CODEWORD ©

THE OFFICIAL NEWSLETTER OF THE BOARD OF BUILDING REGULATIONS & STANDARDS

~April 2001~

BBRS HEARS PRESENTATIONS FROM NFPA AND BOCA

Chapter 143 of the Massachusetts General Laws requires the BBRS amend the State Building Code at least every five years. As the BBRS embarks on the lengthy process of developing the 7th edition of the Building Code, the BBRS invited two of the major codes and standards writing bodies to its monthly meetings in order to gain an insight on two possible model codes for Massachusetts.

The Massachusetts State Building Code has traditionally followed the BOCA National Building Code format since the inception of the 1st edition in 1975. Following the formation of the International Code Council (BOCA, SBCCI and ICBO) and the publication of the International Building Code and more recently the development of a building code by NFPA (NFPA 5000), the BBRS, in exercising due diligence, invited presentations by the NFPA and BOCA on their respective building codes.

At its February 13, 2001 meeting Mr. Gary Keith of NFPA described the ANSI certified consensus process used in the development of NFPA building code. Mr. Keith informed the BBRS that the development of NFPA 5000 was on schedule and would be published in 2002. Mr. Keith also described that there would be a certification component for building officials and that all building officials currently certified would receive certification by reciprocity. Mr. Keith also stated that a commentary is under development and the code would be supported by NFPA training.

At its March 13, 2001 meeting, Mr. Martin Conant of BOCA's North East Regional Office presented an overview of the International Code Council and the development of the International Building Code and the Family of codes (Electrical, Plumbing, Fire Prevention, and Residential) all of which are compatible with each other. Mr. Conant informed the BBRS that the International Building Code is already available and is supported by commentaries and training. Mr. Conant also informed the Board that the current certification process for building officials in Massachusetts is based on examinations on the International Building Code.

The BBRS thanks both the NFPA and BOCA for their presentations and their continued support in the development of codes and standards in the US.

6.8 EARTHQUAKE ROCKS SEATTLE - COULD IT HAPPEN HERE?

On February 28 at 10:55 am Seattle was rocked with a major earthquake measuring 6.8 on the Richter scale and lasting for approximately 20 seconds.

The most notable damage was to the dome of the State's Capitol building which cracked under the loading imposed by the earthquake.

As can be expected, much of the damage occurred to unreinforced masonry buildings which can be particularly vulnerable to damage from earthquakes. Although masonry is a desirable material in terms of support of vertical loads, if unreinforced, it does not resist loads perpendicular to its minor axis.

Vehicle damaged by Falling Masonry
Photo Courtesy of ABC News

Could this happen in Massachusetts? What has the BBRS done to anticipate and mitigate the same problem? When was the last time we had a significant earthquake in Massachusetts?

The answer to the first question is yes. The New England region has a long history of earthquakes (see table below). The most significant earthquake experienced in Massachusetts was in 1755 when an earthquake approximating 6 or 6.25 occurred near Cape Ann. Written reports from the time document many chimney failures and describe the loud noise and violent ground shaking which occurred. The built environment since that time has changed dramatically as populations densities, businesses transportation facilities, and attendant services restaurants, hospitals power plants etc. have increased within the region.

Seismic Event	Date	Richter Magnitude
Cape Ann, MA*	1755	6.0
Eastport, ME	1904	5.8
Newburyport, MA	1727	5.5
Ossippee, NH	1940	5.4

PAST SIGNIFICANT EARTHQUAKES
NORTH EAST USA
(Source New England States Earthquake Consortium)

In 1990 the "Boston Loss Study" was commissioned by the Massachusetts Civil Defense Agency (now the Massachusetts Emergency Management Agency). The study was designed to assess the magnitude of earthquakes that could be expected in the region and to evaluate, based on the expected earthquake, the possible range of injuries, deaths and damage which could occur. The study area was defined as the route 128 belt as this area represents the most populace. However, it is important to realize that an earthquake could affect any part of the state.

