



**City of Seattle
Department of Construction and
Inspections**

**HIGH-RISE PREDESIGN CONFERENCE
Date: [July 13, 2020]**

| PROJECT INFORMATION | | APPLICANT INFORMATION | |
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| Project Name: Saratoga Western and Cedar | | Contact Person: Hank Robson | |
| Project Address: 2616 Western Ave | | Contact Address: Saratoga Capital 485 Alberto Way #200 Los Gatos, CA 95032 | |
| Construction Application/Permit: # 6788521-CN | | Contact Email: HRobson@scisj.net | |
| MUP Project: # 30304374 | | Contact Phone & Fax: (408)316-3137 | |
| Conference Attendees | | | |
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PROVIDE BRIEF DESCRIPTION OF PROJECT SIZE AND OCCUPANCY:

THE PROPOSED PROJECT CONSIST OF 1 HIGH-RISE TOWER WITH (19) NINETEEN LEVELS OF ABOVE GRADE R2 MULTIFAMILY RESIDENTIAL HOUSING AND (2) TWO LEVELS OF BELOW GRADE S2 PARKING. TOTAL PROPOSED BUILDING SF IS APPROXIMATELY 236,500 SF.

The following section requires the applicant to demonstrate to the City that this project is in compliance with the high-rise building section, 403, of the Seattle Building Code. Be aware that Seattle has a significant number of amendments to the International Building Code - full text of each section is NOT reprinted here. You will be required to comply with all of the Seattle amendments*.

*Seattle amendments online at <http://www.seattle.gov/sdci/codes>.

Note: The use of a code alternate or interpretation requires an additional form unless the desired Code Alternate is published in the Seattle Building or Fire Code. For more information and the necessary form see TIP 318, Building Code Pre-submittal/Code Interpretation Conferences.” The Code alternate form is part of TIP 318. It can be found at <http://web6.seattle.gov/DPD/CAMS/CamList.aspx>.

HIGH-RISE BUILDING CODE REQUIREMENTS - * DENOTES SEATTLE AMENDMENT IN SECTION

| Section 403 Highrise Buildings | |
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| 403.1.1* Predesign Conference | <i>Note: At least 60 days prior to application-arrange a predesign conference; provide documentation /appropriate analyses and schematic drawings two weeks prior to conference; approved predesign meeting minutes are required prior to permit application and shall be inserted into plans as part of the permanent permit record</i> |
| 403.2.3* Structural Integrity of enclosures. | <i>Key Items: Exit enclosures and elevator hoistway enclosures in occupancy category III or IV buildings, all fire service access elevators, or all exit enclosures and elevator hoistways in buildings more than 420 feet in height shall comply with Sections 403.2.3.1 through 403.2.3.4.</i> |
| | Proposal: Building will be classified as Risk Category II since the primary occupancy is Group R- 2 (apartments) with an overall net occupant load that will not exceed 5,000 |
| Conference discussion & decisions: Additionally, the total building height is approximately 180'-0". All fire service access elevator (FSAE) hoistways shall comply with the structural integrity requirements of SBC Sections 403.2.3.1 through 403.2.3.4. FSAE are within structural core at all levels | |
| 403.3* Automatic sprinkler system | <i>Key Items: Provide a sprinkler system in accordance with Section 903.3.1.1 and Seattle Fire Code (SFC) Section 914.3.1. Provide a secondary water supply where required by Section 903.3.5.2. Describe proposed sprinkler system and secondary water supply. High-rise building sprinkler systems shall be combination standpipe/sprinkler systems incorporating the following features:</i> <ol style="list-style-type: none"> 1. Each floor sprinkler system shall be connected between standpipe risers. 2. Shut-off valves, water-flow devices and check valves (or pressure reducing valves) shall be provided on each |

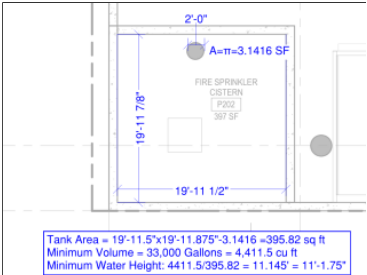
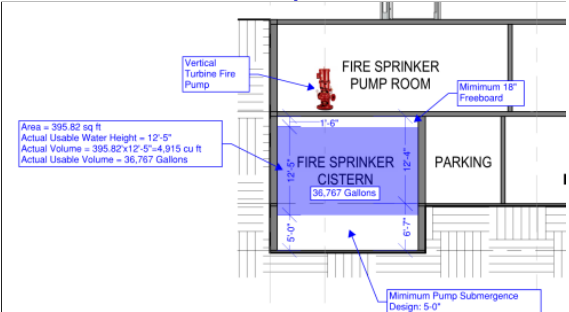
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| | <p><i>floor at the sprinkler system connection to each standpipe.</i></p> <p><i>3. Two four-way fire department connections serving the combination system shall be provided on separate streets well separated from each other.</i></p> <p><i>4. At least one of the fire department connections shall be connected to the riser above a riser isolation valve.</i></p> <p><i>5. When a mid-level fire pump is required to meet pressure requirements, two pumps with the same rating shall be installed.</i></p> <p><i>6. Dry-pipe sprinkler systems serving parking garages may use a separate two-way fire department connection. The dry-pipe sprinkler system shall be supplied by the on-site water tank.</i></p> <p><i>7. The standpipe risers in each required stair shall be a minimum pipe size of 6 inches.</i></p> <p><i>8. Two 2½-inch hose connections shall be provided on every floor level landing in every required stairway. If pressure reducing valves (PRV) are required, each hose connection shall be provided with its own PRV.</i></p> <p><i>9. The system shall be designed to provide a minimum flow of 300 gpm at a minimum pressure of 150 psi [maximum 205 psi at each standpipe connection] in addition to the flow and pressure requirements contained in NFPA 14.</i></p> <p><i>See attached "Seattle Requirements for High-Rise Secondary Water Supply"</i></p> <p><i>Note: If schematic plans are available, please bring them to the conference.</i></p> |
| | <p>Proposal:</p> <p>A tank with 33,000 gallons of usable volume is included on level P2, with a vertical turbine fire pump oriented directly above the tank. Fire pump room will be 2 hour rated.</p> <ol style="list-style-type: none"> Each floor sprinkler system shall be connected between standpipe risers. Shut-off valves, water-flow devices and check valves (or pressure reducing valves) shall be provided on each floor at the sprinkler system connection to each standpipe. Two four-way fire department connections serving the combination system shall be located on Western Avenue and Cedar Street sides well separated (minimum 100'). Locate 10' from main entry doors, generator tailpipe, garage entrances. At least one of the fire department connections shall be connected to the riser above a riser isolation valve. The dry-pipe sprinkler system serving the garage levels and unheated spaces will be supplied by the on-site water tank. A mid level fire pump room is not required. The standpipe risers in each required stair shall be a minimum pipe size of 6 inches. |

