

COPING WITH COMMERCIAL CODES

The complex maze of regulations and regulators
can set you back if you're not prepared

by John Ed Ryan

In most states, the plans for single-family dwellings may be obtained off-the-shelf or you may draw your own. Building officials even see the occasional single-line drawing on the back of a grocery bag. Regulations for construction of dwellings are relatively simple. You buy a lot, check the zoning setback and area restrictions, dig a hole or trench and go to work.

Commercial and industrial buildings are different. The codes are more complicated. There are also more agencies and applicable statutes and ordinances such as those governing land use, environmental concerns, soil erosion, off-street parking, handicapped access, and fire protection.

Unlike residential, each commercial and industrial building must be designed by a licensed architect or professional engineer. All too often, these professionals are employed only to design the building, write the specifications, and draw and seal the plans. After awarding you the contract, the owner will probably want you to make a few changes but the professional is done.

Now you, the contractor, must obtain the building permit for the owner before the work starts. No problem, you might think. You'll just go to the municipal building and make out the application. But be careful. Here's a typical scenario of what can go wrong: You only brought one set of plans and they are not stamped. You are missing the planning commission's approved plans for off-street parking showing the hedges or other screens for the area and you forgot to include them in the contract price. Then you remember the curb-cut permit. It shouldn't take too long to get it from the town engineer if you can find him. At the same time you can be applying for your sewer and water extension permits. A block away you can pick up the Environmental Protection Agency's certificate approving your environmental impact statement—but that isn't filed yet. The Soil Erosion Commission's approval of application to begin moving earth will have to wait until you obtain a topographic map sealed by a Licensed Land Surveyor showing the holding pond for run-off water together with all of the elevations you must observe.

Some time later these little items are corrected, some paid for by the owner and most paid for by you. Now if you can get a clearance from the Handicapped Advocate's office certifying that the plans comply with the Architectural Barriers Code you may resubmit your application after you have submitted the plans to the fire officials' office for approval of the exits, fire

doors, and the smoke-detection and fire-protection systems. Since you rushed through your bid, however, you don't have the shop drawings for the sprinkler system. Don't worry—they would probably have needed amending anyway. And don't forget the elevator permit. Later, when you are building the boiler-room walls the second time, you will wonder why no one noticed before that the specified wall did not have the two-hour fire-resistance rating needed. Your carpet supplier will also probably be hard-nosed about taking back the corridor carpet just because it did not have the correct heat-flux rating. The what? The OSHA inspector did not have to be so mean, either, just because the ladder had one broken rung. It's been broken for years.

Working in the building trades could be really tiresome after an experience like that. Of course, you probably wouldn't trip up on every pitfall just described, but commercial work can take some getting used to. You have to learn the rules.

Bigger Buildings, More Regulations

Why are the code and regulations more complicated for commercial and industrial buildings? There are several reasons: people, size, location, fire hazards, and more.

Commercial and industrial buildings are used by a great number of people who may or may not be familiar with the building layout, and who have very little if any personal control over its operation and maintenance. Nor can the building owners control the behavior of other occupants. Therefore additional and sometimes redundant safety precautions are deemed necessary. In office buildings the occupants are hopefully awake and alert—as opposed to those in a hotel. Fire-safety rules are therefore less rigid for office buildings. Commercial buildings tend to be located in congested areas, which makes fire-department access difficult. The solution is to build in protection. These structures are also relatively large and may contain a number of potential fire hazards. For example, a small strip mall might contain stores with aerosol cans, paint and other flammables, and cardboard-box storage.

Zoning and land development. It has become common practice for all new commercial and industrial developments to be reviewed by the local planning commission before a permit can be issued. Large developments must satisfy the Environmental Protection Agency that the project will not cause damage to the local ecology and that added water runoff will not cause flooding

downstream. Excessive soil erosion must also not occur. Your plans to prevent these problems from occurring must be approved before any dirt is moved. In wetlands and along streams, a permit may be necessary from the Army Corps of Engineers. Hopefully you will not be building near an old burial ground or ancient settlement where the archaeologists get first crack.

