Official Interpretation No. 1-85
DATE: October 30, 1985
SUBJECT: State Building Code Section 108.5.1

Question 1: Section 108.5.1 requires the periodic inspection of certain buildings, and the issuance of Certificates of Inspection for these buildings on a regular basis. The standard form Certificate of Inspection which was developed by the Commonwealth states that "The means of egress are sufficient for the following number of persons:" and provides space for the listing of permitted occupancy load by story and by place of assembly. Is it the intent of the Code to require a complete periodic reinspection of the entire building or is such an inspection limited to the building's egress system?

Answer 1: No. Section 108.5.1 states in part "A Certificate of Inspection as herein specified shall not be issued until an inspection is made certifying that the building or structure or parts thereof complies with ALL the applicable requirements of this Code ..." (emphasis supplied). The periodic reinspection is not necessarily limited to the building's egress system but may extend throughout to the entire building, or parts thereof requiring certification. The Certificate of Inspection serves as a spot check to ensure that other Code mandated procedures have been followed (e.g. permits obtained for alterations) and that the building has been maintained in a safe condition. The building has been maintained in a safe condition. The building official is free to use his judgment in determining how extensive a periodic inspection need be.

Question 2: Do Code requirements for periodic reinspection include a requirement to reinspect by wiring, plumbing, gas fitting and elevator inspectors for compliance with the various applicable specialized codes?

Answer 2: No. The Massachusetts State Building Code does not include a requirement for periodic reinspection by plumbing, wiring, gas fitting or other various specialized code enforcement officials. However, periodic inspections conducted by the building official may reveal conditions that would require further attention by local wiring, plumbing, gas or elevator inspectors.

Question 3: May a professional consultant assume or be granted the powers and duties of the Building Official to issue permits and certificates or may he merely submit a report for the Building Official's review and acceptance?

Answer 3: Section 114.1 states in part, "The Building Commissioner or Inspector of Buildings shall examine or cause to be examined all applications for permits and amendments thereto within 30 days after filing. ... If he is satisfied that the proposed work conforms to the requirements of this Code and all pertinent law applicable thereto, he shall issue a permit." Only a Building Official, appointed in accordance with Section 107 to enforce the building code may issue building permits and/or related certificates. A professional consultant may submit a report for the Building Official's review, but the issuance or denial of the permit or certificate is ultimately the Building Official's responsibility.

Question 4: May such a professional consultant be hired by a municipality to perform inspections in the absence of any "unusual technical issues" as described in Section 108.5, or should the consultant more properly be engaged by the building owner in the absence of unusual technical issues?

Answer 4: A professional consultant or expert retained by a municipality in the absence of any "unusual technical issues" to perform inspections would be required to meet the criteria and qualifications outlined in M.G.L. c. 143, § 3, and would be deemed a local inspector, and subject to all pertinent requirements of Code and law. However, a Building Official may review and/or accept reports from other qualified personnel, per Section 111.2.1 (see Question 3).

Question 5: What, if any, liability under the Code would a municipality assume in utilizing a professional consultant for the various functions described above?

Answer 5: Opinions relative to broad legal questions of liability are beyond the purpose and scope of the Board of Building Regulations and Standards. Therefore, we must decline to answer this question, and would direct the municipality to its legal advisor(s) for such and opinion.

Official Interpretation No. 2-85
DATE: October 30, 1985
SUBJECT: State Building Code Section 119.3

Question 1: Do All existing buildings have a legal use group classification , whether in use or not?

Answer 1: Yes. Section 202.1 states "All buildings and structures shall be classified with respect to use in one (1) of the use groups listed...". The use group classification is based on the purpose for which a building or structure is designed, used or intended to be used. A use group classification is required to be assigned to a building or structure whether in actual use or not.

Question 2: On what is the legal use based?

Answer 2: The Massachusetts State Building Code defines use as "The purpose for which the building or structure is designed, used or intended to be used." The lawful use and/or use group classification of an existing building may be based upon the Building Official's records pertaining to the particular structure. In the case of a vacant structure, the last legal use of record would apply.

Question 3: Does the legal use change or cease to exist when ownership changes?

Answer 3: No. A change in ownership of a building would not change the use group classification of the building or cause the use to cease. A change of use and/or occupancy may take place regardless of ownership when done in accordance with a permit issued by the Building Official.

Does the use have any relationship with ownership?

The use and ownership are only related in that the owner, as defined by Code, is responsible to comply with the applicable sections of the Code as regard to use, and must obtain a permit to change the use of a building.

Question 4: Is there ever any such thing as "abandonment" of a use group classification, so that an existing building has no use group?

Answer 4: No. All buildings are required to be classified with respect to their use. The discontinuance or "abandonment" of the actual using of a building or structure would not change the use group classification. For example, a vacant office building (formerly legally occupied) would remain in use group "B" (Business Buildings), the last lawful use of the building, until a permit was obtained to change that use.

Question 5: Upon request by an owner for a certificate of use and occupancy, is the Building Official obligated to cite in writing any violation of law or orders pending?

Answer 5: Yes. If there are violations of law or orders pending, the provisions of Section 121.0 would apply. Section 121.2.1 states that every notice or order authorized by this Code shall be in writing and shall be served on the person responsible.

Question 6: Can the use of a building or portion of a building, subsequent to January 1, 1975, legally change without the issuance of a building permit and a certificate of use and occupancy?

Answer 6: No. Section 113.0 and Section 113.1 state that a permit is required "...to change the use or occupancy of a building or structure...".

Section 119.0 and Section 119.2 state " A building or structure, in whole or in part, altered to change from one use group to another: to a different use within the same use group...shall not be occupied or used until the certificate shall have been issued certifying that the work has been completed in accordance with the provisions of the approved permits...".

The Massachusetts State Building Code became effective on January 1, 1975. All changes of use or occupancy subsequent to January 1, 1975 would be subject to the provisions of the Code.

Official Interpretation No. 3-85
DATE: October 30, 1985
SUBJECT: State Building Code Section 609.3

APPENDIX B

Massachusetts State Building Code Section 609.2 requires not less than two approved independent exitways serving every building except as modified in Section 609.3.

Massachusetts State Building Code Section 609.3 also allows one exitway in a building of the use group and characteristics as specified in Table 609.

Massachusetts State Building Code Section 609.3 also allows one exitway from the first story of a building when the first story is 2,000 square feet or less in area and with an occupancy load not exceeding 50 persons. Egress from other stories shall comply with Article 6.

Massachusetts State Building Code Section 609.2 also specifies not less than two approved independent exitways serving every story, except in one and two family dwellings and as modified in Section 609.3.

It is our interpretation that Section 609.3 deals with two distinct and separate building design configurations. In its first essence, Section 609.3 provides for certain buildings (those complying with Table 609)which are required to have only one exitway. The remaining sentences in Section 609.3 describe conditions (less than 50 occupants and less than 2,000 square feet in area) in which the first story only of any building is required to have only one exitway. Table 609 does not relate to the latter case.

Official Interpretation No. 4-85
DATE: October 30, 1985
SUBJECT: State Building Code Table 214 and Section 217.4

An existing three story building is proposed to be of type 3-C constriction. The exterior walls have a fire separation of 30 feet or more and the walls themselves are non-bearing. The loads are carried by a structural steel frame and there are structural beams and columns within the exterior wall which are part of the load bearing system. Therefore, the steel frame is load bearing. The walls themselves are essentially curtain walls.

Question: Are the beams and columns which are on the exterior part of the building, required as load bearing members, to have a two hour fire rating?

Answer: No. Table 214, line 8 of the State Building Code establishes the fire resistance rating required for the columns and framing(beams) and does not require a fire resistance rating for columns or beams for the proposed condition. However, it should be noted that, per Section 911.6, beams which support walls required to be fire resistance rated must be protected to afford not less than the fire resistance rating of the wall supported and, when supporting masonry walls, must carry a minimum fire resistance of one hour. Further, it should be noted that, if the framing supports a required fire separation wall such as an exitway enclosure, Section 909.4 would require this framing to be protected to afford a fire resistance rating equal to the wall supported.

Official Interpretation No. 5-86
DATE: January 28, 1986
SUBJECT: State Building Code Section 2101.10.4.2

Question: In a single family dwelling, the (nominal) width of a second means of egress doorway is required by Section 2101.10.4.2 to be a minimum of 32 inches. Does a six foot wide sliding glass door providing a net clear opening of 29 ¾ inches comply with this requirement?

Answer: Yes. Section 2101.10.2 allows the use of sliding glass doors for egress. Section 612.3 of the Code allows means of egress doorways to have a minimum clear width of 28 inches in one- and two-family dwellings. Per Sections 857.5.6.1 (Item 2) and 2101.7.2 (Item 2) of the Code, and Massachusetts General Laws (M.G.L.) Chapter 143, Section 3T, safety glass must be used in these sliding glass doors. M.G.L., c. 143, § 3U requires that safety glazing be etched or otherwise permanently identified as such.

Official Interpretation No. 6-86
DATE: January 28, 1986
SUBJECT: State Building Code Section 909.1.2

Question: Is it the intent to require a fire separation wall and/or fireresistive floor-ceiling assembly between units which has a fire rating of one hour, that is, an assembly with one face in one unit and the opposite face in another unit, with an assembly between the two faces producing a fireresistance rating of one hour, or, a one hour fire rated assembly for each dwelling unit, which in effect, produces a two hour fire rated assembly between the two dwelling units?

Answer: It is the intent of Section 909.1.2 to require a one hour rated dwelling unit separation between dwelling units, rather than a one hour rated assembly per dwelling unit.

Official Interpretation No. 7-86
DATE: January 28, 1986
SUBJECT: State Building Code Table 214, Line 7 "Dwelling Unit Separations and other Non-Bearing Partitions"

Question: Does Table 214, Line 7, control the fireresistance rating of only the vertical dwelling unit separations, with Line 10 controlling the horizontal separation?

Answer: No. Table 214, Line 7, regulates the fireresistance rating required between dwelling units. A rating of not less than one hour is required to be provided between dwellings regardless of their orientation and type of construction. If a certain type of construction is required by Table 214, Line 10 to provide a greater fireresistance rating for floor-ceiling assemblies, this assembly may also serve as the dwelling unit separation required by Table 214, Line 7.

Official Interpretation No. 8-86
DATE: August 19, 1986
SUBJECT: State Building Code Section 607.3

Question: Section 607.3 requires that building exitways be "...as remote from each other as practicable." Do so-called "scissor stairways" which are constructed side-by-side, usually located in the center of a building, violate this requirement?

Answer: No. Section 607.3 also states that exit stairways must be "...arranged to provide direct access in separate directions from any point in the area served." Scissor stairways, especially when located in a center core, may well satisfy Section 607.3. The exit access passageways or corridors must provide direct access to the stairways in separate directions. Because the entrances to the scissor stairways are usually at opposite sides of the core, they may, in fact, be as remote as practicable and accessible in separate directions. Table 214, Line 4, provides fire resistance requirements for enclosure of the exitways, and Table 214, Line 6, and Section 610.4 specifies fireresistance requirements for exitway access corridors.