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| | <p>Two 2½-inch hose connections shall be provided on every floor level landing in every required stairway. If pressure reducing valves (PRV) are required, each hose connection shall be provided with its own PRV.</p> <p>9. The system shall be designed to provide a minimum flow of 300 gpm at a minimum pressure of 150 psi [maximum 205 psi at each standpipe connection] in addition to the flow and pressure requirements contained in NFPA 14.</p> <p>10. Dry-pipe system for 2-Level car stackers on Level P1 to be designed to Extra Hazard Group II classification in accordance with NFPA-13 (2016)</p> <p>11. Dry-pipe system requirements for 3-Level car stackers on Level P2 to be confirmed with SDCI/SFD.</p> <div style="display: flex; justify-content: space-around;">   </div> |
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Conference discussion & decisions:

- Secondary water supply tank will be a maximum of 33,000 gallons or not less than the hydraulically calculated sprinkler demand including hose stream allowance, whichever is less.
- Fire pump room is located on Level P1 with secondary water supply tank located directly below. The fire pump will be electric-powered.
- The water supply will utilize a single electric fire pump with ATS connected to emergency power with a fire pump bypass. The deferred sprinkler submittal will require a fire flow test confirmation of the available water supply. Verify final locations of FDC's with Fire Marshal prior to deferred submittal.
- FDCs shall be located a minimum of 10 feet from building entrances/exits.
- Per SFD, the double height stackers are NFPA 13 "Extra Hazard Group 2." The sprinkler system requirements will require a performance-based engineering judgement to determine the required sprinkler system design to protect the 3 level car stacker. This information will need to be submitted with the architectural package (i.e. not a deferred submittal).

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| 403.4.2 Fire alarm systems | <p><i>Key Items: Fire alarm systems shall comply with Section 907.2.13. Describe proposed fire alarm system.</i></p> |
| | <p>Proposal:</p> <p>A Life Safety System shall be provided in strict compliance with the 2015 Seattle Fire Code Section 907.2.13. The system will be:</p> <p>An addressable Life Safety System will be provided which will include:</p> <p>1. Automatic smoke detection system in accordance with</p> |

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| | <p>Section 907.2.13.1. Area smoke detectors shall be located in each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection. In each elevator machine room and in elevator lobbies. Duct smoke detection shall be installed in strict compliance with Section 907.3.1.</p> <ol style="list-style-type: none"> 2. Manual fire alarm boxes in accordance with Section 907.4.2. Only 1 manual station will be provided as building is fully sprinklered. It will be located in the FCC. 3. Automatic Sprinkler system in accordance with Section 903.3.1 Water flow, pressure, hi-pressure, low pressure and supervisory switches as required for the automatic sprinkler system shall be connected to the Life Safety System. 4. Fire department communication system in accordance with Section 907.2.13.2. City of Seattle requires DAS in all high-rise buildings. 5. Emergency voice/alarm communication system in accordance with Section 907.5.2.2. Must meet 520Hz Low Frequency Requirements. Emergency voice/alarm communication system shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water flow device or manual fire alarm box shall automatically sound and alert tone and activate visible alarms and followed by voice instructions giving directions for general evacuation. The system shall operate on a minimum of the alarming floor, the floor above and the two floors below. Speakers and Visible devices shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided for each elevator group, exit stairway and floor. 6. Alarm notification appliances in accordance with Section 907.5.2.1 75 dBA in all R-2 areas. Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of the fire alarm. The audible alarm notification appliances shall provide a sound pressure level of 5 decibels above the average ambient sound level or 5 decibels above the maximum sound level having a duration of at least 60 seconds, whichever is greater, in every occupiable space within the building. 7. Visible alarm notification appliances in accordance with Section 907.5.2.3. Visible alarm notification appliances shall be provided in accordance with Section 907.5.2.3.1 through 907.5.2.3.4, and Administrative Rule 9.09.07, Visible Alarm Notification Devices, and any future revisions of this rule adopted. 8. Monitoring in accordance with Section 907.6.5. The Life Safety system will be monitored by an approved supervising station in accordance with NFPA 72. 9. The fire pump room is not required to be accessed by a protected path from the exterior all the way to the room (2-hour protection, per NFPA 20). Please verify and review any access requirements. |
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| | The proposal to meet NFPA 72, Section 21.5 requirement is that all FSE lobbies will be monitored by addressable combo heat/smoke sensors. A high temperature indicator lights for every floor will be displayed in the smoke control panel located in the FCC |
| Conference discussion & decisions: <ul style="list-style-type: none"> It was noted that either single-station smoke detectors with system sounder bases or system detection devices may be installed in the residential units, however additional requirements are required where system smoke detectors are provided in the sleeping/dwelling units. They must be configured such that they to only activate within the room and do NOT activate the building fire alarm system. | |
| 403.4.4 Emergency voice/alarm communication systems | Key Items: <i>An emergency voice/alarm communication system shall be provided in accordance with SFC Section 907.5.2.2.</i> |
| | Proposal: (Rushing) Emergency voice/alarm communication is incorporated as an integral part of the Fire Alarm system described above, in accordance with Section 907.5.2.2, to comply with 520Hz Low Frequency Requirements. Emergency voice/alarm communication system will be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water flow device or manual fire alarm box will automatically sound and alert tone and activate visible alarms and followed by voice instructions giving directions for general evacuation. The system will operate on a minimum of the alarming floor, the floor above and two floors below. Speakers and Visible devices will be provided throughout the building by paging zones. At a minimum, paging zones will be provided for each elevator group, exit stairway and floor. |
| Conference discussion & decisions: <ul style="list-style-type: none"> No additional discussion was noted. | |
| 403.4.5 Emergency responder radio coverage | Key Items: <i>Emergency responder radio coverage shall be provided in accordance with SFC Section 510. For information on emergency responder radio coverage systems, see SFD Client Assistance Memo (CAM) 5123.</i> |
| | Proposal: A Distributed Antenna System (DAS) Fire department communication system will be provided in accordance with Section 907.2.13.2, required in all high-rise buildings. |
| Conference discussion & decisions: <ul style="list-style-type: none"> The design and implementation of which will be coordinated with the | |

