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STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CODEWORD

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PROFESSIONALISM

You seldom speak to anyone who is opposed to professionalism. There are some issues on which, in theory at least, everyone apparently agrees. When, for example, have you ever heard anyone in favor of drunk driving, toxic waste, or child abuse. Likewise, who can be opposed to affordable housing, equal opportunity, or, for that matter, public safety. However, somewhere between the abstract concept and the establishment of real measures to accomplish these concepts, we manage to find substantial room to disagree. So, rather than argue for the concept of professionalism, which everyone embraces, we thought we would look back on 1988, and identify those actions which, in our opinion, most and least express real professionalism in practice.

Professionalism is:

Driving many miles to make up that seminar that you missed to maintain coverage in your office

Contributing time and effort to committee work in order to create a new program or improve an existing program

Citing specific sections of code or law to back up a violation notice or other order

Making the effort to express your point of view to the Appeals Board, the Legislature, or the Court which must decide the issue

Saying "I don't know, but I'll check on it and find out" and doing exactly that

Professionalism is not:

Arriving late and leaving early at that seminar, since you had to drive an extra half hour that day

Agreeing to serve on the committee, but being "too busy" to attend most of the meetings

Telling a builder to do something because "That's how I want it, and I'm the inspector..."

Passing the buck to others without your best effort to solve the problem or do your duty

Ignoring something you are unsure of, because someone else must have already checked it out

Professionalism has been called "the quest to be the best". If we are to be truly professional, we have to be willing to measure our own performance, and be honest enough to admit when our own performance doesn't measure up to the standards we have set for ourselves. The year 1988 has been a mixed year for professionalism in building inspection. It has seen inspectors begin to establish a program of meaningful certification, which is the essence of professionalism. It has also seen inspectors tarnish the reputations of their peers through involvement in unethical and illegal practices.

We hope that our short list will serve to help us all look back at 1988, and resolve to support professionalism not only in word, but more importantly in deed, in 1989.

GOODBYE, AND "THANK YOU", PAUL FREDETTE

Paul Fredette, Supervisor, Building Section, has announced that the time has come for him to "clean his cellar" and "collect his tools" and begin several projects; family rooms, decks, cabinetmaking, finish carpentry and others, waiting for him at home, and at the homes of his three children (although at his wife's direction the cleaning of the cellar must come first). These projects have awaited Paul's retirement from his position as the Supervisor, Building Section, Division of Inspection, the position he holds after a thirty-nine year career as a State Building Inspector, Supervisor of Plans and Program Manager in the Department of Public Safety.

After serving as a non-commissioned officer in the combat engineers in both the European and Pacific theaters in World War II, Paul worked as a union carpenter and home builder before joining the Fitchburg Building Department, where he worked for three years prior to becoming a State Building Inspector. As a State Building Inspector Paul has served in the Lowell, Worcester and Boston Districts, and for the last six years has been assigned to the Boston Office as Supervisor of Plans and Program Manager (Supervisor, Building Section). In 1987 Paul's many contributions to the Division were recognized by the "Pride in Performance Award". This award is a particularly appropriate one for Paul to have received as he can be as justifiably proud of his career as he is of his family; his wife, two sons, his daughter and his seven grandchildren.

Never content to enforce regulations without a complete understanding of them, Paul has continuously supplemented his experience and job-related research with formal study of civil and structural engineering at Harvard, M.I.T. and Lowell Universities. Paul has generously shared his knowledge and experience with his co-workers, who, after having received his answer to a question, will know not only the answer, but "why" it is the answer. In answering these questions Paul has also often demonstrated one of his many personal virtues, patience.

Paul's dedication to public safety, and his conscientious application of the codes in situations where others before him had been less rigorous, inevitably caused several incidents in his career when his requirements came under attack. Paul's character and professionalism allowed him to remain steadfast in these circumstances, and he identifies the backing and support he received from his superiors as, "The greatest satisfaction of his career."

Paul's professional contributions to the Department will be sorely missed. However, to his co-workers Paul has made an even more irreplaceable contribution: that of his example as the model of a hard-working, sincere and complete gentleman.

