

**CHAPTER**

**11**

**BUILDING CODE EFFECTIVENESS GRADING SCHEDULE:  
MEASURING THE COMMUNITY'S COMMITMENT TO  
ADOPTING AND ENFORCING BUILDING CODES**

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**Abstract:** Government, insurers, property owners and builders all have important roles and responsibilities to ensure that buildings are safe. However, not all communities have rigorous building codes, nor do all communities enforce their codes with equal commitment. This paper describes how the Insurance Services Office (ISO) helps distinguish between communities in the United States with effective building-code enforcement and those with weak enforcement through a comprehensive programme called the Building Code Effectiveness Grading Schedule. The ISO collects information on a community's building-code adoption and enforcement services; reviews the administration of codes, building plans and field inspections; and then assigns a Building Code Effectiveness Classification.

## The stakeholders

In a free economy, there are many pressures to provide the least expensive product that will serve the customer's immediate needs; in this way, building construction is no different from any other product or service. However, buildings in which we live, learn, work or play are expected to be safe structures that serve us for many years, protecting us from the challenges of the environment and minimising the impact of the hazards that may exist within. As building construction is very expensive, there is an inherent need to minimise the cost of construction to meet the budget. However, under no circumstances should the safety of the occupants be jeopardised in order to minimise these costs.

There are essential partners in the goal of providing safer buildings. They are:

- Government.
- Insurers.
- Property owners.
- Builders.

## Government

Charged with the basic responsibility of providing a safe environment for its citizens, government must set the stage for any meaningful partnership to work effectively. Modern, effective building codes must be adopted, and codes must be enforced in an unbiased manner to set a baseline of minimum expectations for building safety with which everyone must comply.

Government must provide an environment where the insurance industry can operate in a competitive manner with flexible insurance regulation, allowing insurers to develop pricing programmes that provide economic incentives for superior construction, protection and other features that reduce losses.

Government can provide the resources for the research and development of modern building and fire prevention codes if an effective, national consensus, standard-making organisation does not exist in the private sector.

Government can also provide tax incentives to property owners who comply with building construction regulations.

Government can require that builders be qualified and certified, and provide information to consumers. Most consumers are normally unaware of proper building techniques and are dependent on the professionalism and expertise of builders. Information on builder's certification programmes can help customers to make an informed choice when selecting builders.

### **Insurers**

Insurers can work with government to develop rating or pricing programmes that correspond to building and fire prevention codes, thus providing insurance pricing incentives for better construction designs, including hazard mitigation provisions within individual properties and at the local community level. Insurance incentives can have meaningful economic consequences to a business and will attract the attention of business people seeking to maximise their future profit potential through reduced insurance costs. Insurance companies can work with property owners to reduce potential losses.

### **Property owners**

Property owners can work with government to ensure that their new or revised construction is code-compliant early in the planning stage. This relationship does not need to be adversarial if there is the common goal of safe construction at the least cost.

Property owners should hire only qualified and certified builders to ensure quality construction.

Property owners should be selective in choosing an insurance company that offers the most competitive coverage at the least cost for superior construction and hazard mitigation, and that provides on-going service to help reduce hazards and potential losses.

Property owners must realise that while insurance is a method of transferring the risk of financial losses to insurance companies for a premium, insurance will never cover the emotional impact of a major disaster, nor all of the indirect costs of a major loss.

### **Builders**

Builders should be able to identify qualified workers through government or trade association certification programmes. With effective codes and enforcement, all builders can operate on an even playing field that allows them to compete on quality and service, without taking shortcuts that threaten safety.

## **Comparing building code adoption and enforcement**

Following Hurricane Andrew in 1992, photos taken in several parts of south Florida showed homes on one side of a street that were completely destroyed and homes on the other side still standing. Later inspections revealed that, in many cases, construction of the destroyed buildings was well below the standard required by the building code in effect. Several industry studies suggest that total losses (USD 26.5 billion) might have been as much as 50% less if all structures in the area had met current building codes. These studies highlight the fact that code adoption is only part of the solution; rigorous

enforcement with adequately staffed and well-trained personnel is also required to maximise mitigation efforts.

Hurricane Andrew did not limit its destructive forces to property. Even though there was significant warning of the event, it caused 23 deaths in the United States and three in the Bahamas.

In 1994, another significant catastrophic event occurred in the United States: the Northridge earthquake in California. This earthquake caused over USD 7 billion of insured losses to properties. The actual dollar loss rose dramatically considering that only 25% of the damaged property had insurance coverage for the earthquake hazard. Once again, a correlation was evident between significant building damage and non-code compliant construction.

Building code adoption and effective code enforcement can have a major influence on the economic well-being of a municipality as well as on the safety of its citizens. However, not all communities in the United States have rigorous building codes, nor do all communities enforce their codes with equal commitment. Local building codes can have a profound effect on how the structures in a community fare in a hurricane, earthquake or other natural disaster.