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| <p>Seattle Information Technology Department prior to turning on the BDA/DAS system. This system will be connected to normal and emergency power system. System design will be part of a deferred submittal.</p> <ul style="list-style-type: none"> It was noted later that section 510 (Emergency responder radio coverage) of the 2018 Seattle Fire code would be adopted ahead of the rest of the 2018 code. | |
| 403.4.6 Fire command (Center) | <p><i>Key Items: Dedicated fire command center – provide details on the plans submitted for the pre-submittal conference. Requirements include (but are not limited to) approved location nearby and accessible to the fire service access elevators and minimum room size 200 sq. ft. with least dimension of 10 ft. See SFC Section 508.</i></p> |
| | <p>Proposal:</p> <p>The FCC will contain the 19 items as listed under 508.1.6. with the exception of item 6.</p> <ol style="list-style-type: none"> The emergency voice/alarm communication system control unit. The fire department communications system. Fire detection and alarm system annunciator. Annunciator unit visually indicating the location of the elevators and whether they are operational. Status indicators and controls for air distribution systems. The fire-fighter's control panel required by Section 909.16 of the 2015 Seattle Fire Code for smoke control systems installed in the building will not be provided. Instead, HOA fan control switches and associated status indicators will be included on the fire alarm control panel (FACP) in conjunction with a graphical cross section depiction of the building displaying the exit enclosures and elevators per 909.16 in lieu of a graphical depiction with HOA switches integrated within the graphic. Controls for unlocking stairway doors simultaneously. Sprinkler valve and water-flow detector display panels. Emergency and standby power status indicators. A telephone for fire department use with controlled access to the public telephone system. Fire pump status indicators. 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. |

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| | <p>An approved Building Information Card that contains, but is not limited to, the following information:</p> <p>General building information that includes: property name, address, the number of floors in the building (above and below grade), use and occupancy classification (for mixed uses, identify the different types of occupancies on each floor), estimated building population (i.e., day, night, weekend).</p> <p>14. FSAE lobby temperature monitoring with high temperature indicator lights for each floor in accordance with NFPA 72.</p> |
| <p>Conference discussion & decisions:</p> <ul style="list-style-type: none"> • Fire Command Center is located on Level 1 with visual line of sight from a main building entrance (vestibule 100) with nearby access to the Fire Service Access Elevator (FSAE) lobby and both required interior exit stairways that span the entire height of the building. • The Fire command center shall have a minimum area of 200 ft² (currently 190 ft²) with a minimum dimension of 10'-0" (currently 10'-2") • Additional items to be included in FCC: <ul style="list-style-type: none"> - A work table - Emergency generator supervision devices, manual start and stop features - Public Address system (if required) - Elevator fire recall switch - Elevator emergency power transfer switches • On-site water supply tank flow fill valve control switch, tank level indicators, tank low level alarm, and tank fill signal | |
| 403.4.9 Emergency power systems | <p><i>Key Items: Provide an emergency power system complying with Chapter 27 and Section 403.4.8. Include size, location and type of generator, fuel tank fill location, and vent terminations. See Director's Rule 8-2005 on protected above ground fuel tanks. System supervision with manual start and stop features shall be provided at the fire command Center. Provide a 2 hr. separation unless meeting the requirements for the exception for rooms within sprinklered parking garages per Section 909.11. Also see attached "Seattle Requirements for Generator Fuel Tanks" Provide location on the plans submitted for the pre-submittal conference.</i></p> |
| | <p>Proposal:</p> <p>The Emergency Electrical System shall be served from both the main switchboard and Diesel Generator via a automated transfer switches (ATS). Under normal conditions, the emergency system will be connected to the main switchboard. Should normal power be lost, the ATS will automatically switch to the generator.</p> <p>1. Emergency power shall be provided by 750 kW generator located Level 1, one floor level below grade from the</p> |

