Code Review

Dec 7, 2015

665 Congress Street

	IBC 2009		NFPA 101 2009	
8 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	Basement = 1,000 sf Merc. accessory space (60 gsf/oc) = 17	7.3.1.2	Basement = 1,000 sf Merc. accesory. (60 gsf/oc) = 17
		Basement = 16,843 sf Parking (200 gsf/oc) = 84		Basement = 16,843 sf Parking (200 gsf/oc) = 84
		Floor 1 = 16,843 sf Parking (200 gsf/oc) = 84		Floor 1 = 16,843 sf Parking (200 gsf/oc) = 84
		Floor 1 = 2,089 sf Mercantile space (30 gsf/oc) = 70		Floor 1 = 2,543 sf Mercantile space (30 gsf/oc) = 85
		Floor 1 = 1,528 sf Residential (200 gsf/oc) = 8		Floor 1 = 1,528 sf Residential (200 gsf/oc) = 8
		Floor 2 = 11,756 sf Residential (200 gsf/oc) = 59		Floor 2 = 11,756 sf Residential (200 gsf/oc) = 59
		Floor 2 = 728 sf (lounge area tables and chairs) (15sf/oc) = 49		Floor 2 = 709 sf (lounge area tables) (15sf/oc) = 48
		Floor 2 = 1,479 sf (fitness room with equipment) (50sf/oc) = 30		Floor 2 = 1,479 sf (fitness with equip.) (50sf/oc) = 30
		Floor 2 = 1,175 sf Business (100 gsf/oc) = 12		Floor 2 = 1,175 sf Business (100 gsf/oc) = 12
		Floor 3 = 15,119 sf Residential (200 gsf/oc) = 79		Floor 3 = 15,119 sf Residential (200 gsf/oc) = 79
		Floor 4 = 15,119 sf Residential (200 gsf/oc) = 79		Floor 4 = 15,119 sf Residential (200 gsf/oc) = 79
		Floor 5 = 15,119 sf Residential (200 gsf/oc) = 79		Floor 5 = 15,119 sf Residential (200 gsf/oc) = 79
		Floor 6 = 15,119 sf Residential (200 gsf/oc) = 79		Floor 6 = 15,119 sf Residential (200 gsf/oc) = 79
		Floor 7 = 13,109 sf Residential (200 gsf/oc) = 66		Floor 7 = 13,109 sf Residential (200 gsf/oc) = 66
		Floor 7 = 564 private roof deck for unit 719 (15sf/oc) = 38		Floor 7 = 564 roof deck for unit 719 (15sf/oc) = 38
		Floor 7 = 517 private roof deck for unit 718 (15sf/oc) = 35		Floor 7 = 517 roof deck for unit 718 (15sf/oc) = 35
		Floor 8 = 13,109 sf Residential (200 gsf/oc) = 66		Floor 8 = 13,109 sf Residential (200 gsf/oc) = 66
		Total Building Occupant Load = 933		**Total Building Occupant Load = 933**
Use Group(s)	309.1	Basement - Mercantile (M) (accessory storage)	6.1.10	Mercantile (accessory storage)
	309.1	Floor 1 - Mercantile (M)	6.1.10	Mercantile

	311.3	Basement - Parking (S2)	6.1.13.1	Storage (Vehicles)
	311.3	Floor 1 - Parking (S2)	6.1.13.1	Storage (Vehicles)
	310.1	Floors 2 - 8 - Apartments (R2)	6.1.8.1.5	Apartment Building
High-rise Building	403.2.1		High Rise	
High-rise Building	403.2.2	Seismic Considerations per Chapter 16	11.8.3	Sprinkler control valves + water flow dev. at each floor
	403.2.3	Structural Integrity of Exit Enclosures	11.8.4.1	Emergency VOice/alarm system
	403.2.3.1	Wall Assembly	11.8.4.2	Two way Telephone
	403.3.2	Fire Pumps	11.8.5	Emergency Lighting and Standby power
	403.4	Emergency Systems	11.8.5.2.4	Emergency power connected to electric fire pump
	403.4.1	Smoke Detection		Emergency command center, elevator, Mechanical for
	403.4.2	Fire Alarm Systems		smokeproof enclosures
	403.4.3	Emergency Voice/Alarm communication	11.8.6	Emergency command center
	403.4.4	Emergency responder radio coverage	11.8.7	Emergency Plans
	403.4.5	Fire Command		
	403.4.6	Smoke Removal		
	403.4.7	Standby Power		
	403.5.3.1	Stairway Communication System		
	403.5.4	Smokeproof Exit Enclosures		
	403.5.5	Luminous egress path markings		
	403.5.6	Emergency Escape openings are not required		
	403.6.2	Occupant evacuation Elevators		
Construction Type	T 503	1B - non-combustible		II (222) non-combustible
Building Height	T 503	11 stories, 160 feet		
Building Area	T 503	79,000 sf limited by S2, R2 and M are unlimited		
		17,809 sf maximum S2 floor plate		
Building Elements	T 601	2 hr Structural Frame	30.1.6	Apartments (No Minimum Construction requirements)
	T 602	2 hr Bearing Walls Exterior	37.1.6	Mercantile (no minimum requirements)
	T 601	2 hr Bearing Walls Interior	42.1.6	Storage (no minimum requirements)
	T 601	0 hr Non-Bearing Walls Interior		
	T 602	1 hr Non-Bearing Walls Exterior (sep. dist 10'<= 30')		
	T602	1hr Non-Bearing Walls Exterior (sep. dist 0'<10')		
	705.8 'h"	As footnote 'h' in the 2012 IBC allows exterior walls with unlimited unprotected openings to have a '0' hr fire rating section		