Official Interpretation No. 9-86
DATE: August 26, 1986
SUBJECT: State Building Code Sections 504.2 and 1009.2

Question: Does the Code allow the usage of flexible duct and duct connector in forced hot air heating systems for residential construction?

Answer: Yes. Sections 504.2 and 1009.2, which speak to the use of ductwork for heating and ventilating, make reference to the mechanical code listed in Appendix B of the State Building Code, which is the BOCA Basic Mechanical Code, 1978 edition. In Sections M-301.4.3 through M-301.4.5 flexible duct and duct connector are permitted for all occupancies except one and two family dwellings when conforming to the UL 181 standards, and subject to other limits stated therein. Section M-302.2.1 allows non-metallic supply ducts in one and two family dwellings when in conformance with the applicable standard (UL 181 or SMACNA-75) listed in the appendix of the Mechanical Code.

Official Interpretation No. 10-86
DATE: August 27, 1986
SUBJECT: State Building Code Sections 1004.0 and 1006.0

Question: Must condensing type oil-fired furnaces (central heating appliances) always be vented into masonry chimneys?

Answer: No. The purpose of the masonry chimney requirement is to provide safe venting of the high temperature exhaust gasses generated by conventional type oil-fired central heating appliances. However, certain condensing type oil-fired furnaces generate low temperature exhaust gases which also contain corrosive products that can adversely effect masonry. Consequently, condensing type oil-fired furnaces which operate to produce vent gas temperatures of no greater than 150°F are to be approved for through-wall and/or through-roof venting with polyvinylchloride or similar pipe when installed according to the manufacturer's recommendations. The appliance and its venting system must have been tested together and "listed" or the provisions of Section 1006.0 for "unlisted appliance" apply.

Official Interpretation No. 11-87
DATE: December 30, 1986
SUBJECT: State Building Code Section 2108.3.2

Question: Do chimney lining and/or re-lining systems which do not use fire-clay flue lining (ASTM C315) require specific approval by the State Board of Building Regulations and Standards?

Answer: No. Section 2108.3.2 of the Code permits the use as chimney lining of, "...other approved material that will resist corrosion, softening or cracking from flue gasses at temperatures up to 1700° Fahrenheit."

Materials and/or systems which satisfy the high temperature provisions of the Underwriters' Laboratory Test Standard 103 (UL-103 HT) satisfy this performance requirement for lining of masonry chimneys contained in Section 2108.3.2.

Since each system is tested in the configuration required by the manufactures' installation instructions, these instructions become the requirements for installation of the chimney lining system.

Official Interpretation No. 12-87
DATE: February 24, 1987
SUBJECT: State Building Code Sections 616 and 2101

Question: Are alternating tread stairways, such as the Lapeyre Stair, permitted by Massachusetts State Building Code as an element of required means of egress?

Answer: No. The exit stairway requirements described in Sections 616 and 2101 of the Code are intended to provide a stairway of certain minimum exit capacity, with the full width being available for occupant egress, at an incline that results in motion familiar to the occupants. Alternate tread stairways are intended for use where floor space is limited and therefore a steeper than usual incline is required. The steeper incline, when descending the stairway, requires an unfamiliar foot motion more downward and less outward than that typically required. Imposing such an unfamiliar motion on occupants exiting the building during a life threatening situation is unwarranted.

The Lapeyre Alternating Tread Stair exceeds the maximum incline permitted by Sections 616 and 2101 and will, therefore, require an unfamiliar motion by the occupants.

In addition, the overall width of these stairs does not meet the minimum width requirement of Sections 616 and 2101, nor would the exit capacity be equal to that of a full stairway if the minimum width were satisfied since these stairs do not permit parallel egress of individuals.

The Lapeyre Alternating Tread Stair is, therefore, not permitted as an element of a required means of egress.

Official Interpretation No. 13-88
DATE: October 25, 1988
SUBJECT: State Building Code Section 2108

Question: A single family dwelling is to be constructed with a fuel-fired water heater in the basement and a fireplace lined with a 2 inch thick refractory brick on the first floor. What construction is required to separate the water heater flue from the firebox and smoke chamber of the fireplace at the first floor? What separation is required within the chimney?

Answer: Section 2108.7.2 requires that the firebox of a fireplace constructed of solid masonry and lined with refractory brick have back and side walls of at least 8 inches total thickness.

Section 2108.7.4.5 requires that the walls of the smoke chamber be a minimum of eight inches thick. Thus a minimum of eight inches of solid masonry is required in these locations. Once the elevation of the fireplace flue is reached, Section 2108.3.2.4 allows two adjoining flues to be contained in the same chimney, so long as the flue liner joints are staggered at least seven inches. If this staggering of flue liner joints is not provided, or if more than two flues are present, Section 2108.3.2.5 requires that masonry flue partitions of at least four inch thickness, bonded into the chimney walls, be constructed to separate the flues.

Official Interpretation No. 14-89
DATE: March 28, 1989
SUBJECT: State Building Code Section 437 and 616.8

Question 1: Section 437.1.3.2 provides that "At least one required exitway shall be accessible without passage through an atrium." Section 437.2.2, which speaks to the enclosure of atriums, contains an exception which provides that "The adjacent spaces of any three (3) floors of the atrium shall not be required to be separated from the atrium; however, these spaces shall be included in the atrium volume according to Section 437.2." Is it the intent of Section 437.1.3.2 to require at least one required exitway to be accessible without passage through an atrium on those floors exempted by Section 437.2.2 from the requirement for separation from the atrium?

Answer 1: No. The exception in Section 437.2.2 allows the designer to eliminate atrium separations on any three floors so long as the additional spaces on these floors are added to the atrium volume for purposes of sizing the smoke control requirements of the atrium. What this allowance essentially does is to add these adjacent spaces to the atrium. It is impossible to provide an exit which is accessible without passage through an atrium for spaces within that atrium. The provisions of Section 437.1.3.2 are intended to ensure that spaces outside the atrium need not depend on the viability of the atrium in order to gain access to an exitway. Therefore, these provisions are not applicable for any spaces which are already included in the atrium space, including those spaces added when the exception in Section 437.2.2 is applied.

Question 2: Is it the intent of the Code that stairways conforming to Section 616.8 and escalators conforming to Article 16 be subject to the requirements of Section 437.3.1?

Answer 2: Not necessarily. It is intended that unenclosed supplemental stairways be prohibited from connections with (required) exit stairways and exitway access corridors, and that these unenclosed supplemental stairways be equipped with a draft stop conforming to Section 437.3.1. While there are no provisions in the Code text to require that escalators be classified and protected as floor openings, it is possible that escalators can be

so classified. However, escalators may also be enclosed in fire resistance rated construction, or may be located within an atrium. A supplemental stairway may also be enclosed in fire resistance rated construction, or may be located in an atrium, and may therefore not be classified as a floor opening.

Sequential Gap - Official Interpretation Number 15

Official Interpretation No. 16-89
DATE: August 29, 1989
SUBJECT: State Building Code Sections 616

Question: Does the installation of a handicapped stair lift in a required exit stairway constitute an obstruction to the means of egress?

Answer: Yes. Section 616 of the State Building Code makes the following provisions:
"Stairways shall not reduce in width in the direction of exit travel. Projections into a stairway are prohibited except for handrails as indicated in Section 616.5.1 and for stairway stringers which may project not more than one and one-half inches." (616.2.3)

"The least dimension of landings and platforms shall be not less than the required width of stairway." (616.3.1)

"Stairways shall have continuous guards and handrails on both sides..." (616.5)

"An exitway enclosure shall not be used for any purpose other than means of egress." (616.9.2)

Moreover, Section 605 states that "It shall be unlawful to obstruct, or reduce in any manner, the clear widths of any doorway, hallway, passageway or any other exitway required by the provisions of this code." Section 605 also requires that "All required means of egress components shall at all times be maintained in a safe usable condition."

Handicapped stair lifts installed in required egress stairs can conceivably violate all of the above sections. When in use, such lifts render at least a portion of a stairway unusable. Even when not in use, the lift equipment projects into the required width, interferes with the use of handrails, and presents a potential tripping hazard to persons using the stair. Also, the introduction of this equipment into a stair enclosure does, in a sense utilize an exitway enclosure as an elevator shaft, and there is the possibility that the equipment, motor, and wiring can catch fire, thereby rendering the exitway unusable. There is also reason to expect that loss of primary electrical power in an emergency situation could disable the lift in a position where it would present a greater obstruction than when not in use. For these reasons, we conclude that the installation of inclined stairway chairlifts in required exitway stairways is potentially hazardous, and is therefore not permitted. However, the building official may allow the installation of such lifts in stairways which are not a component of the required means of egress, so long as the building official determines that the particular installation is not hazardous. It is the policy of the Department of Public Safety, Division of Inspection, Elevator Section to require a letter of approval from the building official before granting a permit for an inclined stairway chairlift.

Official Interpretation No. 17-89
DATE: October 24, 1989
SUBJECT: State Building Code Section 1216

Question: Under the new (ASME/ANSI A 17.1) elevator code, smoke detectors are required in the elevator lobby for elevator control. Are these same smoke detectors required to be tied into the fire alarm system?

Answer: Yes. NfiPA 72A, the applicable fire protection standard referenced in Section 1216.1, requires that these detectors be tied into the fire alarm system.

Official Interpretation No. 18-90
DATE: February 27, 1990
SUBJECT: State Building Code Section 1006.2

Question: Is the "direct venting" (through-the-sidewall combustion product exhaust venting) of "listed" comfort heating and comfort cooling appliances allowed in lieu of venting to a masonry chimney as required in Section 1004 of the State Building Code?

Answer: Yes, Section 1006 of the State Building Code (the Code) defines "listed appliances" and Section 1006.2 addressing appliances to be vented states:

- "Appliances shall be connected to a listed venting system or provided with other means for exhausting the flue gasses to the outside atmosphere in accordance with the venting system selection chart contained in the mechanical code listed in Appendix B."

In Section 1001.2, the Code recognizes that appliances required to be vented "shall be connected to a vent or chimney..." and in Section 1002 addresses the performance test and acceptance criteria to insure safe and proper performance of the venting system.

Direct venting systems that are "listed" or are part of a listed appliance conform to the requirements of the Code.

Official Interpretation No. 19-90

DATE: December 11, 1990

SUBJECTS: of Section 602.1 of the Fifth Edition of the State Building Code and, BBRS Approval of the Use of Power Venters

In order to immediately correct an inadvertent oversight in Section 602.1 of the Fifth Edition of the State Building Code, at is meeting of November 20, 1990, the Board unanimously voted that it should reflect the provisions of M.G.L. c. 148, §§ 26A and 26A½ and, therefore, should read -

602.1 Applicability: the provisions of this section shall apply to all buildings more than 70 feet above mean grade, except that the provisions of this section shall not apply to airport traffic control towers conforming to the requirements of Section 616.0.

