



The Commonwealth of Massachusetts  
STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

# CODEWORD

Michael S. Dukakis  
Governor

Kentaro Tsutsumi  
Chairman

December, 1990

Charles Dinezio  
Administrator

## WELCOME TO THE FIFTH EDITION

Towards the middle of the 1980's the Board of Building Regulations and Standards was established as the successor agency to the State Building Code Commission. One of the first tasks the Board vowed to achieve was to update the existing edition of the state building code and to have it reflect the format and content of the most recent BOCA National Building Code. Due to a shortage of work-force and a scarcity of monies, this effort was unavoidably delayed. Today, however, after much hard work and dedication, the job is complete. The result is the Fifth Edition of the Massachusetts State Building Code which is based on the 1987 version of the BOCA National Code. The 1987 edition was used as a base point. In the upcoming months, the Board will be examining the 1990 BOCA code to incorporate any relevant changes from that document. For now, let's take a look at the manner in which the Fifth edition was produced.

To understand the new version of the code, you must first learn the guidelines of its development. Although the clear task was to adhere to the language of the national code, many other factors needed to be considered. Over the years Massachusetts has been a leader in many public safety matters and areas of sociological need. Much of the building code reflects the conviction of this research. Section 440.0 of the Fourth Edition (Section 638.0 in the Fifth Edition), for instance, was developed to accommodate the special needs of impaired individuals. The Board recognized that these individuals required special attention and staff worked with the Human Services staff to provide safe living quarters within a community setting. Such was the inception of the special use called Group Dwelling units.

Other sections of the Massachusetts code also reflect innovative thought. Article 7, Structural and Foundation Loads and Stresses (Articles 11 and 12 in the Fifth Edition), is the result of the research and commitment of the various advisory committees who lend their time to our Board. Also, the energy provisions of Article 20 (Article 31 in the Fifth Edition) demonstrate a cooperative effort of individuals concerned with the consumption of our depleting supply of energy sources. And, of course, Massachusetts has many laws and regulations that impact the building code and the construction industry in general. All of these things could not be lost in the conversion of the code. Retaining them, however, meant a change to the BOCA pattern.

Since the Fifth Edition is neither wholly BOCA nor wholly a Massachusetts code, we have developed the *User's Guide to the Fifth Edition*. This guide is distributed with the purchase of each code and is considered the *key* to understanding the new edition. Although it should not be judged as the sole authority on the code, it should be regarded as a fundamental reference source.

---

FIFTH EDITION - CONTINUED FROM PAGE 1

As an introduction, the guide is divided into three parts. Part I outlines all those articles, sections and subsections that are considered unique to Massachusetts. If a change to the BOCA text was in the form of a few words or paragraphs, the modification was highlighted by using bold-faced print. As we have noted, however, some differences extend beyond a couple of sentences. In fact, some entire articles are different. Articles 1, 7, 10 and 12 are some that fall into this category. It is not necessary to list each article here, however. The work has already been done within the text of the code. Each article that is considered distinctly Massachusetts text is identified with the parenthetical term just below its title that states; This Article is entirely unique to Massachusetts.

Part II of the guide outlines changes that occur in the Fifth Edition with respect to the BOCA code and with respect to the Fourth Edition of the Massachusetts code. These changes, of course, have been distinguished using one of the methods described above.

Probably the most useful portion of the guide is Part III. Since the numbering system of the Fifth Edition has been altered to reflect that of the BOCA code, a cross reference of old versus new article numbers has been provided. If you knew where to find the information in the Fourth Edition, all you need to do is locate the section number in the cross index and identify the new section number.

The guide also addresses the issue of the status of the One and Two Family Dwelling Code and the status of the Rules and Regulations pertaining to special licensing procedures (previously contained in Appendix Q). These are areas that seem to require further clarification.

First, as you will note, the One and Two Family Code is not contained within the main basic code. This was a conscience change that was made, again, to reflect the style of the BOCA code. The national one and two family dwelling code is promulgated by the Council of American Building Officials (CABO). This is a stand-alone document sold separately by the national organization. At this point in time, although we have followed suit in separating the material, we have not yet adopted the relevant changes contained within the CABO edition. This task is scheduled for completion towards the end of the fiscal year. In the interim, in order to conform with pertinent Massachusetts regulation, the old Article 21 (One and Two Family Dwelling Code) has been assigned a new article number. That number is 34. The sections have been renumbered and keyed into the basic code to reflect this change. This is the only change to that material at this time. Otherwise, Article 34 of the Fifth Edition is identical to Article 21 of the Fourth Edition.