CODEWORD

This issue's "CODEWORD" is the term Fire Retardant Treated Wood (FRTW). Although the term appears to be self-explanatory this article will explore the standards which define it and control its manufacture and the Code Sections which control its use.

The Code (Section 201, General Definitions) requires that to be considered as fire retardant lumber, "Wood (be) so treated by a recognized impregnation process as to reduce its combustibility." The Materials Standards, Appendix C, lists two standards, one for plywood, and one for structural lumber, for the specification of this process; the American Wood Preservers' Association (AWPA) Standard C27-74 (plywood) and AWPA C20-74 (structural lumber). These standards require that either fire retardant chemicals be incorporated into the product at the time of manufacture (plywood), or that the product be treated using a vacuum/pressure process. There is no "paint-on" product or process that will produce FRTW.

"When exposed to fire, FRTW chemicals react with the combustible tars and gases that are normally produced by wood exposed to high heat. These chemicals convert the combustible tars to carbon char and dilute the combustible gasses with harmless carbon dioxide and water vapor. ...The simultaneous buildup of carbon char on flame-exposed FRTW acts as thermal insulation. This slows down the rate at which the cross section of exposed wood is reduced by fire, allowing wood structures to maintain their structural integrity longer."¹

The Code in Section 903.6.1 regulates the performance of this product when it is to be used as a structural element. This Section requires that the FRTW be tested in accordance with a modified ASTM E84 standard (Method of Test for Surface Burning Characteristics of Building Materials). Not only must the FRTW have a flame spread of not over 25 (Class I), and show no evidence of progressive combustion, but must also perform to these standards for an extended test period (30 minutes, as opposed to the normal 10 minute test period required for an interior finish rating for FRTW). When FRTW is to be used in a rated assembly, that assembly must be tested to the ASTM E119 standard (Methods of Fire Test of Building Construction and Materials). The use of FRTW will not by itself provide a rated assembly. The assembly (containing FRTW) must be tested and rated as any other assembly. Additionally, where FRTW is to be subjected to sustained high humidity or exposed to weather, conditions which may lead to the leaching of the chemicals, it shall be further identified to indicate that there is not an increase in listed fire hazard classification after being subjected to the UL Standard Rain Test (Section 903.6.2).

Although FRTW is not to be considered noncombustible, its use is allowed for some purposes in Types I and II construction where indicated by Note "h" to Table 214, and in Section 903.6.2. Some of the uses permitted for this "combustible" material in these "noncombustible" Construction Types are: exitway access corridors, vertical separation of tenant spaces, dwelling unit separations (and other non-bearing partitions in residential uses) and in roof construction (framing and sheathing) as controlled by Table 214.

When reviewing plans specifying FRTW the building official must determine that its use is permitted (Table 214), that assembly ratings have been tested (where required), that interior/exterior uses have been properly specified, and that its structural performance has been properly calculated as strength design factors may vary (as compared to untreated wood).

¹ Lattanzi, Robert C., "Fire-Retardant-Treated Wood, What It Is, What It Does and How It Works", reprinted from Building Standards, January/February 1987.

" BED & BREAKFAST "

The term "Bed & Breakfast" is popularly used to describe a tourist accommodation in a "residential" setting (i.e. not a motel or hotel) in which the guests share the facilities of the building with the owners who reside there. The "Bed & Breakfast" is becoming (has become) an increasingly popular form of tourist/guest accommodation, and one which poses serious questions of classification and enforcement to the building official.

What is the proper Use Group Classification of a "Bed & Breakfast" ?

The answer to this question will depend upon the number of "guests":

If there are to be 1 to 3 guests accommodated this "residence" remains a single family residence (Use Group R-3 or R-4) as the Code in Sections 209.4 and 209.5 allows "...not more than three (3) lodgers or boarders per family."