By way of clarification, Section 602.1, as cited in the Fifth Edition, is in conflict with statutory requirements of 2 counts:

1. It ties high rise provisions to floors used for human occupancy and located more than 70 feet above the lowest level of fire department vehicle access; whereas, the governing statues identify high rise buildings as all buildings of more than 70 feet in height above the mean grade; and
2. The cited section in the Fifth Edition measures from the lowest level of fire department vehicle access; whereas, the statutes measure from mean grade.

As you know, statutory requirements govern and in this case also reference the high rise provisions of the State Building Code.

POWER VENTERS

Power Venters, as contained in Section 2513 of the Fifth Edition, are ONLY allowed for use WITH GAS OR OIL FIRED comfort heating and/or cooling appliances. Approval from the BBRS is required for use with solid fuel burning appliances.

Official Interpretation No. 21-91

DATE: July 30, 1991

SUBJECT: Section 908.1 of the Fifth Edition of the State Building Code as related to attached dwelling units (Use Group R-3), in which the units are separated by interior lot lines.

Question: a) When side by side attached single family dwelling units (Use Group R-3) are constructed such that the exterior wall of each is located at the lot line which divides them, will two one-hour rated wood stud walls comply with Section 908.1 (Fire Walls and Party Walls) of the 5th Edition of the Code?

b) Could the two walls referred to in question a) above be supported on a single foundation wall.

Answer: a) For multiple attached single family dwelling units, (Use Group R-3), which are separated by interior lot lines, the intent of section 908.1 is satisfied by the construction of a single fire separation wall having a fireresistance rating of one-hour. Such fire separation walls may be used between attached dwelling units providing that the wall construction meets the requirements of Section 910 and the sound transmission ratings of Section 714. and that the allowable area limitations between fire walls of Table 501 are not exceeded. Fire walls, constructed in accordance with Section 908, are required when the allowable area limitations of table 501 are reached. (e.g. 4800 sf per floor for multiple attached single family dwelling units, Use Group R-3).

b) The wall referenced in answer a) above may be supported one a single concrete or masonry foundation wall of equivalent or greater fire resistance rating.

Discussion: Section 908.1 of the Code requires party walls to be constructed as fire walls if an interior lot line is present. Furthermore, the fire walls "....shall be constructed of any approved noncombustible materials providing

the required strength and fireresistance rating specified in Table 401 for the type of construction, but not less than the fire grading of the use group specified in Table 902. Strength.....".

The argument can be made that such party walls can be considered to be exterior walls, thus causing the requirements of section 908.1 to be in conflict with the exterior wall fireresistance requirements of Table 906.2 (for fire separations of five feet or less).

Table 906.2 requires an exterior wall fireresistance rating of one hour for a fire separation distance of zero feet. If two dwelling units were constructed on adjacent lots and each were constructed on the common lot line, such that the fire separation distance of each unit was zero, Table 906.2 would require each exterior wall to have a fireresistance rating of one hour. However, Code requirements for multiple single family attached dwelling units when interior lot lines are not present, table 401 would simply require the construction of *dwelling unit separation* walls with a fireresistance rating of one hour, between dwelling units. It would appear to be inconsistent to require the same R-3 structure to have a greater degree of fire safety due simply to the separation of the dwelling units by an imaginary lot line.

Official Interpretation No. 22-91

DATE: September 24, 1991

SUBJECT: Section 2102.4(1) of the Fifth Edition of the State Building Code as it relates to reconstruction in Coastal High Hazard Areas following Storm Damage.

At a regular meeting of the Board of Building Regulations and Standards held on Tuesday 24, September 1991, the Board approved the following interpretation of Section 2102.4(1) of the 5th Edition of the Massachusetts State Building Code, effective immediately.

Question: When a structure is located in a Coastal High Hazard Area ("V" zone) and is swept from its foundations during a storm, and the building remains intact but the foundation system is completely destroyed, does the code require that the structure be constructed on an elevated pile foundation, in accordance with Section 2102.4 ?

Answer: Yes. The structure, as described would be considered to be substantially damaged and as such would be required to be provided with a new foundation system. Section 3203.3, the foundation system would constitute a "new system", as defined in Section 3201 and therefore would be required to be constructed to meet the requirements for new construction. Since the structure is located within a "V" zone, Section 2102.4(1) would require the structure to be elevated on piles.

Question: When a structure is located in a Coastal High Hazard Area ("V" zone) and is swept from its foundations during a storm, and both the building and foundation system remain intact and if the costs associated in relocating the building onto its existing foundation system are less than 50% of the market value of the structure prior to the damage, does the code require that the structure be constructed on a raised pile foundation, in accordance with Section 2102.4 ?

Answer: No. If both the foundation system and structure are intact and the cost associated in relocating the structure to its pre-damaged condition, then the structure is permitted to be relocated on the existing foundation unless, in the opinion of the building official, under Section 101.3, the proposed reconstruction would constitute an unsafe structural condition, in which case the structure should be elevated in accordance with Section 2102.4(1).

Official Interpretation No. 23-91

DATE: September 30, 1991

SUBJECT: Section 816 of the Fifth Edition of the State Building Code as It Relates to Requirements for Stairways

Date of Interpretation:

The State Board of Building Regulations and Standards, at it's regular monthly meeting of September 24, 1991, affirmed the following requirements:

Question: To what extent are the provisions of Massachusetts State Building Code, Section 816, applicable to a stairway providing access to an attic area in a business establishment; said attic area used for the storage of stock used in conjunction with that business?

Answer: Section 816, INTERIOR STAIRWAYS, (in conjunction with Section 819, EXTERIOR STAIRWAYS), of the Fifth Edition of the Massachusetts State Building Code requires that all stairways, whether interior or exterior, required or supplemental, must be so constructed to satisfy the applicable requirements imposed for interior exit stairways.

This means that for interior or exterior, required or supplemental stairways, the width, headroom, stairway allowed width restrictions, the allowed dimensions of platforms and landings, the acceptable vertical rise between landings and platforms, riser height and tread depth and the dimensional uniformity required between adjacent risers and treads and the requirements for stairway guards and handrails are controlled by the requirements of Section 816.

Note 1: If classified as a mezzanine, then the subject attic area would fall under the requirements of Section 605 of the State Building Code; otherwise such area would be treated as an additional story of the building, with the resulting classification determining what applicable State Building Code requirements apply.

Note 2: Only fixed interior or exterior, required or supplemental stairways (dimensions and handrail/guardrail requirements) are controlled by Section 816 - ladder type stairs and "pull-down", non-fixed stair systems are not explicitly regulated by the Building Code.

Note 3: Article 34, Section 3401, still controls dimensions and handrail/guardrail requirements for fixed stairways in one and two family detached dwellings.

Official Interpretation No. 24-92
DATE: January 28, 1992
SUBJECT: Section 1205 of the Fifth Edition of the State Building Code as it relates to Frost Protection for Fence Posts

At a regular meeting of the Board of Building Regulations and Standards held on Tuesday 28, January, 1992, the Board approved the following interpretation of Section 1205 of the 5th Edition of the Massachusetts State Building Code, effective immediately.

Question: Is it the intent of the Code to require a four foot deep concrete footing to the posts of a fence up to six feet in height ?

Answer: No. The requirement of section 1205, which requires protection against frost for footings for permanent structures is not applicable to minor fences such as described in the above question.

In certain fence applications, post embedment depths of four feet or more may indeed be required for fences of unusual size, or fences which are subjected to unusual loading conditions (such as a prison security fence, for instance which, in addition to wind loads, may also be subjected to vehicle impact loads). However, it is not the intent of the Code to require frost protection for fences which are only four feet in height.

As an example consider the construction of a four foot high chain link fence, erected as a property line demarcation. The required post embedment depth is determined by a number of factors including; the height of the fence; the applied horizontal loads; the nature of the soil and; the intended function of the fence. Specific reference related to post embedment depths can be found in ASTM F 567-84 " Standard Practice for Installation of Chain Link Fence", and although not specifically referenced in the Code, is a recognized national standard of practice. Sections 4.1 and 4.8 of ASTM F 567-84 specify *minimum* post embedment depths of 24 inches and 36 inches, for concrete encased and driven posts, respectively, when used in the construction of a four foot high chain link fence. For this particular type of fence, it is unlikely that movement due to frost heave would result in a life safety hazard or cause serious damage. However, it is incumbent upon the designer to make this determination on a site specific basis (and to submit his determination to the local building official for approval) and prepare the design accordingly.

In summary, the intent of the Code relating to these issues is expressed in Section 311.0, USE GROUP U, UTILITY AND MISCELLANEOUS USES, which states *..." Buildings and Structures of an accessory character ... shall be constructed equipped and maintained to meet the requirements of this code* ***commensurate with the fire and life hazard incidental to their use.*** [emphasis added] *Utility and miscellaneous uses shall include fences over 6 feet high, tanks, cooling towers, retaining walls and buildings such as private garages, carports, sheds and*

agricultural buildings". The phrase *"commensurate with the fire and life hazard incidental to their use"* is the key phrase to consider, as it provides the necessary guidance to the designer and building code official to avoid the "blanket" literal interpretation of the requirements of Section 1205 and other inappropriate sections of the Code.

Official Interpretation No. 25-92
DATE: January 28, 1992
SUBJECT: Section 921.6.2 of the Fifth Edition of the State Building Code as it relates to Firestopping.

At a regular meeting of the Board of Building Regulations and Standards held on Tuesday 28 January, 1992, the Board approved the following interpretation of Section 921.6.2 of the 5th Edition of the Massachusetts State Building Code, effective immediately.

Question: In a building which has suspended ceilings and vertical partitions extending to the underside or suspended horizontal membrane of the ceiling, is it the intent of Section 921.6.2 to require firestopping at the top of the partitions to eliminate the open connection between the vertical wall openings and the horizontal ceiling space ?

If firestopping is required, is the requirement applicable to combustible and noncombustible construction?

Answer: If the vertical partition does not penetrate the ceiling membrane, (i.e. if the partition terminates at the underside of the plane of the ceiling) there is effectively no connection between the horizontal space above the ceiling and the vertical space within the partition, therefore firestopping is not required. If, however, the vertical partition penetrated the plane of the ceiling, firestopping would be required at the interface of the ceiling and partition. For this situation, the firestopping would be required whether the partition and ceiling materials were combustible or noncombustible.

Official Interpretation No. 26-92
DATE: January 28, 1992
SUBJECT: Sections 706.1 and 707.1 of the Fifth Edition of the State Building Code as related to Mechanical Ventilation of Non Public Bathrooms

At a regular meeting of the Board of Building Regulations and Standards held on Tuesday 28, January, 1992, the Board approved the following interpretation of Section 706.1 and 707.1 of the 5th Edition of the Massachusetts State Building Code, effective immediately.

Question: Can a bathroom exhaust fan exhaust into an enclosed ventilated attic space which has soffit vents in conjunction with continuous ridge vents or eaves vents.

Answer: No. Section 707.1 requires that " Mechanical ventilation, when provided, shall conform to the requirements of the BOCA National Mechanical Code listed in Appendix A, unless expressly defined within this Code, and may be substituted for the requirements for natural ventilation."

Article 16 of the BOCA National Mechanical Code (1987) lists the required mechanical ventilation air in Table 1602.2.

