ATTACHMENT K

ACORN ENGINEERING, INC.

Assistant Chief Keith Gautreau
380 Congress St.
Portland, ME 04101

May 11, 2017

Subject: 153-165 Sheridan St. Site Review – Fire Department Checklist
Section 8 of Application

On behalf of BD Sheridan, LLC the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

   BD Sheridan, LLC
   Vassa Real Estate Development
   Quincy, Massachusetts
   (207) 571-4166

2. Name address, telephone number of architect

   Ryan Senatore Architects
   565 Congress St., Suite 304
   Portland, Maine 04101

   Proposed uses of any structures [NFPA and IBC classification]

   The Code Analysis by Ryan Senatore Architecture is attached.

3. Square footage of all structures [total and per story]

1st Floor	8,800	sf
2nd Floor	8,912	sf
3rd Floor	9,701	sf
4th Floor	7,142	sf
Total	**34,555**	**sf**

4. Elevation of all structures

   The total building height from base of the first-floor parking garage to top of truss, four total floors, is 41-0". The average building height as calculated from the average grade is below the maximum allowable 42'-9 ¼ " height limit per the latest Fort Sumner Park Overlay Zone standards and existing apex elevation of the park. See the attached elevations and section view provided by the Architect for additional information.

5. Proposed fire protection of all structures

   The building will have a sprinkler system with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

6. Hydrant locations

   There is an existing fire hydrant approximately 250' from the proposed building edge along the Sheridan Street frontage. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

7. Water main size and location

   The development will be serviced a 6" parent line that will split into a 2" domestic and 6" fire service. The fire service line will extend from the split to the building fire suppression system. The building is expected to have an internal sprinkler risers and a Fire Department pump connection on the building.

8. Access to all structures [min. 2 sides]

   Front access to the structure is provided on Sheridan Street and rear access is provided from a private paved parking lot off of North Street.

9. The Architect will provide a code summary referencing NFPA 1 and all fire department technical standards.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located in a densely developed area and is fronted by a public street. The following street widths are currently available:

- Sheridan Street: 26 ft.

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 ft. of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 ft. from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety

3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: As depicted on the site plan, the proposed building layout provides a minimum of two paved access points to the structure: one from Sheridan Street and one from North Street.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Response: The building will be provided with exterior doors that will be within 50' of a Fire Department access route, namely Sheridan Street.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: Emergency access is provided on Sheridan Street with access to stairs and the elevator.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: The architect has sized the elevator to accommodate a stretcher of such size.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The architect will work with the City's Department of Public Works to assign street addresses and numbering to meet City Standards.

Please let me know if you have any additional questions or comments.

Sincerely,

William H. Savage, P.E.
Principal
Acorn Engineering, Inc.

Code Review

Mar 10, 2017

155 Sheridan Residences

	IBC 2009		NFPA 101 2009	
4 floors above grade	502.1			
Sprinklers		NFPA 13		NFPA 13
Fire Alarm		Monitored Fire Alarm Required		Monitored Fire Alarm Required
Smoke and CO Detectors		Smoke and CO detectors required		Smoke and CO detectors required
Occupant Load	T 1004.1.1	Floor 1 = 1500 sf Residential accessory (200 gsf/oc) = 8	7.3.1.2	Floor 1 = 1500 sf Residential accessory (200 gsf/oc) = 8
		Floor 1 = 7,120 sf Parking (200 gsf/oc) = 36		Floor 1 = 7,120 sf Parking (200 gsf/oc) = 36
		Floor 2 = 8,812 sf Residential (200 gsf/oc) = 45		Floor 2 = 8,812 sf Residential (200 gsf/oc) = 45
		Floor 3 = 9,569 sf Residential (200 gsf/oc) = 48		Floor 3 = 9,569 sf Residential (200 gsf/oc) = 48
		Floor 4 = 7,045 sf Residential (200 gsf/oc) = 36		Floor 4 = 7,045 sf Residential (200 gsf/oc) = 36
		Floor 4 = Common Roof Deck 550 sf / 15 = 37		Floor 4 = Common Roof Deck 550 sf / 15 = 37
		Total Building Occupant Load = 210		**Total Building Occupant Load = 210**
Use Group(s)	311.3	Floor 1 and 2 - Parking (S2)	6.1.13.1	Storage (Vehicles)
	310.1	Floors 2, 3, 4 - Apartments (R2)	6.1.8.1.5	Apartment Building
Horizontal Separation	509.4	Parking Below R - maximum 1 story above grade plane S-2		
		parking garage of type 1 construction, the number of stories		
		shall be measured from the floor above such parking area		
	509.2	3 hr fire separation between 1A and 5B		
		Building below the 3hr is of 1A construction		
		Height measured from Grade Plane for 5B maximum		
Floor 1 - Const. Type	T 503	1A - non-combustible protected		I (332) non-combustible protected
Building Area	T 503	Unlimited Area per floor		

