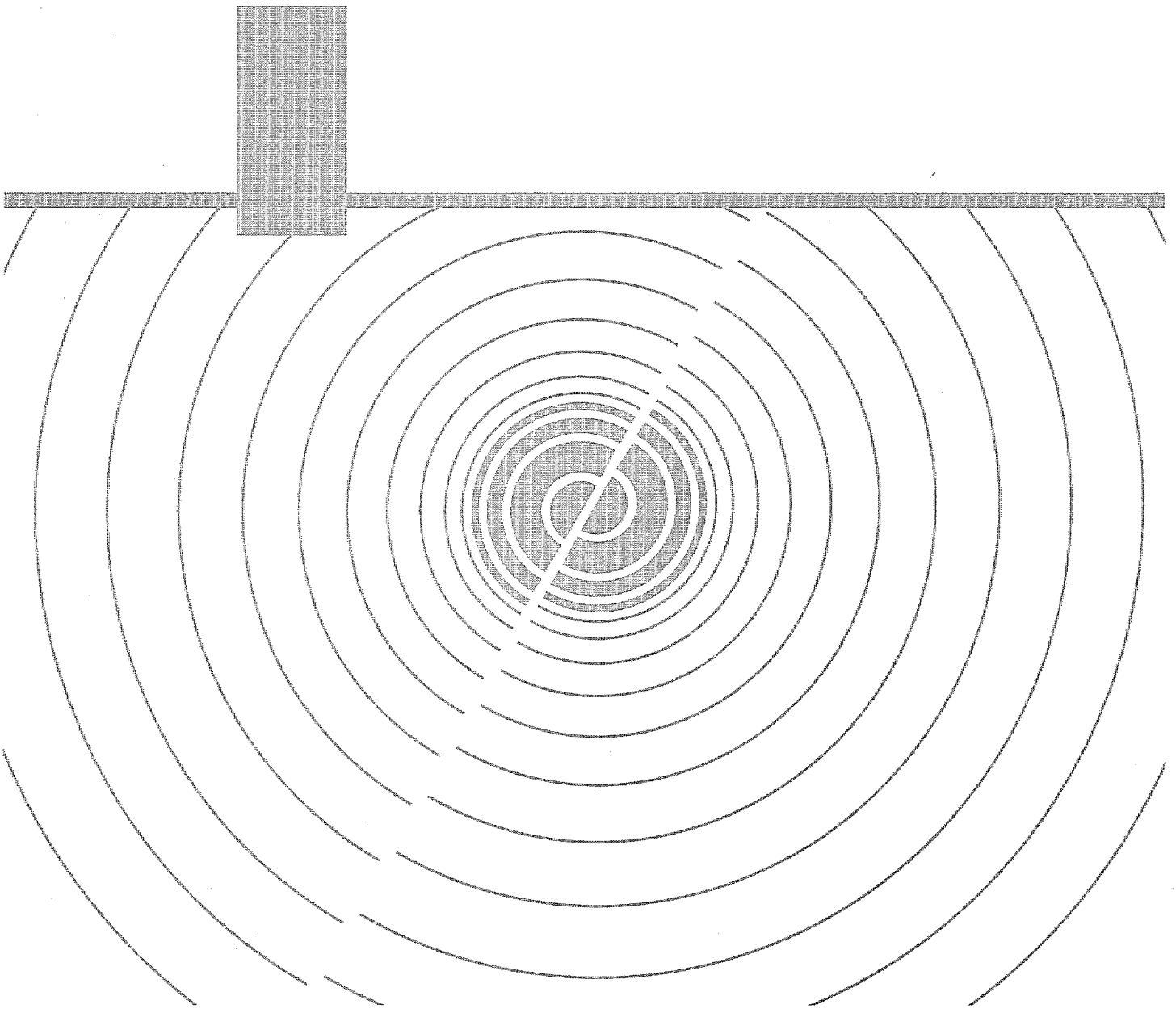
Appendix H:
Sample Press Releases



Appendix H
Sample Press Releases

The Role of News Coverage and How To Get It

Material in this appendix is intended to aid in efforts to promote awareness of earthquake risk and the adoption of the latest building codes. In the effort to educate the public and public officials, the news media can play an important part - maybe even a leading part. To use the media effectively, however, you must be ready to seek out the media, then be prepared if and when they begin to pay attention.

Do not expect reporters, editors, and news directors to find the story for themselves. Expect that you will have to "sell" them on why it is important to the community and their readers. At the same time, be careful not to hype something far beyond its importance; reporters and editors often will see through that. Be ready to back up your claims with facts and expertise.

Many times people dealing with the news media for the first time do not take into account how easily information can be miscommunicated or misunderstood. In your news releases or interviews, take extra care to be sure your major points are clear. Try to get the essential message and facts on paper, either in a news release or in a fact sheet you give to the reporter when meeting for an interview.

In interviews, don't be afraid to repeat your major points and to check and double-check that the reporter has understood the facts. This is especially important in talking about earthquakes, where information about fault zones, degree of risk (be careful using percentages), and the severity of quakes can be easily misconstrued.

Many times with news coverage, the timing is everything. In dealing with earthquake risk, probably the single best time to get the news media's attention is immediately after a major earthquake. The more serious the quake or the closer to your area, the better your opportunity for getting attention. A minor quake, actually felt by the residents in your area, also can be an opportunity.

Editors and news directors often are looking for the "local angle" on current news. If you can tell them why, after a major quake somewhere in the world, it is important to be concerned about earthquakes locally, you are almost assured of coverage. Since this opportunity is so important, and since an earthquake gives no warning, it is important to always be ready. You should have most of a news release already written, containing all the relevant local information, with only the first few sentences left to write when the major event occurs. Those first sentences will be the "hook," used to relate how your information is relevant to the current news and to area residents.

Among other opportunities for getting attention, some of which are anticipated in the attached materials:

- The launching of a statewide or regional effort to promote awareness of earthquake risk and adoption of the latest building codes.
- The anniversary of the Northridge (Los Angeles) and Kobe, Japan, earthquakes. They occurred on the same day, Jan. 17, in 1994 and 1995, respectively.

- When building codes or building code enforcement becomes a topic of serious discussion in city council or other public meetings.
- When emergency preparedness becomes an issue, even if resulting from other kinds of events, such as tornadoes or hurricanes.

Sample Press Releases

This appendix contains: (a) a sample release based on a fictional earthquake, (b) two versions of a "universal" release, designed to raise community awareness and/or announce plans for a campaign to adopt seismic codes; and (c) a sample letter to the editor. Various sections of the releases can be assembled according to your specific situation and local circumstances. This kit has been prepared with the following assumptions:

- Users of the kit may or may not have experience in putting together press releases or dealing with the media generally. The kit was assembled assuming the user would be starting from scratch.
- Users may need maximum flexibility and guidance in assembling a news release for various situations. Thus, we have supplied several versions and made frequent use of brackets, signifying where information must be supplied to fit the specific location or situation.
- It is impossible to anticipate every possible event or situation which might bring with it the opportunity to publicize local or regional earthquake risks. The user ultimately will use this kit as a guide.