Section M-1604.1 (Mechanical Exhaust) of the BOCA National Mechanical Code (1987) states, in part, that **"**.... **The exhaust shall discharge directly to an approved location on the exterior of the building".**

Warm, moist air exhausted from bathroom spaces would condense in the cooler attic space, even if the attic space were adequately ventilated. Moisture from condensation will eventually cause damage to wood framing members (or sheathing), insulation and ceiling materials and may pose a threat of fire if electrical circuitry is contacted.

Sequential Gap 27 and 28

Official Interpretation No. 29-92
DATE: January 12, 1993
SUBJECT: Articles 6, 8 and 9 - Smoke Protection in Egress Corridors of Fully Suppressed Buildings

THE MASSACHUSETTS STATE BUILDING CODE

Question 1: In a fully sprinklered building, is it the intent of Section 810.4.1 of the Fifth Edition of the Massachusetts State Building Code (the Code) that egress corridors be constructed so as to serve as an effective barrier to limit the transfer of smoke?

Answer 1: Yes, for USE GROUPS where *"sleeping uses"* are involved.

The BOCA National Building Code/1987 Commentary, for Section 810.4.1 (the Massachusetts Code, utilizes the BOCA Building Code language for this Section) states that Section 810.4.1 "...acknowledges that an automatic fire suppression system can serve to control or eliminate fire development which could threaten the exit access corridor. The nonsleeping occupancies are permitted to have nonrated corridors if the suppression system is installed throughout the area served by the corridor as well as the corridor itself". "In the sleeping uses ...the corridor fireresistance is reduced to one-half hour. The purpose of the fireresistance rated corridor is not only to provide a fire endurance capability, but mainly to provide a quality of construction that would ensure such walls would serve effectively as barriers to smoke. The dwelling unit (sleeping uses) separation walls, while reduced to ½ hour, are to be constructed tight to the ceiling above (tight to the underside of the floor/roof deck above or tight to the rated floor/ceiling assembly above), to complete the barrier to smoke function."

The interpretation provided above is not meant to imply that Section 810.4 requires satisfying Section 911 - "SMOKE BARRIERS", as "SMOKE BARRIERS" are unique to certain "defend-in-place" concepts, specifically associated with Section 610.5, I-2 USE.

Note that Section 810.4.1 does allow that when an approved fire suppression system is installed and supervised in accordance with Section 1020.1, parts 1, 2 or 3, and has its water flow alarm device connected to an approved central station system, proprietary system or remote station system of the jurisdiction, a fire resistance rating for exit access corridors, and tenant separation walls which are also corridor walls, is not required in USE GROUPS A, B, E, F, M and S.

Question 2: In a fully sprinklered building of USE GROUP I-2, is it the intent of Section 610.4 of the Fifth Edition of the Massachusetts State Building Code (the Code) that egress corridors be constructed so as to serve as an effective barrier to limit the transfer of smoke?

Answer 2: Yes - Section 610.4 clearly states that "...in buildings equipped throughout with an approved automatic fire suppression system, the corridor wall fireresistance rating is not required provided the corridor walls form a barrier to limit the transfer of smoke."

The BOCA National Building Code/1987 Commentary, for Section 610.4 (the Massachusetts Code, utilizes the BOCA Building Code language for this Section) states that "...if the building is protected throughout with an automatic fire suppression system, thereby reducing the possibility that a fire will develop which is life-threatening to persons outside the room of origin, the corridor walls need only be able to resist the passage of smoke."

"...when the building is protected with an automatic fire suppression system, the primary concern is to contain the smoke since the suppression system is expected to suppress and thereby contain the fire."

The interpretation provided above is not meant to imply that Section 610.4 requires satisfying Section 911 - "SMOKE BARRIERS", unless a wall of the exit access corridor is intended to be a "SMOKE BARRIER" wall. "SMOKE BARRIERS" are unique to certain "defend-in-place" concepts, specifically associated with Section 610.5, I-2 USE.

Question 3: In fully sprinklered buildings of USE GROUPS R-1, R-2 and I-2, is it the intent of the Code that smoke dampers be provided at duct penetrations through the unrated corridor walls?

Answer 3: No, provided in the case of the I-2 USE, the corridor wall is not a portion of a "SMOKE BARRIER" (Section 911.5 would require a smoke damper in a "SMOKE BARRIER"/I-2 USE).

Note that the Code is effectively silent on the use of "smoke dampers", but does provide guidance in Section 918, on the use of "fire dampers". Section 918.2 states that "fire dampers" shall be provided at locations where air distribution systems penetrate assemblies required to have a fireresistance rating", thus the R-1 and R-2 USES, having a one-half hour rating would

require "fire dampers" but not smoke dampers" - the I-2 USE corridor walls, if not a portion of a "SMOKE BARRIER" - Section 911 - would not be rated and would not require a "fire damper".

Exceptions to Section 918.2 "fire damper" requirements include exception no. 3 to Section 918.2, where:

Exception 3 states that a fire damper is not required "...at penetrations of tenant separation and corridor walls in buildings equipped throughout with an approved automatic fire suppression system." Here, the 1987 Commentary states that "since an automatic fire suppression system reduces the potential for duct collapse, fire dampers are not required to protect penetrations of tenant separation and corridor walls in buildings protected throughout with an approved automatic suppression system."

Utilizing this same reasoning, a smoke damper would not be required as it is not expected that a fire can develop sufficiently in R-1 and R-2 or I-2 buildings that are fully suppressed, thus the level of "passive defense" required in corridor construction (where such corridor walls are not part of a "SMOKE BARRIER"/I-2 USE), is limited to the corridor walls being constructed tight to the ceiling above (tight to the underside of the floor/roof deck above or tight to the rated floor/ceiling assembly above), to complete the barrier to smoke function and thus limit the transfer of smoke in the exit corridors of these "sleeping occupancies.

Question 4: In fully sprinklered buildings of USE GROUP I-2, is it the intent of the Code to allow the use of flexible duct (designed, listed and installed per the requirements of Section M-303 of the BOCA National Mechanical Code/1987)?

Answer 4: Yes. As is noted in answers #1, #2, and #3 above, the Code now places great emphasis on "active defense" in the form of full suppression and would allow the use of flexible duct when designed, listed and installed per the BOCA National Mechanical Code/1987 and additionally satisfies the requirements of NFiPA-90A in the case of the I-2 USE.

Official Interpretation No. 30-93

DATE: March 9, 1993

SUBJECT: of Table 401, Item 12 of the Fifth Edition of the State Building Code as it relates to the Use of Skylights in Fire resistance Rated Roof Construction

Question: Is it the intent of the Code to allow the use of unrated skylights in roof construction that is required to have a fire resistance rating under the provisions of item 12 of table 401, by virtue of the type of construction and height from the floor to the lowest structural member ?

Answer: Yes. The intent of the fire resistance rating requirements of table 401 are (in protected construction) to offer a degree of protection to the structural members of the roof system in order to prevent premature structural collapse of the roof.

For a particular type of construction, the degree of fire resistance required by table 401 to be provided for the roof construction is consistent with the protection required for the remainder of the structural elements of the building. Damage caused to a skylight during a fire event will not promote premature structural collapse of a rated roof system.

Question: Is it the intent of the code to allow a roof assembly, which is required to be rated under table 401 (item 12), to be constructed wholly of non rated skylights.

Answer: Yes. Provided that the following conditions exist:

a. the structural members of the roof system are protected in accordance with the requirements of table 401;

b. the subject building does not require the roof to be rated under the provisions of section 906.5. If the roof system is required to be rated due to vertical protection issues of section 906.5, unrated skylights are prohibited from being located within 15 feet of the adjacent building.

Question: Are opening protectives required, in accordance with Section 906.5, for exterior wall openings which are located less than 15 feet vertically above the roof of an adjacent lower building, if the adjacent lower building has a roof assembly fire resistance rating of one hour or greater and the roof assembly contains unrated glass skylights ?

Answer: Yes. Section 906.5 requires opening protectives for exterior wall openings in an adjacent higher building if the openings are located less than 15 feet vertically above the lower roof and the adjacent buildings are separated horizontally by a distance less than 15 feet, unless the roof construction of the lower roof has a fire resistance rating of one hour or greater. Fire in the lower building may be a source of exposure to openings in an adjacent higher building if the fire were to breech the roof construction. If the roof of the lower building has a fire resistance rating which affords the degree of safety against collapse of the roof, the potential for spread of fire to the adjacent (and taller) building would exist if fire penetrated the skylights and if the skylights were located within 15 feet vertically and 15 feet horizontally of the skylight. Section 906.5 does not require exterior wall opening protectives, even if the lower adjacent roof assembly is unrated provided that the buildings are separated horizontally by a fire separation distance of over 15 feet.

Therefore skylights would be permitted in rated roof construction of the lower roof without the need for exterior wall opening protectives if either the buildings were separated horizontally 15 feet greater, if the skylights were a distance of 15 feet or more from the adjacent exterior wall, or if the adjacent exterior wall openings were greater than 15 feet above the lower roof level.

Official Interpretation No. 31-93
DATE: April 13,1993
SUBJECT: of Section 113.3 and Section 201.0 Definitions (owner) of the Fifth Edition of the State Building Code as it relates to the definition of owner.

Question 1: If a contractor is hired by an owner, is the contractor considered an agent under the definition of owner (Section 201.0) ?

Answer 1: Yes

Question 2: What information would be necessary to qualify that the contractor was an agent ?

Answer 2: The contractor would need to produce (1) a letter stating that he/she has been granted the authority to act as an agent or (2) a copy of a written contract signed by the owner and the contractor as specified.

Question 3: Can a city or town refuse to issue a permit to a contractor with (1) a letter stating that they may act as an agent or (2) with a signed contract between the two parties to remodel or construct a structure simply because he/she is not the owner of the structure or property ?

Answer 3: No. The definition of owner (Section 201.0 owner) states " Every person who alone or jointly or severally with others .....
(b) has care, charge or control of any building or structure in any capacity .....". The contractor is considered to have control, care or charge of the building during the time of construction as ling as the contractor has a letter stating that he/she is authorized to take out a permit (act as an agent of the owner) or the contractor has a signed contract with the owner.

Official Interpretation No. 32-93
DATE: May 14, 1993
SUBJECT: of Section 827.1 of the Fifth Edition of the Massachusetts State Building Code as it relates to when guardrails are required.

Question 1: Is the 30 inch elevation intended to be the limit above which guardrails are required to be installed in accordance with Section 827.1 ?

Answer 1: Yes. It is generally established in the BOCA National Building Code (1987) that when the height difference between the walking surface and the adjacent lower walking surface or grade is 30 inches or greater, guardrails are required to be provided.

Question 2: Is the 30 inch difference in elevation intended to be the point at which guardrails are required for ramps in addition to stairs or walking surfaces ?

Answer: No. Ramps are required to be provided with guardrails (if the ramp has an open side) irrespective of the difference in elevation between the ramp and the adjacent walking surface.