Significant Conclusions of the Study included:

- $2 billion to $10 billion damage
- Significant damage due to soil liquefaction failure,
  fire and economic interruptions
- Hundreds of deaths
- Thousands of injuries
- Potential for damaging earthquake greater than 6.25 magnitude exists in Massachusetts

The study recommended that:

"The Massachusetts Board of Building Regulations and Standards and the Board's Seismic Advisory Committee should be provided a copy of this report for their use in determining its implications for modifications to the State Building Code"

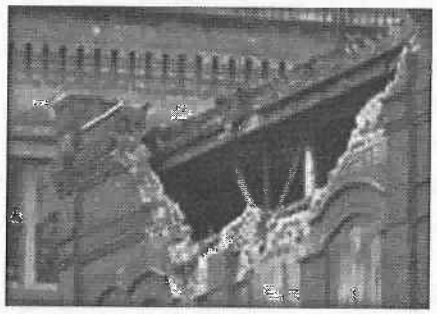
This committee then spent two years diligently working on drafting regulations which would provide a level of safety to existing buildings while recognizing the cost implications associated with the implementation of such regulations to building owners.

A chronology of events is as follows:

- 1990-1992 - SEISMIC ADVISORY COMMITTEE DEVELOPS SEISMIC REGULATIONS RELATIVE TO EXISTING BUILDINGS
- SEPTEMBER 14, 1992 - SEISMIC ADVISORY COMMITTEE FORMALLY SUBMITS RECOMMENDED PROVISIONS TO BBRS FOR INCLUSION IN STATE BUILDING CODE.
- 1992 - APPROVED BY BBRS WITH CONDITIONS THAT AN INDEPENDENT ENGINEERING FIRM EVALUATE THE PROPOSED PROVISIONS FOR ECONOMIC IMPACT AND USABILITY.
- 1993 - BOSTON BUILDING CONSULTANTS SELECTED TO ANALYZE THE "NEW" PROVISIONS FOR EXISTING BUILDINGS SPECIFICALLY ANALYZING 5 DIFFERENT BUILDING TYPES WHICH UNDERWENT RENOVATIONS. REPORT WAS TO STUDY USABILITY OF PROVISIONS AND IDENTIFY POSSIBLE ECONOMIC ISSUES.
- FEBRUARY 1994 - REPORT SUBMITTED TO BBRS BY BOSTON CONSULTANTS.
- 1994 -1996 - SEISMIC ADVISORY COMMITTEE REDRAFTED EXISTING PROVISIONS FOR CONSISTENCY WITH NEW 6TH EDITION REQUIREMENTS (1991 NEHRP PROVISIONS)
- DECEMBER 17, 1996 - FORMALLY ADOPTED BY BBRS

- JANUARY 24, 1997- FILED WITH SECRETARY OF STATE
- FEBRUARY 28, 1997 - PROVISIONS EFFECTIVE IN 6TH EDITION.
- AUGUST 27, 1997 5TH EDITION SUPERSEDED BY 6TH EDITION

Often misunderstood, the regulations require as little as determining when specific seismic hazards are present typically unreinforced masonry parapets (historic killers in even moderate earthquakes) and correcting those hazards: to more extensive seismic upgrades.



Unreinforced Masonry Parapet and Wall Failure
Photograph Courtesy of ABC News

Perhaps some of the most vulnerable buildings are the very buildings which house the people and equipment needed to respond in an emergency event such as an earthquake. Many of the State's older type fire houses are constructed of unreinforced masonry. The picture below is an excellent example of the "soft story" created by the inclusion of the large door openings, out of necessity, required to accommodate fire apparatus. Such large openings in lateral load resisting walls create significant weaknesses in the structure.

An important point to note is that the regulations are not retroactive and only come into play when the life of an existing building is increased by renovation or addition. Extending the life of a building also increases the probability of the building experiencing a damaging earthquake during its life.

Unlike California, Massachusetts stock of pre State Building Code buildings has not been affected by a major earthquake since 1755.

THE ENERGY CORNER

NEW "COMMERCIAL" ENERGY CODE TAKES EFFECT

The revised Chapter 13 energy conservation requirements became effective on January 19, 2001. These new requirements apply to all new buildings other than low-rise residential (which are covered under Appendix J), and are voluntary until July 1, 2001. The mandatory date is based on when a completed permit application package is submitted to the local building department. Given the long lead-time for many commercial projects, architects and engineers should be prepared to incorporate the new code into their designs.

With the support of US Department of Energy and the state's gas and electric utilities, BBRS is offering free seminars throughout the year to introduce the basic requirements of the Chapter 13. Architects, engineers, contractors, building officials, and others are encouraged to attend. Information about the energy code and seminars is available on the BBRS website at www.state.ma.us/bbrs/energy.htm.

