room Exhaust
SF15	T16	E Stair Pressurization
SF14	T16	W Stair Pressurization
SF13	T1	E Stair Pressurization
SF12	T1	W Stair Pressurization
SF11	T4	E Stair Vestibule Pressurization
SF10	T4	W Stair Vestibule Pressurization
SF16	T28	W Stair Pressurization
SF17	T28	E Stair Pressurization
SF18	DP6 (Exchange Block)	W Stair Exhaust
SF19	DP6 (Exchange Block)	E Stair Exhaust
SF20	DP6 (Exchange Block)	W Stair Vestibule Pressurization
SF21	DP6 (Exchange Block)	E Stair Pressurization
SF18	DP2 (Exchange Block)	W Stair Pressurization
SF19	DP2 (Exchange Block)	E Stair Vestibule Pressurization
SF20	DP4 (Exchange Block)	W Stair Pressurization
SF21	DP4 (Exchange Block)	E Stair vestibule Pressurization

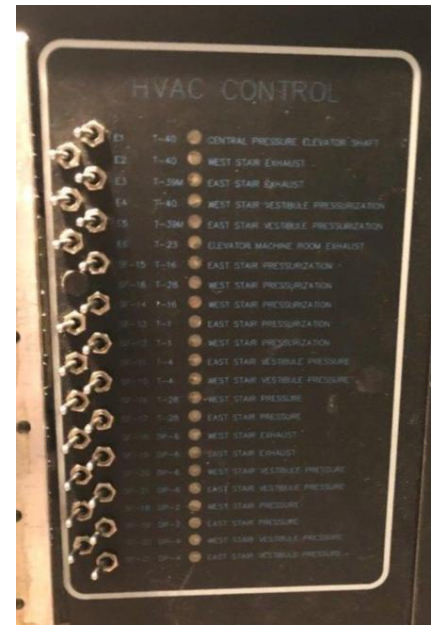


Figure 10 – Existing Fire Fighter's Smoke Control Panel

11. Controls for Unlocking Stair Doors (§911.1.5.7)

Stair doors unlock automatically upon any alarm condition and remain unlocked until the fire alarm system is reset. Stair door locks are controlled through Silent Knight systems (Figure 11) and are controlled directly by the fire alarm system. There is no manual control at the FCC but control exists in the Engineering Office on the 39th floor of the Tower.



Figure 11 - Silent Knight Panels (Typical)

12. Sprinkler Valve and Waterflow Detection Display Panels (§911.1.5.8)

Sprinkler valve and automatic detection display panels are available at the FCC through an EST-3 Annunciator (Figure 12) and the Fireworks display panel. Supervisory and trouble conditions are represented through general and floor specific indication on the remote annunciator panel's small alpha-numeric display. The Fireworks panel indicates waterflow similar to smoke and other initiating devices. Supervisor and trouble conditions are captured in the Fireworks event log (Figure 13).

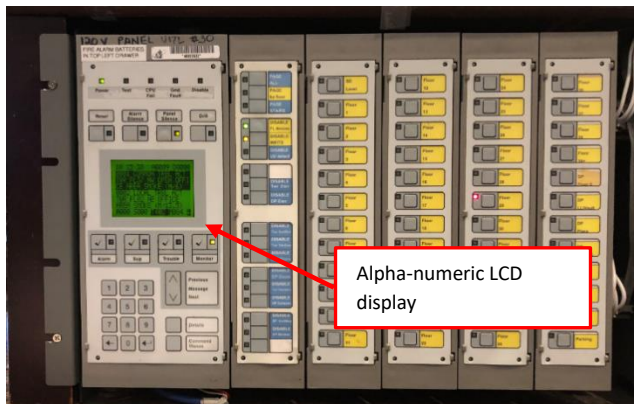


Figure 12 - Fire Alarm System Annunciator

TYPE	DATE/TIME	DESCRIPTION	DEVICE	ADDRESS
Monitor: Local Monitor Activation Ack	11/30/2018 6:06:12 AM	TOWER FLR 29 FLOWS & TAMPERS DISAB	FL29_FLOW	01-001-0
Monitor: Local Monitor Activation Ack	11/30/2018 6:06:12 AM	TOWER FLOOR 29 DEVICES DISABLED	FL29_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:12 AM	TOWER ELEVATOR FUNCTIONS DISABLED	DISABLE_TWR_ELEV_FL	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DP DAMPERS DISABLED	DISABLE_DP_DAMPERS	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DISABLE ALL DP SPEAKERS	DISABLE_ALL_DP_SPEAK	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	TOWER DAMPERS DISABLED	DISABLE_TOWER_DAMP	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DISABLE ALL TOWER SPEAKERS	DISABLE_ALL_TOWER_SPE	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	TOWER DOORHOLDERS DISABLED	DISABLE_TOWER_DOORH	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DISABLE ALL DP STRD	DISABLE_ALL_DP_STRD	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DP DOORHOLDERS DISABLED	DISABLE_DP_DOORHOLD	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	TOWER FLOOR 2 DEVICES DISABLED	FL02_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLR 35 FLOWS & TAMPERS DISAB	FL35_FLOW	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLR 02 FLOWS & TAMPERS DISAB	FL02_FLOW	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLR 31 FLOWS & TAMPERS DISAB	FL31_FLOW	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 21 DEVICES DISABLED	FL21_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 31 DEVICES DISABLED	FL31_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 35 DEVICES DISABLED	FL35_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 02 DEVICES DISABLED	FL02_DEV	01-001-0

Figure 13 - Fireworks Display Event Log

13. Emergency and Standby Power Status Indicators. (§911.1.5.9)

There are no power status indicators at the FCC. Three primary generators are located at Exchange Block level 6 and a smaller generator in Tower level 39 which serves life safety for the Tower (egress lighting and one elevator in each elevator bank).

14. Telephone for fire department use with controlled access to the public telephone system. (§911.1.5.10)

A dedicated phone with a dial top is present at the FCC (Figure 14 – red handset).



Figure 14 - Public Telephone

15. Fire Pump Status Indicators (§911.1.5.11)

The FCC does not feature a status indicator that would display the operational status for any of the building's three fire pumps. The fire pump controllers are monitored by the fire alarm system and if a pump were to start.

16. Schematic Building Plans (§911.1.5.12)

Building plans are available at the fire alarm control panel one level below the FCC.

17. Building Information Card (§911.1.5.13)

A building information card does not exist.

18. Work Table (§911.1.5.14)

There is no work table, but a flat surface is available in the space behind the security desk that was once used as a pay phone alcove (Figure 15).

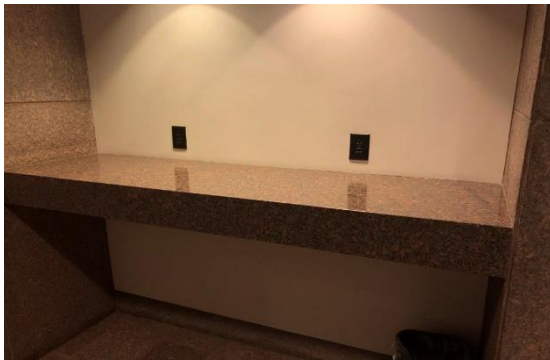


Figure 15 - Counter in old pay phone alcove near FCC

19. Generator Supervision Devices, Manual Start and Transfer Features (§911.1.5.15)

Generator supervision, manual start and transfer features do not exist at the FCC except for emergency power transfer for elevator. Generator status is available in Engineering Office, Tower floor 39.

20. Public Address System (§911.1.5.16)

The public address system is an integral part of the building fire alarm system with fire alarm speakers provided throughout the building. A control unit to select the entire building, a single floor or any number of floors. An associated microphone is provided at the security desk (see Figure 16) and a second microphone is provided in the fire alarm control unit in the closet of the B1 level below the FCC (Figure 17).

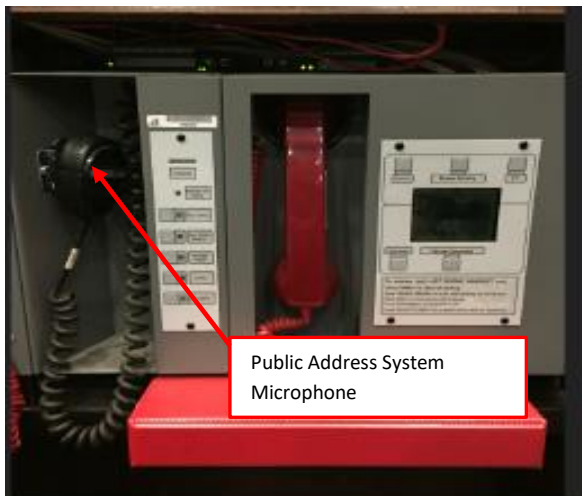


Figure 16 - FCC Public Address



Figure 17 Second Public Address Microphone at B1 Tower Level

21. Elevator Fire Recall Switch in Accordance with ASME A17.1 (§911.1.5.17)

Recall switches are provided at two separate panels at FCC for all tower elevators including parking (see Figures 18 and 19. Elevator recall switches for the Exchange Block are located on the first floor of that building only. The freight elevator in the Exchange Block building is a manual elevator and does not have fire recall but control to close the elevator door is provided at the FCC.