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| | <p>alley on the east, and at the grade level from Western Ave to the West. The generator will be equipped with a remote diesel fuel tank conforming to Seattle requirements for generator fuel tanks.</p> <ol style="list-style-type: none"> The tank shall contain 660 gallons or less of fuel storage. The fuel tank shall be rated per UL 2085. Current fuel storage is planned for 8 hours of run time at 100% load (450 Gallons). Per SBC section 403.4.8.1 exception 2 the generator will be located within the S-2 occupancy enclosed parking garage without a rating between the garage and the room for the walls adjacent to the parking garage. Adjacent space that is not S-2 garage will be separated from the generator room with 2-hr rated fire barrier wall. Make-up air will be transferred from the parking garage and the generator radiator exhaust air shall be discharged to the building exterior on Level 2. The diesel fuel fill station is located on the building exterior at the alley, adjacent to the garage entry (gridlines A and 2) per 2015 Seattle Fire Code, Section 5704.2.7.5.6. Location to be 5' from openings The normal vent for the diesel tank is located in the north wall (not less than 12-feet above adjacent grade) and no less than 5 feet from building openings and property lines in accordance with 2015 Seattle Fire Code, Section 5704.2.7.3.3. Vent termination above bottom of fuel tank is approx. 25'. <p>The architectural plans submitted for permit will indicate:</p> <ul style="list-style-type: none"> Size, type and location of emergency generator fuel tank Location, routing and details of fuel fill station Locations, routing, and details of vents' including required clearances from operable openings <p>At the direction of the Fire Marshal, architectural plans that lack this information will not be approved; this information must be clearly and explicitly noted on the architectural plans and not on just mechanical or electrical plans; this information may not be deferred or referred to "by others".</p> |
| <p>Conference discussion & decisions:</p> <ul style="list-style-type: none"> Specific location of remote diesel fuel tank | |
| 403.4.9.1* Emergency power loads | <p><i>Key Items: Provide emergency power to exit signs & means of egress illumination; elevator car lighting; emergency voice/alarm communication; fire alarm and detection systems; emergency responder radio coverage system, power and lighting for mechanical equipment rooms and fire command center; fire pumps; ventilation & fire detection in smokeproof enclosures; smoke control system; all fire service access elevators and one elevator per bank per</i></p> |

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| | Section 3016.6. |
| | Proposal: No exceptions taken. Emergency power shall be provided for the following loads per section 403.4.8.4: <ol style="list-style-type: none"> 1. Exit signs & means of egress illumination; 2. Elevator car lighting; 3. Emergency voice/alarm communication; 4. Automatic fire detection systems; 5. Fire alarm systems 6. Electrically powered fire pumps 7. Power and lighting for mechanical equipment rooms and the fire command center required by section 403.4.6 8. Lighting for elevator cars, machine rooms, machine spaces and control rooms. 9. Ventilation and cooling equipment for elevator machine rooms, machine spaces and control rooms. 10. Ventilation and automatic fire detection equipment for pressurized stairways and elevator hoistways. 11. Smoke control system. 12. A selected elevator in each elevator group in accordance with Section 3016.16. All elevators shall be transferable to an emergency power system. 13. Emergency responder radio coverage. 14. FSAE's <ol style="list-style-type: none"> a. Operation of all fire service access elevator cars; b. Operation of all occupant evacuation elevators until they are recalled; c. Elevator controller cooling equipment; d. Elevator hoistway lighting for Fire service access elevators |
| Conference discussion & decisions: <ul style="list-style-type: none"> • Additional emergency load requirements: <ul style="list-style-type: none"> - Lighting for emergency generator room and Main Electrical Room - Supervisory fire alarm systems - Jockey pump, controllers, and status monitoring for fire pumps - Door lock/unlock controls must be configured to fail safe. - Car elevators, as they are classified as passenger elevators. | |
| 403.5.1* Remoteness of interior exit stairways | Key Item: <i>Exit stairways shall be separated by not less than 30 feet or one-fourth the diagonal dimension whichever is less measured as straight line between nearest points of the exit enclosures. Primarily R occupancy buildings are allowed 15 feet.</i> |
| | Proposal: Egress stairway enclosures separations will exceed 15-ft on all Group R levels (Level 3 and above) in the tower. They will be separated by a minimum of 30-ft or ¼ diagonal on all other floor (Levels 2 & below). |
| Conference discussion & decisions: <ul style="list-style-type: none"> • The interior exit stairs on Levels P2 through Level 1 will only be required to be separated by the 15 ft minimum as required for the Group | |

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| R-2 occupancies as these levels are Accessory to the primary Group R-2 function of the building. Egress plans indicate compliance with required distancing | |
| 403.5.2 Additional exit stairway | <i>Key Items: For buildings other than Group R-2 that are more than 420 feet(128 m) in building height, one additional exit stairway meeting the requirements of Sections 1009 and 1022 shall be provided in addition to the minimum number of exits required by Section 1021.</i> |
| | Proposal: Occupancy will be Group R-2, building height above average grade will be 190 ft. so criteria for additional exit stairways does not apply. |
| Conference discussion & decisions: <ul style="list-style-type: none"> The building height is approximately 180'-0" above the grade plane and additional exit stairways are not required and, therefore, will not be provided. | |
| 403.5.3* Stairway door operation | <i>Key Items: Stairway doors must be capable of unlocking upon signal from fire command center and must unlock upon activation of fire alarm anywhere in building. Where stairway doors are not locked from the stairway side, wiring and/or conduit shall be installed to facilitate potential future installation of locking hardware.</i> |
| | Proposal: No exception taken. Conduit rough in (no wiring) for future stairwell unlocking will be provided for doors that are currently not locked. Stairway doors shall operate and conform to section 403.5.3. If a security door is provided in the staircase, it will unlock upon activation of fire alarm system. Fail open will be tied to master switch located in the FCC. The roof access doors from the stairs should also unlock but not unlatch if locked. |
| Conference discussion & decisions: <ul style="list-style-type: none"> No additional discussion was noted. | |
| 403.5.3.1* Stairway communication s system | <i>Key Items: In required stairways a telephone or other two-way communication system connected to an approved constantly attended station shall be provided at not less than every fifth floor in each exit stairway.</i> |
| | Proposal: No exceptions taken. System will be provided as required. See response to 403.4.2. |
| Conference discussion & decisions: <ul style="list-style-type: none"> Stairway doors are not anticipated to be locked and, therefore, two-communication shall not be provided on every 5th floor stairway | |