Second, the rules and regulations previously contained within Appendix Q are conspicuously absent from the Fifth Edition. These, too, have been assigned a new identification and will be sold as the Rules and Regulations to the Fifth Edition. The major change that occurs within this new document relates to the certification of agencies involved in the testing of solid fuel burning heating appliances. In the past, the Board staff certified these agencies in house and published a list of approved organizations. In keeping with BOCA requirements, we have altered this procedure. Because the explanation as to why we have done this is fairly lengthy, we have dedicated space for an article further on in this document to deal with the matter entitled; *A Hot Issue*. Hopefully, this article will clarify the new procedure.

Much of this material is probably old news to those of you who have been able to delve into the new code. For those who are just getting into the new document, however, this information should come in very handy, and the *User's Guide* should be a great tool to help with the learning process.

Good luck and good reading!

## HOW MUCH DOES IT COST?

Now that we have established how and why the Fifth Edition of the code was produced, let's get down to the real question: How much does it cost?

Unfortunately, due to budget constraints, the BBRB is unable to supply the cities and towns with copies of the code, but as indicated in a memo from Chief Dinezio on September 6, 1990, we have been able to negotiate a reduced price for building officials. The cost and what is included is as follows:

### Fifth Edition of the code:

- The basic code
- Article 34, One and Two Family Dwelling Code (Formerly Article 21)
- Rules and Regulations (Formerly Appendix Q)
- User's Guide to the Fifth Edition
- Tabbed article dividers and cover ..... \$ 29.00

A building official may order the code by writing to the State House Bookstore on city or town letterhead or visiting the Bookstore in person. The code may be purchased via purchase order by a city or town if so desired. An additional charge is incurred if the document is to be received by mail. Also, a reduced rate can be attained if multiple copies are ordered. For further information regarding pricing, delivery and the like, contact the State House Bookstore directly at 727-2834.

The cost of the document described above for those who are not employed as building officials is thirty-four (\$ 34.<sup>00</sup>) dollars.

## A HOT ISSUE

As mentioned earlier, one aspect of the Fifth Edition that may deserve more attention than is offered in the *User's Guide* is the issue of solid fuel burning heating appliances.

In line with requirements set forth in Appendix Q of the Fourth Edition, the BBRB accepted application and approved all those agencies who wished to be involved in the testing of solid fuel burning heating appliances. A listing of these agencies was distributed to each building official as a guide in determining who was qualified to perform this function. This process proved to be a bit cumbersome, however. As a result, the Board followed the method of approval used nationally by BOCA. To understand the logic behind this technique, we must first turn to the Fifth Edition of the Massachusetts State Building Code.

Section 2512.0 is entitled, *Solid Fuel Burning Heating Appliances*. Section 2512.1 refers us to the BOCA National Mechanical Code to learn the design, installation, construction and repair methods for these appliances. Referencing Section M-401.1, *Labeling* [of equipment], of this document we find that: "all mechanical equipment and appliances regulated by this code shall bear the label of an approved agency unless otherwise approved in accordance with Section M-108.0"

This definition helps some, but we are still left with the question: What is an approved agency? At this point we must turn back to the Massachusetts building code. In the definitions section of Article 2, page 2-3, we find that an approved agency is: "An established and recognized agency regularly engaged in conducting tests or furnishing inspection services. The building commissioner or local inspector may accept creditable evidence of competency of such an agency; however, the BBRB is the ultimate approval agency".

As required by the mechanical code, every solid fuel burning appliance must bear a plate identifying the testing agency responsible for examining for the safe operation of the product. If, for example, the tag reads tested and approved by Underwriters Laboratories, the appliance is acceptable for use in the state of Massachusetts. As we are all aware, U.L. is a reputable operation with a long history of service in the product safety industry. According to our definition, then, this classifies U.L. as an approved agency.

### HOT ISSUE - CONTINUED FROM PAGE 3

All this may sound confusing. In reality, it is quite simple. An approved agency must be one that has been creditably engaged in testing and one that is recognized by the building official as such. This does not necessarily exclude any of the lesser known testing agencies. In such cases, if there is any doubt, merely call or write to the Board of Building Regulations and Standards for assistance, for, as the definition of an approved agency states: "...the BBRB is the ultimate approval agency".

### LABEL DISPUTE

Speaking of labeling requirements, one thing should be mentioned. Make sure it is a legitimate label. Underwriters Laboratory recently expressed through a news release that their label was illegally applied to an insulation product.