Official Interpretation No. 33-93
DATE: May 14, 1993
SUBJECT: Section 114.3 of the Fifth Edition of the Massachusetts State Building Code as it relates building permit extensions

Question: May a building official, if work has not begun as required under a building permit, within the six month period after the issuance of such permit, issue an extension of time for a period of more than six months.

Answer: No. Section 114.3 states that the building permit shall be considered abandoned unless the work authorized by it shall have commenced within six months after its issuance. Section 114.3 permits the building commissioner or inspector of buildings, for cause, to grant one or more extensions of time, for periods not exceeding six months. {emphasis added}.

Building permit extensions may be granted for periods of greater than six months by variance from a local or State Building Code Appeals Board pursuant to sections 126 of the Building Code.

Official Interpretation No. 34-93
DATE: September 28, 1993
SUBJECT: Requirements of the Fifth Edition of the Massachusetts State Building Code for "Permanent Foundations", "Frost-Protected Foundations" and the Building Inspector's Responsibilities Under "Doubtful Use Classification"

Question 1: Do Sections 1205.1 or 3402.3.4 of the Massachusetts State Building Code (the Code) mandate that all buildings and structures that are constructed, be placed on "permanent", frost-protected foundation systems?

Answer 1: No. Neither Section 1205.1, nor 3402.3.4 mandate permanent supports for all buildings and structures, but rather state that where permanent supports exist, they shall be frost-protected in a certain way (in order for supports to be considered "permanent", they must satisfy the requirements of either Section 1205.1 or 3402.3.4 of the Code).

Question 2: Does the State Building Code allow for other than frost-protected foundation systems or permanent foundation systems for new construction building and structures?

Answer 2: Yes.

(The issue of when such non-permanent foundation systems should be allowed, often arises when the Building Official is confronted with a "Doubtful Use" or "Utility Use" building - typically, storage sheds, carports, landscape type structures such as detached gazebos, etc.).

Question 3: As the Code does allow for other than frost-protected or permanent foundation systems in buildings and structures, what Code guidance is provided to assess whether or not frost-protected/permanent foundation systems are required for new construction buildings and structures?

Answer 3: Article 3 of the Code, Sections 301 through 313, address USE classification, and review of same will lead the reader to Sections 311.1 and 312.1 of the Code.

Section 311.1, in part, states: "Buildings and structures of an accessory character and miscellaneous structures not classified in any specific use group shall be constructed, equipped and maintained to meet the requirements of this code commensurate with the fire and life hazard incidental to their use. Utility and miscellaneous uses shall include... carports, sheds and agricultural buildings." (note underlining emphasis added).

Section 312.1, in part, states: "When a building or structure is proposed for a use not specifically provided for in this code, or the classification of which is doubtful, such building or structure shall be included in the use group which it most nearly resembles in respect to the existing or proposed life and fire hazard, and it shall be so classified by the building official." (note underlining emphasis added).

Review of these, Article 3 subsections, reveals that use classification, under utility or doubtful use, allows - in fact, mandates - that the Building Official make a judgement call and that the classification of use be commensurate with the fire and life hazard incidental to the use of the structure. On this basis, if, in the judgement of the Building Official (which is required to be made under Section 312.1), a utility type structure, such as a shed, would have a low fire and life hazard, the Building Official could allow a non-frost-protected, non-permanent foundation system.

Official Interpretation No. 35-94
DATE: April 12, 1994
SUBJECT: Referenced Standards adopted as listed in Appendix A.

Question: Some of the reference standards, as listed in Appendix A, give the local authority having jurisdiction the power to amend or vary the requirements of certain provisions contained within the standard. Does this mean that a building official may, (or the fire official, when reviewing plans pursuant to article 10) when requested, or on his or her own initiative, waive or vary said requirements.

Answer: No. The Board adopts the technical content of the reference standards, as written, but retains jurisdiction to adjudicate all variance requests pursuant to M.G.L. c. 143, § 100. The variance must be pursued through the appeals process pursuant to Section 126 of the Building Code and must be heard at the State level or by local or regional Building Code Appeals Board if local or regional boards exist within your jurisdiction.

Official Interpretation No. 36-94
DATE: April 12, 1994
SUBJECT: Design of Connections in Structural Steel Braced Frames - Sections 1113.5.2.2(a) and 1113.5.7.2

Question: What design force should be considered for the members of a braced frame constructed of structural steel?

Answer: The connection of members in a structural steel braced frame shall be designed for not less than the lesser of the following forces;
a. 1.25 times the force determined in accordance with Section 1113.4.1, without the allowable _ (one third) stress increase or;
b. The full axial capacity of the member, based on 0.6 Fy multiplied by the member gross cross sectional area.

This is a minimum requirement and may be followed in lieu of Section 1113.5.7.2.

DATE: April 12, 1994
SUBJECT: **Formal Interpretation Number 36-94**

The seismic advisory committee, at its meeting of April 7, 1994, voted to approve the attached formal interpretation number 36-94 relating to the design of connections in structural steel frames. The request for the interpretation was submitted by Weidlinger Associates, Inc. on December 6, 1993.

Advisory Ruling No. 1-94

DATE: April 14, 1994

SUBJECT: Section 119.1 of the Fifth Edition of the Massachusetts State Building Code as it relates to the Issuance of the Certificate of Occupancy

Question: If a conflict occurs between a building official and other local agencies as to whether or not a certificate of use and occupancy (c/o) is to issue for a building or structure, what action should the building official take pursuant to Section 119.1 of the Fifth Edition of the Massachusetts State Building Code?

Answer: The building official has the authority to issue a c/o pursuant to Section 119.1. If a conflict is created with other local agencies as a result of the issuance of the c/o, the aggrieved party/parties may, in accordance with M.G.L. c.143, §100, appeal to the State Building Code Appeals Board. Any person aggrieved by a decision of the State Building Code Appeals Board may appeal to a court of law or equity in conformance with M.G.L. c.30A, §14.

Official Interpretation No. 38-94

DATE: August, 16, 1994

SUBJECT: Use of a Registered Professional Engineers Seal as Required under Section s 113.5.2 and 127

Discussion: Section 113.5.2 requires the seal of a qualified registered professional engineer or architect be con-tained on all plans and specifications for buildings and structures containing over 35,000 cubic feet of enclosed space. Additionally section 127.2.1 requires that all plans computations and specifica-tions involving new construction, alterations repairs, expansions or additions shall be prepared by ... a registered professional architect or engineer and shall bear his signature and seal ...

The Board of Registration of Professional Engineers and Land Surveyors (the Board of Registration) is the Board having statutory authority to register professional engineers in the Commonwealth of Massachusetts. The Board of Registration registers engineers by discipline, perhaps the those most related to the construction of buildings and structures being civil, mechanical, HVAC, structural, sanitary, electrical and fire protection.

Question 1: Consider the situation where a set of plans and specifications are filed with the building official at the permit application stage for an automatic fire suppression (sprinkler) system. The plans and specifications bear the seal and signature of a Massachusetts Registered Professional Structural (or any other discipline) Engineer. Do the plans, as filed comply with section 1113.5.2 and 127.2.1? Additionally, is it required that the discipline of the engineer to be shown on the plans?

Answer 1: The plans and specifications may be sealed by an engineer of any discipline with the following conditions;.
The Board of Registration's regulations 250 CMR are the rules and regulations relating to the practice of engineering and land surveying.

The Board of Registration initially registers an engineer in one branch of engineering only, following a determination that the engineer has been found competent by education, experience and specific examination passed by the registrant. The branch of engineering in which the engineer is registered shall either be included as part of the seal, or shall be handwritten above the registrant's signature (250 CMR 3.05(2).

The Board of Registration's regulations 250 CMR 3.05(7) requires the engineer to limit professional practice to areas of professional competence as demonstrated to and approved by (emphasis added} the Board of Registration.

The Board of Registration does not limit the engineer to the discipline in which he/she is registered but allows the registrant to practice in branches of engineering outside that indicated on his/her seal provided that he he/she has demonstrated competence to the Board of Registration. (250 CMR 3.05(6) A registrant who wishes to practice engineering in an area of competence other than that in which registered may request a determination of competence by submitting such evidence as may be required by the Board of Registration). The Board of Registrations regulations mandate that the burden of proof of competence rests with the registrant should a question be raised as to that competence. The Board of Registration is the only authority empowered to determine competency and will do so if requested by the registrant or

any person or entity. The entity could be a city or town and an individual could be the building official acting in his official capacity or acting as a private citizen.

Question 2: Under the requirements of construction control (section 127), does the building official (or the fire official when reviewing plans pursuant to Article 10) have to accept the seal of any Massachusetts registered professional engineer even if the discipline noted on said seal is not the discipline associated with the reports, design, plans or specifications under the building permit review ?

Answer 2: No, the building official (or the fire official when reviewing plans pursuant to Article 10) does not have to accept the seal. In the case where the seal is a different discipline than the work contained in the report, design, plans or specifications, or where the reviewing official believes there is a question of competency, the building official, may require that the registered professional engineer demonstrate competence, in accordance with the Board of Registration's regulations (250 CMR 3.05(6) or (7)). When the registrant's competency is questioned, it is incumbent upon the registrant to apply to the Board of Registration for a determination of competency. It is not the responsibility of the building (or fire) official to make a determination relative to competency, but it is perfectly permissible for a building (or fire) official to request that the registrant prove

Official Interpretation No. 39-94
DATE: July 12, 1994
SUBJECT: The Impact on the State Building Code Due to the May 17, 1994 Emergency Updating of Reference Standards in Appendix A (NFiPA Reference Standards)

Question 1: At its May 17, 1994 Public Hearing, the Board, via emergency adoption, updated numerous NFiPA reference standards in Appendix A of the Code - did the Board, by this action, intend to cause substantive changes to the explicit regulatory requirements of the Code proper?

Answer 1: No. The Board was simply updating Appendix A reference standards to reflect currently available NFiPA reference standards; there was no intention to change explicit requirements of the Code proper.

Question 2: As NFiPA 72-1993, the "NATIONAL FIRE ALARM CODE" is one of the reference standards that was updated at the May 17, 1994 Public hearing and as Section 2-2.1.1.1 of NFiPA 72-93 requires that in new residential construction, there be smoke detectors installed in each sleeping room, would this requirement supersede smoke detector requirements historically mandated by the Code?

Answer 2: No. As indicated in the response to the first question, above, there was no intention on the part of the Board to cause substantive changes to the explicit requirements of the Code when Appendix A reference standards were updated in May of 1994.

Also, Section 101.4 of Article 1 of the Code states that: "Where differences occur between provisions of this Code and referenced standards, the provisions of this Code shall apply."

In the case of smoke detector requirements for residential occupancies, Section 1018 of the Code is explicitly prescriptive relative to the required location for smoke detectors and therefore supersedes the installation requirements of NFiPA 72-93.

Official Interpretation No. 41-94
DATE: August 15, 1994
SUBJECT: Section 109.1.1.1 - The Use of Municipal Construction Supervisor Licenses in Municipalities Where Such Licensing was Established Prior to January 1, 1975

Background/Discussion:

Section 109.1.1.1 does not prohibit a municipality from requiring a license for individuals engaged in directly supervising persons engaged in construction, reconstruction, alteration...in those categories of buildings and structures for which the BBRS is not requiring a license.