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| landing. Conduit shall be installed such to facilitate future installations. | |
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| 403.5.3.2* Stairway penthouses | <p><i>Key Items: All required interior exit stairways shall terminate at a roof in a penthouse with a door complying with Sections 1008.1.1 and 1008.1.2. The building official is permitted to approve an alternate design at the pre-design conference. The intent is for all required stairways to have at least one door or approved penthouse alternate roof hatch that opens directly to the exterior on a roof level, and that all other roof levels may be accessed via stairs, ships ladders or alternating tread devices.</i></p> <p><i>See attached "Seattle High-rise Requirements for a Roof Hatch When Approved as a Penthouse Alternate"</i></p> |
| | <p>Proposal:</p> <p>The tower will have only one (1) stair terminate at the roof in a penthouse with a door. The second required stair access shall be provided as roof hatch accessed by a ships ladder as an 'Approved Penthouse Alternate', with the following features:</p> <ol style="list-style-type: none"> 1. Roof hatch dimensions shall be a minimum of 3'-0" wide x 12'-0" long. 2. Roof hatch shall be installed with a snow sensors/heating cables system. 3. Roof hatch shall be motorized with a remote pushbutton station located at the base of the top stair landing leading to the hatch. 4. Roof hatch electrical system shall be on building emergency power. 5. Provide switch in the Fire Command Center that unlocks the electro-magnetic locks on the hatch doors. 6. Interlock electromagnetic locks on hatch doors with fire alarm system to unlock automatically on any fire alarm signal. 7. Ensure code compliant stairs and height for stairs is met where the stair leads to the hatch. <p>Roof hatch shall be operable from the roof.</p> |
| <p>Conference discussion & decisions:</p> <p>Roland Falb/SFD discussed in the access to the roof and to the roof of the penthouse, which are not resolved in the plans.</p> <ul style="list-style-type: none"> • Stair 1 terminates at the mechanical penthouse • Stair 2 terminates at the Roof (level 19), but access to the roof above that is required from stair 2. This may be accomplished with an additional flight of stairs or an alternating tread device. A hatch at the roof is acceptable. • Access to the penthouse roof is required, and can be at the exterior via | |

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an alternating tread device or stairway.

- Firehose access to the top of the penthouse is required, so the revised design will have to demonstrate that a hose can be transported up the means of access to reach the penthouse.

Plans will be revised to demonstrate full access to penthouse, roof, and penthouse roof areas via stairs 1 and 2 when mechanical design is complete. Building permit submittal will demonstrate compliance with SDCI and SFD requirements.

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| <p>403.5.4* Smoke control in stair enclosures & elevator hoistways</p> | <p><i>Key Items: Provide a smoke control system complying with Section 403.5.4. Every required exit stairway serving floors more than 75 feet above the lowest level of fire department vehicle access shall comply with Sections 909.20.5 and 1022.10. Elevator hoistways shall comply with Sections 909.21 and 713.14. Describe proposed smoke control system, include schematic location of fans and supply air intake and associated ductwork, design criteria used, injection points, use of other ventilation systems, equipment and related wiring protection, etc.</i></p> <p><i>For high-rise buildings that have a simple shaft configuration and utilize shaft pressurization for smoke control (i.e., no building-wide smoke control system), shaft pressurization fan status and controls using switches in accordance with Section 909.16.2 (or equivalent) may be installed on the main fire alarm control panel (FACP) in lieu of installing a dedicated fire-fighter's smoke control panel. The building graphics normally provided on the smoke control panel shall be laminated and mounted in the vicinity of the FACP for quick reference by emergency responders. See SDCI Director's Rule DR 7-2012, Testing of stairway and hoistway pressurization systems in high rise buildings at http://web6.seattle.gov/dpd/DirRulesViewer/Rule.aspx?id=7-2012</i></p> |
| | <p>Proposal:</p> <p>Stair 1 and stair 2 enclosures will be provided with pressurization systems in compliance with sections 909.20.5 and 1023.11. Interior exit stairways will be pressurized to a minimum of 0.10" and maximum of 0.35".</p> <p>The elevator hoistway will be provided with a pressurization system in compliance with sections 909.21 and 713.14. Elevator 1 and 2 hoistway will be pressurized to a minimum of 0.10" and maximum of 0.25".</p> <p>Car elevators 1 and 2 will not be pressurized. None of the 5 conditions in 713.14.2 Hoistway Opening Protection apply including item 5. as it is less than 75' from the lowest floor served to the highest floor served.</p> <p>The pressurized hoistway is measured relative to adjacent area or dwellings except that the pressure differential will</p> |