22. Elevator emergency or Standby Power Selector Switch(es), (§911.1.5.18)



Figure 18 Elevator Recall Panel at FCC (Panel 1)



Figure 19 - Elevator recall at FCC (Panel 2)

A control panel with selector switches for emergency power for the elevators is provided for fire department use at the FCC. (See Figure 20). This panel provides control for all Tower elevators. For the Exchange Block Building all elevators are connected to emergency power and sufficient power is available to power all elevator cars concurrently so selector switches are not provided.

23. On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm, and tank fill signals. (§911.1.5.19)



Figure 20- Elevator Emergency Power Selection Switch

There is no onsite fire protection water storage tank for this building.

4. CONCLUSIONS

The FCC provides many of the required features to support a renovation and expansion of the Exchange Block building. A summary of features that are not provided or do not conform at the FCC and recommended improvements, where applicable, are outlined below:

1. Separation (§911.1.2). The fire command center shall be separated from the remainder of the building by not less than a 1-hour fire barrier constructed in accordance with Section 707 or horizontal assembly constructed in accordance with Section 711, or both.

Proposed to remain as is with no separation. (Separate Appeal #18514).

2. Size (§911.1.3). The room shall be a minimum of 200 square feet (19 m²) with a minimum dimension of 10 feet (3048 mm).

The area where the FCC exists as part of the building security desk is not a room and is proposed to remain as is. (Separate Appeal #18514).

3. Fire Detection and Alarm System Annunciation (§911.1.5.3)

The fire alarm system is not currently monitored but is proposed to be monitored by an approved central station.

4. Status indicators and controls for air distribution systems (§911.1.5.5).

A Siemens BMS status panel available in Engineering Office, Tower floor 39. This interface allows building engineers to control the HVAC system as needed. A similar panel, providing status and control could be proposed for the FCC. However, a BMS panel in the FCC is not a specific requirement. Recommend this requirement be waived as it does not appear to provide significant value to fire operations for this building. If provided, the default screen selected, status indicators, and control should be reviewed and agreed to by the Portland Fire Department.

5. The fire-fighter's smoke control panel required by Section 909.16 for smoke control systems installed in the building. (§911.1.5.6).

The system proposed for the Exchange Block renovation will use the same system architecture with the fire alarm system, sending a signal to the BMS for the activation of the stair and elevator smoke control fans. The BMS is supported by an uninterruptable power supply (UPS) system and emergency power system that is located on the 6th floor of the Exchange Block. A new fire fighter's smoke control panel is being proposed by the design team to fully meet the requirements of the new code. It will include all annunciation, control and graphical information required by OSSC 9.11.1.5.6. Smoke control fans serving the Exchange Block in the current panel (as indicated in the table in 3.2 above) would be

removed and replaced with a fully conforming panel and indicated in the preliminary design illustrated in Figure 21. The preliminary response matrix is illustrated in Figure 22. The new panel will be located behind the security desk in the old pay phone alcove as indicated on Drawing G651. This location is accessible for emergency response personnel.

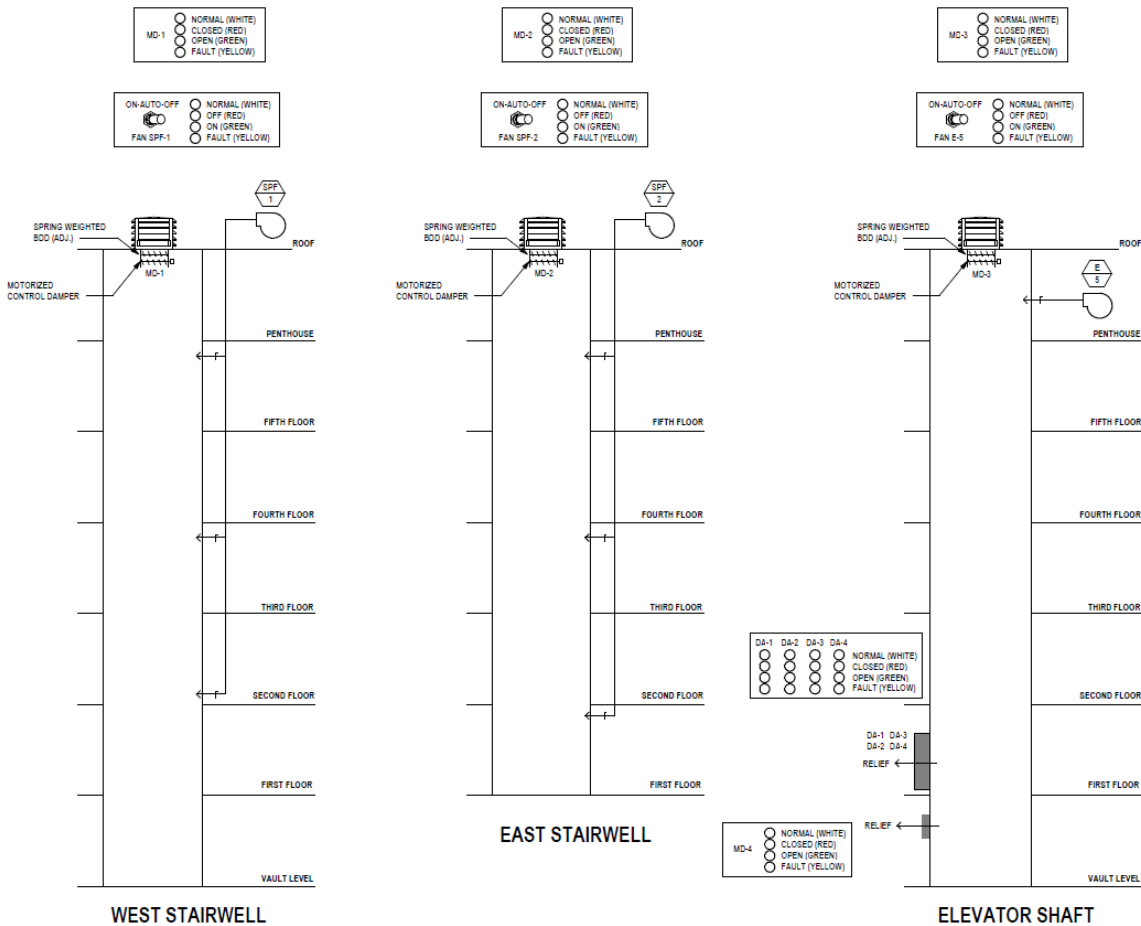


Figure 21 - New (proposed) Smoke Control Panel for the Exchange Building with visual depiction per §909.16

EQUIPMENT/DAMPER		DESCRIPTION	NORMAL OPERATION	FIRE EVENT	MONITORED	CONTROLLED	EMERGENCY POWER	FAIL SAFE POSITION
TYPE	ADDRESS							
SUPPLY FAN	SPF-1	STAIR PRESS. FAN	OFF	ON	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-1	STAIR PRESS. MOTORIZED DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN
SUPPLY FAN	SPF-2	STAIR PRESS. FAN	OFF	ON	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-2	STAIR PRESS. MOTORIZED DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN
SUPPLY FAN	E-5	ELEVATOR PRESS. FAN	OFF	ON	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-3	ELEV. PRESS. MOTORIZED DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN
DOOR ACTUATOR	DA-1	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
DOOR ACTUATOR	DA-2	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
DOOR ACTUATOR	DA-3	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
DOOR ACTUATOR	DA-4	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-4	VAULT LEVEL RELIEF DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN

Figure 22 - New (proposed) Smoke Control Matrix for the Exchange Block

While a fully conforming new panel is proposed for the Exchange Block, the existing smoke control panel serving the Tower building would then be in a different location. To mitigate this issue the old smoke control panel is proposed to be replaced with a new panel with the same (limited) functionality but better graphics to more clearly indicate areas served. The panel is proposed to be located in the pay phone alcove adjacent to the new smoke control panel for the Exchange Block building. Existing conductors, controls, and equipment serving smoke control systems in the Tower building would be reused but the control panel so it is easier to access and more intuitive to operate. Also, the new panel would be commissioned to confirm it operates as originally designed.

