

Preparing for disasters: Build strong, build smart

WEEK ONE // May 1–5, 2019



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Natural disasters are increasing in severity and frequency. Planning in advance for devastating events like hurricanes, floods, snowstorms, tornadoes, wildfires and earthquakes helps individuals and communities increase the health and safety of their population during a disaster, protects the local tax base, ensures continuity of essential services, and supports a faster recovery in the aftermath of a disaster. Here's how you can help your family and community:

- [Build to the latest codes](#)
- [Prepare your family](#)
- [Protect your home](#)
- [Benchmark your community's resilience](#)

Build to the Latest Codes

One of the best ways for communities to prepare for disasters is to build to the most up-to-date, modern building codes. Disaster mitigation through the adoption and enforcement of building codes provide you, your family and your community protection in the event of a natural disaster. Only 31 percent of hazard-prone jurisdictions adopt the latest two editions of hazard-resistant building codes. Broken down by hazard, that statistic is 59 percent for hurricane-prone, 33 percent for flood-prone, 60 percent for earthquake-prone, 46 percent for exposure to damaging wind, and 49 percent for tornado-prone jurisdictions.

It is also very important that codes are properly applied. Proper application requires that local building departments be sufficiently staffed with plan reviewers, inspectors and

other qualified professionals, and that building officials are trained and stay up to date with code advancements through continuing education (more on this in [Week Two](#)). Studies show good code enforcement decreases loss following disasters by up to 25 percent. When states and local jurisdictions apply the latest codes and they are diligently enforced, they are more likely to qualify for federal pre-disaster mitigation funding and for more post-disaster recovery assistance. Further, newly expanded [FEMA grants](#) will fund code adoption, administration and enforcement pre- and post- disaster – providing new resources for communities to update or build out enforcement efforts.

[The National Institute of Building Sciences](#) found that adopting the International Residential and Building Codes generates a national benefit of \$11 for every \$1 invested. The same report found that designing to *exceed* select provisions of the I-Codes and adopting the International Wildland-Urban Interface Code would save an additional \$4 for every \$1 spent.

The I-Codes, developed by the International Code Council, are a family of fifteen coordinated, modern building safety codes used in all 50 U.S. states and in many other countries that protect against disasters like fires, weather-related events and structural collapse.

The development and widespread adoption of building codes creates a uniform regulatory environment in which design professionals and contractors are held to a set of standards adopted by and applicable to the jurisdiction in which they work. The Rebuilding of London Act of 1666, after the Great Fire of London that same year, was the first building code of the modern era. Building regulation in the United States began in the late 1800s when major cities began to adopt and enforce building codes, also in response to large fires in densely populated urban areas. Over time, the scope of building codes broadened. Today, building codes address structural integrity, lighting, ventilation, safe egress, construction materials as well as fire resistance. They specify the minimum requirements to safeguard the health, safety and general welfare of building occupants.

To learn more about building codes, check out:

- [Introduction to Building Codes](#)
- [Building Codes: How They Help You](#)
- [Benefits of Building Permits](#)
- [FEMAs Building Codes Toolkit](#)

Documents summarizing the hazard-resistant provisions of the I-Codes are available at [FEMA's Building Code Resources page](#). CodeMasters, which are easy-to-follow reference

guides for designing in accordance with the latest I-Codes, are available on seismic, wind, snow, and flood loads, and are available [in the ICC store](#).

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Prepare Your Family

Making sure your family is prepared for any natural disaster is important. Below are some of the steps you can take to prepare your family and protect your home from natural disasters. Your actions can ensure that no matter what Mother Nature brings, you, your family and your community will be resilient.

Help is available from code officials post-disaster. Inter-local agreements, mutual aid agreements and state-to-state agreements through the [Emergency Management Assistance Compact \(EMAC\)](#) are providing help with building inspections when needed. The Code Council and the National Council of Structural Engineers Associations (NCSEA) have joined forces to create the [Disaster Response Alliance](#), a national, digital database of volunteers to assist local, state or federal entities who need skilled, trained and certified building safety professionals in the aftermath of a disaster.

Ensuring a safer future through training and education

WEEK TWO // May 6–12, 2019



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WEEK TWO // May 6–12, 2019

Importance of Training and Professional Development

Well-trained, motivated building safety professionals are key to creating and maintaining a successful built environment. Training is important because it helps code officials avoid mistakes and accidents and properly enforce the code. The building safety

field encompasses a wide gamut of specialties and offers many excellent career opportunities that contribute to the safety of the built environment. Here are just a sampling:

- A **building inspector** inspects structures to determine compliance with the various building codes and standards adopted by the jurisdiction.
- A **building official** manages the development, administration, interpretation, application and enforcement of the codes adopted by their jurisdiction.
- A **special inspector** provides a specialized inspection of structural material fabrication and placement, such as poured concrete, structural steel installation and fasteners, etc.
- A **permit technician** assists in the issuance of construction and development permits to ensure compliance with the provisions of a jurisdiction's adopted regulations and codes.
- A **fire marshal** develops and delivers fire prevention and implements public fire safety programs that provide for inspections of occupancies for life safety and fire issues in accordance with codes and standards adopted by their jurisdiction.
- A **plumbing inspector** inspects the installation, maintenance and alteration of plumbing systems complete with their fixtures, equipment, accessories, and appliances.

