CODEWORD©

THE OFFICIAL NEWSLETTER OF THE BOARD OF BUILDING REGULATIONS & STANDARDS

~January 2000~

MASSACHUSETTS MOURNS THE LOSS OF SIX FIRE FIGHTERS

Massachusetts mourns the loss of six Worcester firefighters lost in the Worcester Cold Storage Warehouse fire on December 3, 1999. Lost in the blaze were;

Jeremiah M. Lucey
Joseph T. McGuirk
Paul A. Brotherton
James E. Lyons
Timothy P. Jackson
Thomas E. Spencer

Two firefighters were initially lost after entering the building on a search and rescue mission following a report that there may be homeless persons trapped inside the building. Following the original search, two firefighters could not be accounted for and additional firefighters attempted to rescue their colleagues, however rapidly worsening conditions trapped the four fire fighters.

The building was constructed circa 1917 and was, at some time, used as a cold storage and meat packing plant. Reports indicate that the building was a massive brick structure with interior heavy timber loadbearing frame. An investigation of the fire by the State Fire Marshals Office is in progress. The building has now been demolished.

The BBRS and staff extend their deepest sympathies to the families of the fire fighters; to the City of Worcester Fire Department and; to the fire fighting community at large.

BOARD OF BUILDING REGULATIONS AND STANDARDS AND DEPARTMENT OF FIRE SERVICES (DFS) SHARE NEWSLETTERS

In a joint effort to improve communications among building officials, fire officials, BBRS and DFS, the BBRS provides DFS 400 copies of Codeword for distribution to fire chiefs in the Commonwealth. Similarly DFS provides BBRS with 400 copies of the DFS Quarterly for distribution to local building commissioners. This sharing of information will foster better understanding of each jurisdiction's regulations and authority.

25th ANNIVERSARY OF THE MASSACHUSETTS STATE BUILDING CODE

On January 1, 2000 the Massachusetts State Building Code reaches its 25th anniversary. As we look forward to the next millennium Massachusetts seeks to remain the leader in advancing more effective codes and providing quality education to the Commonwealth's building officials.

CHANGES TO THE BUILDING CODE TO BE FILED EARLY IN 2000

The BBRS staff is in the process of compiling amendments to the State Building Code. The amendments are as a result of code change proposals filed in November of 1998 and May and November of 1999.

The amendments are anticipated to be filed in February 2000. The effective date of the amendments depends upon the completion of a review process established by Executive Order 384 issued by former Governor Weld.

The BBRS is required by law to hold two public hearings every year. The hearings are required to be held in Boston in May and November. The public hearings are specifically to receive testimony on code change proposals.

Code change proposals can be requested by anyone and must be submitted to the BBRS in writing on forms prescribed by the BBRS, at least 60 days prior to the scheduled date of the public hearing.

For year 2000 public hearing dates see the related article in this issue of Codeword.

BRACING 1 & 2 FAMILY DWELLING FOUNDATION WALLS DURING CONSTRUCTION

by Brian Gore, P.E.

Section 3604.4.1.3.1 requires that residential foundation walls be anchored to the floor or sufficiently braced to prevent damage by the backfill during construction.

Soil (backfill) exerts a horizontal force when placed against a foundation wall. Properly compacted backfill typically exerts less force that non-compacted backfill and it is important when backfilling to remember this fact. Backfill should always be placed in small (12- in or less) lifts and each lift should be adequately compacted.

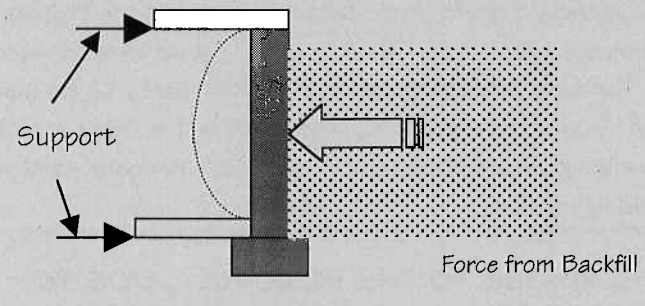

Figure 1

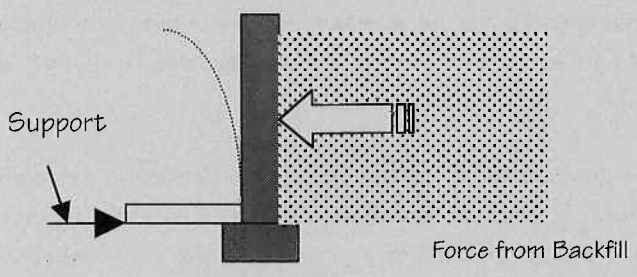

Figure 2

When foundation walls are supported by floor systems (or properly braced) the foundation walls span vertically between the floors (figure 1), which act as supports for the top and bottom of the foundation wall. If nc braced at the top (figure 2), the foundation wall behaves as a cantilever retaining wall, a structural system for which it is not normally designed. Proper bracing of the foundation wall includes bracing both the top and bottom of the wall.