Counterfeit U.L. labels were affixed to bags of cellulose insulation which display the distributor's name, *Weatherking*, in orange lettering. The product, manufactured by Insul-Mor Cellulose Manufacturing Ltd. of Oregon, Illinois, was tested in accordance with ASTM C-739-86 and it was determined the material did not comply with the classification for flammability.

The product is not eligible to bear the U.L. mark because it was not produced under U.L.'s Follow-Up Service program, which includes frequent, unannounced factory visits by U.L. to countercheck compliance with requirements. U.L. has filed a suit requesting an injunction against Insul-Mor.

### FIGHT FIRE WITH FIRE PREVENTION

And, speaking of codes, the Board of Fire Prevention Regulations is considering the adoption of an updated Fire Prevention Code.

The Board of Building Regulations and Standards is supportive of such an action, particularly since the proposal contemplated is based on one of the national models (BOCA), which would make it compatible with the State Building Code.

Charles Dinezio, in addressing the Massachusetts Fire Prevention Association and the Massachusetts Fire Chiefs Association during their November meetings, made it a point to advise the members of his and the BBRB's support.

### CODEWORD

This issue's CODEWORD is; motor fuel service station. This term is one that is familiar to all. Technically, it is not a complicated expression. Each of us probably passes by the local station every day without much thought. The term was not selected as the CODEWORD for its complex definition. Rather, it was chosen to illustrate a fundamental difference between the Fourth Edition and the Fifth Edition of the code.

As we have examined, there are a number of differences between these two volumes; some great and some small. We have tried to make all changes immediately obvious and have succeeded in most cases. Some subtleties remain, however, as is evidenced here.

The definition of a motor fuel service station remains the same in both editions: "a structure, building or premise or any portion thereof where a flammable fluid is stored, housed or sold for supply to motor vehicles". In the Fourth Edition, a motor fuel service station is described under Section 415.0 as a special use. Height and area limitations in this edition are determined using the use group category B. To identify proper design procedures for this type of facility in the new edition of the code, however, one must reference Section 308.0, as it is not considered a special use. This section classifies the motor fuel service station as use group M, Mercantile.

## CODEWORD - CONTINUED FROM PAGE 4

The resulting structure would most likely turn out very similar using the provisions of either document. The difference resides in the route one must follow to arrive at the same conclusion.

Similar circumstances exist in other use group classifications. Often times the Fourth Edition of the code categorized a particular structure as a special use, but the BOCA code did not. On other occasions, the reverse situation was true. The decision on which path to follow was based on a desire to maintain the format of the 1987 BOCA Code to the greatest degree possible, as is the situation with a motor fuel service station. A detoxification facility, on the other hand, remains as a special use under Section 637.0 which is more in line with the philosophy of the Fourth Edition of the code. The reason stems back to compliance with existing Commonwealth of Massachusetts Regulations. So, if you attempt to locate a certain use group and it does not appear in its usual section (at least according to the Fourth Edition) do not despair, just remember this article and also remember the famous line which states: *it's in there*.

### WHO IS AN ARCHITECT?

Section 127.0 of the State Building Code is entitled; *Construction Control*. The provisions of this section "define the construction controls required for all structures needing registered professional architectural or engineering services". The intent of this section is to identify conditions under which particular skills are necessary in order to design the more complicated structures. In all fields of specialty, whether it be plumbing work, electrical design or matters of law, individuals are required to be rigorously trained and, sometimes, extensively schooled in his/her discipline. The architectural profession is no exception. The Board of Registration of Architects often receives questions regarding such requirements. As a result, the Board has published an informational bulletin designed to inform the public as to who is legally able to practice architecture in the Commonwealth. At the request of this Board, we are re-publishing this data for all to share.

**Who is an architect?** An architect is any person who is at least 21 years of age and of good moral character who has given evidence of satisfactory completion of certain education and practical experience requirements, has passed a qualifying examination, and has been issued a license to practice architecture in the Commonwealth of Massachusetts. The license is evidenced by a certificate of registration suitably displayed and by a seal which is impressed upon all plans, specifications, and reports prepared by the architect.

No person who does not fulfill the above requirements may use the title architect, registered architect, licensed architect, architectural designer or any form of the words architect or architectural, or display or use any words, titles, signs, etc. that would indicate such a person offers to engage in the practice of architecture.

**When is an architect required?** An architect is required for the preparation of plans and specifications and for the administration of construction for all buildings, whether they be alterations, enlargement or new, except:

- a.) any structure containing less than 35,000 cubic feet of enclosed space;
- b.) a single or two (2) family house or accessory building for such;
- c.) any building used for farm purposes;
- d.) any alteration of any building not involving substantial and major structural change;
- e.) the preparation of detailed plans or shop drawings that are required to be furnished by a contractor ordinarily engaged in construction work.

