



HIGH-RISE PREDESIGN CONFERENCE

Date: 08.19.2020

PROJECT INFORMATION		APPLICANT INFORMATION	
Project Name: 1115 Dexter Ave Towers		Contact Person: Kelly Carlson	
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Construction Application/Permit: # 6603646-CN		Contact Email: kellyc@runberg.com	
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Conference Attendees			
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**PROVIDE BRIEF DESCRIPTION OF PROJECT SIZE AND OCCUPANCY:
CONSTRUCTION OF TWO HIGHRISE TOWERS WITH 250 APARTMENTS
OVER A SHARED PODIUM WITH APPROXIMATELY 100 ACCESSORY
PARKING.**

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	
403.1.1* Pre-design Conference	<i>Note: At least 60 days prior to application-arrange a pre-design conference; provide documentation /appropriate analyses and schematic drawings two weeks prior to conference; approved pre-design 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: Two (2) Fire Service access elevators are required / proposed per tower. The fire service elevator hoist-way assemblies will comply with this section to meet the structural integrity requirements. The concrete elevator hoist-way walls meet this requirement per section 403.2.3.3, the other hoist-way walls (gypsum wallboard shaft walls) will be detailed to meet the requirements of this section.
Conference discussion & decisions: Two fire service access elevators are proposed in each tower (four in total.) All hoistway construction will be detailed to meet Section 403.2.3.4 OK. RR/SDCI 10/16/2020	
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 floor at the sprinkler system connection to each standpipe. 3. Two four-way fire department connections serving the combination system shall be provided on separate streets well separated from each other. 4. At least one of the fire department connections shall be connected to the riser above a riser isolation valve. 5. When a mid-level fire pump is required to meet pressure requirements, two pumps with the same rating shall be installed.

* Seattle amendment to IBC

	<p>6. <i>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>7. <i>The standpipe risers in each required stair shall be a minimum pipe size of 6 inches.</i></p> <p>8. <i>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>9. <i>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> <i>See attached “Seattle Requirements for High-Rise Secondary Water Supply”</i> <i>Note: If schematic plans are available, please bring them to the conference.</i></p>
	<p>Proposal:</p> <p>A design build contractor will be responsible for the final F/S system for the building. The automatic sprinkler system will address the following items:</p> <ol style="list-style-type: none"> 1. Each floor of each tower sprinkler system will be connected between standpipe risers. 2. Shut-off valves, water-flow devices and PRV’s will be provided on each floor at the sprinkler system connection to each standpipe. 3. Two four-way fire department connections will be provided at two different streets on two sides of the overall building with adequate separation. 4. At least one FDC will be connected to the standpipe riser above the riser’s isolation valve. 5. Option 1: single fire pump provided the hydrant flow test results confirm we have 150% of peak fire flow. Option 2 (If the project doesn’t have 150% of flow): (2) fire pumps will be the backup plan. All other provisions for both of these paths will be included. Pumps (Qty 1 or 2) will be sized for full design flow and pressure. They will be located inside of a 2-hour fire pump room, located next to (horizontal end suction pumps) the concrete cistern. The fire protection EOR shall determine whether a single pressure zone is sufficient, or if multiple pressure zones are required. 6. The parking garage dry pipe system will be served by the fire pumps and secondary water system. 7. Each stair will include (1) 6” standpipe riser. (An additional 6” express riser would be included in each stair if it is determined that multiple pressure zones are required; at this stage it appears only a single riser will be required). 8. Two 2½-inch hose connections will be provided on every floor level landing in every required stairway. Each hose connection shall be provided with a PRV as needed to meet pressure requirements. 9. The system is 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>The secondary water system will be a site built concrete cistern located in the parking garage. The cistern will be sized to provide a minimum usable capacity of</p>