Section 109.1.1.1 goes on to say; provided that those municipalities which have established licensing requirements for construction supervisors prior to January 1, 1975 may maintain their existing licensing requirements.

As a result of a Building Code Appeal, a BBRS Appeals Board, on March 18, 1992, unanimously agreed that no municipality can implement building licensing regulations that conflict with those promulgated by the Commonwealth. The City of Boston was ordered: (1) "to immediately issue appropriate building permits to the appellants, provided such work falls within the scope of their State Construction Supervisor's Licenses"; (2) "to immediately cease the illegal activity of denying building permits to holders of valid State Construction Supervisor's Licenses, provided such work falls within the scope of such State Construction Supervisor's Licenses"; and (3) to immediately cease the illegal activity of issuing building permits to holders of Boston Builders Licenses, but who do not hold a valid State Construction Supervisor's License, where such work falls within the scope of the State Construction Supervisor's License program."

Question: Considering the current practice of many Building Departments requiring a State Construction Supervisor's License (CSL) or a Municipal Construction License (of that Municipality, only) and where such Municipal License was established prior to January 1, 1975, is the Board, via the Board of Appeal ruling of March 18, 1992, ruling that all building permits awarded to holders of such Municipal Licenses are invalid and illegal?

Also, is it the Board's intent to propose a Code Change to Section 109.1.1.1 eliminating Construction Licensing by Municipalities when such Municipal Licensing was established prior to January 1, 1975?

Answer: The Board decision of March 18, 1992 was tied to the City of Boston refusing to issue building permits to holders of State CSL's and was based on the language of St. 1972, c. 802, § 75, which states "All by-laws and ordinances of cities and towns in conflict with the state building code shall cease to be effective on January 1, 1975."

The Board is charged with promulgating a single uniform building code for the Commonwealth and Section 109.1.1.1 of the Code is an explicit portion of said Code and may be formally interpreted by the Board. To this end, it is the Board's position that Section 109.1.1.1, for Municipalities that had appropriate construction

supervisor licensing programs in effect prior to January 1, 1975, such Municipalities may maintain their existing practices of accepting either their local Municipal construction supervisor license or the State CSL - Note that a building permit may not be denied to holders of valid State CSLs (provided such work falls within the scope of the State CSL) even though such holders of the State CSL do not have the Municipal construction supervisor's license; also note that the holder of a local Municipal construction supervisor license may not utilize that license in another Municipality but must possess the State CSL when performing building permittable work within the scope of the State CSL in a community without a valid, local Municipal construction supervisor license program.

Official Interpretation No. 42-94
DATE: September 13, 1994
SUBJECT: Section 1011.2 - Acceptable Discharge Testing of Wet Chemical Range Hood Extinguishing Systems

Background/Discussion:

Section 1011.2, ***"TESTS"***, in part, states that: "a completed system shall be tested by a discharge of wet chemical in sufficient amounts to verify that the system is properly installed and functional."

In reality, that portion of the sprinkler installation industry installing specialized commercial kitchen suppression tests the various pre-engineered wet chemical systems, not by discharging wet chemical, but rather by utilizing pressurized gas - this industry approach allows for determination that piping to spray nozzle integrity exists and that nozzles are not blocked, but does not create a clean-up problem nor does such testing wet up the internals of the piping /nozzle system.

NfiPA 17A, ***"STANDARD ON WET CHEMICAL EXTINGUISHING SYSTEMS"***
and which is referenced in Section 1011 defines pre-engineered wet chemical extinguishing systems as those having predetermined flow rates, nozzle pressures, and quantities of liquid agent. Such systems may have specific pipe sizes, maximum and minimum pipe lengths. flexible hose specifications, number of fittings, and number and types of nozzles prescribed by a testing laboratory. The hazards protected by these pre-engineered systems are specifically limited as to type and size by a testing laboratory. Limitations on hazards that can be protected and piping and nozzle configurations are contained in the manufacturer's listed installation and maintenance manual which is part of the listing.

NfiPA 17A also notes that where required by the authority having jurisdiction, the approval tests shall include a discharge of wet chemical (such a test is not mandated, however, by NFiPA 17A) - the Standard further notes that the method of verification shall be acceptable to the authority having jurisdiction.

Discussions with a major manufacturer of pre-engineered wet chemical range hood extinguishing systems indicates that since the basic system is a pre-engineered listed product, acceptance testing of the entire wet chemical/piping/nozzle system need only consist of ensuring piping integrity and further ensuring that the installed nozzles are not blocked and a full, wet chemical discharge for acceptance testing of a pre-engineered system is not necessary and a simplified gas discharge test would suffice.

Question: For pre-engineered wet chemical range hood extinguishing systems as discussed in Section 1011 of the Code, is it acceptable to substitute a pressurized gas discharge test for the full wet chemical discharge test as required by Section 1011.2?

Answer: **YES**, for pre-engineered systems, since such systems are tested, listed systems, it is sufficient for acceptance testing that a simple gas discharge test that ensures down stream piping integrity and further ensures that spray nozzles are not blocked, would be an acceptable test approach since the intent of the Code is to ensure that the installed range hood extinguishing system is functioning.

Note that it would also be acceptable to test in accordance with the pre-engineered system manufacturer's recommendations.

Official Interpretation No. 43-95
DATE: May 9, 1995
SUBJECT: Section 600.3 - Impact of Section 600.3 on Egress Requirements of Sections 631, 636 and 638

Background/Discussion:

Section 600.3 is language excerpted directly from the 1987 BOCA National Building Code and directly adopted into the Fifth Edition of the Massachusetts State Building Code - it's noted that the

requirements of Section 600.3 of the 1987 BOCA National Building Code were dropped in the 1990 version of the BOCA National Building Code and additionally, such requirements are also absent in the latest, 1993 BOCA National Building Code.

In the current Massachusetts State Building Code, Section 600.3 , *"MEANS OF EGRESS"* states: "The means of egress for buildings of special uses and occupancies shall conform to the requirements of Article 8, except as is modified by more restrictive provisions of this article for specific uses."

This language is sufficiently broad so that one current interpretation of this Section is to require in Section 631, 636 and 638 residences EXIT SIGNS and LIGHTS in accordance with Section 823 of Article 8 and MEANS OF EGRESS LIGHTING in accordance with Section 824 of the Code.

Section 631, "GROUP RESIDENCE"; Section 636, "LIMITED GROUP RESIDENCE"; and Section 638, "GROUP DWELLING UNITS" are sections of the Code that were developed on a consensus basis in conjunction with DMR/DMH/OFC** input and the specific requirements contained within these sections are intended to stand alone as express life-safety requirements for these special uses .

The adoption of Section 600.3 of the 1987 BOCA National Building Code was **not** intended to impose additional signage and lighting requirements in these dwelling units although should certain of these dwelling units be located, for example, in an R-2 USE apartment building, the common egress areas of the apartment building would be required by Code to possess exit signage and lighting appropriate to the building but exit signage and/or lighting for the dwelling unit proper and not expressly required by Section 631 or 636 or 638 would not be required in the dwelling unit.

** Department of Mental Retardation (DMR); Department of Mental Health (DMH); Office for Children (OFC)

Question: Does Section 600.3, *"MEANS OF EGRESS"* of the Code require that the requirements of Section 823, "EXIT SIGNS AND LIGHTS" and/or Section 824, "MEANS OF EGRESS LIGHTING" automatically be imposed on dwelling units falling under Sections 631, 636 and 638 respectively?

Answer: No. Numerous dwelling units with respect to Sections 631, 636 or 638 are found in one- or two-family buildings of R-4 or R-3 USE and it is not the intention of the Code to require exit signage or means of egress lighting in such dwelling units unless expressly required by the special Section. For example, the specific requirements of Section 636.3.3.10 requires MEANS OF EGRESS LIGHTING in accordance with Section 824, but nowhere in Section 636 is there a requirement for EXIT SIGNS and EXIT LIGHTS.

Residences licensed under Sections 631, 636 and 638 are defined as RESIDENTIAL USES and are **not** classified as INSTITUTIONAL USE; therefore only the lighting/signage requirements of 631, 636 and 638 proper are to be imposed on the dwelling units of these residences - note the deliberate term "dwelling unit" as opposed to the term "building". A Section 638 "GROUP DWELLING UNIT" , for example, could be found in an R-2 USE apartment building, and by Code, the common egress areas of the R-2 building would require exit signage, lights and means of egress lighting, but the Section 638 dwelling unit proper would not require such signage and lighting unless expressly required by Section 638 and /or other sections of Code expressly referenced in Section 638.

Official Interpretation No. 44-95
DATE: June 13, 1995
SUBJECT: Use Group Classification - *Warehouse-Mercantile* Buildings and Structures.

Discussion: Recent trends in retail marketing and sales have seen an upsurge in the numbers of the "*warehouse-mercantile*" type stores. These kinds of facilities utilize bulk storage on the actual sales floor area in racks. Commodities stored and sold range from hardware and household items through floorcoverings, cabinetry, lumber paint, adhesives and other building materials, flammables, aerosols, pool chemicals and fertilizers. The building typically functions as both a warehouse and a retail establishment, and the amounts of each type of product stored is typically orders of magnitude greater than a typical mercantile establishment. Furthermore, there is usually no dedicated storage area separate from gross sales area. Aisles are used for staging product prior to storage in the high rack storage system, in addition to merchandizing. Typically, mercantile stores which utilize separated storage and sales areas are designed as *mixed use* buildings, and conform to the separated or non separated requirements of the code. The increasingly popular trend of the *warehouse-mercantile* occupancies has raised a question as to which *use group* is most appropriate for such occupancies. Depending upon the amounts and types of product stored, it is possible that the building could consist of a variety of uses such as; *Mercantile* (*M*), *Low Hazard Storage* (*S-2*), *Moderate Hazard Storage* (*S-1*) and *High Hazard* (*H*) and/or other uses.

Question: Since the State Building Code does not specifically address warehouse retail (retail warehouse) type occupancies or use groups (occupancies consisting of open type floor plan utilizing rack storage type structures consisting of any combination of horizontal, vertical or diagonal members that support stored material or displayed material generally exceeding 12 feet in height), is it the intent of the code to classify such uses as *Mercantile*, Use Group *M*, based on the stock of goods for sale and accessibility to the public?

Answer: No. Due to the life and fire hazard as noted in Section 312, *Doubtful Use* Classification, this type of occupancy should be classified Doubtful Use Group until sufficient information is provided to the satisfaction of the Building Official in order that the Building Official can determine the appropriate use (or uses) which it most resembles in terms of life and fire hazard in accordance with section 312.

Regardless of the *Use Group* classifications determined by the Building Official, it is the responsibility of the permit applicant in accordance with section 113 (*Application for Permit*), to provide sufficient informa-tion to show the nature and character of the work. As part of this section, the Building Official shall forward the available information to the Head of the Fire Department for review and approval of the applicable sections of Article 6, Special Use and Occupancy Requirements and Article 10, Fire Protection Systems.