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| | <p>be measured relative to atmosphere on floors other than the fire floor, two floors below, and the floor above the fire floor as allowed in 909.20.5 and 909.21.</p> <p>Air for stairway pressurization shall be supplied at intervals sufficient to maintain the required pressure throughout the interior exit stairway. Project intent is to supply air at approximately every third and not more than 8 floors from the bottom of each stairway.</p> <p>A corridor exhaust fan will be utilized in compliance with 909.21.1.2 and the exception under 909.20.5.5.</p> <p>Exit passageways will be pressurized via air from the vertical exit enclosure. There is no wall between stair and exit passageway as rated separation is not required per SBC 1023.3.1 exception 3.</p> <p>Shaft pressurization fan status and controls using switches in accordance with Section 909.16.2 (or equivalent) will be installed on the main fire alarm control panel (FACP) in lieu of installing a dedicated fire-fighter's smoke control panel. The building graphics normally provided on the smoke control panel shall be laminated and mounted in the vicinity of the FACP for quick reference by emergency responders.</p> |
| Conference discussion & decisions: <ul style="list-style-type: none"> Confirmed two-story atrium between level 1, mezzanine, and Level 2 does not require smoke control | |
| 403.5.5 Luminous egress path markings | <i>Key Items: Luminous egress path markings shall be provided in accordance with Section 1024.</i> |
| | Proposal: Egress path components serving all Group A occupancies above the level of exit discharge will be provided with luminous egress path markings in accordance with Section 1025. |
| Conference discussion & decisions: <ul style="list-style-type: none"> The Group A occupancy on the roof level shall not require luminous path egress marking as it accessory to the Group R-2 occupancies. | |
| 403.6* Elevators | <i>Key Items: Elevator installation and operation in high rise buildings shall comply with Chapter 30 and Section 403.6. Buildings with stories over 160 feet above the lowest point of fire department vehicle access shall be provided with no less than two elevators served by separate machine rooms</i> |
| | Proposal: Building height above average grade will be 279½-ft 190 ft. Two (2) Fire Service Access Elevators will be provided. Each elevator will be controlled by a separate control room. |
| Conference discussion & decisions: <ul style="list-style-type: none"> Building height is approximately 190'-0" above grade plane. | |

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| <p>403.6.1* Fire service access elevator</p> | <p><i>Key Items: In buildings with occupied floor more than 120 ft. above the lowest level of fire department vehicle access, a minimum of two fire service access elevators shall be provided in accordance with Section 403. Indicate location of fire service access elevators, and how the water prevention requirements of Section 403.6.1.3 will be complied with. Sump capacity shall be 3000 gph per state code requirements. Note: Separate shafts, pressurizations systems, and machine rooms are not required for the two fire service access elevators.</i></p> |
| | <p>Proposal: Building height above average grade will be 190 ft. Two (2) centrally located Fire Service Access Elevators (FSAEs) will serve all levels above and below the levels of exit discharge. FSAEs will each occupy a single hoistway, and comply as follows:</p> <ul style="list-style-type: none"> • All FSAEs will have a 4,000 lb. capacity. • Sprinkler system water intrusion in hoistways is proposed to be prevented by means of a raised floor within the structural core at the elevator lobbies, 1" higher in elevation than the surrounding floor. The sloped transition between floor levels are located at the core wall openings. • All cars will be capable of being recalled in a Phase I emergency operation. • Hoistways will be lit at a minimum of 1fc, with light fixtures connected to the Emergency Power System • Hoistway water protection from operation of sprinklers outside the fire service access elevator lobby per 403.6.1.2 is provided by FSAE door thresholds raised 1 inch above the designated floor level elevation, directing drainage of automatic sprinkler system water outside the FSAE lobby away from the FSAE hoistway. Max slope to be 2%. • Hoistway for FSA elevators 1 and 2 will be provided with a total pump capacity of 3,000 gallons per hour (50 gpm), per SBC 3023.1. |
| <p>Conference discussion & decisions:</p> <ul style="list-style-type: none"> • Building height is approximately 190'-0" above the grade plane • Both FSAEs will be sized to accommodate an ambulance stretcher of 24 inch x 84 inch with 5 inch radius corners • FSAE elevators will be pressurized and enclosed FSAE lobbies shall not be required. | |
| <p>403.7* Emergency operational plan</p> | <p><i>Key Items: In accordance with SFC Section 404, the building is required to have a Fire Safety and Emergency Plan. SFC Section 9309 requires that a Fire Safety Director appointed by the building owner is responsible to oversee the preparedness and initial response of a building's fire and life safety systems and building occupants to a fire alarm, in addition to conducting annual emergency evacuation drills. For more</i></p> |

