

CODE SUMMARY

APPLICABLE CODES

THE GENERAL FIRE PROTECTION / LIFE SAFETY FEATURES AND SYSTEMS BASED UPON THE REQUIREMENTS OF HUDSON, MA. THE FOLLOWING

MASS. ARCHITECTURAL ACCESS BOARD (MAAB), 521-CMR. MASSACHUSETTS STATE BUILDING CODE (MSBC), 780 CMR EIGHTH EDITION **ELECTRICAL** MASS. ELECTRICAL CODE, 527 CMR, 12.00.

MASS. ELEVATOR REGULATIONS, 524 CMR (LATEST EDITION) **ELEVATORS** FIRE PREVENTION MASSACHUSETTS FIRE PREVENTION REGULATIONS (MFPR), 527 CMR. INTERNATIONAL MECHANICAL CODE, AS ADOPTED AND AMENDED BY THE MSBC.

MASS. FUEL GAS AND PLUMBING CODES, 248 CMR NATIONAL FIRE PROTECTION (NFPA) STANDARDS, AS REFERENCED BY THE MSBC AND THE MFPR.

USE AND OCCUPANCY CLASSIFICATIONS

THE BUILDING INCLUDES MORE THAN ONE USE GROUP AND SHALL BE DESIGNATED AS A MIXED USE PER MSBC SECTION 508. USE GROUPS WILL BE NON-SEPARATED MIXED USES PER MSBC 508.3

THE BUILDING CONTAINS THE FOLLOWING SPECIFIC USES PER MSBC 302:

FLOOR	FUNCTION	USE GROUP CLASSIFICATION	SECTION
FOURTH FLOOR	CLASSROOMS ADMINSTRATIVE OFFICES	E B	305 303
THIRD FLOOR	CLASSROOMS ADMINISTRATIVE OFFICES	E B	305 303
SECOND FLOOR	CLASSROOMS MEDIA CENTER ADMINSTRATIVE OFFICES	E A-3	305 303
FIRST FLOOR	CLASSROOMS CAFETERIA GYMNASIUM W/ SEATING AUDITORIUM ADMINISTRATIVE OFFICES	E A-1/A-2 E/A-3 E/A-3 B	305 303 305, 303 305, 303 304

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE IB

ALLOWABLE HEIGHT AND AREA LIMITATIONS **TABLE 503**

E, B, A-2, A-3, STORIES 6			ALLOWABLE AREA AND STORIES
AREA PER FLR UNLIMITED	ROUP		IIA
	E, B, A-2, A-3, A-4	AREA PER FLR	UNLIMITED

FIRE RESISTANCE RATING REQUIREMENTS FOR **BUILDING ELEMENTS (HOURS) - TABLE 601**

BUILDING ELEMENT	CONSTRUCTION CLASSIFICATION TYPE IB
PRIMARY STRUCTURAL FRAME	2
BEARING WALLS	2
NON-BEARING WALLS AND PARTITIONS INTERIOR	0
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	2
ROOF CONSTRUCTION AND SECONDARY MEMBERS	1

Provide a one-hour fire rated roof assembly except provide an unrated roof assembly where every part of the roof construction is 20 feet or more above anyfloor

Provide unenclosed floor openings for stairs serving as required exit access paths from the Ground Floor in accordance requirements of MSBC8 Section 1016.1, Exception 4 as summarized in Table 1a. (1016.1, Exception 4, 1021.1, Exception 3)

Provide other unenclosed floor openings not serving as part of the required means of egress between the Lower and Ground Floors and between the Second and Third Floors in accordance with MSBC8 Section 708.2, Exception 7 as summarized in Table No. 1b. (708.2)