* Seattle amendment to IBC

	<p>33,000 gallons. Cistern will be oversized to accommodate 6” unusable area below intake and 18” airspace above top fill of cistern.</p> <p>Make up water for the cistern will include automatic and manual fill valves as required by either the single or duplex fire pump option. Basis of Design is currently a -single fire pump, dual automatic fill valves, 150% of peak fire flow in make-up water supply verified by hydrant test. The fire pump is adjacent to the cistern in a dedicated fire pump room. The pump will be a vertical turbine style pump with suction diffuser. (verify if the vertical style is still applicable)</p> <p>Cistern to include an overflow pipe that routes to a lift station to be pumped and lifted up to the sanitary sewer drain if located at a higher elevation than the cistern overflow drain. Lift station to be sized at 25% higher flow than make-up water line and include duplex (redundant) pumps, each sized for full flow, with lead lag controls. The cistern is located on Level 1.</p>
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Conference discussion & decisions:
 Fire recommended FDC locations of Aurora and Highland or Aurora and Dexter. We are proposing FDC locations along Dexter and along Aurora. These locations are shown in the revised drawings submitted with the notes for Fire Approval.

Fire noted that the Hazard and Sprinkler Flow will need to be sized for the multi-level car stacking system. **The Proposed Hazard designation and sprinkler flow** will need to be submitted as an engineering judgement or performance based design (JKC 9/17/2020) and submittal will need to be signed and stamped (signed only documents will not be accepted) by a WA licensed Engineer. The SFD recommended that this been done as soon as possible due to the potential impact, depending on the type and configuration of the stacker system, on the fire pump sizing and in turn on the electrical feed and the emergency power requirements. Fire confirmed that the cistern will not be required to be upsized and that the standard requirement of 33,000 usable capacity will be adequate – calculations with 6” (Where did this number come from- the standard which requires a minimum of 6” when using a centrifugal pump and may be several feet if a vertical pump is used. The strainer for a vertical turbine pump needs to be 12” off the bottom at a minimum and usually 3 bowls of the impellar are required to be submerged for the pump to operate, The amount of water below the both the strainer and the minimum number of submerged impellers is not usable. It is stated that a vertical turbine pump will be used above.) unusable base area depending on the type of pump used, horizontal centrifugal or vertical turbine pump and 18” airspace at top will be required to be shown on drawings. These calculations have been added to the revised drawings submitted with the notes for Fire Approval. Mechanical Engineer to provide fire pump make & model on permit drawings.
 Changes per SFD JKC 9/17/2020
 No further comments. RR/SDCI 10/16/2020

<p>403.4.2 Fire alarm systems</p>	<p><i>Key Items: Fire alarm systems shall comply with Section 907.2.13. Describe proposed fire alarm system.</i></p>
	<p>Proposal: A design build contractor will be responsible for the final fire alarm system for the entire project. An addressable Life Safety System will be provided which will include:</p> <ol style="list-style-type: none"> 1 Automatic smoke detection system in accordance with Section 907.2.13.1. Area smoke detectors shall be located in each mechanical equipment, electrical, telephone equipment or similar room which is not provided with sprinkler

	<p>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> <p>2 Manual fire alarm boxes in accordance with Section 907.4.2. Only 1 manual station will be provided in the FCC as building is fully sprinklered.</p> <p>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.</p> <p>4 Fire department communication system in accordance with Section 907.2.13.2. City of Seattle requires DAS in all high-rise buildings.</p> <p>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.</p> <p>6 Alarm notification appliances in accordance with Section 907.5.2.1 75dba in all R-2 sleeping room 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.for a minimum of 75 dba at the pillow.</p> <p>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 9.09.20 Visible Alarm Notification Devices, and any future revisions of this rule adopted</p> <p>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.</p> <p>To meet NFPA 72 Section 21.5, the team proposes that all FSE lobbies will be monitored by an addressable combo heat/smoke sensor that will be connected to a high temperature indicator light per level in the FCC.</p>
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Conference discussion & decisions:
 FSAE elevator lobbies will require fixed heat low temp (135°F) detectors.[changes in blue JKC/SFD 9/17/2020](#)
 No further comments. RR/SDCI 10/16/2020

403.4.4 Emergency voice/alarm communication	Key Items: <i>An emergency voice/alarm communication system shall be provided in accordance with SFC Section 907.5.2.2.</i>
	Proposal:

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	No Exceptions Taken to 403.4.4. A Voice Communication and Alarm system will be provided as required by code. See 403.4.2 above (Item 5) for 907.5.2.2 requirements.
<p>Conference discussion & decisions: <i>Visible alarms / Voice proposed throughout. All systems will be tied together between both towers.</i></p>	
<p>403.4.5 Emergency responder radio coverage</p>	<p>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></p>
	<p>Proposal: No Exceptions Taken to 403.4.5. Emergency responder (BDA/DAS) radio coverage will be provided as required by code.</p>
<p>Conference discussion & decisions: Team to verify BDA/DAS coverage See SFD Client Assistance Memo 5123 JKC/SFD 7/18/2020 No further comments. RR/SDCI 10/16/2020</p>	
<p>403.4.6 Fire command (Center)</p>	<p>Key Items: <i>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: A fire command center for east tower the entire building, complying with SBC section 911 & SFC section 508 to be located near the fire service elevators at the lowest level of the building at Level 1 accessed from the lounge / lobby. Fire command center will be 200sf with a minimum width dimension of 10ft and will be located within line of sight to the fire service elevators serving the East tower. A second fire command center is proposed complying with SBC section 911 & SFC section 508 to be located near the fire service elevators serving the West tower. Fire Command Center(s) will be 200sf with a minimum width dimension of 10ft and has an obscured line of sight of fire service elevators and lobby entry door. The Fire Command Center will be two-hour fire resistance rated and will contain all of the elements outlined below.</p> <p>The FCC will contain the 19 items below as listed under 911.1.6</p> <ol style="list-style-type: none"> 1. The emergency voice/alarm communication system control unit. 2. The fire department communications system. 3. Fire detection and alarm system annunciator. 4. Annunciator unit visually indicating the location of the elevators and whether they are operational. 5. Status indicators and controls for air distribution systems. 6. Firefighter’s control panel required by Section 909.16 of the 2015 Seattle Fire Code for smoke control systems installed in the building, unless 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.

* Seattle amendment to IBC

	<ul style="list-style-type: none">7. Controls for unlocking stairway doors simultaneously.8. Sprinkler valve and water-flow detector display panels.9. Emergency and legally required power status indicators.10. A telephone for fire department use with controlled access to the public telephone system.11. Fire pump status indicators.12. 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.13. An approved Building Information Card that contains, but is not limited to, the following information:<ul style="list-style-type: none">a. 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).b. Building emergency contact information that includes: a list of the building's emergency contacts (e.g., building manager, building engineer, etc.) and their respective work phone number, cell phone number, and e-mail address.c. Building construction information that includes: the type of building construction (e.g., floors, walls, columns, and roof assembly).d. Exit stair information that includes: number of exit stairs in the building, each exit stair designation and floors served, location where each exit stair discharges, exit stairs that are pressurized, exit stairs provided with emergency lighting, each exit stair that allows reentry, exit stairs providing roof access, elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve, location of elevator machine rooms, location of sky lobby, location of freight elevator banks.e. Building services and system information that includes: location of mechanical rooms, location of building management system, location and capacity of all fuel oil tanks, location of emergency generator, and location of natural gas services.f. Fire protection system information that includes: location of standpipes, location of fire pump room, location of fire department connections, floors protected by automatic sprinklers, location of different types of automatic sprinkler systems installed (e.g., dry, wet, pre-action, etc.).g. Hazardous material information that includes: location of hazardous material, quantity of hazardous material.14. Work table.15. Generator supervision devices, manual start and stop features.
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	<p>16. Public address system, where specifically required by other sections of this code.</p> <p>17. Elevator fire recall switch in accordance with ASME A17.1.</p> <p>18. Elevator emergency or standby power selector switch(es), where emergency or legally required standby power is provided.</p> <p>19. On-site fire protection water tank fill valve control switch, tank level indicators, tank low level alarm and tank fill signal.</p> <p>20. Temp control monitors will be provided in all FSAE lobbies and machine rooms to meet NFPA72</p>
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Conference discussion & decisions:
 Fire indicated that their preference would be to have single FCC and the preferred location would be the lowest level of access although either would be acceptable. Team will show this location in the revised drawings submitted with the notes for Fire Approval.
 No further comments. RR/SDCI 10/16/2020

