TRUCTURAL ENGINEE

- Identifying Common Issues and Symptoms of residential foundations
 Identifying Common Issues and Symptoms of residential foundations
 Spotting Early Warning Signs of Foundation Stress Recognizing Cracks and
 Shifts in Concrete Floors Understanding Sticky Doors and Window
 Alignment Pinpointing Sinking Spots around the Foundation Perimeter
 Tracking Water Intrusion as a Contributor to Structural Damage How Uneven
 Floors Reveal Deeper Foundation Concerns Identifying Subtle Changes in
 Exterior Walls When Hairline Drywall Cracks Indicate Movement Monitoring
 Seasonal Soil Movement for Foundation Clues Evaluating Soil Erosion and
 Its Impact on Stability Noting Shifting Porches and Deck Attachments
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- Soil and Environmental Factors influencing home foundations Soil and Environmental Factors influencing home foundations Examining Expansive Clay in Residential Areas Understanding Sandy Loam and Drainage Properties Measuring Soil Moisture for Stabilizing Foundations Impact of Freeze Thaw Cycles on Concrete Slabs Recognizing Erosion Patterns that Undermine Support Coordinating Landscaping to Control Soil Shifts Evaluating Groundwater Levels for Long Term Stability Identifying Seasonal Soil Movement in Coastal Regions Reviewing Impact of Tree Roots on Foundation Integrity Forecasting Effects of Prolonged Drought on Soil Behavior Managing Flood Risk through Strategic Elevation Observing Climate Trends for Anticipating Soil Swell





* Understanding Soil Erosion as a Threat to Residential Foundations

Okay, so let's talk about soil erosion and why it should be on your radar if you own a home. Structural engineers assess damage before major foundation repairs begin foundation repair service building material. We're not just talking about a little mud in the yard here; we're talking about a real threat to the very foundation of your house. Think of it like this: your foundation is the anchor, the thing that keeps everything stable. But what happens when the soil supporting that anchor starts to wash away?

That's soil erosion in action. Rain, wind, even just the way water flows naturally can gradually eat away at the ground around your foundation. Over time, this can create voids and weaknesses. The soil loses its ability to support the weight of the structure above, and that's when the problems start piling up, literally.

We're talking about cracks in your walls, doors and windows that stick, and floors that aren't level anymore. These aren't just cosmetic issues; they're signs that your foundation is struggling, possibly shifting or settling. And the longer you ignore it, the more expensive and complicated the repairs become.

Ignoring soil erosion around your home is like ignoring a slow leak in your car's engine. It might seem small at first, but eventually, it'll lead to a major breakdown. So, paying attention to the health of the soil around your foundation is a crucial part of responsible homeownership. It's about protecting your investment and ensuring your home remains a safe and stable place to live.

* Common Causes of Soil Erosion Around Homes

Okay, let's talk about why your soil might be disappearing around your house. It's not magic, and it's usually a combination of things. Think of your soil as a delicate ecosystem, and we, sometimes unintentionally, disrupt it.

One big culprit is plain old water. Rain's a good thing, right? Well, not always. If your downspouts are dumping water in one spot instead of dispersing it, you're creating a mini-river that'll happily carry away topsoil. The same goes for areas where water naturally flows – if you haven't provided a good route for it, it'll make its own, often taking soil with it. Poor drainage is a silent soil thief.

Then there's the issue of lack of vegetation. Bare soil is basically an invitation for erosion. Plant roots are like tiny anchors, holding the soil together. If you've got large patches of exposed dirt, especially on slopes, you're just asking for trouble. Think of it like this: a lawn is a soil shield, bare spots are its weak points.

And let's not forget about us, the homeowners. Construction projects, even small ones, can disturb the soil structure. Digging, moving dirt, heavy machinery – it all compacts the soil and makes it more vulnerable. Even something as simple as repeatedly walking the same path can wear away vegetation and lead to erosion.

Finally, sometimes it's just the lay of the land. Steep slopes are naturally more prone to erosion. If your house is built on a hillside, you need to be extra vigilant about managing water runoff and maintaining good ground cover. It's all about understanding the particular challenges of your property and taking steps to address them. So, keep an eye on those bare spots, manage your water, and remember, a healthy lawn is a happy (and stable) lawn.

* Identifying Signs of Soil Erosion Affecting Foundation Stability

Okay, let's talk about soil erosion and how it can mess with your house's foundation. It's not something most people think about every day, but it's a real issue, and catching it early can save you a lot of headaches (and money) later on. Basically, soil erosion is when the dirt around your foundation starts to get washed or blown away. This can happen for all sorts of reasons – heavy rain, poor drainage, even just the way your yard slopes.