6. Controls for unlocking stairway doors simultaneously (§911.1.5.7).

A new switch is proposed to be added at the FCC to supplement the existing manual control available in Engineering Office, Tower floor 39.

7. Emergency and standby power status indicators (§911.1.5.9).

A status indication is not currently available at FCC except for run signal indication via EST-3 alpha-numeric display but not on the Fireworks panel. Status available in Engineering Office, Tower floor 39. The fire alarm annunciator at the FCC will be modified to include a status indicator for all required emergency and standby generators, one light for each generator. The indicator would indicate if the generator is in standby mode or operating.

8. Fire pump status indicators (§911.1.5.11)

Status is not provided at FCC but a run signal indication will appear via EST-3, on Fireworks. The fire alarm annunciator at the FCC will be modified to include a status indicator for all three fire pumps, one light for each fire pump. The indicator would indicate if the pump is operating.

9. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions. (§911.1.5.12).

The plans will be provided at a storage location in the alcove by the new smoke control panel.

10. An approved Building Information Card (BIC) (§911.1.5.13).

An approved BIC will be provided and stored and available for PFD at the FCC.

11. Work table (§911.1.5.14).

The existing security desk is proposed to serve as the work table.

12. Generator supervision devices, manual start and transfer features (§911.1.5.15).

No features exist at the FCC but status is available in Engineering Office, Tower floor 39. This code provision, if required by City, will be provided within three years of completion of the Exchange Block Renovation project.

13. Elevator fire recall switch in accordance with ASME A17.1 (§911.1.5.17).

Recall switch provided at FCC for all tower elevators including parking. Elevator recall switches for the Exchange Block are located on the first floor of that building only. This arrangement provides substantial compliance for the Exchange Block building. No change is proposed for this existing condition.

14. Portland Amendment: On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm, and tank fill signals (§911.1.5.19)

There is no on-site water tank and no change is being proposed.

5. FLOOR PLANS

Figure 23 below shows the location of the security desk, the payphone alcove, and the nearby east exterior door facing NE 4th Ave. Attached drawing G051 shows an overall plan and location of the security desk (Fire Command Center) and G651 shows the plan and elevations of the security desk with equipment locations.

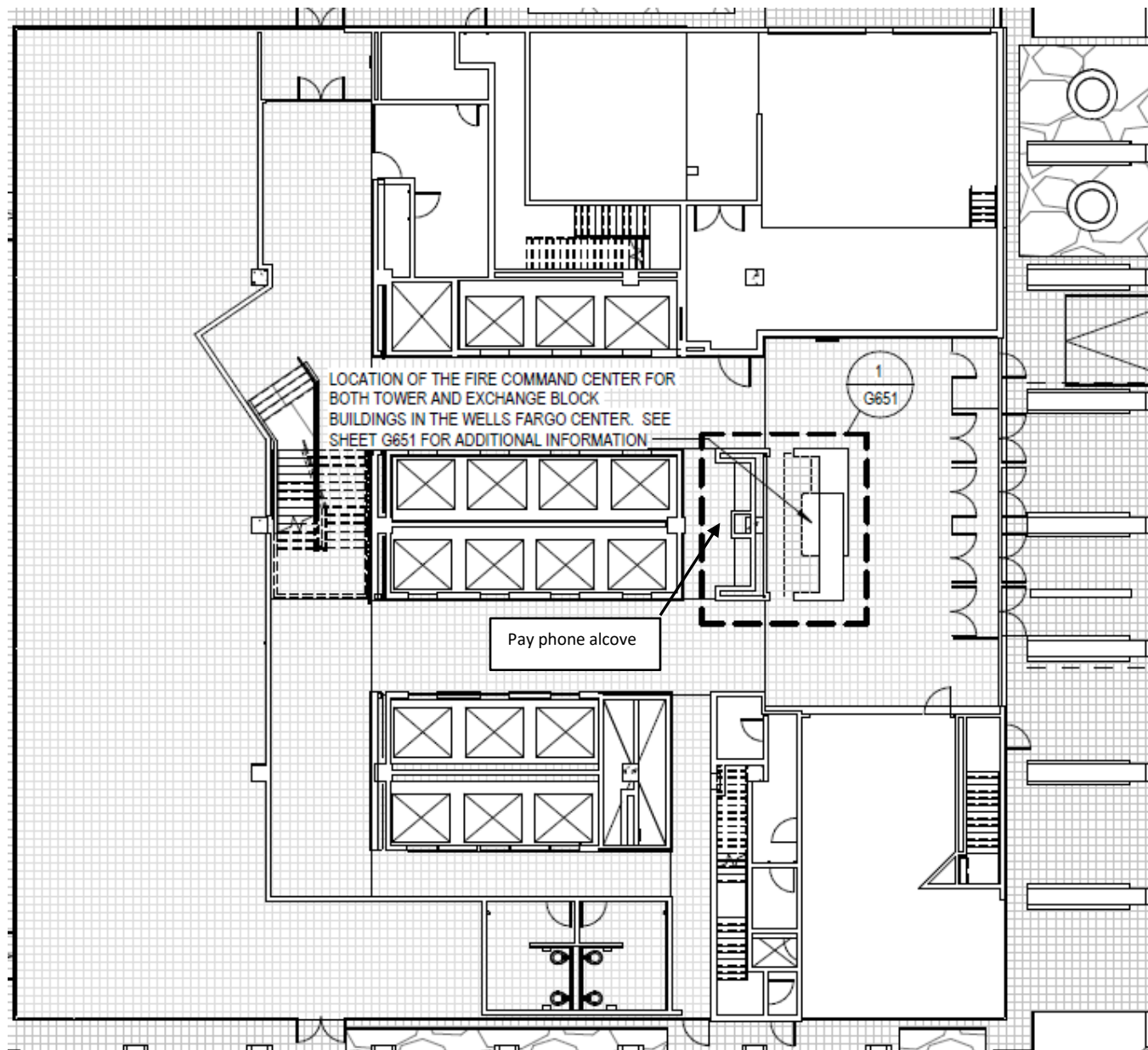


Figure 23 - First floor Plan Tower with Security Desk (FCC)

The information provided in this report is based upon filed observations during a site visit of November 30, 2018, interviews of the building engineer, consulting engineers, technicians familiar with the building, and the review of select record drawings. The information is believed to be accurate but confirmation of all of the facts was not possible within the scope of this evaluation.





- A. FLOOR PLAN KEYNOTES APPLY TO SHEETS A101-A108. ALL KEYNOTES MAY NOT OCCUR ON THIS SHEET AND DO NOT APPLY TO ANY OTHER SHEETS EXCEPT THOSE NOTED.
- B. SEE A103 FOR PARTITION ASSEMBLIES
- C. GRID 0'S ARE REFERENCE ONLY. CONTRACTOR TO SET CONTROL POINTS FOR LAYOUT
- D. REFERENCE SHEET A803 FOR DETAILS OF TRANSITIONS BETWEEN FLOORING MATERIALS
- E. WHERE FINISHES NOT CALLED OUT, USE ENLARGED FINISH PLAN FOR EXENTS
- F. FOR ADA COMPLIANCE REFER TO SHEETS G801 - G802
- G. ALL CLOUT TO MAINT. JUNCTION BOXES IN IT SPACES TO BE EMIT TO FACILITATE FUTURE REMODELS AND REVISIONS TO ELECTRICAL DESIGN.
- H. REPAIR (E) INTERIOR PARTITIONS AT LOCATIONS WHERE NEW ELEVATOR CONTROL PANELS ARE BEING INSTALLED OR EXISTING ONES REMOVED.



CODE
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Wells Fargo Exchange Block

Fire Command Center Assessment

John Heinen, SERA Architects

Property Address: 338 NW 5th Ave, Portland, OR 97209

Date: 12/11/2018

Table of Contents

1. PURPOSE	3
1.1 Purpose.....	3
1.2 Applicable Codes and Standards	3
1.3 Key Issues	3
2. BACKGROUND	4
2.1 Building Overview.....	4
2.3 Building Systems.....	5
3. FIRE COMMAND CENTER FEATURES	6
3.1 Summary of Features	6
3.2 FCC Features and Equipment.....	7
4. CONCLUSIONS	16
5. FLOOR PLANS.....	20

1. PURPOSE

1.1 Purpose

The project goal is to provide detailed information about the features of the Wells Fargo Center fire command center (FCC) to support a formal appeal to the City of Portland so that the permit for the Exchange Block renovation may be obtained.