Visit the Code Council's [Learning Center](#) to learn more about available training options.

Building Careers for Today's Generation

Download [pdf](#) or [jpg](#). The building industry will experience a loss of 80 percent of the existing skilled workforce over a 15 year period, [according to a survey](#) conducted by the National Institute of Building Sciences in 2014. In fact, the entire building industry, including code officials, is looking at a severe workforce shortage of qualified candidates. This is a tremendous opportunity for job seekers!

The Code Council has developed [Safety 2.0](#) to welcome a new generation of members and leaders to the building safety profession. Programs include our [High School](#) and [College Technical Training Programs](#) and our [Military Families Career Path Program](#) — which promotes building safety careers for military personnel after service. If you're a student or professional looking for a new career, check out the [Building Safety Career Path](#).



Securing clean, abundant water for all communities

WEEK THREE // May 13–19, 2019



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Clean water is the world's most precious commodity. The World Health Organization estimates 844 million people lack basic drinking-water service. Building, plumbing and green codes help guard this precious commodity for future generations through proper construction, conservation and safe disposal.

Code officials are vigilant protectors of our water supply. Because of their dedicated service, you can turn on the tap in your home and draw sufficient, clean water. They take nothing for granted, so you can.

As a homeowner or renter, you need to pay attention to the water supply to your home even if your community offers water and sewage treatment. If there are faulty or no backflow protectors in your home, cross-contamination can happen even while residents are filling their backyard swimming pools, drawing some of the pool's chlorine into the home.



In Episode Seven of the ICC Pulse Podcast, the Code Council's Senior Director of PMG Resources [Lee Clifton](#) speaks with backflow prevention specialist [Bruce Rathburn](#) about plumbing cross-connection control programs. Rathburn is the past president of his local chapter of the American Backflow Prevention Association (ABPA)

and the immediate past president of ABPA International. [Click here](#) to listen to the podcast.

Construction professionals and homeowners: Partners in safety

WEEK FOUR // May 20–26, 2019



Construction professional and homeowners: Partners in safety

WEEK FOUR // May 20–26, 2019

Whether you are going through a minor remodeling job or major construction, the code official wants your project to be a success. Building safety professionals play a major role in keeping the public safe. They can also help avoid potential problems that could put you at risk and cost you time and money.

Before you begin any work that involves construction, visit your local building department. They will explain the process, which may include getting a building permit, plan review and inspection. This is also an opportunity to discuss incorporating [mitigation measures](#) to further protect your home from natural hazards. The process is designed to protect the home or building owner and the occupants.

Code officials ensure that all buildings, including homes, businesses and places of public assembly are built to required building safety codes, which address structural stability, fire safety, exits, sanitation, electricity, energy efficiency, flood protection and more. These building safety professionals are responsible for protecting public health, safety and welfare through effective code enforcement.

What are Building Codes?

Building codes and regulations have protected the public for thousands of years. The earliest known code of law—the Code of Hammurabi, king of the Babylonian Empire, written circa 2200 B.C.—assessed severe penalties, including death, if a building was not

constructed safely. Regulation of building construction in the United States dates back to the 1700s. In the late 1800s major cities began to adopt and enforce building codes in response to large fires in densely populated urban areas. The primary intent of early building codes was to reduce fire risk, but over time, their scope has broadened. Today, building codes are sets of regulations that address structural integrity, fire resistance, safe exits, lighting, ventilation, construction materials, and flood, wind, and earthquake protection. They specify the minimum requirements to safeguard the health, safety and general welfare of building occupants.

To learn more about building codes, check out [the Code Council's Introduction to Building Codes](#).

The [International Codes](#) (I-Codes), developed by the International Code Council, are a family of fifteen coordinated, modern building safety codes used in all 50 U.S. states and in many other countries that protect against disasters like fires, flood and other weather-related events and structural collapse. Only 31 percent of hazard-prone jurisdictions adopt what FEMA deems a hazard-resistant building code.

Documents summarizing the hazard-resistant provisions of the I-Codes are available at [FEMA's Building Code Resources page](#). This page also includes other guidance documents on codes and standards.

Communities across the globe have differing levels of codes and standards coverage. **Codes build confidence.** Does your community have the latest codes? Find your community on our list of [I-Codes adoptions](#), or check with your code officials and legislators to see what the situation is in your area.

Public safety is not the only byproduct afforded by modern codes. Architects, engineers, contractors and others in the building community can take advantage of the latest technological advances incorporated in these codes to impart viable savings to the consumer.

[The Codes Protect Your Investment](#)

The biggest investment most people will ever make is when they buy a home. Homes represent security, a place where people will live, raise their families and share their lives with others. Whether you own or rent a home, following the building codes during construction or remodeling can help protect your health and safety as well as your investment.