			Section 104.11 allows local jurisdiction to approve this exception even as we are IBC 2009 currently		
		T 602	0 hr Non-Bearing Walls Exterior (sep. dist >30')		
		T 601	2 hr Floor Construction and secondary members		
		T 601	1 hr Roof Construction		
		705.8 (g)	Exterior walls at Open Parking Garages with 10 separation		
			do not need fire rating		
			North wall of parking garage is 1hr rated, all others are greater		
			than 10 feet separation and unrated		
		1007.3 (5)	Areas of Refuge are not required at exit stairs serving open parking garages		
		1007.3 (7)	Areas of Refuge are not required in Group R-2 Occupancies		
			Exterior Walls to Meet NFPA 285 Test		
Separations					
		508.4	M and R2 = 1 hr	6.1.14.4.1	Mercantile and Apartment = 1hr with sprinkler
		508.4	M and S2 = 1 hr	6.1.14.4.1	Mercantile and Storage (ord.) = 1hr with sprink.
		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	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
		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 (less than 500 occ. per story)	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
		160’ maximum travel distance to exit		
Section 1014.3 common path of egress travel has been deleted per MUBEC. Please revise.	1014	125’ Common Path of Travel	30.2.5.3.2	50’ Common Path of Travel
		38’-9” maximum common path of travel		
	1018.4	50‘ Dead End	30.2.5.4.2	50‘ Dead End
		38’-9” maximum 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	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’ (allows ‘0’ hr exterior walls per footnote ‘h’ in 2012 and 104.11 in 2009)		
	T 705.8	Unlimited when exterior wall sep. dist. is 25’>30’ (allows ‘0’ hr exterior walls per footnote ‘h’ in 2012 and 104.11 in 2009)		
	T 705.8	Unlimited when exterior wall sep. dist. is >30’ (allows ‘0’ hr exterior walls per footnote ‘h’ in 2012 and 104.11 in 2009)		
		North wall above paring is 40’ away from proprty line and unrated, parking garage wall is 1 hr rated		
		West wall is 27’ from property line thus is unrated		
		East wall is 28’ from property line thus is unrated		
		South wall is 36’-5’ from property line thus is unrated		
Elevator Lobby	708.14.1.4	REQUIRED		
Elevator as MoE	1007.2.1.1	REQUIRED		
Generator		Required for means of egress elevator		
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				
Zone 6				
Commercial	T 502.2.1	0.35 Fenestration U-Factor		
		R-20c Ceiling entirely above deck		
		Proposed ceiling above deck is R-33		
		R-13+7.5c Metal Framed wall		
		Proposed Wall is R-22.5		
		R-38 Floor		
		Proposed floor is R-38		
		R-7.5c Basement wall		
		Proposed Basement Wall is R-10		
		R-10 to 4ft Slab		
		Proposed Slab is R-10		
		U 0.45 Storefront		
		U 0.80 Entrance Door		
		U 0.55 Other		
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		
Vestibule IECC	502.4.7	Not required in spaces less than 3,000 sf = retail is 2,500 sf	
Plumbing for retail	1,429 sf of retail space		
	48 occ = 24 males = 1 toilet, 1 lav		
	24 females = 1 toilet, 1 lav		

Please clarify the square footage of the retail space. The square footage here does not match up with the square footage on page one of the code analysis.