1.2 Applicable Codes and Standards

- IBC 2014 Oregon Structural Specialty Code (OSSC), including the recently adopted Appendix N which references the International Fire Code.
- 2016 Portland Fire Code
- NFPA 72

1.3 Key Issues

The security desk located at the Wells Fargo Center building main lobby serves as the current FCC for the entire Wells Fargo Center. The lack of a dedicated fire rated room will be appealed to continue as a non-conforming existing condition per Appeal #18514. Existing FCC equipment and features systems are not well documented and additional information is being requested by the City of Portland for the permit application. This City may require some feature to be upgraded as a condition of approving the permit for the Exchange Block renovation.

2. BACKGROUND

2.1 Building Overview

The Wells Fargo Center is an existing high-rise building in Portland, OR that consists of two buildings on a common underground parking structure that includes three levels of parking. The Tower building is 39 stories while the exchange Block is six stories. It was originally constructed in the early 70's and many fire and life safety systems have been provided and upgraded over the life of the building. The six story Exchange Block building, also a high-rise building by definition, is being renovated and expanded at grade level. While the Center is one building, it has two addresses as follows: Tower -1300 SW 5th Ave, Portland OR 97201, and Exchange Block – 350 SW Jefferson, Portland, OR 97201.



Figure 1 - Wells Fargo Center, Exchange Block Building in Forefront

2.2 Fire Command Center

A fire command center (FCC) located on the ground floor of the 39 story Tower building serves the entire Wells Fargo Center. While the building features two separate towers (Tower and Exchange Block) it is a single building with a single FCC. The FCC includes many of the required features outlined in the Oregon Fire Code (OFC) §911. This report provides detailed information with respect to these features. The FCC is incorporated with the building's security desk.

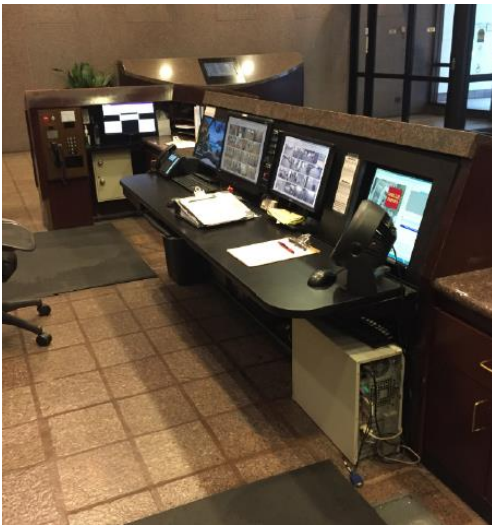


Figure 2 - FCC from Right

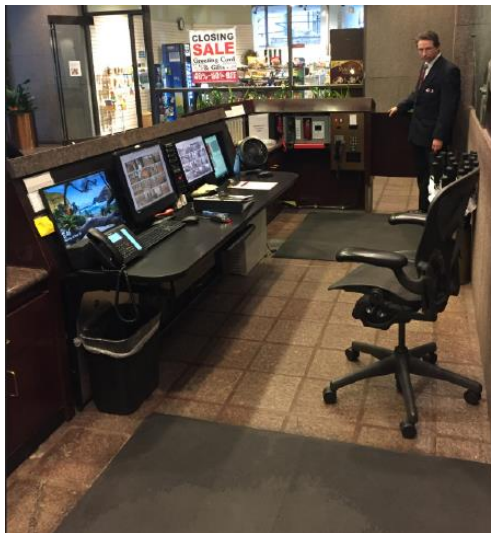


Figure 3 - FCC from left

2.3 Building Systems

The building is fully sprinkler protected and shares common fire protection, fire alarm, emergency power, uninterrupted power supply, fire department communication system, HVAC control system, fire-fighter's smoke control system, and other systems as outlined herein.

Most of the fire sprinkler systems are wet-pipe type but dry-pipe systems protect the parking garage area. Pre-action systems are provided in some sensitive areas. There are three fire pumps; two serve the tower and one fire pump serves the Exchange building.

A single addressable analog networked fire alarm panel serves the entire complex. The system is monitored at the constantly attended security desk, it is not monitored by a central station. This system includes automatic detection and notification devices (speakers and strobes), firefighter communication system, a voice alarm communication system, and control of elevators, HVAC, and stair door locking devices. It also monitors the fire pumps and emergency/standby power systems.

Four emergency generators providing emergency and standby power and an uninterruptable power system provide power to life safety systems. A repeater antenna is also provided for operational use to boost radio signal strength within the building.

The engineering office on the 39th floor also has some controls and annunciation that are redundant, and in some cases supplemental, to that of the FCC.

3. FIRE COMMAND CENTER FEATURES

3.1 Summary of Features

Table 1 summarizes existing features and equipment associated with the security desk at the Wells Fargo Center per OFC §911. Additional information is provided in the section that follows.

Table 1 – Fire Command Center (Security Desk) Features			
Code Citation	Exists		Notes
	Tower	Exchange	
§911.1.1 Location and access. The location and accessibility of the fire command center shall be <i>approved</i> by the fire chief.	Y	Y	Existing condition. One common FCC at the security desk. (Separate Appeal 18514)
§911.1.2 Separation. The fire command center shall be separated from the remainder of the building by not less than a 1-hour <i>fire barrier</i> constructed in accordance with Section 707 or <i>horizontal assembly</i> constructed in accordance with Section 711, or both.	N	N	Not Separated. (Separate Appeal 18514)
§911.1.3 Size. The room shall be a minimum of 200 square feet (19 m2) with a minimum dimension of 10 feet (3048 mm).	Y	Y	One common FCC at the security desk and the area exceeds 200 SF.
§911.1.4 Layout approval. A layout of the fire command center and all features required by this section to be contained therein	Y	Y	Existing condition
§ 911.1.5 Required features. The fire command center shall comply with NFPA 72 and shall contain the following features:			
§911.1.5.1 The emergency voice/alarm communication system control unit.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.2 The fire department communications system.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.3 Fire detection and alarm system annunciator.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.4 Annunciator unit visually indicating the location of the elevators and whether they are operational.	Y	Y	Common system serving the entire Wells Fargo Center
§911.1.5.5 Status indicators and controls for air distribution systems.	N	N	Not Available at FCC. Siemens BMS status panel available in Engineering Office, Tower floor 39.
§911.1.5.6. The fire-fighter's control panel required by §909.16 for smoke control systems installed in the building. Portland Amendment: §909.16 The smoke control panel for high-rise buildings shall include a visual depiction of the building showing typical floor plan(s) with locations of exit enclosures and elevator shafts. The panel shall also include section views of the building to show the extent of travel for each exit enclosure and elevator. Exit enclosures and elevator shafts shall be labeled on the plan section views to match the labeling used in the building itself.	N	N	An existing nonconforming system serves the entire Wells Fargo Center.
§911.1.5.7 Controls for unlocking <i>stairway</i> doors simultaneously.	N	N	No switch available at the FCC. Manual control available in Engineering Office, Tower floor 39.
§911.1.5.8 Sprinkler valve and waterflow detector display panels.	Y	Y	Common system serving the entire Wells Fargo Center. Annunciation through the

			EST-3 fire alarm panel and Fireworks display
§911.1.5.9 Emergency and standby power status indicators.	N	N	Not available at FCC except for run signal via EST-3 alpha-numeric display, but not on Fireworks Panel. Status is available in Engineering Office, Tower floor 39.
§911.1.5.10 A telephone for fire department use with controlled access to the public telephone system.	Y	Y	Red phone at security desk. Dial tone available.
§911.1.5.11 Fire pump status indicators.	N	N	Not provided at FCC but run indication via the EST-3 fire alarm system Fireworks display
§911.1.5.12 Schematic building plans indicating the typical floor plan and detailing the building core, <i>means of egress</i> , fire protection systems, fire-fighting equipment and fire department access and the location of <i>fire walls</i> , <i>fire barriers</i> , <i>fire partitions</i> , <i>smoke barriers</i> and smoke partitions.	N	N	Available at FACP in basement below security desk
§911.1.5.13 An <i>approved</i> Building Information Card.	N	N	Not available
§911.1.5.14 Work table.	N	N	No work table but alcove counter available
§911.1.5.15 Generator supervision devices, manual start and transfer features.	N	N	No features exist at the FCC but status is available in Engineering Office in the Tower Building on floor 39
§911.1.5.16. Public address system, where specifically required by other sections of this code.	Y	Y	Common system serving the entire Wells Fargo Center. Integral part of the EST-3 fire alarm panel
§911.1.5.17 Elevator fire recall switch in accordance with ASME A17.1.	Y	N	Recall switch provided at FCC for all tower elevators including parking elevators. Elevator recall switches for the Exchange Building are located on the first floor of that building only.
§911.1.5.18 Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.	Y	N	Three power selector switches are provided for the three elevator banks serving the Tower (parking, floors 1-21, and floors 22-39).
§911.1.5.19 <u>Portland Amendment</u> : On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm, and tank fill signals.	NA	NA	No on-site water tank.