**What is the practice of architecture?** A person practices architecture by performing professional services in connection with the design and construction of a building.

These services may include consultation, investigation, studies, preparation of plans and specifications, coordination of consultant engineer's designs, administration of construction contracts, or any similar contribution of services in whole or in part. The practice of architecture does not include the practice of engineering except as that work is incidental to the practice of architecture.

## ARCHITECT - CONTINUED FROM PAGE 5

Any organization, be it a sole proprietor, partnership, or corporation that practices architecture must have among its partners or principal directors or officers, a person who is a Massachusetts registered architect under whose direction the various activities of architecture are performed.

**Penalties?** The Board of Registration may revoke, suspend or annul a certificate of registration and may reprimand, censure or discipline a registrant who, after appropriate hearing, is found to have violated the afore-referenced laws and regulations. The Board may report to the attorney general anyone who does not comply with any decision of the Board. Violators may be punished by a fine of not more than \$500.00, or imprisonment for up to 3 months, or both.

**Note** This information in no way supplements or supersedes the laws and regulations that govern the practice of architecture. (See MGL c 13 s 44A - D inclusive, c 112 s 60A - 60O inclusive, s 61 - 65 inclusive and s 88 for further detail.)

### SEAL OF APPROVAL?

The BBRS receives many pieces of mail inquiring as to certain aspects of the code and related topics. One such letter is in line with the article above. The question is: Can an architect prepare and seal structural, plumbing, mechanical, and electrical drawings?

The answer to this question is touched upon in paragraph two of *What is the practice of architecture*, above. The law expounds on this issue stating that the practice of architecture is: "performing or agreeing to perform...the co-ordination [emphasis added] of structural and mechanical design..." and "... provided that the practice of architecture shall not include the practice of engineering as defined in this chapter... [except] as incidental [emphasis added] to the practice of architecture".

The word coordination is defined as "...harmonious adjustment or interaction", in the American Heritage Dictionary and incidental is defined as "...of a minor, casual or subordinate nature" under this same document. Clearly, an architect must arrange his plans in order to accommodate the requirements of the necessary trades. He/she may also be responsible for field procedures which follow-up office work, but at no time is an architect qualified to design the utility or structural systems for a structure. The design of the structural system, plumbing layout and mechanical and electrical systems are critical to the proper functioning of a building. These tasks are certainly not considered incidental to the practice of architecture. As such, an individual who is duly licensed must be employed to prepare these plans.

The key word in this question, then, is prepare. Although an architect may perform some engineering tasks, such as to suggest locations for equipment, identify areas for the passage of duct lines etc., he/she cannot draft and stamp the designs for such systems certifying that he/she is the registered preparer of the document. This, as we have seen, is a matter of law. A person who violates these laws could be subject to penalties similar to those described above. The pertinent section of Massachusetts General Law to reference in order to determine just who is qualified to perform these duties is c 112 s 81D, *Practice of Engineering*.

### RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 126.7.11 (Contents of Decisions) of the code states, "Any decision shall not be considered by any person or agency as a precedent for future decisions."

#### Appeal Docket # 89-62

The local building official refused to issue a Certificate of Occupancy to the owner of a multi-story building citing nonconformance to Section 917.0, Wired Glass (919.0 in the Fifth Edition). (Other violations are pertinent to this case. We will focus on this particular aspect, however.)

APPEALS CONTINUED FROM PAGE 6

The Appellant wished to substitute "FireLite" glass for the wired glass required by Section 917.0. The Appellant presented documentation that indicated the proposed glass is U.L. rated and has passed the ASTM E152, Test of Door Assemblies, for fire resistance. The Appellant argued that this glass serves the same function as wired glass, but is more pleasing to the eye. The Appellant wished to install the glass in exitway doors and in side panels adjacent to these doors where the doors exit directly to grade. Also, the glass would be installed in clubhouse doors.

The local inspector felt that the cited product was a reasonable alternative to the wired glass, but did not feel that he could authorize its use without a ruling from the Board.

The Board felt that in light of the favorable results of the ASTM test procedure and of Underwriters Laboratories labeling that the "FireLite" glass would provide an equal level of safety to that of the wired glass. As such, the Board voted to vary the section of the code requiring wired glass in these door assemblies.

**NOTE:** In reference to "FireLite", subsequent to this appeal the Board of Building Regulations and Standards approved the use of this product, under proper installation conditions. See the May 1990 issue of CODEWORD for further details.