So, what are the signs to look for? Well, one of the most obvious is seeing exposed foundation. If you used to have soil covering part of the concrete, and now you don't, that's a red flag. Another thing to watch for is cracks in your foundation, especially if they're new or getting wider. These cracks can be a sign that the soil supporting your house is shifting or settling unevenly because it's been eroded away.

Pay attention to the landscaping too. Are there areas where the soil is noticeably lower than it used to be? Are there gullies forming after it rains? Are plants struggling to grow near the foundation? These can all be indicators that soil is being washed away.

Finally, look for problems inside the house. Sticking doors or windows, cracks in the walls, or even a sloping floor can all be signs of foundation trouble caused by soil erosion. It's like a chain reaction – the soil goes, the foundation weakens, and then the problems show up inside your home.

The key is to be observant. Walk around your house regularly and take a good look at the foundation and surrounding soil. If you see any of these warning signs, don't ignore them. It's best to call in a professional to assess the situation and recommend a fix. Addressing erosion early is much easier (and cheaper) than dealing with major foundation repairs down the road. Think of it as preventative maintenance for your home's structural health.

* Methods for Evaluating the Extent of Soil Erosion Damage

Alright, so you're trying to figure out how bad the soil erosion is, right? How much damage has actually been done? Well, there's no single magic bullet, it's a combination of looking at things in different ways. Think of it like a doctor diagnosing an illness – they don't just take your temperature and call it a day. They look at your symptoms, run tests, and piece it all together.

First, there's the visual stuff. You can literally walk around and *see* the erosion. Rills and gullies – those little channels and bigger ditches carved into the earth – are big red flags. Look at the plant cover. Is it sparse? Are there exposed roots? That tells you soil's been washed away. Then there's evidence of sediment being moved – piles of dirt against fences, muddied streams. This is relatively easy to do, but it's subjective. One person's "minor erosion" could be another's "disaster zone."

Next, you can get more technical. There are things like measuring soil loss over time. You might use erosion pins – basically, sticks stuck in the ground – and see how much the soil level drops around them. Or you can look at sediment accumulation in reservoirs or waterways. The more silt building up, the more erosion's happening upstream. There are also rainfall simulators, where you artificially rain on a patch of ground and measure how much soil gets washed away. These are much more precise, but they take more time and equipment.

Finally, there are models. These are computer programs that use things like rainfall data, soil type, slope, and land cover to predict how much erosion *should* be happening. You can then compare that to what you're actually seeing on the ground. The Revised Universal Soil Loss Equation (RUSLE) is a common one. But remember, models are just estimates. They're only as good as the data you put in.

Ultimately, evaluating soil erosion damage is about using all these methods together. Visual observations give you a quick overview. Technical measurements provide hard data. And models help you understand the bigger picture. You need to consider all the information to accurately assess the situation and figure out what needs to be done. It's a bit like detective work, really. You're piecing together the clues to solve the mystery of the disappearing soil.

* The Link Between Soil Erosion and Foundation Problems (Cracks, Settlement)

Okay, so you're thinking about soil erosion and how it messes with the stability of things, especially foundations? It's a pretty straightforward connection, really. Think about it this way: your house, or any building for that matter, is sitting on soil. That soil is its support system. Now, what happens when that support system starts to crumble, literally? That's where soil erosion comes in.

Rain, wind, even just the passage of time can slowly wear away at the soil surrounding your foundation. When this happens, the soil that was once tightly packed and providing even support starts to loosen and disappear. This creates voids and uneven pressure under and around the foundation.

What's the result? Well, you might start seeing cracks in your foundation walls. These can be small hairline fractures at first, but they can quickly widen and deepen as the erosion continues. You might also notice your house starting to settle unevenly. Doors and windows might stick, floors might slope, and you might even get that unsettling feeling that something's just "off." That's because the foundation is shifting and moving in response to the weakened soil beneath it.

In essence, soil erosion undermines the very thing holding your house up. It's like pulling bricks out from under a wall – eventually, things are going to start to crack and crumble. So, understanding the link between soil erosion and foundation problems is crucial if you want to keep your home structurally sound and avoid costly repairs down the road. It's all about protecting that essential support system beneath your feet.

* Repair Solutions for Foundations Damaged by Soil Erosion

Okay, so you've got a foundation, and the ground around it is, well, disappearing. Soil erosion, that sneaky culprit, is eating away at the land that supports your home. It's a scary thought, but don't panic! There are ways to fight back and shore up your home's stability.

First, let's talk about the basics. We're not talking about a cosmetic fix here. We're talking about preventing further erosion and potentially lifting and reinforcing your foundation. Think of it like this: you're not just patching a hole, you're building a stronger shield against future problems.