In contacting the local media, through a press release or other means, the following advice should be kept in mind:

- Make the information relevant to the newspaper's readers or the station's audience. Answer the question: "Why should they care?" The more relevant the concern, the more editors and news directors will pay attention and cover it.
- Make your case at the top of the release, and in the first sentence if possible. Give the editor or news director a reason to pay attention before going into details.
- Be prepared to move quickly. Everyone is paying more attention immediately after an event - such as a small earthquake locally or a large one somewhere else. But this opportunity to educate will fade very quickly. Be ready with a plan for what you can do when an earthquake occurs, and then be ready to move quickly. Do you have your local facts and risk assessment in hand? Have you identified someone who can speak knowledgeably to the media? The opportunity will fade within a couple of days, if not within hours.
- Keep your points simple, and stick to them.

A final note: To be effective with the news media, it is important to view your communication with reporters, editors, and news directors as an opportunity and not as a distraction or something to just get through. It can be easy to fall into the latter, thereby wasting a valuable opportunity to reach the public that may not come again.

Guide to Press Materials

Sample Press Release:

- Raise community awareness in the wake of a seismic event elsewhere
- Describe the local community's own risks and safety deficits
- Provide background on similar quake events and damage

Universal Press Release 1:

- Raise community awareness in the wake of a seismic event elsewhere
- Describe the local community's own risks and safety deficits
- Present solution in terms of seismic codes
- Detail actions planned to adopt seismic codes

Universal Press Release 2:

- Raise community awareness of seismic risks and safety deficits
- Present solution in terms of seismic codes

Letter to Local Editor or News Director:

- Raise community awareness of seismic risks and safety deficits
- Present solution in terms of seismic codes
- Key points and background information on related costs and importance of seismic codes

Sample Press Release

Emergency Service Disaster Agency
555 E. Main St.
Richter, IL
987-654-3210
Mailed x/x/x

FOR IMMEDIATE RELEASE

RICHTER - They're still assessing the cost in Salt Lake City resulting from last Friday's devastating earthquake. The latest death toll stands at 250, and the current estimate of damage to buildings and infrastructure is between $1 billion and $2 billion.

It could have been much worse, however, and the city's experience holds a lesson for Richter, says Bill Bright, executive director of the local Emergency Services Disaster Agency.

Salt Lake City at least was anticipating a quake, and so had changed its building codes and taken other preparedness measures in recent years. Friday's magnitude 7.1 quake could have killed thousands if those actions had not been taken, he said.

Richter is not even aware of the earthquake risk it faces, and is not prepared, said Bright, who will hold an informational meeting about local earthquake risk and preparedness at 7 p.m. next Thursday, April 27, in the Richter Public Library, 514 E. Main.

Richter lies near an active fault zone and so can expect an earthquake, possibly as severe as the one that struck Salt Lake City, Bright said. Seismologists estimate there is a 25 percent chance that a severe quake - magnitude 6.5 or greater - will affect the southern Illinois region within the next 50 years.

The death toll from that quake will largely be determined by the quality of the buildings in the quake zone - and therefore by the quality of the building codes and enforcement that dictated how those buildings were constructed, Bright said.

A magnitude 7.2 quake in 1995 struck the center of Kobe, Japan, with severe shaking that caused even some well-designed buildings to collapse. But the greatest damage was to older buildings, built before the modern Japanese seismic building code. More than 5,000 people were killed, most of them in older homes built shortly after World War II, with little or no attention to seismic resistance.

Two California quakes of similar strength of recent years, Loma Prieta (San Francisco) and Northridge (Los Angeles), by contrast produced 62 and 57 deaths respectively. Those California communities were prepared for an earthquake, Bright said, having been building for more than 30 years according to building codes that can prevent or minimize seismic damage.

Since 1992, the three model building codes used in the United States have included practical and low-cost construction guidelines that can prevent or minimize seismic damage in new construction, Bright said. The cost of using them is minimal, they vary with the level of risk in each community, and already are being used for all federal government projects and for state-owned buildings in 37 states.

Richter, however, has yet to adopt one of these codes. It also lacks a fully-staffed building safety department that could enforce them. Unless actions are taken to change the situation, Richter may suffer the consequences, Bright said.

-###-

"Universal" Press Release 1

[agency or gov't office]
[address]
[city, state, zip]
[phone]
Mailed x/x/x

FOR IMMEDIATE RELEASE

[CITY, State from which you're sending the release] - The earthquake [two, three, four, etc.] days ago was in [Japan, California, Armenia, etc.], but it could have been here. [County/community] also sits near an active fault zone - a fault zone that could produce a quake at any time.

When a quake occurs, property and lives could be lost needlessly - because buildings were constructed without the benefit of the latest building code, says [local government or agency official].

To prepare for that eventuality, and reduce the potential for damage and loss of life, [state government office or agency] today launched a statewide campaign to raise awareness of the risk and educate local communities on what they can do to deal with it. The chief aim of the campaign, said [name], will be to inform local governments and residents of the benefits of adopting and enforcing the latest version of one of the three model building codes used in the United States.

Since 1992, each of the model codes has included practical and low-cost construction guidelines that can prevent or minimize seismic damage, he/she said. By adopting and enforcing the latest code for new construction, communities can begin to protect themselves against potential quake damage. Too few are doing that, he/she said.

[Might want to say something here about specific campaign plans.]

Among the issues to be addressed in the campaign: [Agenda for meeting]

-###-

"Universal" Press Release 2

[agency or gov't office]
[address]
[city, state, zip]
[phone]
Mailed x/x/x

FOR IMMEDIATE RELEASE

[CITY, State from which you're sending the release] - Buildings may collapse and lives may be lost when an earthquake rumbles through [county/community] sometime in the future. The damage doesn't have to happen.

[County/community] is in an earthquake zone, but it doesn't have the latest building code. That lays the groundwork for potential and unnecessary tragedy, says [local government or agency official].

When a quake occurs, property and lives could be lost needlessly - because buildings were constructed without the benefit of the latest building code, says [local government or agency official].

Since 1992, the three model building codes used in the United States have included practical and low-cost construction guidelines that can prevent or minimize seismic damage in new construction, [official] said. The cost of using them is minimal, they vary with the level of risk in each community, and already are being used for all federal government projects and for state-owned buildings in 37 states.

[City], however, has yet to adopt one of these codes. It also lacks a fully-staffed building safety department that could enforce them. Unless actions are taken to change the situation, [City] may suffer the consequences, [official] said.

-###-

Sample Letter To The Editor

Dear Editor/News Director

[County/community] is in an earthquake zone, with a [number] percent chance of experiencing a damaging earthquake within the next [number] years. But are its buildings being constructed with that in mind? Has the local government adopted the latest building code, which includes practical and low-cost construction guidelines that can prevent or minimize seismic damage? And are local residents aware of the potential damage and loss of life that could be prevented if buildings are constructed using the latest code?

A magnitude 6.7 quake in Armenia in 1988 killed approximately 25,000. In part this was caused by poor building construction and an insufficient seismic building code. The same thing could happen here.

Two California quakes of similar strength of recent years, Loma Prieta (San Francisco) and Northridge (Los Angeles), by contrast produced 62 and 57 deaths respectively. Those California communities were prepared for an earthquake, having been building for more than 30 years according to building codes that can prevent or minimize seismic damage.

I'm writing to ask that you consider asking these questions in your community as the basis for a possible story. Since 1992, all three of the model building codes used in the United States have included seismic design provisions, but your local government [has not updated its code], [has never implemented a building code], or [is neglecting enforcement].

Since the threat of an earthquake often is thought of as something only in the distant future, local officials may underestimate voter support for taking actions that might reduce the potential for quake damage, or may be resisting it out of an unwarranted fear of the costs to developers or business. Voters may not be voicing support for taking action because they haven't been made aware of the importance of acting now.