**Appeal Docket # 89-76**

The Appellant testified that he had applied for a building permit to construct a complex consisting of four separate buildings. The Appellant claimed that the inspector had failed to act on the application within the thirty (30) day time period required in Section 114.0. The Appellant also stated that the building inspector requested as-built plans for other buildings located on the lot.

The local building official acknowledged receipt of the application for permit and asserts that he had responded negatively to the application within the specified time. The inspector based his denial on the fact that a current site plan was unavailable. Site plan approval is a function of the local zoning board. Until the board approves the layout of the site, he is unable to issue a permit.

The Board voted in favor of the local building official's actions. The Board was satisfied that the building official had acted within the thirty (30) day time limit in denying the permit, and found, further, that the Appellant had failed to comply with the procedure governing zoning requirements. Until this task is complete, the building official cannot take positive action on the permit.

**POWER VENT INSTALLATION**

The use of power venting devices has become fairly common throughout the Commonwealth. Page 9 of the January, 1990 issue of CODEWORD identifies types of power venters currently approved by the Board of Building Regulations and Standards. The products listed in that article were approved by the Board previous to the promulgation of the Fifth Edition. New products that enter the market place shall be governed by the standards described in *A Hot Issue*, page 3 of this document.

Apparently, due to conflicts in the CODEWORD article as well as with direction supplied by the BOCA National Mechanical Code, there has been some confusion as to the proper method of installation of these products. In order to rectify this controversy, the Fifth Edition contains a new section, Section 2513.0, entitled, Power Venters. The subsections 2513.3 and 2513.4 examine installation requirements. They read as follows:

**2513.3 Installation of direct venting equipment:** Direct venting equipment shall be installed in accordance with the manufacturer's installation manual and instructions (typically, only personnel trained in the installation of such equipment are accepted by the manufacturer as qualified to install). Power venters shall be selected to match the venting requirements of the equipment being vented in accordance with the manufacturer's requirements.

POWER VENTERS - CONTINUED

2513.4 Termination: The vent system shall terminate so that proper clearances are maintained in accordance with the National Fuel Gas Code, ANSI Z223.1 or in accordance with the manufacturer's recommendations - the more stringent of such requirements shall apply. (Note: The Massachusetts Fuel Gas Code is the National Fuel Gas Code with modifications. Section 2513.4 will be amended to read Massachusetts Fuel Gas Code instead of National Gas Code.)

These sections should clarify any discrepancies concerning mounting height of termination vents above grade, and the like. The reader is cautioned that these standards are valid only for use with oil and gas fired appliances.

Additional information regarding these devices is also available in this new section of the Fifth Edition of the building code.

WELCOME BRIAN AND BILL

The BBRS is pleased to announce the arrival of two new members to our staff.

Brian Gore brings an undergraduate degree in civil engineering and a master's degree in structural engineering from the University of Liverpool, England to our staff. Brian is a registered professional engineer in Massachusetts as well as a chartered engineer in England. He has been actively practicing his profession on this side of the ocean and abroad for the last thirteen years.

Bill Plouffe delivers a wealth of information to our office from an extensive career as a governmental consultant. Bill is an undergraduate of M.I.T. with a degree in mechanical engineering and a graduate of Harvard University's MBA program. Bill has been continuously involved in the research and development of building codes for twenty plus years. His experience dates back to the origin of the state building code. The state code was the result of an intense study of the many building codes in existence at the time. The Three City Study, as it was dubbed, lead to the development of a more uniform state building code. Bill, of course, was an integral member of this study group.

We welcome both Brian and Bill to our organization and look forward to the tapping of their collective knowledge.

CONSTRUCTION SUPERVISOR'S LICENSE - BOARD POLICY

This article was originally published in the February, 1987 issue of CODEWORD. Since we receive many questions regarding this topic, it is time to print once again.

The State Board of Building Regulations and Standards has established the policy that a Construction Supervisor's License is not required to install roof covering. The Board based this policy on the fact that the license requirement was instituted to cover structural aspects of construction. As roof covering installation is non-structural, no license is required. However, a license is, of course, required for the framing and sheathing of roofs. (Do not forget to check the actual construction supervisor's license and confirm authenticity with a picture I.D. before issuing a permit should a license is required.)

HAPPY HOLIDAYS

It is hard to believe that the holiday season is upon us once again. It seems that the last Christmas celebration was but a short time ago. We hope that the year has been kind to all and we wish everyone a very joyous Christmas and New Year.

EDITOR IN CHIEF Charles Dinezio OTHER CONTRIBUTING STAFF Tom Riley  
ASSISTANT EDITOR Pauline Stanton  
SUPERVISING EDITOR Robert Anderson