The Insurance Services Office (ISO) helps to distinguish between communities with effective building code enforcement and those with weak enforcement through a comprehensive programme called the Building Code Effectiveness Grading Schedule (BCEGS).

The ISO is an independent statistical, rating and advisory organisation that serves the property/casualty insurance industry. It collects information on a community's building code adoption and enforcement services, analyses the data, and then assigns a Building Code Effectiveness Classification from 1 to 10. Class 1 represents exemplary commitment to building code enforcement, and Class 10 indicates less than minimum commitment.

The BCEGS also helps evaluate a community's building code enforcement services. The programme provides an objective, countrywide standard for agencies to use when preparing and budgeting for plan review, inspection services, public relations activities and training efforts.

### **Multiple benefits for communities**

Municipalities with well-enforced, up-to-date codes demonstrate better loss experience, and their citizens' insurance rates can reflect that. The prospect of minimising catastrophe-related damage and ultimately lowering insurance costs gives communities an incentive to enforce their building codes. Communities can benefit with safer buildings, less damage from catastrophic events and reduced insurance premiums.

### **How the BCEGS works**

The BCEGS assesses the building codes in effect in a particular community. The programme also evaluates how the community enforces its building codes, with special emphasis on mitigation of losses from natural hazards.

The ISO collects information on building code adoption and enforcement services by distributing a detailed questionnaire to the community's building official. Once the

questionnaire is complete, the ISO arranges for one of more than 40 field representatives to meet at the community site with the building official. Together, the ISO representative and building official review and verify the community's capabilities. Each review usually takes between two and four hours.

The ISO field representative then tabulates the points scored on the various sections of the schedule. The total score determines the community's Building Code Effectiveness Classification.

The ISO notifies each community of the results of the evaluation before releasing the classification to subscribing insurance companies. The notification letter includes comprehensive details of the evaluation, outlining the score in each category.

The ISO field representatives are trained to gather and accurately analyse information regarding adopted building codes and enforcement efforts. Their training includes an overview of the administration of building codes and the BCEGS, and a detailed review of the questionnaire including background concepts and information gathering techniques. Each new BCEGS employee is also field mentored. It is not important that the field staff have a building official's knowledge of the building codes. The BCEGS programme's focus on the codes adopted, resources, and certification and education of the staff translate into measurable expectations of different community's commitment to effective code adoption and enforcement.

### **BCEGS criteria**

The BCEGS analysis focuses on three critical areas.

#### *Administration of codes*

- Building code edition in use.
- Modification of the codes.
- Zoning provisions to mitigate natural hazards.
- Training of code enforcers.
- Certification of code enforcers.
- Incentives for outside education or certification.
- Qualifications of building officials.
- Contractor or builder licensing and bonding.
- Public awareness programmes.
- Participation in code development activities and the appeal process.

*Review of building plans*

- Staffing levels.
- Qualifications.
- Level of detail within plan review.
- Performance evaluations.
- Review of plans for residential, multi-family and commercial buildings.

*Review of field inspections*

- Staffing levels.
- Qualifications.
- Level of detail in field inspections.
- Performance evaluations.
- Final inspections.
- Issuance of certificates of occupancy.

In addition, the ISO collects insurance underwriting information, including natural hazards common to the area, the number of inspection permits issued, the number of inspections completed, the building department's funding mechanism and date of establishment, the size of the jurisdiction and population, and the fair-market value of all buildings.

**BCEGS and property owner insurance premiums**

The ISO serves the property/casualty insurance industry by classifying a community's commitment to code adoption and enforcement. Insurers subscribe to the BCEGS service through affiliation fees; the companies pay a fee proportional to their premium volume. They use the BCEGS results to help establish appropriate insurance premiums for residential and commercial properties.

The ISO has extensive information on more than 5 000 building code enforcement agencies. Insurance companies receive reliable, up-to-date information on a municipality's building code adoption and enforcement services.

The ISO provides insurers with BCEGS classifications, BCEGS advisory credits and related underwriting information. Any building constructed in the year that the ISO classifies a community, or in a later year, will be eligible for the insurance rating credits contained in the programme.

**Re-evaluating a community's BCEGS classification**

The ISO's trained field representatives evaluate communities at approximate five-

year intervals. However, the ISO can survey a community sooner if its building code enforcement agency has made significant changes, or when a community requests a resurvey.

By securing lower property insurance premiums for communities with better performance, the BCEGS programme provides rewards to communities that choose to improve their building code enforcement efforts.

### **BCEGS programme incentives**

Communities have many incentives to participate in the BCEGS programme. These incentives include:

- Promoting construction of damage-resistant buildings.
- Reducing property and human losses.
- Minimising economic and social disruption resulting from catastrophic events.
- Promoting good public policy.

The BCEGS programme recognises a community's commitment to building code adoption and enforcement and promotes mutually beneficial relationships among community leaders, private citizens, building code enforcement agencies and insurers.