In almost every case, off-street parking facilities will be required. Additionally, these facilities must be adequately screened from the street and neighboring buildings. Study the law.

Public utilities. When a residential subdivision is laid out, the location of driveways and sewer and water connections are predetermined. In commercial developments the location of curb-cuts, storm and sanitary sewer lines, water connections, and utility connections (gas, electrical, and telephone) are not known before the building is designed. Each facility will probably require a separate permit which must be obtained before the building permit is issued. Also remember that approval of these same utilities by the individual departments will be required before a Certificate of Occupancy will be issued.

Architectural barrier code. All buildings other than one-family dwellings are required to be accessible to the handicapped. This includes the parking areas and garages. These requirements may be contained in the building code

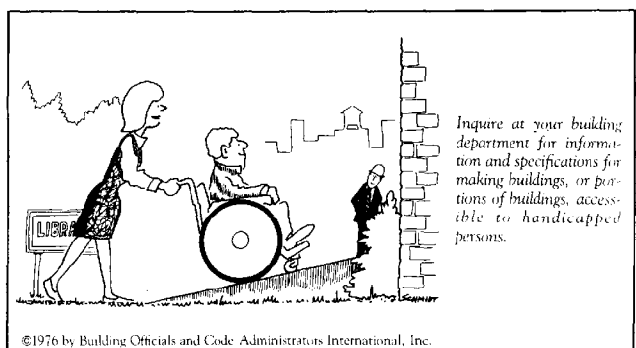
and New York State have continued to use their own locally written code. Southern Florida Code and the Dade County code are quite similar to the Standard Code.

The BOCA (see address list at end of article) National Codes have been adopted as mandatory state codes in Massachusetts, Rhode Island, Connecticut, Vermont, New Jersey, Virginia, Kentucky, Ohio, Michigan, Oklahoma and the District of Columbia. It is also widely adopted in West Virginia, Pennsylvania, Delaware, Illinois, New Hampshire, and Maine.

The ICBO Uniform Code is the mandatory code in Indiana and is used almost exclusively west of the Mississippi River and in Alaska and Hawaii.

The SBCCI Standard Code is used almost exclusively in the southeastern states.

New editions of the model codes are issued every three years. However, not all jurisdictions keep their codes up-to-date. Therefore it is necessary to know which edition is in effect in a given area. The three model codes differ little regarding material use and design. They all adopt or use industry-sponsored design manuals. Floor loads and wind, snow, and earthquake provisions are very similar. Floor loading, however, is not the same in all occupancies. It will vary from 40 pounds per square foot (psf) to over 100 psf depending on occu-



or in a separate statute or ordinance. They may be enforced by the building official, by a separate agency, or by both. It would be prudent to become familiar with the code and its manner of enforcement. If accessibility is not determined before the building is constructed, it may be expensive to remedy afterwards.

Building codes. Since 1970, most states and local communities adopting building codes have opted to use one of the three model building codes with or without amendments. Only Wisconsin

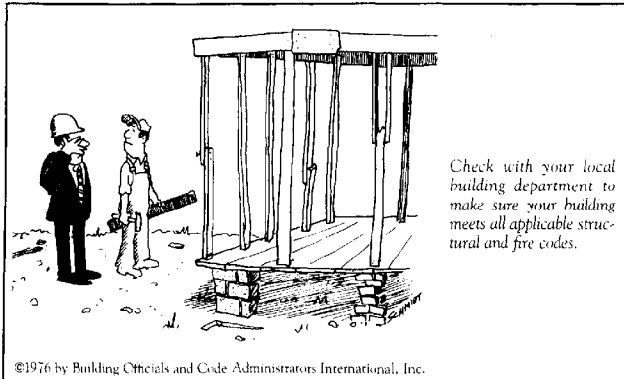
It will also vary for different areas of the building: for example, 40 psf in a room but 60 psf in corridors of some buildings.