Below are some key points related to earthquake mitigation and building codes. For further information, contact [the state office of....., at .....]

- **Why the building code is important.** In the 1995 earthquake in Kobe, Japan, older (pre-1971) buildings were *more than six times more likely* to be severely damaged than buildings constructed according to the latest seismic code. A 1988 earthquake in Armenia killed 25,000 people. But severe quakes near San Francisco in 1989 and near Los Angeles in 1994 killed only 62 and 57 respectively. The difference in the death toll resulted largely from the quality of buildings and codes in each area.
- **Cost.** The cost of using the seismic guidelines in the latest codes is minimal. They add an average of 2.1 percent to total building costs across all types of construction, and only 0.7 percent for low-rise residential, according to the Building Seismic Safety Council, a nonprofit organization of engineering and construction groups.
- **Level of need.** Seismic codes take into account the level of risk in each community. If a community's risk is low, the code reflects that. Having a seismic code doesn't mean you build to San Francisco standards.
- **Who is using seismic building codes.** They already are required for federal government construction projects, for state-owned buildings in 37 states, and are being more widely used by all levels of government. The three model codes, on which most local building codes are based, now include seismic codes. More communities are using them, making those communities safer.
- **Insurance cost.** The insurance industry is implementing a system of building-code enforcement ratings, which include the new seismic requirements, much like those used to rate local fire protection. Communities that do not incorporate seismic codes for new construction may be rated as having a higher risk, thus bringing higher insurance costs to residents.

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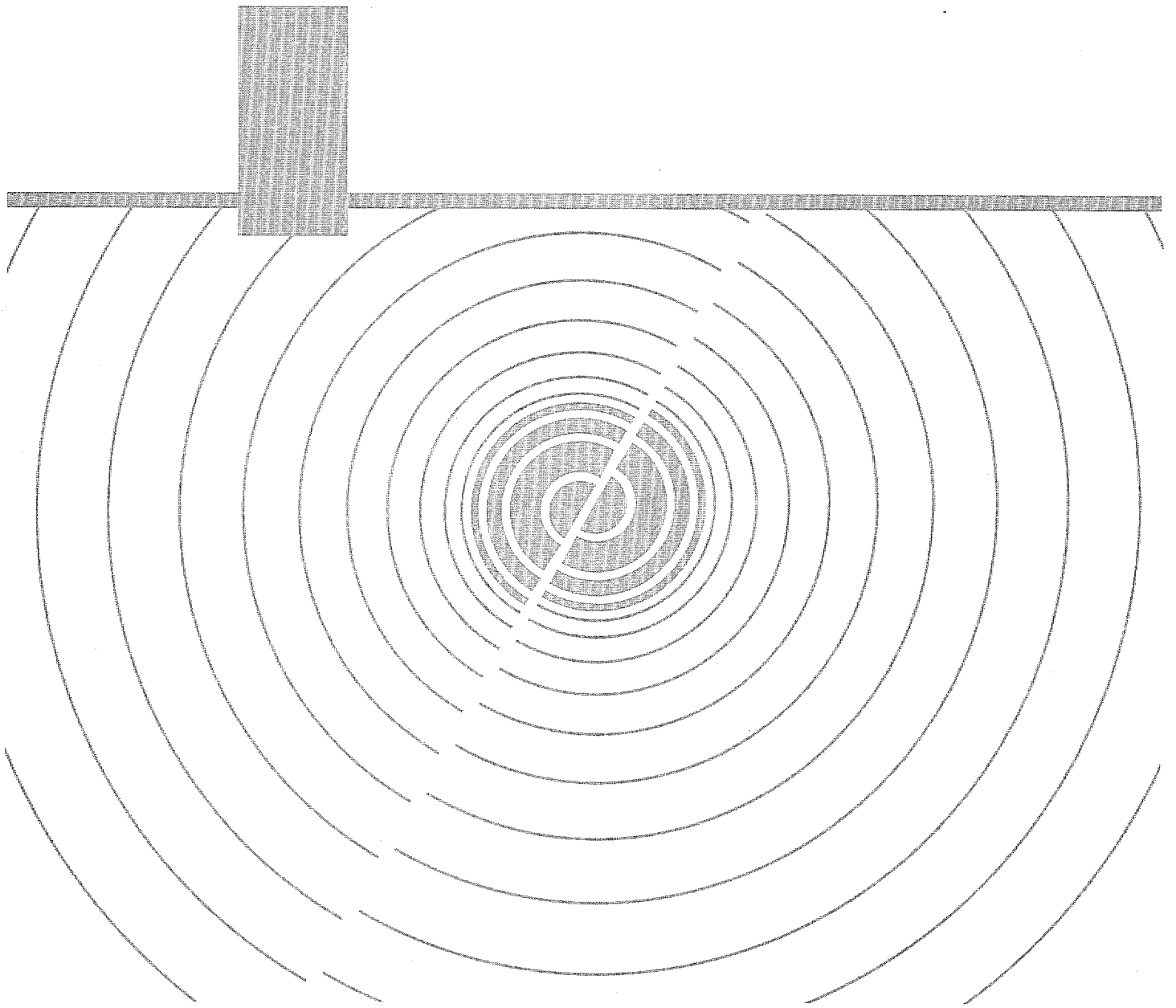
Appendix I: Sample Brochures



Appendix I: Sample Brochures

Brochures are an inexpensive way to deliver your message to a large number of people. Materials in this appendix are set up so that you can photocopy the pages (front and back) and fold them for ready-made brochures.

The brochures are intended for (a) architects and engineers, and others involved in the construction industry and (b) local officials and decision-makers. Four areas are covered:

- Design & Build for Earthquake Safety: A Guide for Architects & Engineers
- Design & Build for Earthquake Safety: A Guide for Local Officials
- Enforce Seismic Code Provisions for Earthquake Safety: A Guide for Architects & Engineers
- Enforce Seismic Code Provisions for Earthquake Safety: A Guide for Local Officials

Use the brochures to generate interest in improving local seismic code provisions. They can also serve as handouts for workshop presentations.

Seismic Protection: Considerations for Local Officials

- **Seismic codes will not hurt business.** Seismic building codes do not drive business from communities. In the words of one building official, "I've never heard of an industry not coming to town because of seismic requirements." Also, without the code protection, even minor seismic events can force businesses to relocate or temporarily shut down.
- **Seismic codes are becoming the national norm.** The federal government has set an example with Executive Order 12699, January 1990, which mandates a wide variety of seismic design standards. Seismic codes are becoming more prevalent at all levels of government, which means two things: (a) you will not be at an economic disadvantage for attracting new business and (b) if everyone else does it and you do not, you invite liability. Furthermore, to be eligible for most forms of federal financial assistance for new buildings, your community should adopt one of the model codes with seismic provisions.
- **Adopting seismic provisions is easy.** Call up a model code organization, buy the code, develop a fee structure (to pay for administration), and contract with the county or another nearby agency for initial staffing.
- **Seismic provisions are good for the community.** With a seismic code you will know that the community is on its way to seismic safety. The code will reduce long-term liability costs. A good code may ultimately improve the community's insurance rating.
- **All communities need a seismic code regardless of risk.** Seismic codes supplied by the building code organizations account for your community's level of seismic risk. If your risk is low, the code will reflect that.
- **Citizens support seismic codes.** Studies in California and the central United States have shown that most citizens support seismic building codes, and that elected officials underestimate this support.