As addressed in Article 10, Section 1001.2, the information presented must be "... of sufficient detail to evaluate the hazard and the effectiveness of the system. The details of the hazards shall include materials involved, the location and arrangement, and the exposure to the hazard."

To properly address the particular issues and acquire the required information for such a review as identified in Section 1001.2, any plans, documents and reports which are submitted to the Building Official in accordance with sections 113 and 127 must bear the seal of a qualified professional engineer or architect when required by the building code or statute. Since Section 1001.2 addresses special fire protection features, it shall be noted that the Building Official and the Head of the Fire Department should refer to the official interpretation No. 38-94 Relating to the Use of Registered Professional Engineers Seal as required under Section 113.5.2 and 127, to determine whether the information submitted is sufficient and properly documented and sealed by engineers qualified in fire protection concerns. (see Official Interpretation No. 38-94)

Unless the necessary information and documentation is properly submitted in sufficient detail per Section 1001.2, the Head of the Fire Department will not be capable of proper evaluation and analysis of the hazards and exposures to property and life and any associated fire and life safety systems provided and therefore can not approve the plans. In order for the Head of the Fire Department to approve plans and specifications per Section 113.5(*Plans and Specifications*).

Sufficient details and supporting documentation should be included to address, as a minimum, the following;

- Material storage/display arrangement
- Segregation/separation of incompatible/hazardous materials
- Emergency evacuation plans (number and location of exits)
- Warehousing operations (open and closed)
- Employee training and drills
- Management participation (housekeeping)
- Fire initiation and development
- Spread of smoke and toxic products
- Smoke exhaust venting
- Fire Suppression Systems
- Standpipe systems ($2^{1/2}$" vs. $1^{1/2}$" outlets)
- Requirements for rack sprinklers (NFiPA 231C)
- Adequacy of water supplies
- Egress relative to rack aisles (blockage/obstructions)
- Occupant evacuation time
- Fire alarm systems (automatic and manual)
- Fire Department notification (master box/central station service)
- Occupant notification
- Fire Department site and building entry access

- Seasonal changes in merchandising (introduction of additional flammable and hazardous material)
- Access to floor/merchandising plan (periodic review)
- Review of other agency requirements (CMR 527, Fire Prevention Regulations)
- Review of other nationally recognized engineering standards relative to fire hazards and life safety

If sufficient client information is not provided to the Head of the Fire Department as identified above, then the Building Official shall classify the building as Doubtful Use Group per Section 312, *Doubtful Use* Classification, and the structure shall be included in the use group it most nearly resembles, (such as a Use Group *H*, *High Hazard* Uses, Section 306 or as described in Section 308, *Mercantile* Uses, Use Group *M*, or as the Building Official so deems until adequate information is provided as per Section 1001.2, to determine otherwise.

If sufficient information is submitted in detail satisfactory to the Building Official and the Head of the Fire Department to achieve the desired level of life safety and fire hazard protection, then the building could be classified Use Group *M* or other as determined by the Building Official in cooperation with the Head of the Fire Department.

Official Interpretation No. 45-96
DATE: June 27, 1996
SUBJECT: Impacts of M.G.L. c. 148, §§ 26G, 26H and 26I

At a regular meeting of the Board of Building Regulations and Standards held on Thursday 27, June 1996, the Board approved the following interpretation of the application of M.G.L. c. 148, § 26G, 26H and 26I as they impact the building permit process.

Discussion: M.G.L. c. 148, §§ 26G, 26H and 26I are "local option statutes". These are state laws which are not applicable in a municipality until a municipality elects to adopt them, at which time they become law in that municipality. The statutes are "Fire Safety Statutes", and require the installation of automatic sprinkler systems in specific buildings identified in the statutes. Once adopted, they are enforced by the Head of the Local Fire Department (the Fire Chief).

In summary, the statutes require the following

Statute (M.G.L.)[a]	Requirements	Appeal Provision
c. 148, § 26G[b]	Automatic Sprinkler System in: 1) New buildings over 7,500 sf 2) Additions to existing buildings (addition only) over 7,500 sf 3) Major alterations to existing buildings over 7,500 sf	Automatic Sprinkler Appeals Board
c. 148, § 26H	Automatic Sprinkler System in lodging and boarding houses	Automatic Sprinkler Appeals Board
c. 148, § 26I	Sprinkler system installation in; 1) New multiple family dwellings containing four or more dwelling units. 2) Substantially rehabilitated buildings in multi family dwellings containing four or more dwelling units.	State Fire Marshal

Notes:
(a) Refer to statute for exact wording
(b) Residential uses exempted

In some municipalities, the adoption of these statutes has created an apparent regulatory conflict and has, in extreme cases resulted in omission of sprinkler systems at the outset of construction resulting in lawsuits and court judgments requiring the installation of the sprinkler systems after occupancy. Needless to say, such cases have proved to be extremely costly.

Question: How do these particular statutes affect the responsibilities of the Building Official in the enforcement of the State Building Code? In particular, what action does the Building Official take at the building permit application stage?

Answer: In accordance with the provisions of *M.G.L. c. 143, § 3*, the Building Official is empowered to enforce the provisions of the State Building Code and the Architectural Access Board Regulations (521 CMR). The Fire Chief is empowered to enforce the provisions of *M.G.L. c. 148, §§ 26G, 26H and 26I*.

The statutes link the requirement to install the automatic sprinkler to the building code by requiring the installation to be *"....in accordance with the provisions of the state building code"* . This language shall be properly interpreted as "*....in accordance with standards referenced for the installation of an automatic sprinkler system*", e.g. NFiPA 13, 13R or 13D, etc. Such interpretation would also extend to the permitting requirements of Article 1.

The Building Official's approach in municipalities which have adopted said statutes shall be;

APPENDIX B

The Building Official should become generally aware of the requirements of *M.G.L. c. 148, §§ 26G, 26H and 26I*.

If a building permit application is made which may trigger the enforcement of the statutes, the determination is (by law) made by the Fire Chief. It is clear in the subject statutes that the Fire Chief is the sole authority to determine whether or not a particular construction activity is subject to said statutes and the municipality and its agents, including the Building Official are bound by this determination. The

permit applicant is provided avenues of administrative appeal from the Fire Chief's determination, by way of the State Fire Marshal or the Automatic Sprinkler Appeals Board. Once a determination has been made by the Fire Chief that the statute is applicable, the Building Official must ensure, at the building permit application stage, that provision has been made for the design and installation of the automatic sprinkler system. If plans submitted at the building permit application stage do not include the sprinkler system, the application shall be denied based on non compliance with Section 113 of the Massachusetts State Building Code, i.e. incomplete plans and/or application materials.

If an appeal is taken, the Building Official, pending the outcome of the appeal, may issue a permit in part and shall, in writing, concurrently notify the Fire Chief and the permit applicant. Said notification must clearly identify the limits placed on the construction.

In communities which have adopted the provisions of M.G.L. c. 148, § 26H, a certificate of inspection, as required by Table 108 for a lodging or boarding house, shall not be issued if an automatic sprinkler system has not been installed within the time provided for by said statute, providing that the Building Official has been notified by the Fire Chief of the date of the adoption of said statute. If an appeal is pending a temporary certificate of inspection may be issued and renewed, each for periods not exceeding 30 days, pending the outcome of the appeal.

This interpretation is made to foster cooperation between building and fire officials in this particular area of law which has caused some confusion in the past.

Official Interpretation No. 46-96
DATE: June 27, 1996
SUBJECT: Handrails and Guardrails in One and Two Family Dwellings
Section 3401.11 of the Fifth Edition of the State Building Code

At a regular meeting of the Board of Building Regulations and Standards held on Thursday 27, June 1996, the Board approved the following interpretation of the application of Section 3401.11 of the Fifth Edition of the State Building Code.

Section 3401.11 states that "*. . . Handrails having [a] minimum and maximum height of thirty (30) inches and 34 inches, respectively, measured vertically from the nosing of the treads shall be provided on at least one side of stairways of three or more risers. Open sides of all stairs shall be similarly protected by guards. . .* "

Question 1: Is it the intent of Section 3401.11 to require ***both*** handrails and guardrails set at different heights on the open sides of stairs in a one or two family dwelling?

Answer 1: No. It is the opinion of the Board that the word ***similarly*** refers to the handrail description, which means that the open side of the stair must be protected with a guardrail that also acts as a handrail. It is ***not*** necessary to provide a guardrail set at 36 inches in height with a handrail set between 30 and 34 inches.

Question 2: At what height should the guardrail be set?

Answer 2: The guardrail may be set between 30 and 34 inches in height measured vertically from the nosing of the tread. If a handrail is provided on the opposite side of the stair, it shall be set at the same height.

Official Interpretation No. 47-98
DATE: March 10, 1998
SUBJECT: Application of 780 CMR 3408.6.3 (2) and 2305.6.4 of the Sixth Edition of the State Building Code.

At a regular meeting of the Board of Building Regulations and Standards held on Tuesday 10, March, 1998, the Board approved the following interpretation of the application of 780 CMR 3408.6.3 (2) and 2305.6.4 of the Sixth Edition of the State Building Code.

Discussion: Chapter 34, See 780 CMR 3408.6.3(2), under certain conditions during the renovation of an existing building, requires masonry walls to be connected to floors and/or roofs in order to improve (or affect) lateral support of the walls.

All masonry walls shall be connected to floor or roof diaphragms, or other elements providing their lateral support, so as to conform to the requirements of 780 CMR 1612.7. The design force for the connection shall not be less than 100 pound per linear foot of wall. Connections shall not produce cross-grain bending in wood members.

In existing buildings with wood framed floor and roof systems and masonry loadbearing walls, building codes have traditionally required (based on traditional construction methods) wood floor and roof members framing into masonry walls to be "fire cut".

2305.6.4: Fire Cuts: All wood and other combustible floor, roof and other structural members framing into masonry walls shall be cut to a bevel of three inches (76 mm) in depth and shall project not more than four inches (102 mm) into the wall.

Fire cuts are representative of traditional construction detailing methods stemming principally from older "mill" type buildings which, in the event of a fire resulting in the their collapse of a floor or roof are intended to allow the framing members to rotate at supports allowing the floors to collapse without causing the collapse of the wall systems.

Question: Does the seismic requirement for connection of masonry walls to floors override or negate the requirement to preserve existing fire cuts in wood structural members ?

Answer: No. The provision for fire cuts and lateral support of masonry walls serve different purposes and are independent requirements. Compliance with both code provisions is required.. The designer of the lateral support details requirement must exercise care in the detailing of such connections. The connections must be detailed to allow the framing members at the wall connection to rotate in the event of a fire while additionally providing the lateral support for the walls in the event of an earthquake.

Official Interpretation No. 48-98
DATE: March 10, 1998
SUBJECT: Application of 780 CMR 1012.6 and 101.6 of the Sixth Edition of the State Building Code.

At a regular meeting of the Board of Building Regulations and Standards held on Tuesday 10, March, 1998, the Board approved the following interpretation of the application of 780 CMR 1012.6 and 101.6 of the Sixth Edition of the State Building Code.