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>
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	<p>Proposal: Emergency power will be provided to serve the building:</p> <ul style="list-style-type: none"> • The building shall be provided by an estimated 200 kW generator sized to accommodate all loads including fire pumps sized by Fire Protection Engineer, located in the garage on Level 2 with a sub-base diesel fuel tank conforming to Seattle requirements for generator fuel tanks. The final generator size will be shown in the final electrical permit drawings. • The tank shall contain less than 660 gallons of fuel storage as allowed by SFC Section 603.3.2.1 and the fuel tank shall be rated per UL-142. The fuel capacity will be sized to contain a minimum of 8 hours of fun time at full load; approximately 420 gallons. • Per SBC section 403.4.9.2 exception 1 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. The generator housing sits on the terrace level with supply air intake from the Level P1 garage. • Radiator cooling air will be circulated to/from the parking garage, and the generator engine exhaust air shall be discharged to the exterior in accordance with all clearance requirements per Seattle Mechanical Code Section 501.3.1.2. • The fuel fill station is proposed to be located per code clearances. 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 20125 Seattle Fire Code, Section 5704.2.7.5.2.
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	<ul style="list-style-type: none"> • Fill connection when located within a dedicated loading dock shall be within 10-feet of the exterior opening of the loading dock and the loading dock entrance doors shall have openings comprising at least 50% of the door opening. • The normal and emergency vents for diesel tank is located at not less than 12-feet above adjacent grade and at least 5 feet from building openings and property lines in accordance with 2015 Seattle Fire Code, Section 5704.2.7.3.3. • The fuel fill will be located off Highland on site. Fuel fill will have vents located 10ft above grade and fill will be located open to the sky above. • Details will be provided on plans indicating location (with plan and elevation views) and routing of normal and emergency vents for the diesel tanks (manifolding of emergency vents is not allowed) in accordance with 2015 Seattle Fire Code, Section 5704.2.7.4.1 and 5704.2.7.3.3. If the tank specification and tank fill and vent details are not clearly and explicitly shown on the architectural plans submitted for the project building permit, those plans will not be approved by the Seattle Fire Department.
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Conference discussion & decisions:
 Architectural submittal drawings need to clearly outline air circulation with code reference, generator exhaust vent location; fuel tank size and location, location of fuel intake; generator and emergency load capacity. Fire verified that fuel fill can be located below overhang as shown 20'+ above location of fill. Fuel fill vents to be located 10ft 12 ft. above grade and will have adequate clearance above to vent properly. Changes per SFD shown in blue jkc/sfd 9/17/2020
 No further comments. RR/SDCI 10/16/2020

403.4.9.1* Emergency power loads	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 Section 3016.6.
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	<p>Proposal: No exception taken – all loads identified per code will be provided with emergency power. Emergency power as required per 403.4.8.4 shall be provided for the following:</p> <ol style="list-style-type: none"> 1. Exit signs and <i>means of egress</i> illumination required by Chapter 10. 2. Elevator car lighting. 3. Emergency voice/alarm communication systems. 4. Automatic fire detection systems. 5. <i>Fire alarm systems</i>. 6. Electrically powered fire pumps. 7. Power and lighting for mechanical equipment rooms and the <i>fire command center</i> 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 3016.6. All elevators shall be transferable to an emergency power system.
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	<ul style="list-style-type: none">13. For fire service access and occupant evacuation elevators:<ul style="list-style-type: none">1. Operation of all fire service access elevator cars2. Operation of all occupant evacuation elevators until they are recalled3. Elevator controller cooling equipment4. For fire service access elevations only, elevator hoistway lighting.14. Emergency responder radio coverage.15. Sump pumps required by Section 403.4.9.3.
<p>Conference discussion & decisions: Generator will be sized to support all C700 loads; all C701 loads including all pressurization fans; all fire pumps (note Fire comment about increased fire pump loads to address increased hazard due to multiple level car stacking) SDCI asked how optional loads on emergency system will be separated. Team outlined that separation between required and optional loads will be provided at separate transfer switches. Team will verify emergency loads include all roof hatches. SFD changes in Blue/ JKC/SFD 9/18/2020. List includes roof hatch per item 403.5.3.2 below. RR/SDCI 10/16/2020</p>	