If there are to be 4 to 20 guests accommodated this "residence" becomes a boarding or lodging house (Use Group R-2) as the Code in Section 209.3 includes in this classification, "...all dormitories, boarding and lodging houses arranged for shelter and sleeping accommodations by more than three (3) and not more than twenty (20) individuals. This classification is consistent with MGL, Ch 140, s 22, Lodging Houses, Definitions, in which, Lodging House, "...shall mean a house where lodgings are let to four or more persons not within the second degree of kindred to the person conducting it...".

What are the consequences of changing the Use Group Classification of an existing single family residence of unprotected wood frame (Construction Type 4B) construction from R-4 to R-2?

The Hazard Index (Table 2204) of both use groups is "2"; however, the fourth note to the Table requires that the hazard index of the applicable proposed new use group (R-2) be increased by one (1), when the structure's construction type is 4B (unprotected wood frame), as is our case. Therefore, Section 2204.0, Requirements for change in use group to one hazard index greater, applies. This section requires the existing building to conform to the requirements of the Code for new construction with some exceptions as provided in the section. Similarly, the exception as regards the required number of exitways (Section 609.2) in the R-4 Use Group is not applicable to the proposed R-2 use.

How is the number of "dwelling" or "residential" units to be computed for the determination of requirements of the R-2 Use Group (type of smoke detection system, necessity for emergency egress lighting, etc.)?

Section 201, General Definitions, provides two definitions of "residential unit" applicable to this use group:

- a.) in R-2 multi-family use group, a dwelling unit;
- b.) in R-2 dormitory (boarding or lodging house) use group, a room or group of rooms occupied as a single unit;...

Thus, the "owners' suite" becomes the "first" residential unit and each room (bedroom) or group of rooms to be occupied as a single "rentable" unit are to be counted as additional residential units.

RECENT STATE BUILDING CODE APPEALS BOARD DECISIONS

Section 127.7.11 (Contents of Decision) of the Code states, "Any decision shall not be considered by any person or agency as a precedent for future decisions."

Appeal Docket #87-91

The building official upon reviewing plans for the proposed conversion of an existing church structure (formerly in the A-4 use group) into 17 apartments (R-2 use group) refused to issue a building permit citing violation of Sections 607.3, 2203.7 and 2203.12. The alteration called for the preservation of the existing sanctuary, a thirty (30) foot high "open well" to contain an circular corridor and stairway open to the central well as a "monumental egress stair". A second means of egress was to be provided by an enclosed stairway accessible only from the open-ring corridor. These stairways were to serve the upper two floors (ten apartments) of this proposed three story structure. The building official noted that the design considered as "communicating floors" under Section 616.10, would violate several requirements of that section.

The Appellant argued that the design was required to preserve the view of irreplaceable architectural features, curved truss work of arches and hammer beams forming the sanctuary vault. The appellant proposed as compliance alternatives; a deluge curtain fire suppression system (to be installed in the corridor at the edge of the well), and increasing the fire resistance rating of the apartment walls at the corridor to two hours.

The Board found that the local inspector correctly applied Section 607.3, Remote location, in that as the enclosed stairway could only be reached from the open-ring corridor it could not be considered as "remote", nor could the arrangement be considered to provide, "...direct access in separate directions...". The Board required that a smoke venting system be installed and that the open well and corridor be completely suppressed as conditions to granting variances to allow the exitway arrangement.

Appeal Docket #87-116

The building official refused to grant a Certificate of Use and Occupancy for the extension of use of a business occupancy into the basement of an existing business structure. The building official cited Section 506.5.1 (Room dimensions, Ceiling heights) as being violated in both the rooms proposed for occupancy (ceiling height of 6' 2") and in the exitway access corridor serving these rooms (ceiling height of 6' 2 1/2") where 7' 3" and 7' ceiling heights are required, respectively.

The Appellant argued that mechanical (air handling duct work) and structural (beams) elements were the cause of the low ceiling heights and that as the offending duct work was part of a central system its relocation would be impractical. The appellant proposed to identify the areas of low ceiling height with bright markings to alert to occupants of the hazard.