ACTUAL HEIGHT AND AREAS

USES	MOST STRINGENT USE	CONSTRUCTION CLASSIFICATION	ALLOWABLE HEIGHT (FT) ALLOWABLE HEIGHT (ST) ALLOWABLE AREA (SF)	ACTUAL HEIGHT (FT) ACTUAL STORIES (ST)ACTUAL LARGEST FLOOR AREA (SF)	TOTAL ACTUAL FLOOR AREA IN BUILDING	ACTUAL TOTAL BUILDING HEIGHT
E, B A-1, A-2, A-3, A-4	A-1, A-2, A-3, A-4	IB	200 6 UNLIMITED	62'-0" TO ROOF EDGE 4 72,905 (FIRST FLOOR) 100,853 (BUILDING FOOTPRINT)	236, 495	62'-0"

PLUMBING FIXTURE CALCULATIONS

Students population	n= 1225	Academics 75%-80% (3rd & 4th)	Electives 20%-25% (1st & 2nd)
Females: 613 =	21 water closets (@1:30)	16 water closet	5 water closets
	7 lavatories (@1:90)	6 lavatories	1 lavatory
Males: 613 =	7 water closet (@ 1:90)	6 water closets	1 water closet
	7 urinals (@ 1:90)	6 urinal	1 urinal
	7 lavatories (@ 1:90)	6 lavatories	1 lavatory

<u>Daytime Use:</u> Students population= 1225 21 water closets (@1:30) Females: 613 = 7 lavatories (@1:90) 7 water closet (@ 1:90) 7 urinals (@ 1:90) 7 lavatories (@ 1:90)

Staff Population = 175 5 water closets (@1:20) Females: 86= 3 lavatories (@1:40) 4 water closet (@ 1:25) No urinal required but 1 urinal can take the place of a toilet (33% urinals) 3 lavatories (@ 1:40)

Kitchen Staff = 8 (1st Floor) 1 water closets (@1:20) Females : 4= 1 lavatories (@1:40) 1 water closet (@ 1:25) No urinal required (33% urinals) 1 lavatories (@ 1:40)

Cafeteria = seating for 350 (table and chairs) 1st Floor Females: 175= 6 water closets (@1:30) 1 lavatory (@1:200) 3 water closet (@ 1:60) No urinal required but 1 urinal can take the place of a toilet 50% urinals) 1 lavatory (@ 1:200)

Night use
Auditorium = 600 seats (as per page 153 item (h) in 248 CMR) 2 water closets (@1:200) 2 lavatories (@1:200)

2 lavatories (@ 1:200) Stage and Orchestra Pit = 130 people 3 water closets (@1:30) Females : 65= 1 lavatory (@1:90) 1 water closet (@ 1:60) 1 urinals (@ 1:90)

Gymnasium = bleacher capacity = 1225 (11, 200 s.f.) Based on Halls, Museums, Libraries. Etc. 13 water closets (@1:50) 3 lavatories (@1:200) 7 water closet (@ 1:100) No urinal required but 3 urinals can take

> the place of a toilet 50% urinals) 3 lavatories (@ 1:200)

1 lavatory (@ 1:90)

1 water closet (@ 1:600)

2 urinals (@ 1:200)

Student Locker Rooms = 4 water closets (@1:30) 2 lavatories (@1:90) 3 showers (number of showers is not specified) Males: 50= 2 water closet (@1:90) 2 urinals (@1:90) 2 lavatories (@1:90) 3 showers (number of showers is not specified)

Staff Locker Rooms = Females : 285= 2 water closets 2 water closet Males: 285 = 1 lavatory 1 shower