Remember the quality, placement and compaction of backfill materials is equally as important as adequate bracing.

Unsuitable backfill includes boulders; non-compacted material or other unstable material and organic materials such as tree stumps or brush.

GEOTECHNICAL ADVISORY COMMITTEE ISSUES RETAINING WALL ALERT

The Geotechnical Advisory Committee has requested that the BBRS issue an alert to all building officials relative to the design of retaining walls in light of an increasing number of retaining wall failures investigated by members of the committee in their private practices.

The recent development of many patented retaining wa systems affords an inexpensive and easily constructed soil retaining structure. Many of these systems, utilize soil reinforcing strips or interlocking blocks, and can easily retain up to 20 feet of earth. Failure of this type of structure can have a significant effect on public safety.

The most frequent deficiencies observed during investigations into many of these failures has been the lack of the provision of a positive drainage system behind the wall and/or failure to account for loads due to hydrostatic pressure in the design.

Investigations have also shown that the design of the majority of these walls has not accounted for seismic loads, a deficiency which unfortunately may only be revealed should the state experience a significant earthquake.

Section 1825.3 of the State Building Code requires retaining walls to be designed to resist hydrostatic pressure unless positive drainage has been provide behind the wall.

For example, the design forces on a wall retaining 10 feet of earth may experience lateral loads up to 2_ times greater than the loads exerted on the same wall provided with positive drainage.

The Geotechnical Advisory Committee has requested that the Board remind all building officials that all retaining wall designs are reviewed with additional attention given to the requirements for;

1. Groundwater drainage behind the wall that is consistent with the site soil and groundwater conditions and the design pressures for the wall and;
2. Seismic forces had been adequately addressed in the design and construction of the wall.

BBRS/DPS STAFF PROVIDE SEMINARS ON THE MANUFACTURED BUILDINGS PROCESS TO 350 BUILDING OFFICIALS

In December of 1999 Board of Building Regulations (BBRS) and Department of Public Safety (DPS) staff conducted six seminars on the manufactured building regulations and process as contained in Sections 35 and R3 of the Massachusetts State Building Code. The presenters were;

- Thomas Rogers Chief of Inspections, DPS
- Rob Anderson, Deputy Administrator BBRS
- Brian Gore. P.E., Technical Director, BBRS
- David Weitz Energy Code Co-ordinator, BBRS
- Gordon Bailey, District State Inspector, DPS and
- David Holmes, District State Inspector, DPS

All certified building officials in attendance received 5_ hours of continuing education credits towards certification maintenance.

The seminar outlined the regulations governing the production and approval of manufactured buildings and the manufactured building process itself. Topics included the difference in jurisdiction between state inspectors and local building, plumbing and wiring inspectors and the difference in the construction processes between manufactured and conventional buildings. District State Inspector Gordon Bailey provided a unique perspective as a former municipal building official dealing with manufactured buildings at the local level and contrasted that with his duties as a state building official.

Points emphasized in the seminars included;

- Manufacturers and Third Party Inspection Agencies are both approved by the BBRS in accordance with the State Building Code procedures

- Once a State or label has been applied to a manufactured building, or manufactured building component, local officials (building, gas electrical or fire) MAY NOT order destructive disassembly. If a code violation is suspected, DPS and the BBRS must be contacted immediately. (Attendees were encouraged to utilize the expertise and authority of DPS in this matter).

Inspectors are requested to use the manufactured building's complaint form any time they discover or suspect a code violation or non-conformance or whenever else the need may arise. A copy of the complaint form is enclosed on page 6 of this issue of Codeword.

Seminars were held in the BBRS/DPS training facility at the Paul A. Dever School in Taunton, John Augustus Hall, West Boylston; Becket Town Hall and West Springfield City Hall.

Thanks to Assistant Chief of Inspections Mark Mooney and State Inspector John Wojciechowicz of DPS for technical assistance in setting up the seminars.