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<p>403.5.1* Remoteness of interior exit stairways</p>	<p>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></p>
	<p>Proposal: This building is classified as an R-2 occupancy, therefore the minimum required distance between exit enclosures is 15' – 0"; 53ft min is proposed.</p>
<p>Conference discussion & decisions: <i>No Exception - Stairs exceed requirement for separation.</i> OK. RR/SDCI 10/16/2020</p>	
<p>403.5.2 Additional exit stairway</p>	<p>Key Items: <i>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></p>
	<p>Proposal: Not Applicable – Building is an R-2 occupancy and is less than 420 ft in height.</p>
<p>Conference discussion & decisions: N/A OK. RR/SDCI 10/16/2020</p>	
<p>403.5.3* Stairway door operation</p>	<p>Key Items: <i>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></p>
	<p>Proposal: No Exception Taken – Doors will be locked from stair side and will unlock upon activation of the fire alarm per 403.5.3. If doors are not locked, they will still include conduit rough in (no wire) for future unlocking from the FCC.</p>
<p>Conference discussion & decisions: <i>No Exception</i> OK. RR/SDCI 10/16/2020</p>	
<p>403.5.3.1* Stairway communications system</p>	<p>Key Items: <i>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></p>
	<p>Proposal: No Exception Taken</p>
<p>Conference discussion & decisions: <i>No Exception</i> OK. RR/SDCI 10/16/2020</p>	
<p>403.5.3.2* Stairway penthouses</p>	<p>Key Items: <i>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</i></p>

* Seattle amendment to IBC

	<p><i>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: Penthouse with man doors complying with sections 1008.1.1 & 1008.1.2 from stair to all roofs over occupiable spaces are proposed. A 3ft X 12ft pneumatic hatch and ships ladder to access mechanical penthouse roof.</p>
<p>Conference discussion & decisions: Access to roofs above the roof deck levels provided with 3'x12' pneumatic hatch as proposed JKC/SFD 9/18/2020 OK. RR/SDCI 10/16/2020</p>	
<p>403.5.4* Smoke control in stair enclosures & elevator hoistways</p>	<p>Key Items: <i>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><u>Stairwell pressurization:</u></p> <p>All stairs that extend more than 75 feet above the lowest level of fire department vehicle access will be pressurized in accordance with 909.20.5 and 1023.11. To mitigate the adverse impact of the elevator pressurization system (see below), a combination of passive and active relief will be provided to relieve the air introduced into hoistway and through the elevator doors. The mechanical relief in each tower will consist of a dedicated exhaust fan installed in parallel with the residential corridor supply fan. During an alarm event, the corridor supply fan will de-energize and the exhaust fan will start to relieve approximately 3,000 CFM on the floor of incident, one floor above, and two floors below. A means for relief (grilles and/or exhaust fan if determined to be required) will be installed at the elevator lobbies on the floors of recall for pressurization relief. As the relief is a critical component to the functionality, the relief system will comply with the provisions of 909. This includes the fans to be on emergency power, monitored for power downstream of the disconnects and all fans monitored for status.</p>