1 HOUR RATED PARTITION OCCUPANT LOAD OCCUPANT TYPE

TRAVEL DISTANCE 1 HR RATED CEILING MEANS OF EGRESS

MEANS OF EGRESS - MAXIMUM FLOOR AREA ALLOWANCES - TABLE 1004.1.1

FUNCTION OF SPACE	FLOOR AREA IN SF PER OCCUPANT	PLAN DESIGNATION
ACCESSORY STORAGE MECHANICAL EQUIPMENT ROOM	300 GROSS	М
STORAGE ROOMS, TOILET ROOMS, CORRIDORS	n/a	n/a
ASSEMBLY WITH FIXED SEATING	EQUALS NUMBER OF FIXED SEATS INSTALLED HEREIN	A
ASSEMBLY CONCENTRATED CHAIRS ONLY - NOT FIXED	7 NET	A1
ASSEMBLY UNCONCENTRATED TABLES AND CHAIRS	15 NET	A2
BUSINESS AREAS	100 GROSS	В
EDUCATIONAL - CLASSROOMS	20 NET	Е
EDUCATIONAL SHOPS - OTHER VOCATIONAL	50 GROSS	E1
EXERCISE ROOMS	50 GROSS	F
KITCHENS - COMMERCIAL	200 GROSS	К
LIBRARY - READING ROOM	50 NET	L
LOCKER ROOMS	50 GROSS	F1
STAGE AND PLATFORMS	15 NET	Р

MEANS OF EGRESS - REQUIRED EGRESS WIDTHS AND LENGTHS

EGRESS TYPE	EGRESS WIDTH OR LENGTH	MSBC SECTION
STAIRWAY	0.2 INCHES PER OCCUPANT	MSBC 1005.1 (PER MA AMENDMENT)
OTHER EGRESS COMPONENTS	0.15 INCHES PER OCCUPANT	MSBC 1005.1 (PER MA AMENDMENT)
COMMON PATH OF EGRESS TRAVEL USE GROUP E	75 FEET MAXIMUM	MSBC 1014.3
COMMON PATH OF EGRESS TRAVEL USE GROUP B	100 FEET MAXIMUM	MSBC 1014.3, EXCEPTION 1
COMMON PATH OF EGRESS TRAVEL USE GROUP A	30 FEET MAXIMUM	MSBC 1028.8
EXIT ACCESS TRAVEL DISTANCE USE GROUPS A AND E	250 FEET MAXIMUM	MSBC TABLE 1016.1
EXIT ACCESS TRAVEL DISTANCE USE GROUP B	300 FEET MAXIMUM	MSBC TABLE 1016.1
MINIMUM CORRIDOR WIDTH	44 INCHES MINIMUM	MSBC 1018.2
MINIMUM CORRIDOR WIDTH E USE GROUP SERVING 100 OCCUPANTS OR MORE	72 INCHES MINIMUM	MSBC 1018.2, EXCEPTION 4

PROVIDE A MINIMUM CLEAR WIDTH OF 72 INCHES FOR CORRIDORS WITH A REQUIRED CAPACITY OF 100 OR MORE PERSONS, A MINIMUM CLEAR WIDTH OF 44 INCHES FOR CORRIDORS WITH A REQUIRED EGRESS CAPACITY OF 51 TO 99 PERSONS AND A MINIMUM CLEAR WIDTH OF 36 INCHES FOR CORRIDORS WITH A REQUIRED EGRESS CAPACITY OF 50 OR LESS PERSONS (1018.2, EXCEPTIONS 2 AND 4)

FIRE DETECTION SYSTEMS AND ALARM SYSTEMS

THE BUILDING WILL BE EQUIPPED WITH FULLY AUTOMATIC FIRE DETECTION, ALARM AND COMMUNICATION SYSTEMS. THE SYSTEM INCLUDES THE FOLLOWING FIRE DETECTION FEATURES (MSBC 907.0, 907.5, 907.2.1.1, 907.2.3-EXCEPTION 2):

MANUAL STATIONS AT EXITS HVAC EQUIPMENT SMOKE DETECTORS

SPRINKLER WATER FLOW AND SWITCHES ELEVATOR MACHINE ROOM SMOKE DETECTORS

EMERGENCY AND STANDBY POWER THE BUILDING WILL BE EQUIPPED WITH EMERGENCY POWER IN ACCORDANCE TO MSBC 907.6.2, NFPA 72, 1011.5.3, 1006.3 FOR THE FOLLOWING:

EMERGENCY LIGHTS ELEVATOR CAR LIGHTING

FIRE ALARM AND COMMUNICATIONS SYSTEMS **ELEVATORS**

ONE ELEVATOR WILL BE SIZED TO ACCOMMODATE AN AMBULANCE GURNEY IN ITS HORIZONTAL POSITION (80 INCHES BY 54 INCHES MINIMUM

ACCESSIBILITY

AS IDENTIFIED BY THE CRITERIA IN MSBC 1101.1, (WITHIN THE MASSACHUSETTS ADMENDMENTS TO THE IBC 2009), THE ENTIRE BUILDING WILL BE MADE TO COMPLY WITH THE REQUIREMENTS OF MAAB CMR 521. NORMAL HANDICAPPED ACCESSIBLE AND VAN PARKING SPACES WILL BE PROVIDED IN ACCORDANCE WITH MAAB CMR 521.

ENERGY CONSERVATION

BUILDING SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE INTERNATIONAL ENERGY CONSERVATION CODE 2009 (IECC 2009) WITH MASSACHUSETTS AMENDMENTS WHERE APPLICABLE (MSBC 1301.1.1 WITHIN THE MASSACHUSETTS ADMENDMENTS TO THE IBC 2009) WITHIN USE GROUPS E, THE ENTIRE AREA OF SLAB ON GRADE SHALL BE INSULATED WITH A MINIMUM OF R10 RIGID INSULATION (MSBC 502.2.6.1 WITHIN THE MASSACHUSETTS ADMENDMENTS TO THE IBC 2009)

A CONTINUOUS AIR BARRIER WILL BE PROVIDED (MSBC 502.4.3 WITHIN THE MASSACHUSETTS ADMENDMENTS TO THE IBC 2009)

CLIMATE ZONE: 5A (PER TABLE 301.1 IECC 2009)

BUILDING ENVELOPE REQUIREMENTS: OPAQUE ASSEMBLIES (TABLE 502.2(1), IECC 2009) REQUIRED R VALUE PROVIDED R VALUE

INSULATION ENTIRELY ABOVE DECK	R-20ci	R-48ci
WALLS ABOVE GRADE	REQUIRED R VALUE	PROVIDED R VALUE
MASS (BRICK VENEER @ 42 POUNDS PER SF)	R-11.4ci	R-15ci
WALLS BELOW GRADE	REQUIRED R VALUE	PROVIDED R VALUE
BELOW GRADE WALL	R-7.5ci	R-11.6ci
SLAB ON GRADE FLOORS	REQUIRED R VALUE	PROVIDED R VALUE
UNHEATED SLABS	R-5.0ci	R-10ci
OPAQUE DOORS	REQUIRED U VALUE	PROVIDED U VALUE
SWINGING DOORS	U-0.70	
ROLL-UP OR SLIDING DOORS	U-0.50	

BUILDING ENVELOPE REQUIREMENTS: FENESTRATION (TABLE 502.3, IECC 2009) VERTICAL FENESTRATION (40% MAXIMUM OF ABOVE-GRADE WALL)

METAL FRAMING WITH OR WITHOUT THERMAL BREAK	REQUIRED U VALUE	PROVIDED U VALUE
CURTAINWALL/STOREFRONT U-FACTOR	0.45	0.40
ENTRANCE DOOR U-FACTOR	0.80	0.59
ALL OTHER U-FACTOR	0.55	NA
SHGC - ALL FRAME TYPES	REQUIRED U VALUE	PROVIDED U VALUE
SHGC: PF < 0.25	0.40	0.37
SHGC: 0.25 < PF < 0.50	NR	NR
SHGC: PF > 0.50	NR	NR
SKYLIGHTS (3% MAXIMUM)	REQUIRED U VALUE	PROVIDED U VALUE
U FACTOR	0.60	0.40

1102.00

G2.1

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0.37 0.40 First and Second Floor Code No.: Date: 8/15/2012 Site Plan Review and Board of Appeals Submission Drawn: Checked: JRF