Seismic Building Codes Are Affordable

Seismic codes add relatively little to the cost of a new building; and as experience with seismic design and construction grows, this increment will shrink. A 1985 federal study found that seismic codes increase total building costs by 2.1 percent on average. A 1992 study by the National Association of Home Builders found that builders can construct houses providing for life safety in earthquakes for an additional 1 percent or less of the purchase price. This is a small price to pay for the proven level of protection provided.

How To Learn More About Seismic Building Design

As seismic design practice rapidly spreads throughout the country, it is becoming easier and easier to access educational programs and materials. The model building code organizations now offer materials and seminars on their seismic design requirements. These seminars are sponsored periodically in most states, often by the state emergency management agency. Contact the three model code organizations for more information.

Model Code Organizations

Building Officials and Code Administrators International, Inc. (BOCA)
4051 West Flossmoor Road
Country Club Hills, IL 60478-5795
Tel: 708-799-2300; fax: 708-799-4981;
http://www.bocai.org

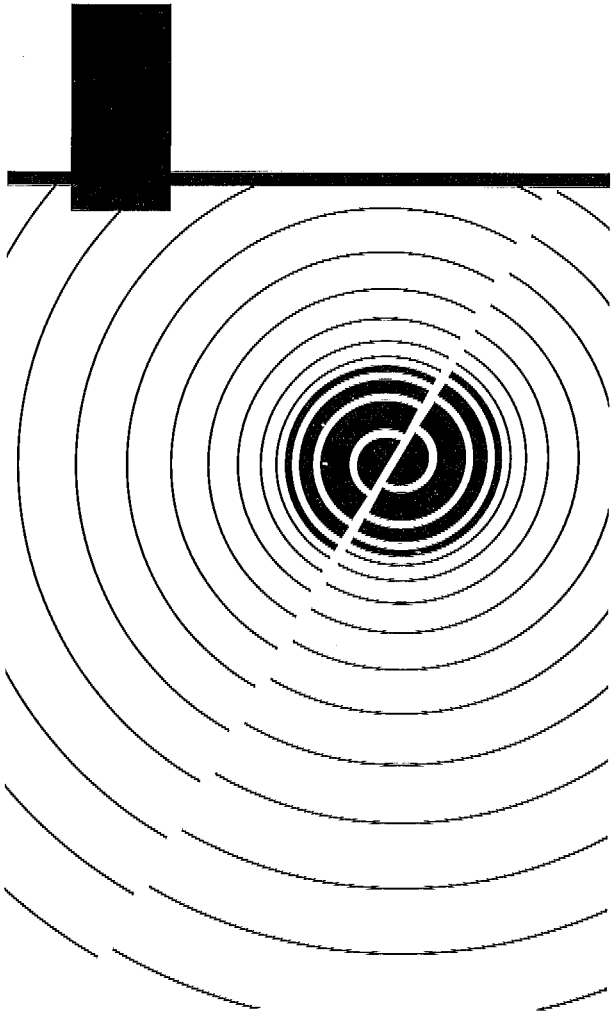
International Conference of Building Officials (ICBO)
5360 South Workman Mill Road
Whittier, CA 90601-2298
Tel: 562-699-0541; fax: 562-6998031
http://www.icbo.org

Southern Building Code Congress International, Inc. (SBCCI)
900 Montclair Road
Birmingham, AL 35213-1206
Tel: 205-591-1853; fax: 205-592-7001;
http://www.sbcci.org

FEDERAL EMERGENCY MANAGEMENT AGENCY FEMA 313 / January 1998

Design and Build for Earthquake Safety

A Guide for Local Officials



Design and Build for Earthquake Safety

A Guide for Local Officials

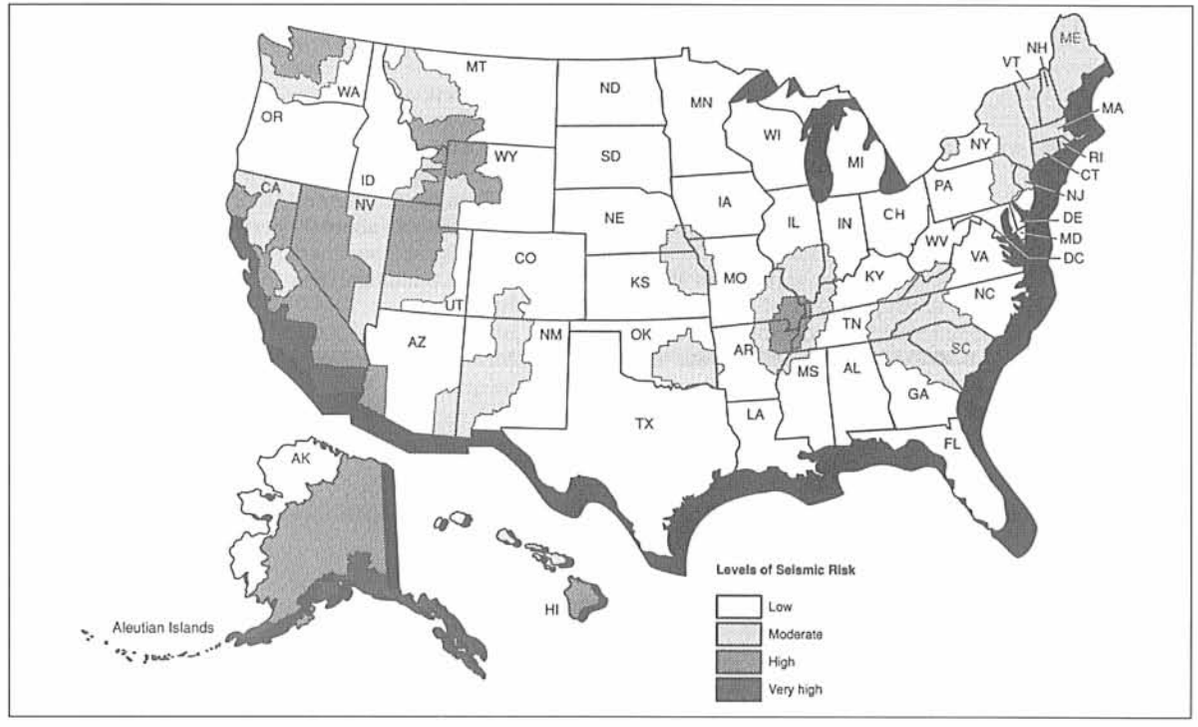
Most parts of the United States have the potential to suffer from earthquake damage. Local officials can help to reduce risk from earthquake damage by adopting a building code that contains current seismic provisions.

Each of the three model building codes specifies seismic code provisions appropriate to a given area's level of hazard. By adopting one of the model codes and incorporating the seismic provisions into new design and building, you can help to ensure that new structures withstand damage and help to protect lives in your community.

Seismic Building Codes Are Specific to Local Conditions

Each model code contains a seismic hazard map, based on current scientific knowledge. Its risk philosophy is accepted by a broad consensus of scientists and design and construction professionals. Its use in seismic design was determined by a nationwide consensus process conducted by the Building Seismic Safety Council (BSSC), an organization of more than fifty construction, professional, and trade organizations.

Portions of thirty-nine states are considered to have some degree of earthquake hazard. Some counties need to design for high levels of earthquake ground-shaking, whereas others should design for relatively less. Conversely, some areas, even those with seismic codes, do not need seismic design at all because the risks are so low. High-risk facilities, of course, demand customized, site-specific analysis.