A fire-resistance rating is seldom required for the exterior walls of dwellings, but is usually required for commercial and industrial buildings depending on the fire-separation distance and the occupancy. You are also required in commercial buildings to isolate by fire-resistive construction

hazardous areas such as boiler rooms, workshops, laboratories, and garages from other sections of the building. Exit access corridors, passageways, and stairshafts must also be protected in most commercial buildings.

Fire- and smoke-detection and fire-protection systems should have been specified on the plans. Sometimes, however, they are overlooked or the plans are deficient. In other cases, they are on the plans but are too general. Detailed shop drawings for these sys-

tions also. This NFPA standard and several others have also been referenced in the building codes to cover safety aspects not specifically addressed in the code itself. Where the Life Safety Code is not in effect, similar fire-safety requirements in the Building Code may be under the jurisdiction of the fire official. This is the case in Massachusetts and New Jersey. Generally, the NFPA 101 and the building codes are very compatible. However, the Life Safety Code is retroactive whereas very little of the Building Code is. This



tems may be necessary for plan approval. Such plans will usually be drafted by the prospective installer and must be approved by the design professional.

Fire safety codes. The NFPA 101, Life Safety Code has been adopted and is enforced in many areas, including New Hampshire, Vermont, Connecticut, Delaware, West Virginia, and Maryland. There may be other adop-

tions also. This NFPA standard and several others have also been referenced in the building codes to cover safety aspects not specifically addressed in the code itself. Where the Life Safety Code is not in effect, similar fire-safety requirements in the Building Code may be under the jurisdiction of the fire official. This is the case in Massachusetts and New Jersey. Generally, the NFPA 101 and the building codes are very compatible. However, the Life Safety Code is retroactive whereas very little of the Building Code is. This

Hard Knocks

Where to start? The only real school for this career is the College of Hard Knocks. However, the knocks can be softer and fewer if you work it right.

First, learn the code. It will take some time and you will not always agree with the building official on interpretation. But that's okay. Get some help with this. Join the local contractor's association and attend their meetings. Why make the same mistake Fred did if you can help it? Talk to him and be wiser. One recommended organization is the New England Building Code Association. NEBCA membership includes engineers, architects, building and fire officials, contractors, builders, retail and wholesale material dealers, building trades, and manufacturers' reps. NEBCA meets about five times a year to provide a forum for discussion of mutual problems in building regulations, and the promotion of uniform codes and code interpretations. Go talk to your local building official. You'll find him a great help in most cases. Buy a copy of the zoning ordinance and all other regulations applicable to buildings—including the Building Code. Get on the list to be informed when new regulations are proposed and adopted. Usually the cost is less than \$100 per year. Go to seminars and ask questions. You are not alone.

Finally, all of the code agencies publish interpretations, educational pamphlets, and books to assist the user of the codes. We suggest that all contractors entering the commercial field consider buying these.

Who's responsible?

What if the fire marshal finds a building in violation of the code after the building is 95-percent complete? Even though you were granted a permit, you the builder, along with the owner and designer, are responsible for any code violations. Even if an inspector

missed the violation on the plans, it still falls back on the builders and owners. Legally speaking, a permit is not a license to violate the code. Buildings have been torn down, moved, and otherwise painfully and expensively modified due to code problems discovered late in the game.

In summary, building regulations are more complicated for commercial and industrial buildings. If you want to succeed in this arena, you will need to familiarize yourself with a broad range of code issues. Start by studying the rules themselves. Then make an effort to learn from the experiences of others, so you don't make the same mistakes they did. ■

For More Information:

New England Building Code Association, 123 N. Washington St., Boston, MA 02114.

BOCA—Building Officials and Code Administrators International, Inc., 4051 West Flossmoor Road, Country Club Hills, IL 60477-5795.

ICBO—International Conference of Building Officials, Inc., 5360 South Workman Mill Road, Whittier, CA 90601.

SBCC—Southern Building Code Congress International, Inc., 900 Montclair Road, Birmingham, AL 35213.

NFPA—National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

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