3.2 FCC Features and Equipment

Additional information on FCC features and equipment are outlined below.

1. FCC Location and Access (§911.1.1)

FCC is combined with the security desk on the first floor of the Tower Building near the 4th Ave Entrance. This is an existing nonconforming condition.

2. Separation (§911.1.2)

The FCC is not separated from other areas of the building with fire rated construction per 911.1.2. This is an existing nonconforming condition.

3. Size (§911.1.3)

The security desk and surrounding area exceeds 200 sq. ft. but it is not a separate room. This is an existing nonconforming condition.

4. FCC Layout (§911.1.4)

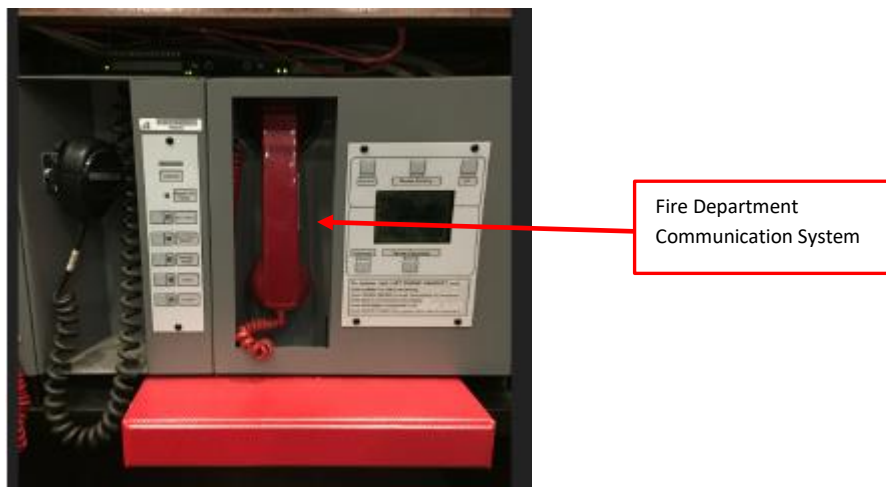
The layout of the fire command center is an existing condition that is illustrated on the attached drawing(G651).

5. Voice Alarm/Communication System (§911.1.5.1)

The emergency voice/alarm and communications unit is an element of the ESC-3 fire alarm system. The system serves the entire center and includes prerecorded message providing instruction to evacuate alarmed areas and reassemble elsewhere, typically three stories below the affected area.

6. Fire Department Communication System (§911.1.5.2)

A fire department communication system that is integrated into the ESC-3 fire alarm panel is provided at the FCC. This system serves the entire Center including the stairs and elevators in both the tower and exchange building. Five fire fighter handsets are available for fire department use.



Fire Department
Communication System

Figure 4 - Fire Fighter Communication System

7. Fire Detection and Alarm System Annunciation (§911.1.5.3)

The fire detection and alarm system is an addressable analog distributed panel system that function as a single system for the entire Center. Each building has a fire alarm riser with control panels on every third or fourth floor. Each control panel has a battery and is also connected to the building emergency power system. A remote annunciator for the fire alarm system is provided at the FCC. The Exchange Block buildings does not have a remote annunciator panel.

The FCC annunciator panel shows systems that are disabled and supervisory and trouble conditions for each floor. Alarm conditions are annunciated via a small alpha-numeric display that provides limited information. The adjacent Fireworks display and associated computer is listed as part of the ECT-3 fire alarm system. While it is not provided with a local UPS, it is powered by the building UPS system that is located on the Exchange buildings. The display provides a log of events, supervisory and trouble conditions and the ability to drill down for more specific alarm condition information. The default screen indicates the general zone of alarm (Upper Tower, Lower Tower, and Exchange Block). The next screen may be selected to illustrate the alarmed floor and the floor may be selected that provides a floor plan and illustrates all initiating devices and their status as indicated in Figures 5-7.

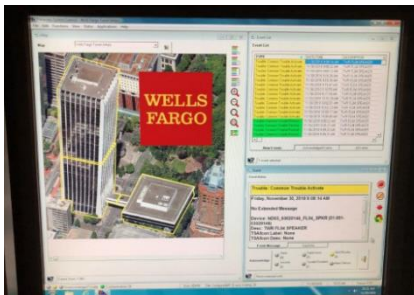


Figure 5 - Main (Default) Screen Showing Zones

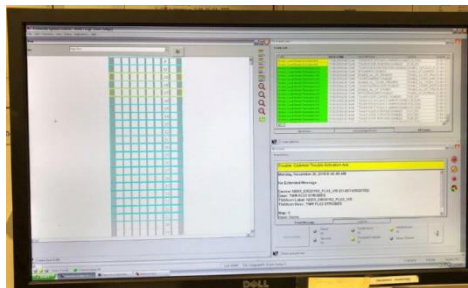


Figure 6 - Elevation View Indicating Alarmed Floor



Figure 7 - Floor View Indicating Location and Type of Initiating Device

8. Annunciator unit visually indicating the location/operation of the elevators (§911.1.5.4)

An elevator status panel is provided at the FCC that indicates the operational status and location of all elevators in the building except for the Exchange Block freight elevator. This elevator is manually operated with no fire recall and a status indicator is not required. See item 21 for more information on fire recall. A non-functional older panel also exists next to the existing smoke control panel below the counter of the security desk. See Figure 8.



Figure 8 - Elevator Location and Operation Status Panel and non-functional legacy panel.

9. Status indicators and controls for air distribution systems (§911.1.5.5)

There is no status indication or control at the FCC for the building air distribution system. The Siemens BMS provides air distribution status via a display panel in Engineering Office on the 39th floor of the Tower. See Figure 9. The BMS is connected to two sources of power, normal building power and emergency power. The general sequence of operation for alarm activation is to close dampers to stop supply and recirculation of air on the fire floor, the floor above, and the floor below the fire floor. There is no smoke control using floor pressurization. Both the Tower and Exchange Block building are provided with tempered glass windows on each of the four faces of the building on every floor that may be broken out by the fire department for overhaul operations to ventilate the affected area.

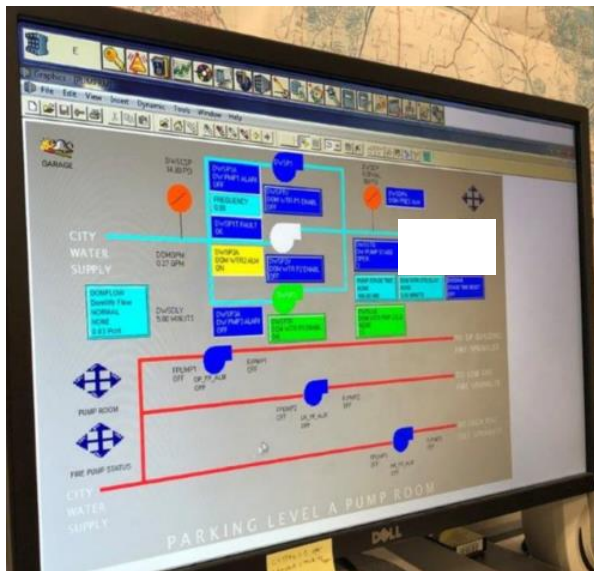


Figure 9 - Siemens BMS HVAC Status, Engineer's Office, Tower - Floor 39

10. Fire Fighter's Smoke Control Panel (§911.1.5.6)

The fire fighter's smoke control panel controls elevator and stair pressurization fans. There is no smoke control utilizing floor pressurization. The existing system for smoke control and annunciation at the FCC is associated with original construction and does not have all required provisions of §911.1.5.6 and §909.16. It is located below the counter of the security desk and difficult to access. The panel includes status lights and manual control for fans in both Tower and Exchange Block as outlined below in Table 2 and as illustrated in Figure 10. Functionality is tested periodically as part of the fire alarm test

The building features a Siemens Apogee - Insight Rev 3.15 building management system (BMS) which is UL 864 (UUKL) for smoke control and capable of providing a conforming fire fighter's smoke control panel for the Exchange Block building. The Siemens system is interconnected with the fire alarm control panel and integrated with other control systems.