This seismic hazard map shows that, although the most severe seismic shaking is expected in the western U.S. and Mississippi River areas, much of the U.S. has some level of seismic hazard.

Seismic Building Codes Work

Recent earthquakes in the United States and throughout the world show that seismic codes work. Cities that have built structures to meet seismic codes have suffered much less damage than those without such codes. In the 1995 earthquake in Kobe, Japan, most of the 5,000 fatalities occurred in homes built prior to the advent of modern seismic codes. The 1988 Armenian earthquake destroyed entire communities and killed 25,000 people. The construction standards used in Armenia are similar to those used in much of the United States. The 1989 Loma Prieta and 1994 Northridge, California, earthquakes had relatively low loss of life (63 and 57 deaths, respectively) largely because of the widespread use of seismic building codes.

Smaller seismic events, while receiving less attention from the media, can result in substantial losses to a community. Helena, Montana, experienced an M6.0 event in 1935 (predating seismic codes) and suffered $4 million damage, including severe damage to the high school. A Magnitude 5.6 earthquake in 1993 at Scotts Mills, Oregon, caused significant structural damage to a number of unreinforced masonry (brick) buildings. The estimated damage cost to public facilities alone was nearly $13 million.

Seismic Design Is Becoming the National Norm

Since 1992 all three model codes in the United States have included seismic design provisions. By a 1990 presidential executive order (EO 12699), all federal agencies must require seismic design and construction of all new buildings that they own, lease, regulate, or financially assist, including single-family homes with Federal Housing Authority mortgages. At least thirty-seven states now have seismic design requirements for state-owned buildings. Seismic design is rapidly becoming the standard of practice throughout the United States.

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How To Learn More About Seismic Building Design

As seismic design practice rapidly spreads throughout the country, it is becoming easier and easier to access educational programs and materials. The model building code organizations now offer materials and seminars on their seismic design requirements. These seminars are sponsored periodically in most states, often by the state emergency management agency. Contact the three model code organizations for more information.

Professional Organizations:

American Institute of Architects
1735 New York Avenue, NW, Washington, DC 20006
Tel: 202-626-7300; http://www.aia.org

American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, VA 20191-4400
Tel: 800-548-2723; http://www.asce.org

Model Code Organizations:

Building Officials and Code Administrators International, Inc. (BOCA)
4051 West Flossmoor Road
Country Club Hills, IL 60478-5795
Tel: 708-799-2300; fax: 708-799-4981;
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http://www.sbcci.org

The Earthquake Engineering Research Institute of Oakland, California (tel: 510-451-0905) has sponsored two-day seismic design seminars in various parts of the country. Also, civil engineering and construction technology programs at many public universities now teach courses, mini-courses, and workshops in seismic design.

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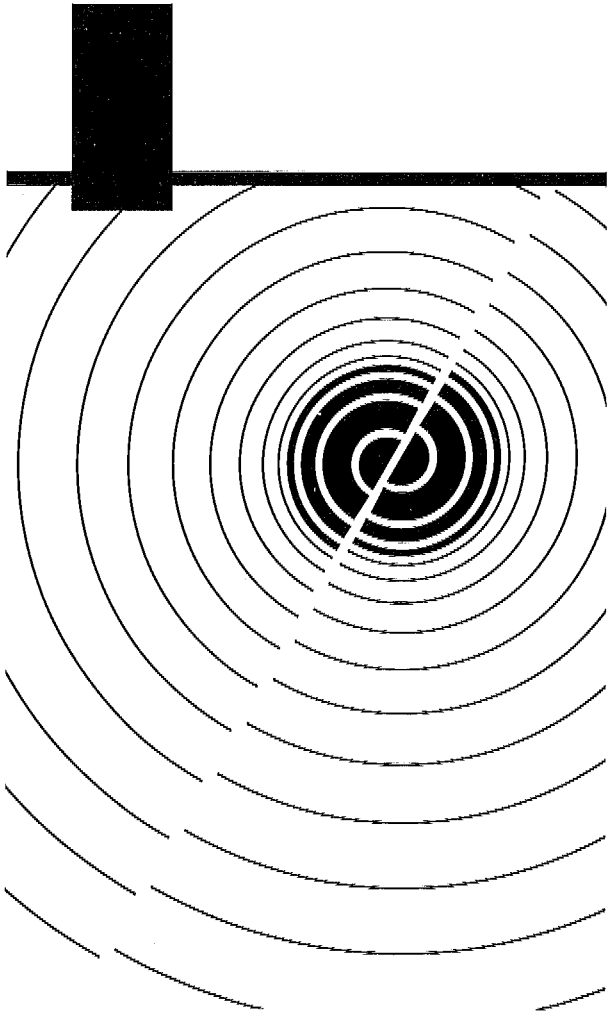
Design and Build for Earthquake Safety

A Guide for Architects & Engineers



Design and Build for Earthquake Safety

A Guide for Architects & Engineers

Most parts of the United States have the potential to suffer from earthquake damage. Architects and engineers, as key players in the construction industry, can help to reduce risk from earthquake damage by encouraging the adoption of seismic building codes.

Each of the three model building codes specifies seismic code provisions appropriate to a given area's level of hazard. By adopting one of the model codes and incorporating the seismic provisions into new design and building, you can help to ensure that new structures withstand damage and help to protect lives in your community.

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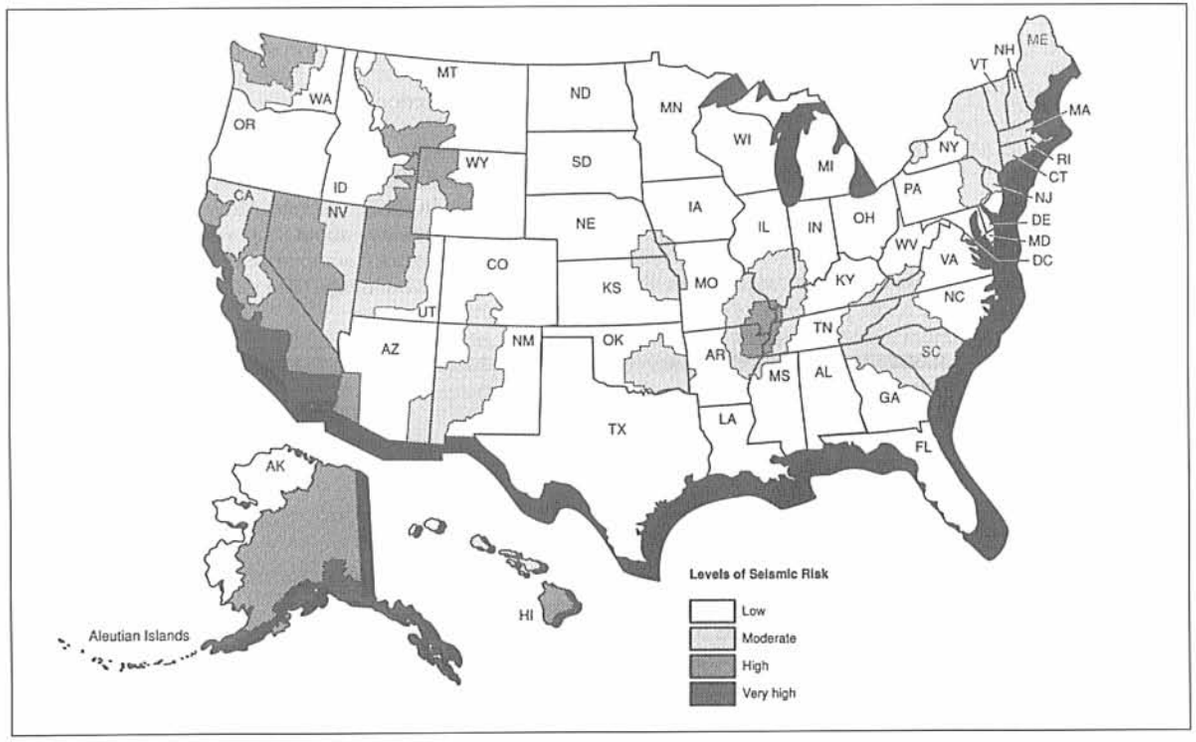

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whether construction is proceeding according to the approved plans and the conditions of the permit. Inspection is typically required at several key stages in the construction process. The inspector has a powerful enforcement tool called a *stop work order*. A stop work order is issued to the construction firm if the inspector finds a code violation that must be corrected before any further construction is performed. At final inspection, the building can be approved for occupancy.