Thanks also to Building Commissioner Patrick Moore and Assistant Commissioner Tom Lagodich, of West Springfield and Building Commissioner Keith Fox, of Becket for their invaluable assistance in making these seminars possible

REMINDER TO CONSTRUCTION SUPERVISOR LICENSE EXAMINATION APPLICANTS

As of the March 11, 2000 test administration there will be a series of questions on the examination, which will require the candidate to interpret a typical set of plans.

Construction Supervisor License Examination Schedule

Registration Deadline	Examination Date
February 11, 2000	March 11, 2000
May 12, 2000	June 10, 2000
August 11, 2000	September 9, 2000

BBRS MEETINGS AND PUBLIC HEARINGS SCHEDULE FOR 2000 ANNOUNCED

The BBRS is pleased to announce its schedules meetings and public hearings for the year 2000.

Date	Location
January 11	Boston
February 8	Wellesley
March 14	Boston
April 11	Wellesley
May 9 -PUBLIC HEARING	Boston
June 13	Wellesley
July 11	Boston
August 8	Wellesley
September 12	Boston
October 3	Wellesley
November 14 - PUBLIC HEARING	Boston
December 12	Wellesley

Wellesley - National Guard Armory, Minuteman Lane,
Boston 1 Ashburton Place
All meetings subject to change.

OMEGA POINT LABORATORIES ISSUES DISCLAIMER ON ELEPHANT BRAND GYPSUM WALLBOARD

Omega Point Laboratories, Inc. has requested that the BBRS issue an Omega Point press release to all building officials and potential users of elephant brand gypsum wallboard.

FOR IMMEDIATE RELEASE: November 9, 1999

Omega Point Laboratories, Inc. has become aware of rumors alleging that gypsum board being imported under the name "Elephant Brand" from Thailand or China has been certified or listed by us as complying with ASTM C36 Type X. ASTM C36 is the Standard Specification for Gypsum Wallboard. At present Omega Point has not tested this Product for compliance with that standard. Omega Point Laboratories, Inc. has only performed an ASTM E 119 test on a sample of gypsum board identified by the test sponsor as Elephant Brand. The actual source or composition of the board tested is unknown to Omega Point.

Omega Point Laboratories is currently in discussion with the manufactures of Elephant Brand gypsum board regarding establishing a complete test program and listing and labeling of this product. As with all listed and labeled products this program will include witnessing the production of the test samples at the factory and follow-up inspections of any labeled product.

Should you become aware of any such gypsum board marked with the Omega Point Name or Logo, or claiming to be certified by Omega Point, Please contact Omega Point immediately via. John D. Nicholas at (210) 635-8100.

THE ENERGY CORNER

by David Weitz

FREE COMMERCIAL ENERGY CODE SEMINARS SET TO BEGIN IN 2000

New commercial energy conservation requirements are scheduled to take effect on January 1, 2001, but training seminars will begin in February 2000 and continue throughout the year. There will be separate sessions for Envelope, HVAC, and Lighting requirements. Each of the half-day sessions will also cover administrative changes and software demonstrations.

The changes represent a complete revision of Chapter 13 that captures 10 years worth of improvements in design and technology for energy systems. Just as important, the format of the chapter has been simplified and clarified to make compliance and verification simpler. (The new code follows the format of IECC 2000.)

All members of the commercial building industry are encouraged to attend. The seminars are free, and have been sited around the state to make travel easy. Building officials will receive Continuing Education Credits for attending, as will AIA members. For more information about the seminars, including a list of dates and locations, and to register, visit the BBRS website at www.state.ma.us/bbrs/register.html. Or you can call the seminar registration service at 617-951-1433 ext. 323 and ask for a fax-in registration form.

BBRS STAFF MEMBERS PROVIDE TRAINING AT BUILD BOSTON 1999

BBRS Staff Member s Brian Gore, P.E., Technical Director and Davis Weitz, Energy Code Co-ordinator were presenters at the annual Build Boston symposium hosted by the Boston Society of Architects.

The event was held at the World Trade Center in Boston and attended by thousands of architects, engineers, builders and other construction professionals.

Brian co-presented a seminar with Hal Cultler, P.E. and Arthur Cohen, A.I.A. entitled "Chapter 34, the Regulations and the Reality" The seminar discussed the

State Building Code requirements for additions, alterations and changes in use of existing buildings.

David co-presented a seminar on "the New Commercial Energy Code" with Wagdy Anis, R.A. a member of the BBRS Energy Advisory Committee. (See related article for details of upcoming free energy seminars in 2000).

Each seminar attracted between 70 and 100 attendees.