The building codes include research from experts that help ensure every phase of the construction process adheres to the latest building science and technology standards. In addition to helping make your home safe, the building codes can also help make your home more energy efficient, and conserve water and resources.

If your construction project does not comply with the codes adopted by your community, the value of your investment could be reduced. Property insurers may not cover work done without permits and inspections or your insurance premiums may become impractical to manage. If you decide to sell a home or building that has had modifications without a permit, you may be required to tear down the addition, leave it unoccupied or make costly repairs.

A property owner who can show that code requirements were strictly and consistently met—as demonstrated by a code official’s carefully maintained records—has a strong ally if something happens to trigger a potentially destructive lawsuit. Having the proper permits allows the code official to protect the public by reducing the potential hazards of unsafe construction and ensuring public health, safety and welfare.

By following code guidelines, the completed project will meet minimum standards of safety and will be less likely to cause injury to you, your family, your friends or future owners. Plus, you’ll benefit from the best energy efficient construction techniques that will continue to pay you back during the life of your home.

Invest wisely in your home or remodeling project. It’s a smart investment to build and remodel your home to the latest codes.



Innovations in building safety

WEEK FIVE // May 27–31, 2019

Science and Technology Lead the Way

Science and technology are leading the way for designing and constructing safe, efficient and resilient homes and buildings. Up-to-date building safety codes and

standards enable technology to be incorporated into buildings while ensuring safety for lives, properties and investments.

Drones no longer are novelties, but are increasingly being used to maintain construction site security and observe post-disaster building damage, reducing the opportunity for accidents and injuries.

Someday, robotics may be used on construction sites, overseen by skilled technicians, to handle tasks such as painting or laying masonry.

The **International Codes** (I-Codes), developed by the International Code Council, are the most widely used and adopted set of building safety codes in the world and use the latest technology for energy and water savings for homeowners and businesses. We remain committed to working with member jurisdictions and industry partners to bring the right building products and practices to market, labeling new homes and structures as more efficient, and spreading the word about the need for wiser resource usage and building resilient structures.

The building safety industry is on the cutting edge of technology and building science. From green construction and resiliency to product evaluation, certification, and codification, the ICC Family of Companies is part of this technological transformation to make our buildings safer and our industry more advanced.

Green construction

Green building strategies reinforce the societal health, life and safety benefits that building codes offer, providing resilience to natural disasters, a changing climate, resource consumption and management, and service interruptions due to unforeseen events. Green building can also aid occupant comfort and health, save money and preserve resources during the design, construction and operation of buildings. Many homeowners, businesses and building professionals have voluntarily sought to incorporate green building strategies into their projects, and a number of local and national systems have been developed to guide green building practices.

The 2018 **International Green Construction Code** (IgCC) provides the design and construction industry with a very effective way to deliver sustainable, resilient, high-performance buildings. The 2018 IgCC provides fundamental criteria for energy efficiency, resource conservation, water safety, land use, site development, indoor environmental quality and building performance that can be broadly adopted.

Code compliant building products

The certification and accreditation of building products are critical to the building code enforcement process. Technical evaluations of building product listings and plumbing, mechanical and fuel gas listings provide regulators and construction professionals with clear evidence that products and systems comply with codes and technical standards. The [ICC Evaluation Service](#) (ICC-ES) issues reports on product code compliance that are made available free of charge to code officials, contractors, specifiers, architects, engineers and anyone else with an interest in the building industry and construction. ASTM International develops voluntary standards for materials and products, including the ongoing development of a Standard Practice for Determining the Flood Damage Resistance Rating of Materials and Assemblies.

Accreditation of entities that support code compliance

There is a need for independent verification that businesses, organizations and governmental entities that facilitate building codes and standards are competent and comply with industry and/or international standards. The [International Accreditation Service \(IAS\)](#) accredits testing and calibration laboratories, inspection agencies, building departments, fabricator inspection programs and special inspection agencies to ensure adherence to acknowledged standards.

Building department codification

Codification is the process by which local governments keep their laws organized, structured and updated to serve as a reliable legal reference. [General Code](#) updates and digitizes local codes, integrating new laws into the existing code. It works with municipalities to create a single, consistent resource and compiles the information into a comprehensive code. It subsequently publishes this code resource in print or in a convenient online platform.

Resilience benchmarking

Buildings house many of the most critical functions of our communities, including schools, hospitals, businesses and residences. The Code Council and the [Alliance for National and Community Resilience](#) (ANCR) recently released their community resilience benchmarks on buildings. This unique benchmark document provides specific guidelines for increasing the safety, sustainability and resilience of communities' building stock. Throughout 2019, ANCR will engage subject matter experts in the development of additional benchmarks including housing, business, energy and water infrastructure. Resilience starts with strong, regularly updated and properly implemented building codes.

So, whether you're considering renovating, remodeling or building from the ground up, look for the latest technology and make sure it is based on the codes and standards that put safety and efficiency first.