UNVENTED ROOF AMENDMENT ADOPTED BY BBRS

In response to an increasing number of cases, the Board voted at its February meeting to allow unvented roof systems under limited circumstances. Although this amendment, like any other, does not become official until it has gone through the final review by the Secretary of State's office, the Board did vote favorably on its technical merits.

The change will affect two identical sections of the code: 780CMR 1210.1 ("Ventilation of Special Spaces, Roof Spaces") and 780CMR 3608.6.1 ("Roof Ventilation"). The new sections will read as follows, with the amended language underlined:

> Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roofs rafters, shall have

cross ventilation for each separate space by ventilation openings that are protected against the entrance of rain and snow. The openings shall be covered with corrosion-resistant mesh not less than 1/4-inch (6mm) nor more than 1/2-inch (13mm) in any direction.

Exception 1: Roof assemblies where an expanding spray foam insulation material, providing at least 40% of the total R-value of the required insulation, is in direct contact with the underside of the roof deck and adjacent framing members. If the permeability of the foam material is less than 2 perm-inch, no vapor barrier is necessary.

Exception 2: Roof assemblies where a board foam plastic insulation material, providing at least 40% of the total R-value of the required insulation, is placed on top of the roof deck. If the permeability of the foam material is less than 2 perm-inch, no vapor barrier is necessary.

When either of the above Exceptions is taken, the following conditions must also be satisfied:

The roof assembly, including the wall-to-eave-to-roof deck connection must be made air-tight, per 780CMR J4.3.3 or 780CMR 1304.3 as applicable.

Thermal barrier requirements, if any, shall be per 780CMR 2603.4 as applicable.

The roof assembly must meet the fireresistance rating requirements of 780CMR, when and as applicable.

Roofing material must be listed/warranted by its manufacturer for use in an unvented roof system.

Also, Section J4.2.1 ("Vapor Retarder") was amended to include a second exception:

Exception 1: In construction where moisture or its freezing will not damage the materials or adversely affect the performance of the insulation.

Exception 2: As allowed in 780 CMR 3608.6.1.

BBRS AND MAURICE PILETTE TEAM UP FOR SEMINARS

Registered Fire Protection Engineer, Maurice Pilett, PE, Chairman of the Fire Safety Commission and Automatic Sprinkler Appeals Board presented two seminars to the design and construction community at the Hurley Building in Boston on March 8 and 15.

The seminars covered the laws put in place to enact a statewide building code and also development of the regulatory process involved in the design and construction of fire protection systems.

The seminar also focused on:

- Narrative Reports for Fire Protections Systems
- Construction Control
- Appeals Process
- Interaction of State Law and Regulation
- The role of engineers, architects, contractors and licensed trades in the design, construction testing of fire protection systems.
- Effectively communicating with building and fire officials.

The seminars ran from 8:30 am to 4:15 pm and attracted over 120 attendees.

DEPARTMENT OF PUBLIC SAFETY APPOINTS TWO NEW STATE BUILDING INSPECTORS

The Department of Public Safety announces the appointment of two new District State building inspectors.

Sean MacDonald

Paul Wakem

Both Sean and Paul were formerly employed by the City of Boston Inspectional Services Department.

The BBRS and Staff welcome Sean and Paul to the Department of Public Safety and wish them success in their future endeavors.

LICENSED CONSTRUCTION SUPERVISOR'S CORNER
AMENDING THE BUILDING PERMIT.

The BBRS oftentimes receives inquiries from lawyers representing builders who have applied for a building permit, completed a portion of the work (or none at all) and sometime thereafter the project has been taken over by another contractor. What is the responsibility of the contractor who originally applied for the permit?

Unless the original permit applicant amends the building permit application by removing his or her name from the permit application, he or she remains responsible for the work. The building permit should be also be amended by the contractor assuming responsibility by "signing on" to the permit, thereby amending the permit. When both of these acts occur, the building official is duly noted of the change in the party responsible for code compliance. It is sound practice at this point, to avoid any future disputes, to also make a written accounting as to the status of the project. The permit amendment process is part of the ADMINISTRATIVE PROCEDURES contained in the building code. These procedures are contained in chapter 1 and make up the rules by which any and all parties involved in the building process from product manufacturers to builders to owner to building officials must abide. Other specific licensing rules are found in the Boards' regulations R1 through R 7 of the State Building Code.