Architects & Engineers Can Help Improve Code Enforcement

Architects and engineers can, and should, help to improve code enforcement. Structures built improperly can damage the architect's profesional reputation and may lead to being named in a lawsuit. Secondly, the reputation of the professional as a whole may suffer if numerous errors and failures occur. Some actions you can take include:

- Verify the enforcement capabilities in every jurisdiction in which you work. If possible, find out the code-effectiveness rating of each building department.
- Work with local building departments to convince them of the need for effective enforcement.
- Inspect your own jobs more carefully in jurisdictions with poor enforcement, and inform your client of the reason.
- Work with your local professional organizations to lobby for more effective enforcement.

Model Code Organizations

Building Officials and Code Administrators International, Inc. (BOCA)
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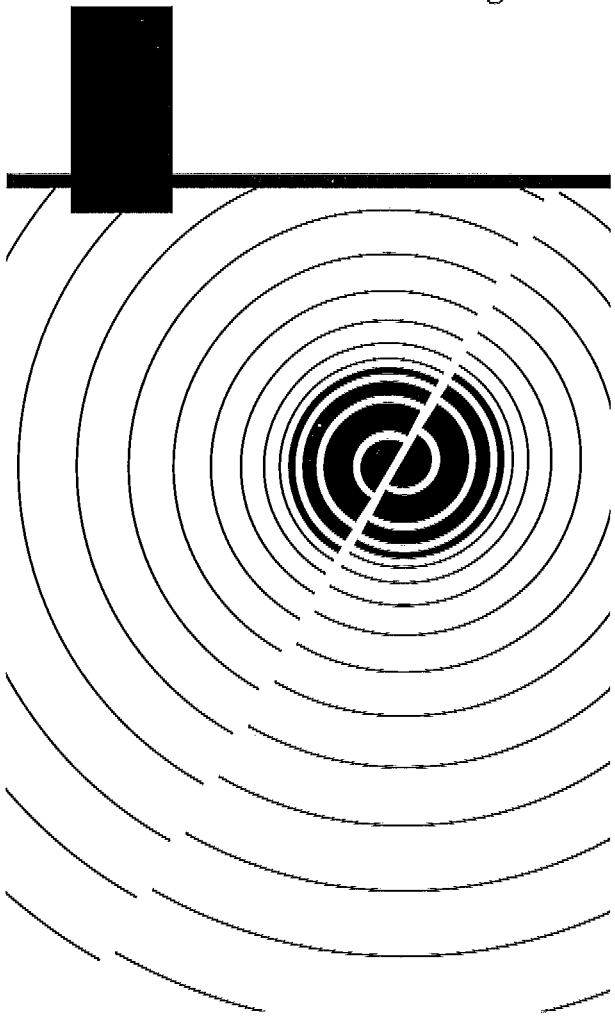
FEDERAL EMERGENCY MANAGEMENT AGENCY FEMA 313 / January 1998

Enforce Seismic Code Provisions for Earthquake Safety

A Guide for Architects & Engineers



Enforce Seismic Code Provisions for Earthquake Safety

A Guide for Architects & Engineers

A building code is just a book. To achieve the community goal of safer buildings, the building code and its seismic provisions must be enforced-a process in which architects and engineers can play an important role. By specifying practices in accordance with the code, and working closely with code-enforcement personnel, architects and engineers can ensure that safer buildings are constructed according to plan and without costly interruptions.

Poor Code Enforcement Results in Deficient Buildings

Recent studies following Hurricanes Hugo and Andrew have shown weaknesses in code enforcement. In 1991 State Farm Insurance Company contracted with SBCCI (Southern Building Code Congress International, a model code organization) to evaluate code compliance in twelve randomly selected coastal communities. They found that inspectors and reviewers had little or no training in wind-resistant construction and that there was a general lack of enforcement of adequate connections of windows, doors, and mechanical equipment to the building frame. About half of the communities were not enforcing their own code standards for wind resistance. Thus, even in communities with adequate codes, significant damage was attributed to poor compliance and enforcement. With respect to seismic design, a 1993 study by the University of Southern California found significant problems in quality control of seismic-resistant construction in California.

Insurers Recognize the Critical Importance of Code Enforcement

The code-enforcement problems discovered in the wake of Hurricane Andrew have prompted the insurance industry to initiate a code-effectiveness grading schedule, in order to identify communities with good enforcement practices. The new system will be phased in over a five-year period beginning in 1995. Property owners in communities with good code-enforcement practices may be rewarded with reduced insurance premiums.

Elements of Code Enforcement

Code enforcement and administration consist of five sequential elements. For architects and engineers, the most important aspects of enforcement are plan review and construction inspection—but effective code administration must consider the entire sequence.

Code provisions must be up to date. A code is an active document, evolving to reflect new knowledge and new standards of practice. Once a jurisdiction makes a commitment to use a building code, it must be prepared to update its local code on a regular basis.

Builders must apply for permits. Obviously, if builders try to avoid the code-application process, then the code cannot do its job. A jurisdiction must have inspectors out in the field who know the community. The inspector needs to be alert to new construction in his or her jurisdiction and must be aware of current active permits. Architects and engineers can help to ensure that clients obtain building permits.

A qualified reviewer must review building plans. Plan review is one of the two points at which the local government can affect the details of building construction. At a minimum, the plan review verifies whether the design complies with the building code. This is the most cost-effective moment to catch mistakes, before any money is spent on construction. Some jurisdictions may also review structural calculations.

Architects and engineers can help by specifying practices in accordance with the code and working closely with reviewers. State statutes require that the licensed professional engineer and/or architect place his or her seal and signature on the designs. The seal and signature signify that the design is at the accepted professional standard, which is typically the most recent version of a model building code or technical document. An added incentive for conformity is the legal liability the engineers and architects assume when the seal and signature are placed on the document. Typically, licensed architects and engineers also inspect the construction of their designs.

Construction should proceed according to approved plans. An owner receives a building permit to construct according to the approved plans, and it is the legal responsibility of the owner to do so. The builder uses the plans to order materials and construct the building. The owner may hire inspectors or the engineers and architects to oversee key aspects of the construction in order to help verify compliance with the plans. To some extent, all government inspection systems depend on this obligation by the owner, which is inherent in the issuance of a permit.