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| | <i>information, see SFD CAMs 5963 and 5982.</i> |
| | Proposal: An emergency operational plan is to be developed once a Fire Safety Director is engaged by the Owner. Plan must be approved by SFD. |
| Conference discussion & decisions: <ul style="list-style-type: none"> Plan must be made available to the SFD upon request. | |
| Chapter 7 | |
| 712* Vertical openings | <i>Key Items: The code limits the number of stories that can be in common atmosphere with one another without the required fire barrier separation between them. The plans submitted for the predesign meeting should show all architectural floor openings including those relating to escalators. If architectural floor openings reach the threshold meeting the definition of an atrium, the atrium code requirement shall be addressed. Note any garage elevators or duct system using the provisions of Section 712.</i> |
| | Proposal: Level 1 will be connected to a mezzanine level (complying with Section 505.2), by an open stairway and common atmosphere. Per Chapter 2 definition, this will be an Atrium space which will comply with requirements of Section 404. |
| Conference discussion & decisions: <ul style="list-style-type: none"> Level 1 will contain a mezzanine that is accessed via an open stair. Additionally, the Lounge area (Room 114) on the mezzanine shall extend into Level 2 near Vestibule (Room 1M01). As a mezzanine is not considered a 'story' per SBC Section 505.2, the vertical communication between the open stair and the vertical mezzanine extension into Level 2 shall comply the requirements for an allowable two-story opening per SBC Section 712.1.9. | |
| CHAPTER 10, MEANS OF EGRESS | |
| Chapter 10* General | <i>Key Items: Provide an exiting plan and describe any issues requiring interpretation or a code alternate or code modification. Indicate occupancy loads and load factors for all assembly type spaces. Clearly note all locations where exit access stairways are being proposed.</i> |
| Code Alternate/ Modification □ (form attached) | Proposal: Egress diagrams are shown on sheets G-035, 036, 037 and 038. Accessible lifts shall not be permitted to be part of the accessible means of egress and are not included. |
| Conference discussion & decisions: <ul style="list-style-type: none"> Exit stairways are sized to accommodate 0.2 inches per occupant and all other exit components are sized to accommodate 0.15 inches per occupant. Exits stairways shall be provided with a minimum exit separation distance measured as 1/3 the maximum diagonal of the area served. The exit separation distance shall be measured along the shortest direct line of travel where the exit stairways are interconnected by a corridor constructed of 1 hour fire-rated partitions. It was noted that the egress from stair 1 to the street includes two sets | |

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of steps, thus it will not be considered an accessible means of egress. Accessible egress from the second floor will be via elevator, unless the egress passageway can be reconfigured without stairs.

CHAPTER 30, ELEVATORS

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| 3016.6* Elevator operation on emergency power - recall | <i>Key Items: Elevators shall comply with Sections 3016 through 3019 for hoistway smoke control, elevator operation on emergency power, general emergency operation requirements, and phase I and phase II recall requirements.</i> |
| | <p>Proposal:</p> <p>No exception taken to this requirement. Elevators will be the requirements of section 3016-3019.</p> <ol style="list-style-type: none"> 1. Elevators will comply with Sections 3016 through 3019. 2. Pressurization is provided for the elevator hoistway and systems will comply with 3016.5. 3. Elevators will comply with elevator operation on emergency power, general emergency operation requirements, and will allow for Phase 1 & Phase 2 recall requirements. 4. The panel serving the lights for the car and machine room will be fed from the generator. 5. The fire service elevators will be equipped with emergency power that will automatically transfer upon loss of power. Both elevators will be connected to the emergency power system. 6. The fire command center will be equipped with the elevator status panel. In an event, the elevators will recall (1) at a time but only (2) FSEs, and one additional elevator from each bank may be operated simultaneously. <p>The generator will be sized for simultaneous operation of both FSAEs and Automobile Parking Elevators.</p> |
| Conference discussion & decisions: <ul style="list-style-type: none"> ● No additional discussion was noted. | |
| 3020.1* & 3020.4* Construction of Hoistways, and machine and control rooms | <i>Key Items: Construction of hoistways and hoistway enclosures shall comply with ASME A17.1 Section 2.1 as amended.</i> |
| | <p>Proposal:</p> <p>Hoistway enclosures will be a minimum 2-hour fire-rated construction consisting cast concrete and light gauge framed wall assemblies.</p> <p>Hoistway will contain no more than four (4) cars per SBC 3016.7 (two is proposed).</p> |

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| Conference discussion & decisions: | |
| <ul style="list-style-type: none"> ● No additional discussion was noted. | |
| OTHER | |
| Other | <i>Describe any significant interpretation requests or special conditions you wish to address including any issues requiring a code alternate or code modification.</i> |
| Code Alternate/ Modification □ (form attached) | <p>Proposal:</p> <p>Two Automobile Parking Elevators as defined in Section 3004 will be installed in a shared hoistway to be used exclusively for transportation of tenant automobiles from level 2 (alley access) to parking facilities on below grade levels P1 and P2.</p> <p>Automobile Parking Elevators are roped hydraulic, meeting ASME A17.1 (2016) for Class B elevators.</p> <p>Automobile Parking Elevators are to be operated by tenants, from within vehicles.</p> <p>All floors served by the Automobile Parking Elevators will also be served by the two FSA elevators, and egress stairs.</p> <p>Installation will comply with Sections 3006 through 3010 and 3016 through 3029.</p> |
| Conference discussion & decisions: | |
| <ul style="list-style-type: none"> ● The automobile hoistway shall be constructed as a 2 hour fire-rated shaft. Hoistway protection (i.e Elevator lobbies) shall not be required as the hoistway is less than 75 feet in height per SBC Section 713.14.2. ● SDCI indicated that the discussion on this topic is to continue separately from the other topics on the high-rise agenda, as the configuration and operation are not yet resolved. | |
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Seattle Requirements for High-Rise Secondary Water Supply

Water Tank: An automatic secondary on-site water supply storage tank shall be provided for high-rise buildings in accordance with SFC Sec. 903.3.5.2, and meet the requirements of NFPA 22 and the following:

OPTION 1 Single Fire Pump with Storage Tank Having Automatic Refill Features

Tank Refill Lines:

Dual automatic refill lines, each capable of refilling the tank at a minimum rate of 150 percent of the fire pump(s) capacity, shall be installed. Ref: NFPA 20 - 4.31.3.1.1

A manual tank fill bypass designed for and capable of refilling the tank at a minimum rate of 150 percent of the fire pump(s) capacity shall be provided. Ref: NFPA 20 - 4.31.3.1.3

Tank Fill Valves and Control Systems: The two automatic refill lines shall have separate automatic tank fill valves that are listed for fire service and arranged for automatic operation. Each automatic tank fill valve shall be provided with a separate approved means of actuation such as float assemblies, pressure sensors, etc. that are supervised by the fire alarm system. The status of the valves (i.e., 'open', 'closed') shall be indicated at the valves and in the Fire Command Center (FCC).