BBRS MEMBER PROFILE
STEPHEN DIXON

This issue of Codeword profiles BBRS member Stephen Dixon. Stephen is appointed to the Board as the representative of the One and Two Family Dwelling Contractors. In addition to his regular duties at the BBRS Stephen also serves on the Construction Supervisor License Review Committee.

Stephen is a graduate of the University of Connecticut and has been a builder of custom homes since 1977. In 1996 the Builders Association of Greater Boston selected him as builder of the year. He is also a life member of the National Association of Homebuilders and former President of the Builders Association of Greater Boston.

Stephen is also a former member and chairman of the planning board of the Town of Middleboro.

Stephen is president of Stephen Dixon Construction, Inc.., a construction company specializing in single family dwelling design and construction.

In his spare time Stephen enjoys ocean kayaking.

CONSTRUCTION SUPERVISOR LICENSE DISCIPLINARY ACTIONS

by Marian Doyle
Program Manager

On September 23, 1999, and on October 6, 1999, hearings were held before the License Review Committee to determine appropriate actions against the Construction Supervisor for violations of the Massachusetts State Building Code. The License Review Committee issued the following decisions:

NAME & ADDRESS	CSL #	ACTION TAKEN
Marshall Adams P. O. Box 205 251 Lincoln St. Franklin, MA 01913	44774	Letter of WARNING issued. Must also take and pass the Construction Supervisor license examination within a six-month time period.
Robert DeNisco 2 Kyleigh Lane Peabody, MA 01960	68213	License REVOKED. If, after a three-year time period, he can demonstrate that he has been employed by another Construction Supervisor, then he may take the written examination.
Michael Carano 144 Howe Street Methuen, MA 01844	49716	Letter of WARNING issued. Must also take and pass the Construction Supervisor license examination within a six-month time period.
Mr. James Svenson 2 Florence Road Burlington, MA 01803	56157	License #56157 has EXPIRED and is no longer valid. Upon successful completion of the Construction Supervisor license examination, a new license number can be issued to him after a minimum of sixty days. He must also submit copies of permits for the properties addressed in the complaint to the License Review Committee.
Mr. Frank Polak 166 Massapoag Rd Tyngsboro MA 01879	52388	If contractor submits an engineer's report to the Town of Andover, then no further action will be taken on license.
Joseph Girouard* 2 Otis Street Boston, MA 02108	2937	License REVOKED.
Mr. Nathan Devoie 62 Hampden Street Springfield MA 01089	70567	License SUSPENDED for a period of nine months effective October 6, 1999. During nine month time period, he must take and pass the examination for the Construction Supervisor license. Suspension effective until June 6, 2000.

*Joseph Girouard also has addresses in Braintree and Falmouth, MA.

Future complaints on any licensed construction supervisor who has been issued a letter of warning may result in SUSPENSION or REVOCATION.

Commonwealth of Massachusetts

Manufactured Buildings Program

Complaint Form

780 CMR R3.5 states that there shall be "no inspection entailing disassembly, damage to or destruction of certified Manufactured buildings, manufactured building components or manufactured homes...."

Complaint Number: (State Use) Date of Complaint:

Complainant s Name:

Address:

Telephone: Fax::

Complaint FiledAgainst::

Reason for complaint: (Provide attachments if insufficient space)

Building Manufacturer:

State Label Number:: Manufacturer s Serial #:

Third Party Agency

Municipal Building Official:

Name:

Telephone ( ) - Fax: ( ) -

City or Town:

Mail or Fax form to:
Board of Building Regulations and Standards
One Ashburton Place – Room 1301
Boston, MA 02108-1618
Attention: Administrator to the Board
Fax number: (617) 227-1754

(State Use Only)

Investigator: Date assigned

Date & resolution of complaint

WHAT CAN YOU LEGALLY SUPERVISE WITH YOUR CONSTRUCTION SUPERVISOR'S LICENSE?

The Board of Building Regulations and Standards currently issue three classes of Construction Supervisor's licenses. These are;

- Unrestricted
- Restricted and
- Masonry

Each license is obtained by successful completion of a written examination. The limitations of each license are as follows;

1. Unrestricted license permits supervision of construction of all aspects[1] of the construction buildings up to 35,000 CUBIC FEET OF ENCLOSED SPACE [2] and 1 and 2 family detached dwellings of any size
2. Restricted license permits supervision of construction all aspects[1] of 1 and 2 family detached dwellings of any size.
3. Masonry license is limited to supervision of activities involving masonry (e.g. Chimney and fireplace construction, wall construction).

FN1 Does not include the supervision of electrical, plumbing or sprinkler systems or oil fired heating apparatus as other state boards license these activities.)