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	<p>Plans will show the location of the rooftop pressurization fans and associated shafts, dampers, and rooftop units. The pressurization supply air shall be drawn 20 feet from exhaust locations. In accordance with SBC 909.4, a CONTAM Smoke Control Model will be developed to determine the size of the fans to meet the required pressures and the locations of the injection points. The Model and Fire Protection Report will be submitted to SDCI for a separate smoke control design meeting with SDCI</p> <p><u>Elevator pressurization:</u></p> <p>The elevator hoistway will be pressurized in accordance with 909. 21. To maintain pressures during normal operation and recall, a Counterbalance Pressure Relief Damper will be installed at the top of each hoistway. Elevator lobby doors shall be provided at the elevator landings in the garage levels (1 & 2). To maintain consistent pressures, the doors must re-close after occupants ingress and egress through doors when the elevator pressurization system is operating. A 1.5 ft² vent will be installed above each door to allow the doors to re-close. An alternate floor of recall shall be proposed in accordance with Section 30 regarding recall operations. To relieve the large volume of air one of the doors will be power operated to open during alternate recall. The smoke control system will undergo special inspection services in accordance with SBC 909.3.</p> <p>Plans will show the location of the rooftop pressurization fans and associated shafts, dampers, and air handlers. The pressurization supply air shall be drawn 20 feet from exhaust locations.</p>
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Conference discussion & decisions:
 Fire confirmed that **submittal of the CONTAM modeling is not required by the SFD JKC/SFD 9/18/2020.**
 Include pressurization criteria and pressure differentials and how they are measured in design. Clearly define where pressurization stops, what is the horizontal plane below which is not pressurized. Team responded that pressurization will extend all the way down to the bottom of each shaft.

SDCI comment (P. Man 9/2/2020): Please refer to the Director’s Rule 7-2012 Testing of Stairway and Hoistway Pressurization Systems in High Rise Buildings for the testing requirements.

Pre-submittal smoke control conference is not required at this time (will be in future code edition). Fire protection of wiring for the relief equipment is not required.
 Each interior exit stairway shall be pressurized to not less than 0.10 inch of water and not more than 0.35 inches of water in the shaft relative to the building measured with all interior exit stairway doors closed under maximum anticipated conditions of stack effect and wind effect. The pressure differential shall be measured between the interior exit stairway and the adjacent area or dwelling unuts.
 The interior exit stairway shall be equipped with a relief opening at the top. The relief opening shall be equipped with a barometric relief damper and a motorized damper. The motorized damper shall be of the normally open type (open with the power off). Activation of the damper shall be initiated by the building fire alarm system and by actuation of the automatic sprinkler system. The

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<p>pressurization system shall be capable of maintaining the differential pressure required by Section 909.20.5 while discharging 2,500 cubic feet per minute of air through the relief opening. The relief outlet shall be located at least 20 feet from elevator hoistway and stairway pressurization system supply air intake locations. RR/SDCI 10/16/2020</p>	
<p>403.5.5 Luminous egress path markings</p>	<p>Key Items: <i>Luminous egress path markings shall be provided in accordance with Section 1024.</i></p>
	<p>Proposal: Per SBC403.5.5 & 1025 No luminous egress path markings are required for a R-2 occupancy tower. We do have accessory to R-2 Group A occupancies in the building. We also have B & M occupancies at grade with exterior at grade access. We would like confirmation that we do not need to provide luminous markings for these spaces.</p>
<p>Conference discussion & decisions: <i>None required</i> OK. RR/SDCI 10/16/2020</p>	
<p>403.6* Elevators</p>	<p>Key Items: <i>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></p>
	<p>Proposal: Each tower is under 160' and will be served by one (1) elevator control room per 403.6. The West tower is accessed off Aurora Ave and is under 115ft from the lowest point of FD vehicle access. The East tower is accessed off Dexter Ave & Highland Dr and is under 140ft from lowest point of FD vehicle access.</p>
<p>Conference discussion & decisions: Current code edition does not allow exception for 160' Two elevator control rooms are required for each tower (4 elevator control rooms total; one for each fire service access elevator. OK, as corrected. RR/SDCI 10/16/2020</p>	
<p>403.6.1* Fire service access elevator</p>	<p>Key Items: <i>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:</p> <ul style="list-style-type: none"> Two (2) fire service access elevators per tower are provided in shafts complying with section 713. Hoist-way with emergency lighting per section 403. Elevator lobbies floors will be sloped away from elevator shaft doors. Elevator pit will provide sump with drain & pump for each elevator to meet 3000 gph per state code requirements. Pump will discharge into oil/water separator before discharge to city system. Compliance with 403.6.1.3 will be met by providing a slope away from the elevator openings of 2% at the accessible landing area and 5% elsewhere to achieve the minimum 1" offset.