The wiring to the smoke control panel is original and while power is reportedly derived from the BMS system and is not currently supervised. The lights associated with each switch may only indicate switch position rather than positive confirmation of airflow. The on-off-auto fan control, open-auto-close damper control, control priorities, confirmation of airflow and visual depictions of the building per 909.16 are not provided. Stair and elevator pressurization fans start automatically through a signal from the fire alarm system. Any alarm condition reportedly activates all fans. Override control included at the FCC reportedly have priority over the automatic control.

Table 2 – Existing Smoke Control Panel		
Fan Number	Fan Location	Description
E1	T40	Central Pressure Elevator Shaft
E2	T40	W Stair Exhaust
E3	T39M	E Stair Exhaust
E4	T40	W Stair Vestibule Pressure
E5	T39M	E Stair Vestibule pressure
E6	T23	Elevator Machine Room Exhaust
SF15	T16	E Stair Pressurization
SF14	T16	W Stair Pressurization
SF13	T1	E Stair Pressurization
SF12	T1	W Stair Pressurization
SF11	T4	E Stair Vestibule Pressurization
SF10	T4	W Stair Vestibule Pressurization
SF16	T28	W Stair Pressurization
SF17	T28	E Stair Pressurization
SF18	DP6 (Exchange Block)	W Stair Exhaust
SF19	DP6 (Exchange Block)	E Stair Exhaust
SF20	DP6 (Exchange Block)	W Stair Vestibule Pressurization
SF21	DP6 (Exchange Block)	E Stair Pressurization
SF18	DP2 (Exchange Block)	W Stair Pressurization
SF19	DP2 (Exchange Block)	E Stair Vestibule Pressurization
SF20	DP4 (Exchange Block)	W Stair Pressurization
SF21	DP4 (Exchange Block)	E Stair vestibule Pressurization

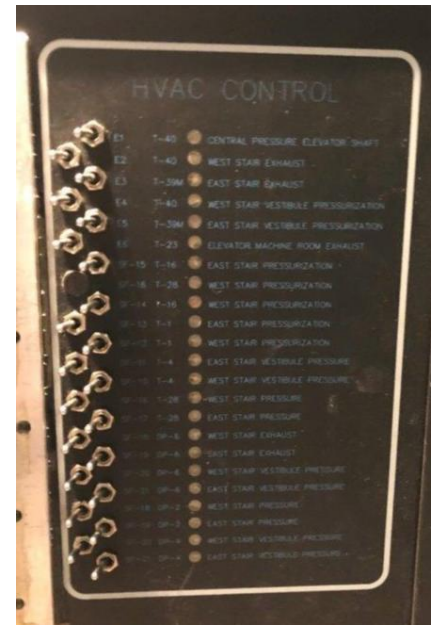


Figure 10 – Existing Fire Fighter's Smoke Control Panel

11. Controls for Unlocking Stair Doors (§911.1.5.7)

Stair doors unlock automatically upon any alarm condition and remain unlocked until the fire alarm system is reset. Stair door locks are controlled through Silent Knight systems (Figure 11) and are controlled directly by the fire alarm system. There is no manual control at the FCC but control exists in the Engineering Office on the 39th floor of the Tower.



Figure 11 - Silent Knight Panels (Typical)

12. Sprinkler Valve and Waterflow Detection Display Panels (§911.1.5.8)

Sprinkler valve and automatic detection display panels are available at the FCC through an EST-3 Annunciator (Figure 12) and the Fireworks display panel. Supervisory and trouble conditions are represented through general and floor specific indication on the remote annunciator panel's small alpha-numeric display. The Fireworks panel indicates waterflow similar to smoke and other initiating devices. Supervisor and trouble conditions are captured in the Fireworks event log (Figure 13).

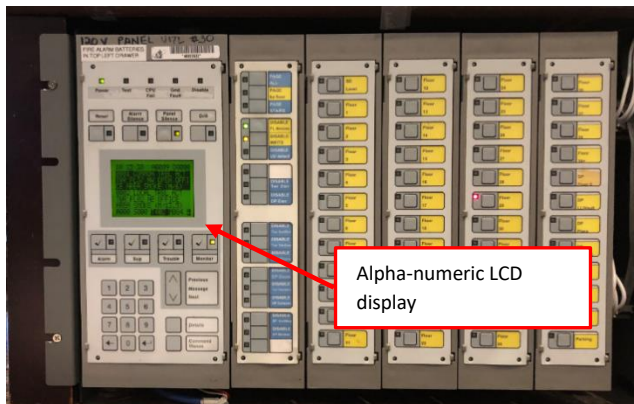


Figure 12 - Fire Alarm System Annunciator

TYPE	DATE/TIME	DESCRIPTION	DEVICE	ADDRESS
Monitor: Local Monitor Activation Ack	11/30/2018 6:06:12 AM	TOWER FLR 29 FLOWS & TAMPERS DISAB	FL29_FLOW	01-001-0
Monitor: Local Monitor Activation Ack	11/30/2018 6:06:12 AM	TOWER FLOOR 29 DEVICES DISABLED	FL29_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:12 AM	TOWER ELEVATOR FUNCTIONS DISABLED	DISABLE_TWR_ELEV_FL	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DP DAMPERS DISABLED	DISABLE_DP_DAMPERS	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DISABLE ALL DP SPEAKERS	DISABLE_ALL_DP_SPEAK	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	TOWER DAMPERS DISABLED	DISABLE_TOWER_DAMP	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DISABLE ALL TOWER SPEAKERS	DISABLE_ALL_TOWER_SPE	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	TOWER DOORHOLDERS DISABLED	DISABLE_TOWER_DOORH	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DISABLE ALL DP STRD	DISABLE_ALL_DP_STRD	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	DP DOORHOLDERS DISABLED	DISABLE_DP_DOORHOL	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:13 AM	TOWER FLOOR 2 DEVICES DISABLED	FL02_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLR 35 FLOWS & TAMPERS DISAB	FL35_FLOW	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLR 02 FLOWS & TAMPERS DISAB	FL02_FLOW	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLR 31 FLOWS & TAMPERS DISAB	FL31_FLOW	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 21 DEVICES DISABLED	FL21_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 31 DEVICES DISABLED	FL31_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 35 DEVICES DISABLED	FL35_DEV	01-001-0
Monitor: Local Monitor Restoration Ack	11/30/2018 6:06:14 AM	TOWER FLOOR 02 DEVICES DISABLED	FL02_DEV	01-001-0

Figure 13 - Fireworks Display Event Log

13. Emergency and Standby Power Status Indicators. (§911.1.5.9)

There are no power status indicators at the FCC. Three primary generators are located at Exchange Block level 6 and a smaller generator in Tower level 39 which serves life safety for the Tower (egress lighting and one elevator in each elevator bank).

14. Telephone for fire department use with controlled access to the public telephone system. (§911.1.5.10)

A dedicated phone with a dial top is present at the FCC (Figure 14 – red handset).



Figure 14 - Public Telephone

15. Fire Pump Status Indicators (§911.1.5.11)

The FCC does not feature a status indicator that would display the operational status for any of the building's three fire pumps. The fire pump controllers are monitored by the fire alarm system and if a pump were to start.

16. Schematic Building Plans (§911.1.5.12)

Building plans are available at the fire alarm control panel one level below the FCC.

17. Building Information Card (§911.1.5.13)

A building information card does not exist.

18. Work Table (§911.1.5.14)

There is no work table, but a flat surface is available in the space behind the security desk that was once used as a pay phone alcove (Figure 15).

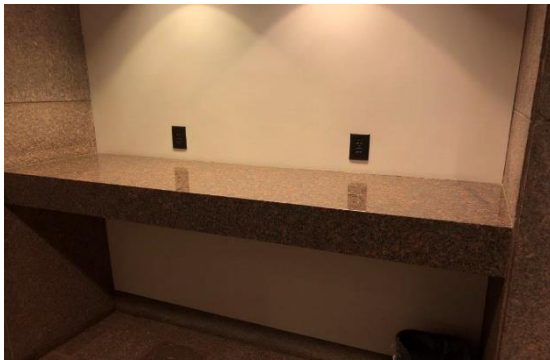


Figure 15 - Counter in old pay phone alcove near FCC

19. Generator Supervision Devices, Manual Start and Transfer Features (§911.1.5.15)

Generator supervision, manual start and transfer features do not exist at the FCC except for emergency power transfer for elevator. Generator status is available in Engineering Office, Tower floor 39.

20. Public Address System (§911.1.5.16)

The public address system is an integral part of the building fire alarm system with fire alarm speakers provided throughout the building. A control unit to select the entire building, a single floor or any number of floors. An associated microphone is provided at the security desk (see Figure 16) and a second microphone is provided in the fire alarm control unit in the closet of the B1 level below the FCC (Figure 17).