FN2 Massachusetts General Law Chapter 112 section 60L regulates and defines the practice of architecture and requires that Registered Architects are placed in control of buildings or work in any building over 35,000 cubic feet of enclosed space. This is also reflected in section 108 and 116 of the State Building Code.

INSULATED CONCRETE FORMS (ICF'S) FOR CONCRETE WALL CONSTRUCTION

by Thomas M. Riley

Expanded polystyrene (EPS) concrete construction forms began appearing around the time of the 1970s oil embargoes.

Advantages of use of the the product incluse:

- Permanent formwork
- Lightweight
- Stackable, interlocking and easily erected
- Are often left in place and used as insulation

Disadvantages to the contractor may include;

- Reduced placement rates
- Limitations on height of forms in any single lift
- Possible necessity for engineering review
- Possible Fire Rating Issues.

A question often asked is;
Does this type of formwork require approval from the Board of Building Regulations and Standards?

Generally speaking the answer is no.

The reason is that contractor is responsible for the safe construction of a building or structure. Consequently, the design and use of formwork for concrete is the responsibility of the contractor. Providing that the finished product (foundation wall) complies with the minimum requirements of the code, no special approval is for this type of formwork is necessary (as is also the case for other patented formwork systems e.g. systems which utilize plywood or other materials).

Now let us examine the possible code implications relative to the product's use if;

1. The forms remain in place and comprise the interior finish of a building space or,

2. The foundation wall is constructed such that it is different than the minimum prescriptive requirements of the code.

If the forms remain in place and comprise the interior finish of a building space the following issues must be considered;

Expanded polystyrene The EPS inner insulated side of an ICF wall presents a fire hazard in buildings. Section 2603 of the code regulates the use of this material in buildings. 2603.4 requires foam plastics to be separated from the interior by an approved thermal barrier of _ inch gypsum board or equivalent. (Refer to 780 CMR 2603 for actual code requirements in their entirety).

The ICF Manufacturer's Installation Manual should be provided to the Building Department at the time of building permit application as that Installation Manual identifies proper assembly of the ICF's.

If the foundation wall is constructed such that it is different than the minimum prescriptive requirements of

the code then the wall system must be evaluated by a registered professional engineer for compliance with the performance requirements of the code. The use of published evaluation reports will also provide guidance to the code official on the use of the product. The evaluation report will generally provide structural details and also provide a series of instructions to the code official. Evaluation reports and other engineering data should be provided to the code official, which can then be used as the code official's basis for review. Building Officials should then review for,

- Structural details
- Limitations on the product
- Engineering review when applicable
- Other properties or issues which may be specific to a particular product.

Finally, as the ICFs are made of a foam plastic material, waterproofing and/or dampproofing materials must be chemically compatible with the EPS or other plastic material. Additionally, manufacturers may claim that the product itself qualifies as a waterproofing or dampproofing agent. Building officials should consult the submitted evaluation reports for guidance on this issue.

In This Issue of Codeword:

- Massachusetts Mourns the Loss of Six Firefighters
- BBRS/DFS Share Newsletters
- 25th Anniversary of the Massachusetts State Building Code
- Changes to Building Code to be Filed in 2000
- Bracing 1 & 2 Family Dwelling Foundation Walls
- Geotechnical Advisory Committee Issues Retaining Wall Alert
- BBRS/DPS Seminars on Manufactured Building Process
- Reminder to Construction Supervisor License Applicants
- BBRS Meeting and Public Hearing Schedule - Year 2000
- Disclaimer on Elephant Brand Gypsum Board Issued.
- Energy Corner - Free Seminars - Commercial Energy Code
- BBRS Staff Provide Seminars at 1999 "Build Boston"
- BBRS Member Profile - Stephen Dixon
- Licensed Construction Supervisors - Disciplinary Actions
- Manufactured Buildings Complaint Form
- What Can You Legally Supervise with Your Construction Supervisors License?
- Insulated Concrete Forms for Concrete Wall Construction.

Editor in Chief:	Thomas L. Rogers
Supervising Editor:	Brian Gore, P.E.
Graphic Design & Layout:	Brian Gore, P.E .
Subscriptions Accountant:	Anne Marie Rose

Codeword
Board of Building Regulations and Standards
One Ashburton Place, Room 1301
Boston, MA. 02108

Bulk Rate
U.S. Postage
PAID
Braintree, MA
Permit No. 52342

AS A PUBLIC SERVICE, CODEWORD IS PROVIDED FREE OF CHARGE TO ALL MUNICIPAL BUILDING DEPARTMENTS OF THE COMMONWEALTH