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<p>Conference discussion & decisions: Two elevators required to server upper most roof deck level at each tower. Water protection proposed as raised floor above corridor elevation; 1” change in elevation (verify door landings not impacted by sloped floor (including elevator doors) This change in floor elevation has been added to revised drawings submitted with the notes for Fire Approval SDCI noted that sump calculations are per hoistway not per elevator. One sump pump per hoistway that pumps 3000 gallons per hour will be provided. SFD changes noted in Blue JKC/SFD 9/18/2020</p> <p>Note after meeting: Please verify if the sump can pump directly to a drain or if it will require to go through an oil / water separator.</p> <p>OK. RR/SDCI 10/16/2020</p>	
<p>403.7* Emergency operational plan</p>	<p>Key Items: <i>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 information, see SFD CAMs 5963 and 5982.</i></p>
	<p>Proposal: Prior to the issuance of certificate of occupancy, the owner-occupant of the building shall assign a responsible person as the Building Fire Safety Director to work with the Fire Chief in establishing an operational plan for the building. Such operation shall contain the guideline procedures to be followed and responsibilities of the fire department, building employees, and tenants under the emergency conditions including special provisions for persons with disabilities. The plan shall include procedures for operation, maintenance and testing of the fire safety systems and the allowable use and occupancy of each portion of the building. One copy of the operational plan shall be filed with the Fire Chief, and one shall be posted in the central control station, prior to the issuance of the Certificate of Occupancy.</p>
<p>Conference discussion & decisions: <i>No Exception - Fire noted that team needs to verify it is available for review at TCO or CO; there is no requirement to submit this plan.</i> OK. RR/SDCI 10/16/2020</p>	
<p>Chapter 7</p>	
<p>712* Vertical openings</p>	<p>Key Items: <i>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></p>
	<p>Proposal: This project complies with Section 712 and does not have any space that qualifies as an Atrium.</p>
<p>Conference discussion & decisions: Team outlined car stacking vertical openings will be fully enclosed with rated shaft walls; each of the vertical volumes will be vented at the top; any ducts will be protected with same rating extending to termination. Reviewers had no comments on car stacking vertical opening.</p>	

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<p>Team outlined that double height lobby will be separated with shaft construction from adjacent spaces at Level 2 and confirmed that any duct penetrations will be provided with appropriate fire/smoke damper OK, as corrected. RR/SDCI 10/16/2020</p>	
<p>CHAPTER 10, MEANS OF EGRESS</p>	
<p>Chapter 10* General</p>	<p>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.</p>
<p>Code Alternate/Modification <input type="checkbox"/> (form attached)</p>	<ul style="list-style-type: none"> • Proposal: An egress plan will be submitted at least two weeks prior to the scheduled pre-submittal meeting for the City of Seattle review. There are no proposed code alternates or modifications for the egress plan. Occupancy loads, load factors and exit access stairway locations will be shown.
<p>Conference discussion & decisions: Egress from Roof was confirmed – Team to change A-2 designation to A-3 designation throughout.</p> <p>Single means of egress from Level 4 is acceptable as originally shown with 125’ common path of travel, maximum 3rd story above grade plane, and maximum of 4 dwelling units; however, this single means of egress cannot egress through the lobby using exception 1028.1 Ex. 1. Team has revised design. Two means of egress has been extended to Level 5. Level 4 has been revised to the level of exit discharge by means of an exit passageway per Section 1024. Please provide interpretation of elevator lobby requirement at level 4? Elevators cannot open directly into the exit passageway, per SBC 1024.5; please revise design to have the passageway bypass the elevator lobby. With this exception, the proposal is acceptable in concept; details subject to plan review. Please note doors to dwelling units opening into the passageway shall meet all and the stricter requirements for rated corridors and exit passageway. RR/SDCI 10/16/2020</p> <p>The team will revise the parking level to include a connecting stair providing a second means of egress to each level and a maximum of 50% of egress provided through a lobby.</p> <p>The team has resubmitted the revised egress plans with Meeting Notes for clarity. OK. RR/SDCI 10/16/2020</p>	
<p>CHAPTER 30, ELEVATORS</p>	
<p>3016.6* Elevator operation on emergency power – recall</p>	<p>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.</p>
	<p>Proposal: Elevators will comply with Sections 3016 through 3019.</p> <ul style="list-style-type: none"> • The building elevator hoistways will be pressurized. • The elevators will comply with elevator operation on emergency power general emergency operation requirements and will allow for Phase 1 & Phase 2 recall requirements.

