Code Review

Apr 3, 2017

Baxter Academy at 185 Lancaster Street

	IBC 2009		NFPA 101 2009	
2 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
		Emergency Lighting		Emergency Lighting
Areas		First floor Tenant area = 19,211 sf		
		Second floor Tenant area = 12,360 sf		
	1004.1.1	Classrooms 20 net sf per occ.	7.3.1.2	Classrooms 20 net sf per occ.
		Shops and Vocational 50 net sf per occ.		Labs, Shops 50 net sf per occ.
Occupant Load	T 1004.1.1	First Floor = 352 Occupants	7.3.1.2	First Floor = 355 Occupants
		Second Floor = 316 Occupants		Second Floor = 316 Occupants
		Total Building Occupant Load = 668		**Total Building Occupant Load = 668**
Use Group(s)	305.1	First and Second Floor - Educational	14.1.10	Educational
	304.1	Basement First and Second Floor - Business	38.1.10	Business
Construction Type	T 503	3B - mixed-combustible		III (200) Mixed-combustible
Building Height	T 503	E = 2 stories, 55 feet		
		B = 3 stories, 55 feet		
Building Area	T 503	E = 14,500 sf		
		B = 19,000 sf		

	First Floor Footprint. = 53,779 sf			
		Educational Use has a proposed 1hr fire separation from Adjacent Business Tenants		
	506.2	Building area Frontage Increase		
		If = (1309’/1309’-0.25) 30’/30		
		If = 0.75		
		Aa = 10,875+(14,500x2)		
		Aa = 39,875 sf allowed		
Building Elements	T 601	0 hr Structural Frame	14.1.6	Educational (No Minimum Construction requirements)
	T 602	2 hr Bearing Walls Exterior	38.1.6	Business (no minimum requirements)
	T 601	0 hr Bearing Walls Interior		
	T 601	0 hr Non-Bearing Walls Interior	14.1.1.2	Classrooms over 50 occ are Assembly
	T 602	1 hr Non-Bearing Walls Exterior (sep. dist 10’<= 30’)		
	T602	1hr Non-Bearing Walls Exterior (sep. dist 0’<10’)		
	T 602	0 hr Non-Bearing Walls Exterior (sep. dist >30’)		
	T 601	0 hr Floor Construction and secondary members		
	T 601	0 hr Roof Construction		
	1007.3 (3)	Areas of Refuge are not required at exit stairs with sprinkler systems		
Separations				
	506.1	NON-Separated Use	6.1.14.2.1	Multiple Occupancy
				Educational and Business
	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	1 hr Stair Shaft < 4 stories		
	1018.1	(smoke partitions) 0 hr Corridor with sprinkler for B and E	14.3.6.1.2	Corridor walls to be smoke partitions with sprinkler
	508.2.5	1 hr Boiler Room	14.3.2.1.1	1 hr Boiler Room
	508.2.5	1 hr Trash Room	14.3.2.1.1	1 hr Trash Room
	508.2.5	1 hr Storage Room	14.3.2.1.1	1 hr Storage Room

	508.2.5	1 hr Laundry Room	14.3.2.1.1	1 hr Laundry Room
	715.4	60 minute Stairwell Doors (1hr shaft)		
Distances and Exits	1018.1	Corridors 44” wide	14.2.3.2	Corridors to be 6’ wide clear minimum
	1018.1	Corridors 72” wide in E occupancy with 100 occupants		
	1021.1	2 Exits required (less than 500 occ. per story)	14.2.4	2 Means of Egress required
		3 Exits required (more than 500 occ. per story)		
	1016.1	250’ Travel Distance to exits with Sprinklers E occupancy	14.2.6.3	200’ Travel distance with sprinkler
	1014	75’ common path of travel	14.2.5.3.1	100’ Common Path of Travel
	1018.4	50‘ Dead End with sprinkler	14.2.5.2	50‘ Dead End with sprinkler
			14.2.5.4	Rooms larger than 1000 sf or 50 occupants need
				2 exit doors that lead to separate exits
			14.2.5.6	Doors cannot swing into exit corridor (provide recess)
			14.2.11.1.2	Window for Rescue - not required with sprinkler
			14.3.3.2	Interior finishes Wall Ceiling Class A or B
			14.3.3.3	Floors to be Class I or II (exits to have Class II)
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)		
Elevator Lobby	708.14.1.4	Not required with sprinkler		
Elevator as MoE	1007.2.1.1	Not required as it is less than 4 stories		
Egress width	1005.1	Stairs from second floor (0.3 times 316 occupants) = 93”		
		2 stairs each needs to be 47.4” wide		
		Corridors on second floor (0.2 times occupants 316) = 63.2”		
		Corridors on first floor (0.2 times occupants 352) = 70.4”		

Egress Stairs	1009.1	Occ. Load >50 = 44” min width	14.2.2.3	Stair to comply with this section
	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		
	1018.1	Corridors 44” wide		
	1018.1	Corridors 72” wide in E occupancy with 100 occupants		
Accessibility	Ch 11 of IBC 2009 does not apply as State of ME did not adopt it as part of MUBEC			
	Must meet ADAAG 2010			
	Maine Human Rights Act Applies			
Plumbing	205 male students			
UPC 2015	Secondary	Toilets 1 per 50 = 5 toilets		
		Urinals 1 per 100 = 3 urinals		
		Lavatory 1 per 40 = 6 Lavatories		
		Water Fountains 1 per 150 = 3		
	205 female students			
	Secondary	Toilets 1 per 30 = 7 toilets		
		Lavatory 1 per 40 = 6 Lavatories		

30 male staff

1 per 50 occ = 1 toilet
1 per 100 = 1 urinal
1 per 40 = 1 lavatory

30 female staff

1 per 30 occ = 1 toilet (2 toilets are required to equal mens fixtures)
1 per 40 = 1 lavatory