Building Elements	T 601	3 hr Structural Frame	30.1.6	No Minimum Construction requirements
	T 602	3 hr Bearing Walls Exterior		
	T 601	3 hr Bearing Walls Interior		
	T 601	0 hr Non-Bearing Walls Interior		
	T 602	1 hr Non-Bearing Walls Exterior (sep. dist 10'<= 30')		
	T602	2hr Non-Bearing Walls Exterior (sep. dist 0'<10')		
	T 602	0 hr Non-Bearing Walls Exterior (sep. dist >30')		
Floor 2,3,4 Const. Type	T 503	5B - combustible unprotected		V (000) combustible unprotected
Building Height	T 503 and 504.2	Sprinkler increase = 3 stories and 60' max.		
		The proposed building is 3 stories (on top of the 1 story podium)		
Building Area	T 503	14,000 sf max with 503 sprinkler increase of 100%		
		The proposed largest story is 9,569 sf		
Building Elements	T 601	0 hr Structural Frame	30.1.6	No Minimum Construction requirements
	T 602	0 hr Bearing Walls Exterior (sep. dist >= 10')		
	T 601	0 hr Bearing Walls Interior		
	T 601	0 hr Non-Bearing Walls Interior		
	T 601	0 hr Floor Construction (1hr between units)		
	T 601	0 hr Roof Construction		
Separations				
	508.4	S2 and R2 = 1 hr	6.1.14.4.1	Storage (ord.) and Apartment = 1hr with sprink.
	708.4	2 hr Elevator Shaft >= 4 stories	8.6.5	2 hr >= 4 stories
	708.4	1 hr Elevator Shaft < 4 stories	8.6.5	1 hr < 4 stories
	708	2 hr Mechanical Shaft >= 4 stories		
	708	1 hr Mechanical Shaft < 4 stories		
	1022.1	2 hr Stair Shaft >= 4 stories		
	1022.1	1 hr Stair Shaft < 4 stories		
	709.1	1 hr Between Dwelling Units		
	1018.1	1/2 hr Corridor	30.3.6.1.2	1/2 hr corridor
	508.2.5	1 hr Boiler Room	30.3.2.1.1	1 hr Boiler Room
	508.2.5	1 hr Trash Room	30.3.2.1.1	1 hr Trash Room
	508.2.5	1 hr Storage Room	30.3.2.1.1	1 hr Storage Room

	508.2.5	1 hr Laundry Room	30.3.2.1.1	1 hr Laundry Room
	3006.4	2 hr Elevator Machine Room		
	715.4	90 minute Stairwell Doors (2hr shaft)		
	715.4	20 minute Apartment Entry Doors (1/2 hr corridor wall)	30.3.6.2.1	20 minute Apartment Entry Doors
Distances and Exits	1021.1	2 Exits required	7.4.1.1	2 Means of Egress required
	1016.1	250’ Travel Distance to exits with Sprinklers	30.2.6.3.2	200’ Travel distance from apt. door to exit
	1014.3	125’ Common Path of Travel	30.2.5.3.2	50’ Common Path of Travel
	1018.4	50‘ Dead End	30.2.5.4.2	50‘ Dead End
			30.2.6.2	125’ Travel Distance within Dwelling to Corridor
Unprotected Openings	T 705.8	15% when exterior wall sep. dist. is 3’>5’		
	T 705.8	25% when exterior wall sep. dist is 5’>10’		
	T 705.8	45% when exterior wall sep. dist. is 10’>15’		
	T 705.8	75% when exterior wall sep. dist. is 15’>20’		
	T 705.8	Unlimited when exterior wall sep. dist. is 25’>30’		
Elevator Lobby	708.14.1.4	Not required as Sprinkled with 13		
Elevator as MoE	1007.2.1.1	Not req. as bldg. is not 4 stories above the level of exit discharge		
Egress Windows	1029.1.1	Not Required as Sprinkled with NFPA13		
Egress Stairs	1009.1	Occ. Load >50 = 44” min width	24.2.5.4	36” min. stair width
	1009.1	Occ. Load <=50 = 36” min width	7.2.2.2.1.2(B)	44” min. over 50 occ.
	1003.3	Handrails can protrude into stair 4.5” max	7.2.2.2.1.2	Handrails can protrude into stair 4.5” max
	1005.2	Door Swings may not reduce egress width by > 1/2		
	1009.2	80” min headroom	7.2.2.2.1.1(a)	6’-8” min. headroom
	1009.3	7” max. riser	7.2.2.2.1.1(a)	7” max. riser
	1009.3	11” min Tread depth	7.2.2.2.1.1(a)	11” min. tread
	1009.6	12’ max. total rise between floors or landings	7.2.2.2.1.1(a)	12’ max. height between landings
Ramps	1010.2	1:12 (8%) Max slope	7.2.5.2(a)	1:12 max. slope

	1010.6	60” long landings at top and bottom		
	1010.6	2% max slope of landings	7.2.5.2(a)	1:48 max. cross slope
	1010.8	>6” rise must have handrails on both sides of ramp		
Egress Corridors	1018.2	44” min. when Occ. > 50		
	1018.2	36” min. when Occ. <= 50		
	1018.2	24” min. at service corridors to mechanical equipment		
Sound	1207.2	STC > 50 at walls and floors/ceilings		
	1207.3	IIC > 50 at walls and floors/ceilings		
Energy IECC 2006	T 402.1.1	0.35 Fenestration U-Factor		
Zone 6		R-49 Ceiling		
Residential		R-20 or 13+5c Framed wall		
		R-30 Floor		
		R-19 or 15c Basement wall		
		R-10 to 4ft Slab		
Accessibility	Fair Housing Act Applies			
	All units are designed to meet the Fair Housing Act			
	Ch 11 of IBC 2009 does not apply as State of ME did not adopt it as part of MUBEC			
	Maine Human RIghts Act Applies			
	All units are designed to meet the Maine Human Rights Act			
	Retail Spaces must meet ADA 2010			
	All common spaces and retail areas are designed to meet ADA 2010			
	The residential units do not need to meet ADA as the project has no Public Funding			