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	<ul style="list-style-type: none"> • The (2) fire service access (FSA) elevators will be equipped with emergency power that will automatically transfer upon loss of power. Both elevators are capable of running simultaneously on the generator. • The panel serving the lights for the Residential Building car and machine rooms will be fed from the generator. • The fire command center will be equipped with the elevator status panel for the building. • In an event, the elevators will recall (1) at a time but both may be operated at the same time.
<p>Conference discussion & decisions: <i>No Exception –SDCI noted that conveyance inspectors will not inspect stackers – they will be classified as storage equipment and will be subject to Labor and Industry Jurisdiction. SFD changes noted in Blue JKC/SFD 9/18/2020</i> OK. Structural design for the attachments of the stackers to the building is required to be submitted to SDCI, either with the permit plan set or as a deferred submittal (“shop drawings submittal”) RR/SDCI 10/16/2020</p>	
<p>3020.1* & 3020.4* Construction of Hoistways, and machine and control rooms</p>	<p><i>Key Items: Construction of hoistways and hoistway enclosures shall comply with ASME A17.1 Section 2.1 as amended.</i></p>
	<p>Proposal: No Exception Taken.</p>
<p>Conference discussion & decisions: <i>No notes</i> OK. RR/SDCI 10/16/2020</p>	

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OTHER	
<p>510.8 Multiple Buildings above a horizontal assembly</p> <p>Code Alternate/ Modification <input type="checkbox"/> (form attached)</p>	<p><i>Key Items: Use of heavy timber in roof elements is allowed where a 1-hour or less fire-resistance rating is required. (Table 601 note c.) Type I-A roofs are listed as 1 ½ hour rated; Type I-B is the 1-hr rated.</i></p> <p>Proposal: The team would like to use heavy timber in roof elements in the Solarium and the Lobby, this is allowed in Type I-B construction (Table 601 note c.) for roof construction. The building is well within the 180 feet height limit of Type I-B and is limited to 12 stories above grade plane. The Dexter Tower complies at only 11 stories even measured to the lowest level. To achieve Type I-B construction we have recalculated the average grade plane for a single building and are proposing that the two towers are unique above a horizontal assembly.</p>
<p>Conference discussion & decisions: Revised to Type I-A Construction Type OK. Revision was necessary due to number of stories per story above grade definition #2. No heavy timber or fire-retardant treated wood at less than 20 ft above the floor are permitted in the roof construction. RR/SDCI 10/16/2020</p>	

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<p>NFPA 13 – 5.4.2</p>	<p>Key Items: <i>Guidance on cars stacked two high (silent on cars stacked more than two high)</i></p>
	<p>Proposal: The team is following guidance provided to increase the hazard level to Extra Hazard Group 2 provided with Standard sidewall sprinklers listed for Ordinary Hazard Group 1 located at both the front and rear of each parking platform supplied from the 33,000 gal cistern</p>
<p>Conference discussion & decisions: Fire noted that an engineering judgement will need to be provided by a licensed Fire Protection Engineer as no code path is available for fire protection analysis of car stackers in excess of 2 cars vertically. Team will engage Fire Protection Engineer and submit a proposed engineering judgement to Fire directly for initial confirmation. Current assumptions include</p> <ul style="list-style-type: none"> • Extra Hazard Group 2 designated only at the area of the car stacking, not the entire garage • Ordinary Hazard Group 1 sidewall sprinklers acceptable (Extra Hazard sidewalls are not manufactured) providing sprinkler flow rates as calculated for Extra Hazard Group 2 • Fire confirmed that the fire cistern does not require additional capacity; 33,000 gallon <p>No exception taken. RR/SDCI 10/16/2020</p>	

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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-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

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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 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.

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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 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.

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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 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.

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