A qualified inspector must inspect the construction. Inspection is the second point at which the local government can affect the details of building construction. Inspection verifies

Improving Substandard Enforcement Practices

The most direct way to improve building code enforcement is to increase the quantity or quality of staff. The new code-enforcement grading system may aid local legislative bodies in encouraging or requiring building department staff to participate in continuing education and certification. All the model building code organizations have extensive education programs, including handbooks, workshops, seminars, and videotapes. These programs aim to improve both technical expertise and administrative effectiveness in order to increase the level of professionalism in code administration. Each code organization also has a certification program for a number of categories of plan review and inspection. Certification-based promotions will help to reward staff members for their achievements.

Model Code Organizations

Building Officials and Code Administrators International, Inc. (BOCA)
4051 West Flossmoor Road
Country Club Hills, IL 60478-5795
Tel: 708-799-2300; fax: 708-799-4981;
http://www.bocai.org

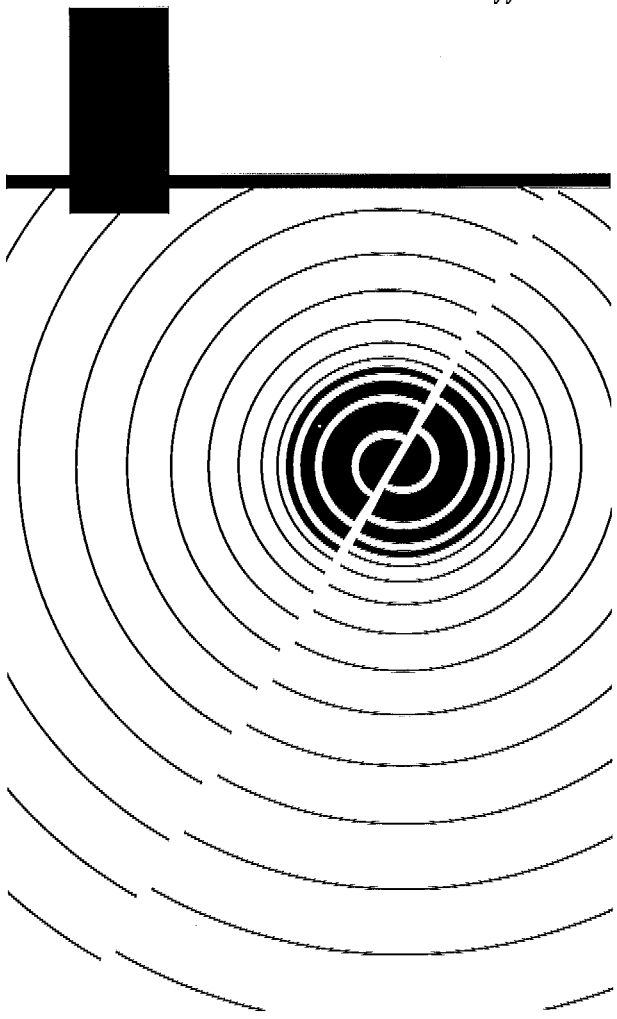
International Conference of Building Officials (ICBO)
5360 South Workman Mill Road
Whittier, CA 90601-2298
Tel: 562-699-0541; fax: 562-699-8031
http://www.icbo.org

Southern Building Code Congress International, Inc. (SBCCI)
900 Montclair Road
Birmingham, AL 35213-1206
Tel: 205-591-1853; fax: 205-592-7001;
http://www.sbcci.org

FEDERAL EMERGENCY MANAGEMENT AGENCY FEMA 313 / January 1998

Enforce Seismic Code Provisions for Earthquake Safety

A Guide for Local Officials



Enforce Seismic Code Provisions for Earthquake Safety

A Guide for Local Officials

A building code is just a book. To achieve the community goal of safer buildings, the building code and its seismic provisions must be enforced—a process facilitated by the active involvement and oversight of local officials. Through proper staffing and code-enforcement procedures, and coordination with area architects, engineers, and builders, local officials can ensure that safer buildings are constructed according to plan and without costly interruptions.

Poor Code Enforcement Results in Deficient Buildings

Recent studies following Hurricanes Hugo and Andrew have shown weaknesses in code enforcement. In 1991 State Farm Insurance Company contracted with SBCCI (Southern Building Code Congress International, a model code organization) to evaluate code compliance in twelve randomly selected coastal communities. They found that inspectors and reviewers had little or no training in wind-resistant construction and that there was a general lack of enforcement of adequate connections of windows, doors, and mechanical equipment to the building frame. About half of the communities were not enforcing their own code standards for wind resistance. Thus, even in communities with adequate codes, significant damage was attributed to poor compliance and enforcement. With respect to seismic design, a 1993 study by the University of Southern California found significant problems in quality control of seismic-resistant construction in California.

Steps Toward an Effective Building Code-Enforcement Program

Step 1: Adopt a model code.

Step 2: Establish fee structures for permits and plan review.

Step 3: Institute a systematic plan review system.

Step 4: Determine an inspection schedule.

Insurers Recognize the Critical Importance of Code Enforcement

The code-enforcement problems discovered in the wake of Hurricane Andrew have prompted the insurance industry to initiate a code-effectiveness grading schedule, in order to identify communities with good enforcement practices. The new system will be phased in over a five-year period beginning in 1995. *Communities with good code-enforcement practices may be rewarded with reduced insurance premiums.*

Elements of Code Enforcement

Code enforcement and administration consist of five sequential elements. Local officials must ensure that each element functions smoothly and is staffed by trained personnel.

Code provisions must be up to date. A code is an active document, evolving to reflect new knowledge and new standards of practice. Once a jurisdiction makes a commitment to use a building code, it must be prepared to update its local code on a regular basis.

Builders must apply for permits. Obviously, if builders try to avoid the code-application process, then the code cannot do its job. A jurisdiction must have inspectors out in the field who know the community. The inspector needs to be alert to new construction in his or her jurisdiction and must be aware of current active permits.