A recent case before the license review committee resulted in a contractor losing his license to practice after he allowed his name and license to be used in an application to construct a new single family dwelling. In effect this contractor "loaned" his license and even though he conditioned this "loan" by requesting of the builder than he be intimately involved in the construction, the building was in fact constructed by an unlicensed person without the knowledge of the licensee. During construction, the unlicensed contractor violated many provisions of the code, probably one of the more serious violations being the omission of a support column for a floor beam.

Remember, your license, when used on a building permit application, carries many responsibilities including the primary responsibility to construct the building in accordance with the State Building Code.

CONSTRUCTION SUPERVISOR LICENSE DISCIPLINARY ACTIONS

Licensee	CSL #	Disciplinary Action Taken
Andrew MacKey	070518	License Suspended one year effective February 21, 2001 and must pass construction supervisor license examination prior to reinstatement.

BBRS MAY PUBLIC HEARING

Mark your calendars. The May public hearing is scheduled for Tuesday 8th at 1:00 pm.

This is a public hearing required by Massachusetts General Law and is one of the two meetings where code amendments can be offered and where testimony can be given on code changes which have been filed.

A NOTE TO BUILDING OFFICIALS

The BBRS issues Construction Supervisor Licenses and renewal licenses with picture identifications. These licenses are also laminated. Please ensure that you verify the license holder and view the license to ensure the license has not expired. Do not rely on a license number you may have on file in your office.

HOME IMPROVEMENT CONTRACTOR DISCIPLINARY ACTIONS

On February 13, 2001, hearings were held before the designee for the Director of the Home Improvement contractor Registration Program to determine appropriate actions against the following registrants (see pages 6 and 7) pursuant to M. G. L. c. 142A and 780 CMR.

The designee for the Director issued the following decisions and administrative penalties. Questions regarding the decisions can be directed to Ms. Marian Doyle at (617) 727-7532 x25259.

HIC Registration No: 117751 Applicant Name: SEWALL, RICHARD W
Company: ALUMINUM HOMES, INC. 1191 WASHINGTON ST W. NEWTON, MA 02165
Disciplinary Action: 02/13/2001 Revoked
Comments: defaulted - must reimburse homeowner and Guaranty Fund - $7000 admin. penalty

HIC Registration No: 108069 Applicant Name: O'Brien, William S
Company: BLUE SPRUCE COMPANY, INC. PO Box 604/ 40 Term Terr Tewksbury, MA 01876
Disciplinary Action: 02/13/2001 Revoked
Comments: defaulted - $3000 administrative penalty

HIC Registration No: 113608 Applicant Name: WILBUR, DENNIS W
Company: DENNIS W WILBUR 1801 Bay Road Sharon, MA 02067
Disciplinary Action: 02/13/2001 Revoked
Comments: must reimburse Guaranty Fund and pay $3000 administrative penalty

HIC Registration No: 117366 Applicant Name: FLAHERTY, MICHAEL T
Company: FLAHERTY ROOFING 571 NORFOLK ST HOLLISTON, MA 01746
Disciplinary Action: 02/13/2001 Suspended
Comments: must reimburse Guaranty Fund, submit new contract and pay $1000 admin. penalty

HIC Registration No: 111737 Applicant Name: SMALLEY, JAMES R
Company: JAMES R. SMALLEY 463 S. BOLTON RD BOLTON, MA 01740
Disciplinary Action: 02/13/2001 Suspended
Comments: $500 admin. penalty - must submit new contract

HIC Registration No: 116085 Applicant Name: KANE, JAMES T
Company: JAMES T KANE 14 COTTAGE ST CAMBRIDGE, MA 02139
Disciplinary Action: 02/13/2001 Revoked
Comments: default - $5500 admin. penalty

HIC Registration No: 124997 Applicant Name: Kenny, Michael J
Company: Kenny Home Improvement 30 RICHARDS ST. WORCESTER, MA 01603
Disciplinary Action: 02/13/2001 Suspended
Comments: must reimburse homeowner and guaranty fund and submit new contract

HIC Registration No: 115041 Applicant Name: LYNCH, MARK P
Company: MARK P. LYNCH 18 Beal Place SCITUATE, MA 02066
Disciplinary Action: 02/13/2001 Revoked
Comments: $4000 admin. penalty - defaulted

HIC Registration No: 122199 Applicant Name: FANALE, STEPHEN M
Company: MASS CUSTOM SASH 114 CHESTNUT ST HAVERHILL, MA 01830
Disciplinary Action: 02/13/2001 Revoked
Comments: defaulted - $3000 administrative penalty