Discussion: 780 CMR 1012.6 of the Sixth edition of the Massachusetts State Building Code governs the requirements for assembly aisles and aisle accessways. 780 CMR 1012.6 specifically addresses the required width of an aisle accessway (row) and states;

780 CMR 1012.6: Row Widths: The minimum clear row width shall not be less than 12 inches (305 mm) measured as the clear horizontal distance from the back of the row ahead and the nearest projection of the row behind. Where chairs have automatic of self rising seats, the measurement shall be made with the seat in the raised position. Where any chair in the row does not have an automatic or self rising seat, the measurement shall be made with the seat in the down position. Where tablet arm seating is used the measurement shall be made with the tablet- arm in the useable position.

The state building code appendix A references the Life Safety Code NFPA 101 (1994), which, in section 8-2.5.7.6, states;

Rows of seating utilizing tablet-arm chairs shall be permitted only if the clear width of aisle accessways complies with the requirements of 8-2.5.7 where the tablet is in the useable position.

Exception: *Tablet arms shall be permitted to be measured in the stored position where the tablet arm automatically returns to the stored position when raised manually to a vertical position in one motion and falls to the stored position by force of gravity.*

THE MASSACHUSETTS STATE BUILDING CODE

Question: Is the life safety code section applicable? Can the exception in NFPA 101 8-2.5.7.6 be utilized ?

Answer: The State Building Code 780 CMR 101.6 explains under what circumstances referenced standards are applicable;

101.6 Referenced Standards: The standards referenced in 780 CMR and listed in Appendix A shall be considered part of the requirements of 780 CMR to the prescribed extent of each such reference. Where differences occur between the provisions of 780 CMR and referenced standards, the provisions of 780 CMR shall apply. . . .

Therefore the answer to the forgoing questions is in the negative, for the following reasons;

780 CMR 1012.6 provides no direct reference to NFPA 101 and therefore the provisions of NFPA 101 as they relate to the measurement of row widths are inapplicable. It is incorrect to assume that simply because NFPA 101 is referenced in 780 CMR that it is referenced in its entirety, and;

If NFPA 101 were referenced in the subject section, the provisions of NFPA 101, section 8-2.5.7.6 (exception) is in conflict with 780 CMR 1012.6 relative to the measurement of row widths where tablet-

arm seating is present (780 CMR contains no such exemption for automatic return of tablets). In such instances 780 CMR 101.6 directs that the provisions of 780 CMR are applicable should a conflict occur between a provision of 780 CMR and a referenced standard.

In order to use this section of NFPA 101, an applicant must apply for and receive a variance from the State Building Code Appeals Board in accordance with 780 CMR 126.

Official Interpretation No. 49-98

DATE: March 23, 1998

SUBJECT: Smoke Detector and Heat Detector Requirements in One- and Two-Family Dwellings - 780 CMR 3603.16 of the Sixth Edition of the State Building Code.

At a regular meeting of the State Board of Building Regulations and Standards held on Tuesday, March 10, 1998, the Board approved the following interpretation of the application of 780 CMR Chapter 36, 780 CMR 3603.16, "FIRE PROTECTION SYSTEMS" of the Sixth Edition of the Massachusetts State Building Code.

Background/Discussion:

The Sixth Edition of the Massachusetts State Building Code (the Code), 780 CMR 3603.16 is titled: "FIRE PROTECTION SYSTEMS" and specifies all required fire protection system requirements for new construction one-and two-family dwellings that are single or two-family detached buildings; additionally, 780 CMR 3603.16.13 sets requirements for when smoke detector requirements for new construction will apply to additions, alterations and/or repairs.

The Sixth Edition One- and Two-Family fire protection system requirements, differ from those of the Fifth Edition Code in several ways.

The Sixth Edition reflects the philosophy of NFPA 72-1996[1], "National Fire Alarm Code" in that:

1. Household fire warning systems may consist of either ac primary powered single and multiple station smoke detectors complying with ANSI/UL 217, or;
2. Household fire warning systems (note that these household fire warning systems could be referred to as "a fire alarm panel with low voltage connection to detectors, etc."), may consist of a listed control unit complying with UL 864 or UL 985 with automatic smoke detectors complying with UL 268 and occupant notification appliances complying with UL 464 or UL 1971 if such notification appliances incor-porate strobe lights - if supplementary visual signals are utilized they should comply with UL 1638, and;
3. All household fire warning systems shall have secondary power supplied from monitored batteries, and;
4. Massachusetts provisions require the use of photo electric smoke detectors, rather than the ionization type smoke detectors when such smoke detectors are on the same floor and within 20 feet of a kitchen or bathroom containing a tub or shower (to prevent nuisance false alarms characteristic of ionization type smoke detectors in proximity to kitchens and tub or shower areas), and;
5. Electrical compatibility (listed for intended purpose - see 780 CMR 3603.16.2) between smoke detectors and/or notification appliances to ensure that all portions of the household fire warning system will operate properly, and;
6. In addition to smoke detector requirements, the Sixth Edition of the Code has been structured to address heat detector requirements <u>but at this time, and until 780 CMR 3603.16.4 is otherwise amended, HEAT DETECTORS ARE NOT REQUIRED IN ONE- AND TWO-FAMILY DWELLINGS</u>, and;
7. 780 CMR 3603.16.8.1 addresses "non-required" alarm notification appliances and non-required smoke or heat detectors and requires that such are to be installed so that the actuation of any non-required detector shall cause the alarm in all required and non-required detectors in the dwelling unit to sound, and;
8. 780 CMR 3603.16.13 requires fire warning systems for new construction throughout an existing dwelling when one or more sleeping rooms are added or created in an existing dwelling.

Answers to some frequently asked questions about smoke detectors and heat detectors

Question 1: Are ionization type smoke detectors still allowed in new construction one- and two-family dwellings?

Answer 1: Yes, provided such smoke detectors satisfy the applicable general listing requirements of 780 CMR 3603.16 and are not located (on the same floor) within 20 feet of a kitchen or a bathroom containing a tub or shower (780 CMR 3603.16.11). Ionization smoke detectors that otherwise satisfy the general requirements of 780 CMR 3603.16 shall be allowed within 20 feet of a kitchen or bathroom containing a tub or shower when the ionization detector is on a different floor than the subject kitchen or bathroom.

Question 2: Would ionization smoke detectors be allowed in bedrooms when the bedrooms are separated from the kitchen or bath by both a bedroom door and a kitchen or bath door, even if such ionization smoke detectors are within 20 feet of a kitchen or bath door?

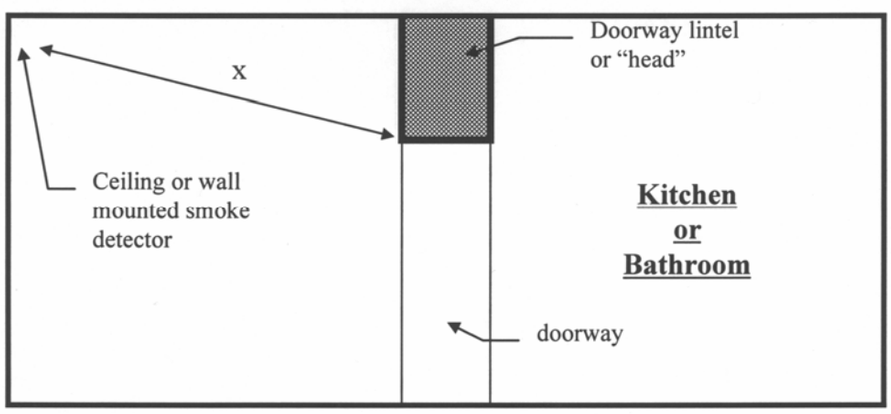
Answer 2: No. Once the smoke detector is within 20 feet of a kitchen or bath, then a photo-electric type smoke detector must be utilized.

Question 3: How does one measure the 20 foot distance from a kitchen or from a bathroom containing a tub or shower?

Answer 3: Refer to the sketches and note that the 20 foot rule applies to smoke detectors only on the same floor as kitchens or bathrooms containing a tub or shower and that the 20 foot distance from the smoke detector (ceiling or wall mounted) to the kitchen or bath shall be "true length", measured from:

the centerline of the smoke detector to the nearest edge, front face of the doorway separating the kitchen or bath from the area in which the smoke detector is located (in "two room" layouts), and;

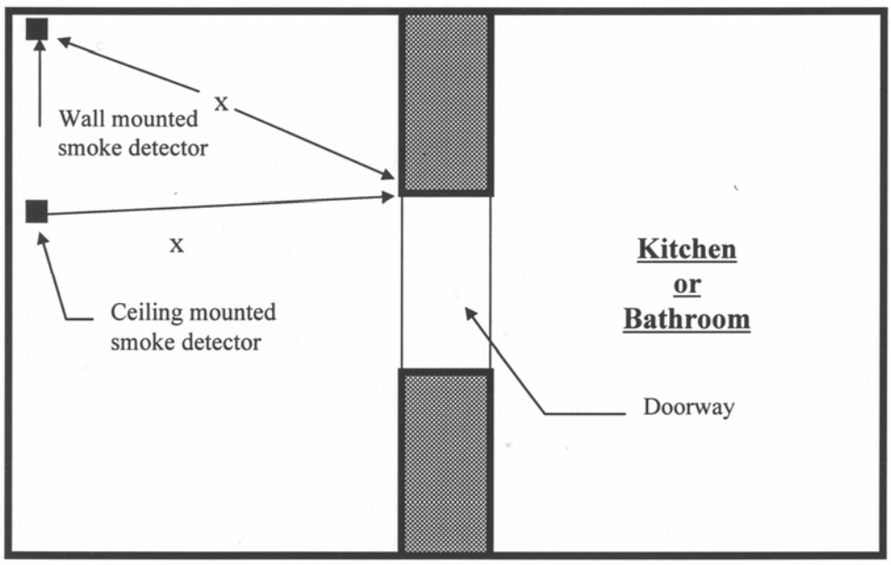
in "open plan" areas where no doorway separates the kitchen from the detector, the 20 foot rule shall be the shortest, "true length" 20 foot distance measured from centerline of ceiling-mounted or wall-mounted smoke detector to nearest edge of fixed smoke-producing appliance (stove, oven, broiler, etc.--note that movable appliances and/or microwave ovens are not to be considered relative to the 20 foot distance).



Section view of a "two room" layout with the ceiling-mounted or wall-mounted smoke detector (■) shown in the room on the left and the kitchen or bathroom represented by the room on the right.

If true length of "x" is less than or equal to 20 feet, then a photo electric smoke detector must be utilized. The true length of "x" is the actual distance from the centerline of the ceiling-mounted or wall-mounted smoke detector to the nearest edge of detector-side, front face of doorway.

APPENDIX B



Plan view of a “two room” layout with either a ceiling-mounted or a wall-mounted smoke detector (■) shown in the room to the left and the kitchen or bathroom represented by the room on the right.

If true length of “x” is less than or equal to 20 feet, then a photo electric smoke detector must be utilized. The true length of “x” is the actual distance from the centerline of the ceiling-mounted or wall-mounted smoke detector to the nearest edge of detector-side, front face of doorway.