The Board allowed the applicant to submit redrawn plans in which the duct work is shown as relocated to the perimeter of the basement, reducing the ceiling height only along the outside walls of the proposed office spaces, and in which beams were shown as redesigned to allow the required ceiling height in the exitway access corridor. The Board granted a variance of ceiling height requirements for those perimeter areas where required height was to be reduced by duct work, and required as a condition of occupancy full compliance with the redrawn plans as submitted.

FREEBIES

NATIONAL FOREST PRODUCTS ASSOCIATION

Mr. Kenneth Bland, P.E., Northeast District Manager of the National Forest Products Association has written to CODEWORD to offer to building officials the services of his organization, He writes:

There are many ways which the building official can benefit from the services of NFOPA. Most frequently is through the use of technical publications. These publications are used in different formats by building inspectors, engineers, architects and contractors. They include: Span Tables for Joists and Rafters - 1977 edition, Permanent Wood Foundation Systems - Design, Fabrication and Installation and the Wood Structural Design Data Book - 1986 edition, to mention only a few. For individuals involved in the design and review of wood structures, the National Design Specification and Design Values for Wood Construction provide the engineered approach to wood design. ...If you would like to receive an order form for technical publications, send your business card or request on official letterhead to: Kenneth E. Bland, P.O. Box 205, Troy, NH, 03456. Single complimentary copies are provided to each jurisdiction so, update your files to the latest edition today.

THE GYPSUM ASSOCIATION

The "Building Code Newsletter" of the Gypsum Association, Fall 1988, announced (and distributed as an enclosure) the Gypsum Association FIRE RESISTANCE DESIGN MANUAL. This updated edition lists 250 fire and sound rated assemblies utilizing fire resistant construction. Building Officials may receive copies at no charge by sending a request on their department letterhead to: The Gypsum Association, 1603 Orrington Avenue, Evanston, IL, 60201.

Both the National Forest Products Association and the Gypsum Association are Reference Standards Agencies of the Massachusetts State Building Code.

HELLO, LEO PURCELL

On November 28, 1988, Leo Purcell of the Massachusetts Building Trades Council was sworn in by Governor Dukakis to fill the unexpired term of Tom Evers as the Building Trades member of the State Board of Building Regulations and Standards. Leo got his feet wet by sitting at the public hearing the following day! We welcome Leo to the Board and look forward to working with him in the implementation of the Board's programs/policies.

YOU DON'T NEED A LICENSE TO DO THAT

Probably the most frequently asked question of all the inquiries we receive has to do with which types of construction operations do (or don't) require a Construction Supervisor's License. Simply put, a license is only required when work of a structural nature is undertaken. A license is not needed to install roofing, siding, or rooftop solar collectors, nor is a license needed to construct swimming pools, erect signs or tents. Please note that the absence of a license requirement does not exempt a project from permit requirements.

PLEASE SEND ME APPLICATIONS!

We receive many letters and phone calls from building officials, trade organizations, schools and other individuals and organizations asking that we send copies of the "Bulletin of Information for the Massachusetts Construction Supervisors License Examination". The Bulletin contains background information on and the application form for the Construction Supervisors License Exam. Unfortunately, the demand for the publication far exceeds the supply of Bulletins, and the cost of mailing the booklets would soon exhaust the entire agency mailing budget (including CODEWORD). As a result, we had to institute some policies and limits regarding the distribution of the Bulletin.

The Bulletin is available for pick-up only (one per person) at all Division of Inspection site offices, and also at the State Bookstore in Boston (the Bookstore also sells the State Building Code, which is needed by applicants as this is an "open Code book" exam). Division of Inspection site offices are located in Boston, Danvers, Fall River, Lowell, Pittsfield, Springfield, and Worcester. We regret that due to limited supplies, we are not able to supply all building departments with copies of the Bulletin.

With regard to requests for multiple copies of the Bulletin, we will only supply multiple copies to organizations conducting courses specifically aimed at preparing candidates for the exam as there are insufficient quantities to do otherwise. These requests should be made in writing to the Board's office in Boston. There is a limit of 50 applications, and, as with individual applications, no mailing of Bulletins will occur. Since requests for multiple copies will only be filled when supplies are sufficient, we will call to notify you for pick-up.