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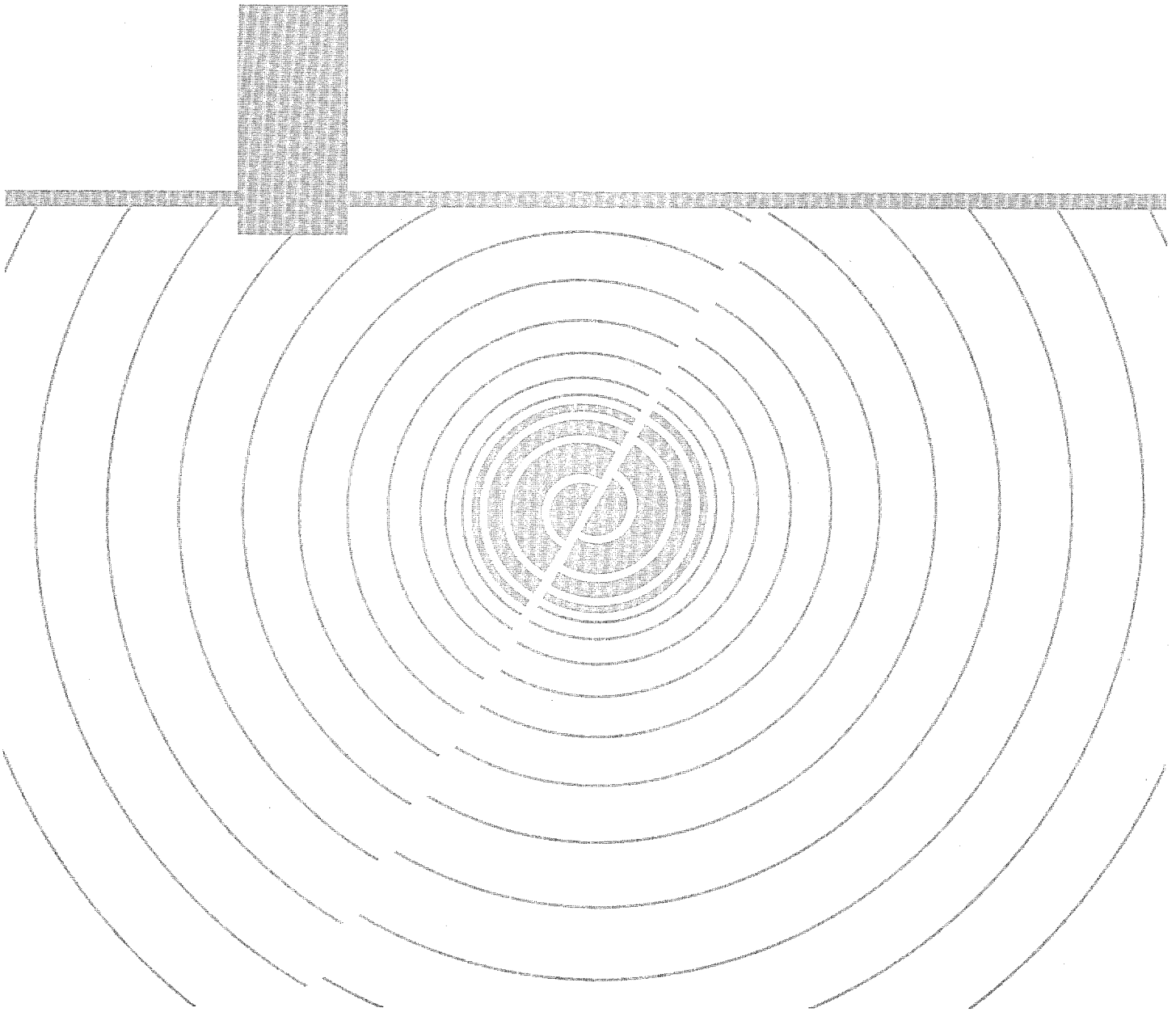
Construction should proceed according to approved plans. An owner receives a building permit to construct according to the approved plans, and it is the legal responsibility of the owner to do so. The builder uses the plans to order materials and construct the building. The owner may hire inspectors or the engineers and architects to oversee key aspects of the construction in order to help verify compliance with the plans. To some extent, all government inspection systems depend on this obligation by the owner, which is inherent in the issuance of a permit.

A qualified inspector must inspect the construction. Inspection is the second point at which the local government can affect the details of building construction. Inspection verifies whether construction is proceeding according to the approved plans and the conditions of the permit. Inspection is typically required at several key stages in the construction process. The inspector has a powerful enforcement tool called a *stop work order*. A stop work order is issued to the construction firm if the inspector finds a code violation that must be corrected before any further construction is performed. At final inspection, the building can be approved for occupancy.

Appendix J: Glossary and Acronyms



Appendix J
Glossary and Acronyms

Glossary of Terms and Definitions Related to Building Codes

Body-wave magnitude
Magnitude of an earthquake as determined from seismic waves that travel through the interior of the Earth.

Brittle failure
Sudden rupture with little warning.

Building code
Officially adopted comprehensive specifications regulating building construction, materials, and performance to protect the public health, safety, and welfare.

Ductile failure
Rupture or collapse preceded by large deformations (bending).

Ductility
Ability of a material to deform without fracturing.

Dynamic structural analysis
Modeling (most often by computer) of the building's behavior during an entire cycle of earthquake forces.

Earthquake zone map
Map that divides the country into zones of relative earthquake hazard and reflects the maximum ground-shaking expected within a specified time period.

Epicenter
Surface projection of the *hypocenter*, the point within the earth where an earthquake originates.

Frame
Support skeleton of the structure that transfers weight to the foundation.

General failure
Total collapse of a structure.

Geophysics
Study of the physics of the Earth, including seismology, geomagnetism, gravity, geodesy, heat flow.

Geotechnical engineering
Civil engineering subdiscipline that applies knowledge of soil and rock mechanics to engineering problems.

Intensity
Measure of ground-shaking based on the degree of damage to man-made structures, changes in the Earth's surface, and felt reports.

Lateral force
Horizontal force generated by an earthquake's side-to-side motion.

Local failure
Partial collapse of a building limited to noncritical sections.

Magnitude
Measure of the physical size of an earthquake.

Model building code
Document published by a private organization containing standardized building requirements available for adoption by political units in the U.S.

Peak ground acceleration
Maximum rate of change in earthquake-generated ground motion at a specified location that produces the maximum force generated by an earthquake.

Peak ground velocity
Maximum speed (distance divided by time) of the earthquake-generated ground motion.

Reinforcement
Steel rods or wire used to strengthen concrete under tension (pulling).

Seismic hazard
Probability that a specified earthquake intensity will occur during a defined period of time.

Seismic hazard map
Map that indicates the likely level of earthquake ground-shaking throughout the country, or local maps that show the relative hazard from earthquakes.

Seismic moment magnitude
Magnitude of an earthquake as determined from the dimensions of the fault, amount of displacement along the fault during the earthquake, and rigidity of rock.

Seismic rehabilitation
Corrections to a building after the initial construction is completed and before damage is caused by an earthquake.

Seismic-resistant design
Building design that evaluates expected horizontal earthquake forces and strengthens the building to withstand these forces.

Seismic retrofit
Repairs to a building damaged by an earthquake.

Seismology
The study of earthquakes.

Structural engineering
Civil engineering subdiscipline responsible for the selection, design calculations, drawing, and specifications of a building frame.

Surface wave magnitude
Magnitude of an earthquake as determined from seismic waves that travel around the surface of the Earth.

Sway
Side-to-side movement of a structure.

Unreinforced masonry construction
Construction using brick, stone, or concrete blocks that are adhered together solely by mortar with no additional reinforcing material.

Significant Acronyms Related to Building Codes

ACI	American Concrete Institute
AASHTO	American Association of State Highway and Transportation Officials
AIA	American Institute of Architects
AISI	American Iron and Steel Institute
ASCE	American Society of Civil Engineers
ATC	Applied Technology Council
BNBC	BOCA National Building Code
BOCA	Building Officials and Code Administrators International, Inc.
BSSC	Building Seismic Safety Council
CABO	Council of American Building Officials
EERI	Earthquake Engineering Research Institute
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
IBHS	Institute for Business and Home Safety (formerly NCPI and IIPLR)
ICBO	International Conference of Building Officials
ICMA	International City/County Management Association
ICSSC	Interagency Committee on Seismic Safety in Construction
IIPLR	Insurance Institute for Property Loss Reduction (formerly NCPI, now IBHS)
ISO/CRS	Insurance Services Office, Commercial Risk Services
NAHB	National Association of Home Builders
NBS	National Bureau of Standards (now NIST)
NCPI	National Committee on Property Insurance (now IBHS)
NCSBCS	National Conference of States on Building Codes and Standards
NEHRP	National Earthquake Hazards Reduction Program
NIBS	National Institute of Building Science
NIST	National Institute of Standards and Technology (formerly NBS)
NSF	National Science Foundation
SBC	Standard Building Code
SBCCI	Southern Building Code Congress International, Inc.
SEAOC	Structural Engineers Association of California
UBC	Uniform Building Code
USGS	United States Geological Survey