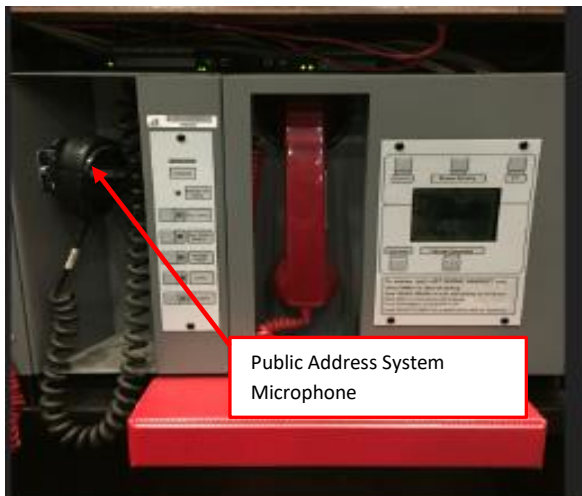


Figure 16 - FCC Public Address



Figure 17 Second Public Address Microphone at B1 Tower Level

21. Elevator Fire Recall Switch in Accordance with ASME A17.1 (§911.1.5.17)

Recall switches are provided at two separate panels at FCC for all tower elevators including parking (see Figures 18 and 19. Elevator recall switches for the Exchange Block are located on the first floor of that building only. The freight elevator in the Exchange Block building is a manual elevator and does not have fire recall but control to close the elevator door is provided at the FCC.

22. Elevator emergency or Standby Power Selector Switch(es), (§911.1.5.18)



Figure 18 Elevator Recall Panel at FCC (Panel 1)



Figure 19 - Elevator recall at FCC (Panel 2)

A control panel with selector switches for emergency power for the elevators is provided for fire department use at the FCC. (See Figure 20). This panel provides control for all Tower elevators. For the Exchange Block Building all elevators are connected to emergency power and sufficient power is available to power all elevator cars concurrently so selector switches are not provided.

23. On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm, and tank fill signals. (§911.1.5.19)



Figure 20- Elevator Emergency Power Selection Switch

There is no onsite fire protection water storage tank for this building.

4. CONCLUSIONS

The FCC provides many of the required features to support a renovation and expansion of the Exchange Block building. A summary of features that are not provided or do not conform at the FCC and recommended improvements, where applicable, are outlined below:

1. Separation (§911.1.2). The fire command center shall be separated from the remainder of the building by not less than a 1-hour fire barrier constructed in accordance with Section 707 or horizontal assembly constructed in accordance with Section 711, or both.

Proposed to remain as is with no separation. (Separate Appeal #18514).

2. Size (§911.1.3). The room shall be a minimum of 200 square feet (19 m²) with a minimum dimension of 10 feet (3048 mm).

The area where the FCC exists as part of the building security desk is not a room and is proposed to remain as is. (Separate Appeal #18514).

3. Fire Detection and Alarm System Annunciation (§911.1.5.3)

The fire alarm system is not currently monitored but is proposed to be monitored by an approved central station.

4. Status indicators and controls for air distribution systems (§911.1.5.5).

A Siemens BMS status panel available in Engineering Office, Tower floor 39. This interface allows building engineers to control the HVAC system as needed. A similar panel, providing status and control could be proposed for the FCC. However, a BMS panel in the FCC is not a specific requirement. Recommend this requirement be waived as it does not appear to provide significant value to fire operations for this building. If provided, the default screen selected, status indicators, and control should be reviewed and agreed to by the Portland Fire Department.

5. The fire-fighter's smoke control panel required by Section 909.16 for smoke control systems installed in the building. (§911.1.5.6).

The system proposed for the Exchange Block renovation will use the same system architecture with the fire alarm system, sending a signal to the BMS for the activation of the stair and elevator smoke control fans. The BMS is supported by an uninterruptable power supply (UPS) system and emergency power system that is located on the 6th floor of the Exchange Block. A new fire fighter's smoke control panel is being proposed by the design team to fully meet the requirements of the new code. It will include all annunciation, control and graphical information required by OSSC 9.11.1.5.6. Smoke control fans serving the Exchange Block in the current panel (as indicated in the table in 3.2 above) would be

removed and replaced with a fully conforming panel and indicated in the preliminary design illustrated in Figure 21. The preliminary response matrix is illustrated in Figure 22. The new panel will be located behind the security desk in the old pay phone alcove as indicated on Drawing G651. This location is accessible for emergency response personnel.

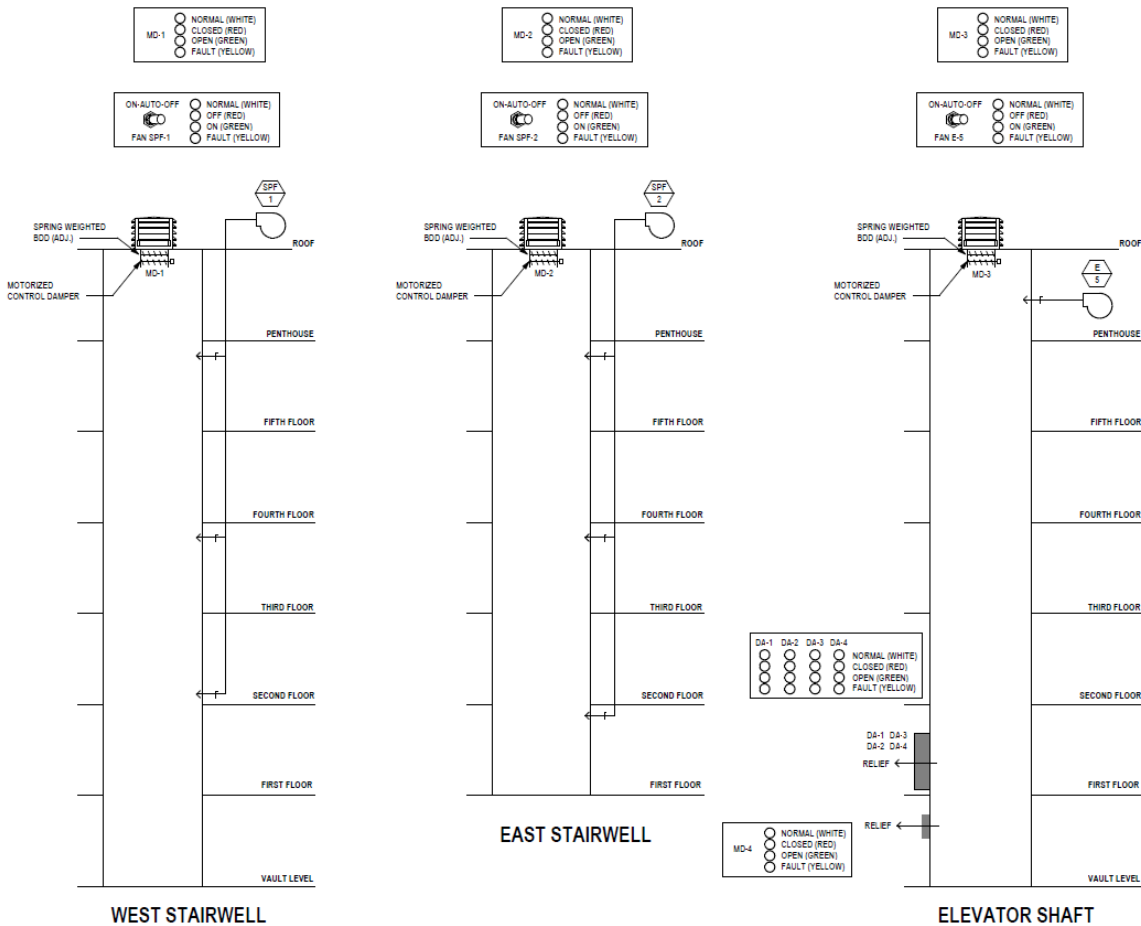


Figure 21 - New (proposed) Smoke Control Panel for the Exchange Building with visual depiction per §909.16

EQUIPMENT/DAMPER		DESCRIPTION	NORMAL OPERATION	FIRE EVENT	MONITORED	CONTROLLED	EMERGENCY POWER	FAIL SAFE POSITION
TYPE	ADDRESS							
SUPPLY FAN	SPF-1	STAIR PRESS. FAN	OFF	ON	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-1	STAIR PRESS. MOTORIZED DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN
SUPPLY FAN	SPF-2	STAIR PRESS. FAN	OFF	ON	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-2	STAIR PRESS. MOTORIZED DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN
SUPPLY FAN	E-5	ELEVATOR PRESS. FAN	OFF	ON	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-3	ELEV. PRESS. MOTORIZED DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN
DOOR ACTUATOR	DA-1	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
DOOR ACTUATOR	DA-2	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
DOOR ACTUATOR	DA-3	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
DOOR ACTUATOR	DA-4	MOTORIZED DOOR ACTUATOR	CLOSED	OPEN	YES	YES	YES	N/A
MOTORIZED DAMPER	MD-4	VAULT LEVEL RELIEF DAMPER	CLOSED	OPEN	YES	NO	YES	OPEN

Figure 22 - New (proposed) Smoke Control Matrix for the Exchange Block

While a fully conforming new panel is proposed for the Exchange Block, the existing smoke control panel serving the Tower building would then be in a different location. To mitigate this issue the old smoke control panel is proposed to be replaced with a new panel with the same (limited) functionality but better graphics to more clearly indicate areas served. The panel is proposed to be located in the pay phone alcove adjacent to the new smoke control panel for the Exchange Block building. Existing conductors, controls, and equipment serving smoke control systems in the Tower building would be reused but the control panel so it is easier to access and more intuitive to operate. Also, the new panel would be commissioned to confirm it operates as originally designed.