We regret that we are unable to make the Bulletin more widely available. Unfortunately printing of larger quantities would result in increased examination fees. However, we do allow photocopying of the Bulletin, so long as the material is reproduced in its entirety.

CONSTRUCTION SUPERVISOR'S LICENSES REVOCATIONS AND SUSPENSIONS

On December 20, 1988, the Board of Examiners of the State Board of Building Regulations and Standards voted unanimously to suspend the Construction Supervisor's Licence of Mr. Benjamin LaTorre, License Number 015648 for a period of one year commencing November 1, 1988.

SPRINGFIELD HOME BUILDERS SPONSOR RADON SEMINAR

The Home Builders Association of Greater Springfield has announced its sponsorship of a half-day seminar entitled "Radon: Impact on the Home Building Industry". The seminar will feature as speakers Attorney William Ethier, a specialist in land use and environmental law and builder liability, and Mr. John Spears, Program Manager for Energy and Air Quality at the National Association of Home Builders Research Center. The seminar will be held in the Sheraton Springfield-West on March 1 from 1 - 5 p.m. with a Wine and Cheese Reception to follow. Costs for the day's events are \$75 for members of the HBA of Greater Springfield or \$100 for non-members. A special \$75 rate is also available to municipal building inspectors. For more information or reservations, please call Helen at the HBA of Greater Springfield (413)-733-3126.

THE BUILDING OFFICIAL'S "OFFICIAL" NEW YEAR'S RESOLUTIONS (A SUGGESTED LIST)

An informal survey conducted by the staff of "CODEWORD" has resulted in the following (selected) list of NEW YEAR'S RESOLUTIONS made by building officials across the state. We offer it here for your consideration, and, perhaps, adoption as resolutions of your own!

I hereby resolve: that I will leave a clear "paper trail" detailing my enforcement actions. This trail of letters, notices and departmental records will document violations by specifically referencing the code sections concerned and the specific remedies/abatement I have required (including the time period I have specified for their correction). I make this resolution with the full foreknowledge that it will require more "paperwork", but that this paperwork will be invaluable should I need to "defend" my actions.

I hereby resolve: that when driving to and from inspections I **WILL REMEMBER THAT I AM DRIVING**. I will not while driving to an inspection anticipate what I might discover, nor while driving away from an inspection speculate on what I might have missed. Instead, when I am inspecting, I will concentrate on inspecting, and, when driving, I will concentrate on driving.

I hereby resolve: that I will require the plans and specifications submitted with permit applications to be complete and detailed. I make this resolution with the full foreknowledge that the applicant will strongly object and inform me of how many times he/she has constructed the work proposed, and/or how many years he/she has been building this proposed construction. I will listen calmly, patiently and politely and issue the permit only when I am satisfied with the plan submission.

I hereby resolve: that when dealing with real estate agents I will keep in mind that they were once adorable infants whose parents undoubtedly loved them dearly and had for them the highest of expectations and out of respect for those profound parental emotions, although, perhaps, now vanished, I will answer their questions. I make this resolution with the full foreknowledge that any kindness shown to a real estate agent will be rewarded only with continuing requests for information they could easily look up themselves.

I hereby resolve: that I will keep in mind what is causing **THE REAL PROBLEM**. When permit holders describe to me all of the trouble and expense and inconvenience that they will experience in correcting their work to meet the Code, I will explain to them that these are certainly problems, but not **THE REAL PROBLEM**. **THE REAL PROBLEM** is that they did not follow the Code in the first place. While I may be sympathetic to the problems that they have caused themselves, I will insist that they solve **THE REAL PROBLEM**.

A BELATED HOLIDAY GIFT

During the printing of the July, 1988 amendments to the State Building Code, a formula was inadvertently omitted from one of the new pages of the Code. The page has been reprinted to include the missing formula, and we were provided with replacement pages for those code books which we supplied to building officials. Therefore, each building official will find that we have enclosed a replacement page with our mailing of this issue of CODEWORD. While it may not be the best present you received this holiday season, chances are it is the latest one. Ah well, it's the thought that counts! The Board and its staff hope that your holidays were happy.