The tank shall be kept filled, and the water level shall never be more than 4 inches below the designated fire service level. Ref: NFPA 22 - 14.4.3

Tank Level Indicators: Two tank level indicators are required, one located in the FCC and another in the immediate vicinity of the tank fill valves. The tank level indicator monitoring shall be provided through the fire alarm system in accordance with NFPA 72.

Two separate and distinct signals shall be initiated: one indicating that the required water level has been lowered or raised (off-

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normal), and the other indicating restoration. Ref: NFPA 72 - 17.16.3.1

The off-normal signal shall be initiated when the water level falls three inches or rises three inches. Ref: NFPA 72 - 17.16.3.2.1

Tank Low Level Alarm: Separate and distinct tank low level audible and visible alarms shall be provided in the FCC and in the vicinity of the tank fill valves, and activate when the tank water level drops below 50% capacity. The tank low level monitoring shall be provided through the fire alarm system in accordance with NFPA 72. The signaling devices shall be clearly labeled "Water Tank Low Level Alarm" or equivalent. An independent silence switch shall be provided for the tank low level alarms in the immediate vicinity of the alarm devices.

Tank Overflow Protection: An approved means to prevent the tank from overflowing into the building shall be provided. Where an automatic shutoff valve is provided, it shall be listed for fire service and have dual (redundant) means of actuation such as two float assemblies, pressure sensors, etc. that are supervised by the fire alarm system. The valve shall be supervised by the fire alarm system and status (i.e., 'open', 'closed') indicated at the valve and in the FCC.

Pump By-pass: A full size by-pass shall be installed around the storage tank and the fire pump in accordance with NFPA 20. The by-pass shall be installed on the supply side of the tank fill valves and connected to the system on the downstream side of the fire pump and any sprinkler system pressure regulating valves installed on feed mains.

OPTION 2: Two Fire Pumps and Storage Tank Without Automatic Refill Features

The primary fire pump shall be supplied by a dedicated fire service main and the secondary fire pump supplied from the storage tank. The pumps shall operate at the same rated flow capacity and at similar discharge pressures. When using Option 2, automatic refill of the tank is not required.

The means to fill the tank shall be sized to fill the tank in a

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maximum time of 8 hours. Ref: NFPA 22 - 14.4.2

The tank shall be kept filled, and the water level shall never be more than 4 inches below the designated fire service level. Ref: NFPA 22 - 14.4.3

Tank Level Indicator: A tank level indicator is required in the immediate vicinity of the tank fill valve.

Pump By-pass: A full size by-pass shall be installed around the primary fire pump in accordance with NFPA 20. The by-pass shall be connected to the system on the downstream side of any sprinkler system pressure regulating valves installed on feed mains.

Seattle Requirements for High-Rise Generator Fuel Tanks

Ensure that the as a minimum the following information is provided on the on the architectural plan submittals:

1. Provide detail on plans indicating type of tank (i.e., UL-142, UL-2085, or other type of tank), type of fuel, and how much will be stored on-site.
2. Provide detail on plan (plan and elevation views) showing the location of the diesel fill connection, located on the exterior of the building, at least 5 feet from building openings and property lines in accordance with SFC Section 5704.2.7.5.2.
3. Provide details on plans indicating location (plan and elevation views) and routing of normal vent for diesel tank (manifolding of normal vents is not allowed) in accordance with SFC Section 5704.2.7.3.3.
4. Provide details on plans indicating location and routing of emergency vents diesel tanks (manifolding of emergency vents is not allowed) in accordance with SFC Section 5704.2.7.4.

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**Seattle Requirements for Protection of Wiring Required by Section
909.11**

- 1. Power and control wiring that serves the pressurization and other smoke control equipment, regardless of voltage, shall have fire-resistance-rated protection (rated cable, installation in shafts, embedment, etc.) of at least two hours. Exception: Fire-resistance rating is not required for wiring serving a generator in an unprotected area in a garage that is separated from the rest of the building by 2 hour-rated construction.**
- 2. Where wiring protection is provided by installing in a rated shaft, protection of wiring is required between the fire command center and the shaft.**
- 3. Protection of wiring is not required for rooftop or penthouse wiring where installed outside the building envelope or in a penthouse that is not required to be protected.**
- 4. Protection is not required for HVAC fans used to exhaust**

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intermittent floors.

5. Protection is not required for the dampers on the HVAC equipment unless dedicated for shaft pressurization.
6. Wiring required to have 2-hour protection can be in a shaft with other wiring. The "independent route" requirement in Section 909.11 means separate raceway from normal power.

Seattle High-Rise Requirements for a Roof Hatch When Approved as a Penthouse Alternate

1. Roof hatch dimensions shall be a minimum of 3'-0" wide x 12'-0" long.
2. Roof hatch shall be installed with a snow sensors/heating cables system.
3. Roof hatch shall be motorized with a remote pushbutton station located at the base of the top stair landing leading to the hatch.
4. Roof hatch electrical system shall be on building emergency

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power.

5. Provide switch in the Fire Command Center that unlocks the electro-magnetic locks on the hatch doors.
6. Interlock electromagnetic locks on hatch doors with fire alarm system to unlock automatically on any fire alarm signal.
7. Ensure code compliant stairs and height for stairs is met where the stair leads to the hatch.
8. Roof hatch shall be operable from the roof.