HOME IMPROVEMENT CONTRACTOR DISCIPLINARY ACTIONS
(continued)

HIC Registration No: 117106 Applicant Name: PEREIRA, JOHN D
Company: SOUTHPAW CONSTRUCTION CO PO BOX 7045/ 29 Langeford St GLOUCESTER, MA 01930
Disciplinary Action: 02/13/2001 Revoked
Comments: $2000 - admin. penalty

HIC Registration No: 123671 Applicant Name: Shuttleworth, Jason P
Company: Student Works Painting 777 Salem End Rd Framingham, MA 01701
Disciplinary Action: 02/13/2001 Revoked
Comments: defaulted - $5000 administrative penalty

HIC Registration No: 112253 Applicant Name: SWEENEY, THOMAS C
Company: T.C. SWEENEY CONSTRUCTION 671 ADAMS ST DORCHESTER, MA 02122
Disciplinary Action: 02/13/2001 Suspended
Comments: 3 month suspension - $500 admin.penalty - must submit new contract

HIC Registration No: 108918 Applicant Name: HITCHCOCK, THEODORE L
Company: THEODORE L. HITCHCOCK PO BOX 211/ 55 LISA LN W. BARNSTABLE, MA 02668
Disciplinary Action: 02/13/2001 Suspended
Comments: must reimburse Guaranty Fund, submit new contract and resolve and outstanding complaints.

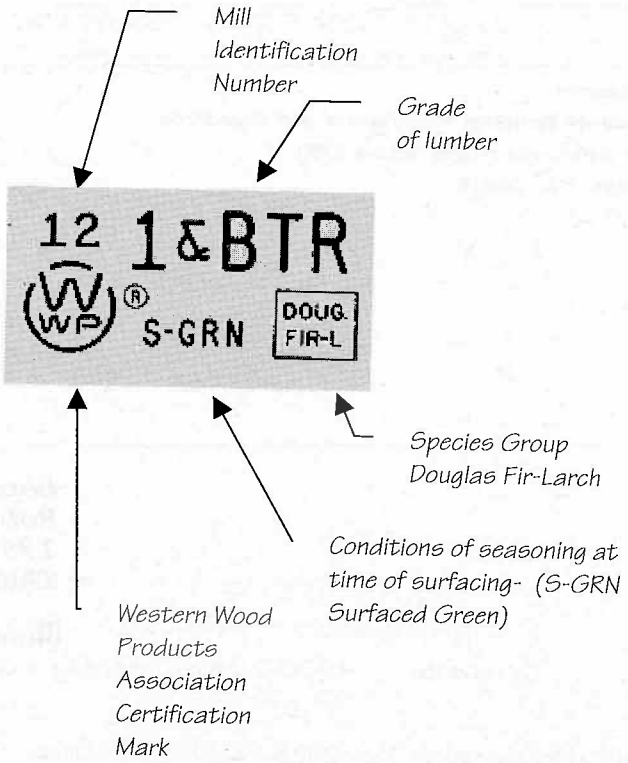
SAWN LUMBER GRADE STAMPS

For structural applications visually graded lumber is grouped into species groups. The species groups are comprised of species of lumber, which have similar structural properties.

When visually graded lumber is inspected at a lumber mill a grade stamp is applied which indicates the species and grade of lumber, the grading agency certification mark, the conditions of lumber at the time it was surfaced and the mill identification number.

The grade stamp is used by contractors and inspectors in the field to check whether the species and grade of lumber used in the field is the same as specified on the design plans.

An example of a grade stamp under the Western Wood Products Association Certification and grading program is shown below.



Grade Stamp Facsimile Reproduced by kind permission of the Western Wood Products Association

DID YOU KNOW?

In the formulation of the State Building Code, the BBRS is fortunate to have assistance from many professionals, firms and municipalities on its advisory committees. Advisory committees are responsible for providing guidance to the BBRS on issues within the committees expertise. Current advisory committees include:

- Construction Materials Safety Board
- Fire Protection Fire Prevention Advisory Committee
- Geotechnical Advisory Committee
- Seismic Advisory Committee
- Loads Advisory Committee
- Building Official Certification Committee
- Energy Advisory Committee

The valuable input of these advisory committees ensures that the Commonwealth of Massachusetts maintains the best possible regulations for building design and construction.

The BBRS and staff extend their thanks to the individuals, firms and municipalities who provide their expertise and their valuable time pro bono to the Commonwealth.

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