6. Controls for unlocking stairway doors simultaneously (§911.1.5.7).

A new switch is proposed to be added at the FCC to supplement the existing manual control available in Engineering Office, Tower floor 39.

7. Emergency and standby power status indicators (§911.1.5.9).

A status indication is not currently available at FCC except for run signal indication via EST-3 alpha-numeric display but not on the Fireworks panel. Status available in Engineering Office, Tower floor 39. The fire alarm annunciator at the FCC will be modified to include a status indicator for all required emergency and standby generators, one light for each generator. The indicator would indicate if the generator is in standby mode or operating.

8. Fire pump status indicators (§911.1.5.11)

Status is not provided at FCC but a run signal indication will appear via EST-3, on Fireworks. The fire alarm annunciator at the FCC will be modified to include a status indicator for all three fire pumps, one light for each fire pump. The indicator would indicate if the pump is operating.

9. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access and the location of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions. (§911.1.5.12).

The plans will be provided at a storage location in the alcove by the new smoke control panel.

10. An approved Building Information Card (BIC) (§911.1.5.13).

An approved BIC will be provided and stored and available for PFD at the FCC.

11. Work table (§911.1.5.14).

The existing security desk is proposed to serve as the work table.

12. Generator supervision devices, manual start and transfer features (§911.1.5.15).

No features exist at the FCC but status is available in Engineering Office, Tower floor 39. This code provision, if required by City, will be provided within three years of completion of the Exchange Block Renovation project.

13. Elevator fire recall switch in accordance with ASME A17.1 (§911.1.5.17).

Recall switch provided at FCC for all tower elevators including parking. Elevator recall switches for the Exchange Block are located on the first floor of that building only. This arrangement provides substantial compliance for the Exchange Block building. No change is proposed for this existing condition.

14. Portland Amendment: On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm, and tank fill signals (§911.1.5.19)

There is no on-site water tank and no change is being proposed.

5. FLOOR PLANS

Figure 23 below shows the location of the security desk, the payphone alcove, and the nearby east exterior door facing NE 4th Ave. Attached drawing G051 shows an overall plan and location of the security desk (Fire Command Center) and G651 shows the plan and elevations of the security desk with equipment locations.

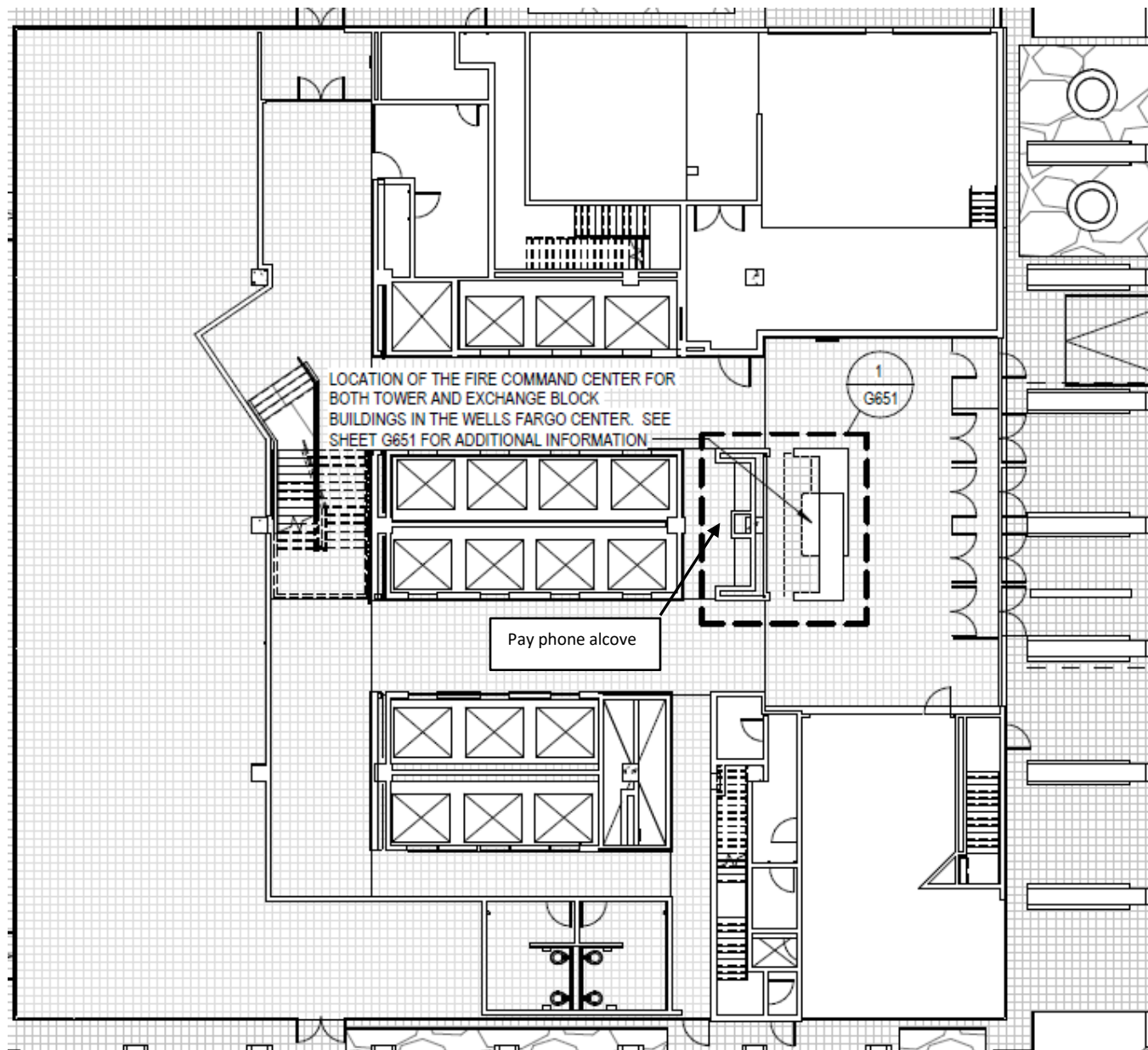


Figure 23 - First floor Plan Tower with Security Desk (FCC)

The information provided in this report is based upon filed observations during a site visit of November 30, 2018, interviews of the building engineer, consulting engineers, technicians familiar with the building, and the review of select record drawings. The information is believed to be accurate but confirmation of all of the facts was not possible within the scope of this evaluation.





- A. FLOOR PLAN KEYNOTES APPLY TO SHEETS A101-A108. ALL KEYNOTES MAY NOT OCCUR ON THIS SHEET AND DO NOT APPLY TO ANY OTHER SHEETS EXCEPT THOSE NOTED.
- B. SEE A103 FOR PARTITION ASSEMBLIES
- C. GRID 0'S ARE REFERENCE ONLY. CONTRACTOR TO SET CONTROL POINTS FOR LAYOUT
- D. REFERENCE SHEET A803 FOR DETAILS OF TRANSITIONS BETWEEN FLOORING MATERIALS
- E. WHERE FINISHES NOT CALLED OUT, USE ENLARGED FINISH PLAN FOR EXENTS
- F. FOR ADA COMPLIANCE REFER TO SHEETS G801 - G802
- G. ALL CLOUT TO MAINT. JUNCTION BOXES IN IT SPACES TO BE EMIT TO FACILITATE FUTURE REMODELS AND REVISIONS TO ELECTRICAL DESIGN.
- H. REPAIR (E) INTERIOR PARTITIONS AT LOCATIONS WHERE NEW ELEVATOR CONTROL PANELS ARE BEING INSTALLED OR EXISTING ONES REMOVED.