One common approach is to improve drainage. Often, erosion is caused by water runoff pooling near the foundation. Gutters can be cleaned and extended to direct water away. Grading the soil around the house to slope away from the foundation is also a big help. Imagine creating a little hill that gently guides water elsewhere – that's the idea.

Then there are physical barriers. Retaining walls, built with stone, concrete, or even treated timber, act as a solid defense against erosion. These walls hold back the soil and prevent it from washing away. They can also be quite attractive, adding to your landscaping.

For more serious erosion, or when the soil is particularly unstable, you might need to consider soil stabilization techniques. This could involve injecting grout or foam into the soil to fill voids and create a stronger, more cohesive mass. Think of it like giving the soil a shot of super-glue. It's a more invasive method, but it can be incredibly effective in the long run.

And don't forget about vegetation! Plants with deep root systems are natural erosion fighters. They act like tiny anchors, holding the soil in place. Ground cover plants, shrubs, and even trees can all play a role in preventing erosion around your foundation. Plus, they make your yard look nicer!

Ultimately, the best solution depends on the severity of the erosion, the type of soil, and the specific characteristics of your property. It's definitely worth getting a professional assessment to determine the most effective and cost-efficient approach. Don't wait until the problem gets worse! Addressing soil erosion early can save you a lot of headaches (and money) down the road. Think of it as an investment in the long-term health and stability of your home.

* Preventative Measures to Mitigate Future Soil Erosion Risks

Okay, so we've been looking at soil erosion, right? And how it's messing with the stability of, well, everything. It's not just about losing a little dirt; it's about landslides, reduced crop yields, and even water pollution. So, the big question is: what can we *do* about it? What preventative measures can we actually take to calm things down and lessen the risk of future erosion?

Honestly, there's no silver bullet. It's about a combination of things, tailored to the specific situation. For example, if we're talking about agricultural land, things like contour plowing become pretty important. Basically, you're plowing across the slope, not up and down it, so you create these little ridges that slow down water runoff. That gives the water more time to soak into the ground, and less time to carry away valuable topsoil. Terracing is another smart move, especially on steeper slopes. It's like creating a series of steps, which breaks up the flow of water and prevents it from gaining too much momentum. Then there's the whole business of ground cover. Bare soil is just begging to be eroded, so keeping the soil covered is key. This could mean planting cover crops during the off-season, leaving crop residue on the field after harvest, or even just using mulch. The idea is to protect the soil from the direct impact of rainfall and wind.

Beyond agriculture, things like reforestation and proper land management are crucial. Trees and vegetation act like natural anchors, their roots holding the soil together. Overgrazing, deforestation, and poorly planned construction projects can all strip away that protective layer and leave the soil vulnerable.

And let's not forget about infrastructure. Building retaining walls, stabilizing slopes with netting, and improving drainage systems can all play a significant role in preventing erosion, particularly in areas prone to landslides or flooding.

Ultimately, it's about understanding the specific risks in a given area, identifying the underlying causes of erosion, and then implementing a combination of preventative measures that address those causes. It's not a quick fix, but a long-term commitment to protecting our soil resources and ensuring a more stable future. It's about working *with* nature, not against it, to keep the ground beneath our feet where it belongs.



About building code

Globe Subject. You may improve this article, discuss the issue on the talk page, or create a new article, as appropriate. (November 2021) (Learn how and when to remove this message) Not to be confused with Zoning laws.



Code Violation: This fire-rated concrete block wall is penetrated by cable trays and electrical cables. The hole should be firestopped to restore the fire-resistance rating of the wall. Instead, it is filled with flammable polyurethane foam.

A **building code** (also **building control** or **building regulations**) is a set of rules that specify the standards for construction objects such as buildings and non-building structures. Buildings must conform to the code to obtain planning permission, usually from a local council. The main purpose of building codes is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures $\tilde{A}f\hat{A}\phi\hat{A}\phi\hat{a}\in\hat{s}\hat{A}\neg\tilde{A}...\hat{A}$ — $\tilde{A}f\hat{A}\phi\hat{A}\phi\hat{a}\in\hat{s}\hat{A}\neg\tilde{A}...\hat{A}$ for example, the building codes in many countries require engineers to consider the effects of soil liquefaction in the design of new buildings.[¹] The building code becomes law of a particular jurisdiction when formally enacted by the appropriate governmental or private authority.[²]

Building codes are generally intended to be applied by architects, engineers, interior designers, constructors and regulators but are also used for various purposes by safety inspectors, environmental scientists, real estate developers, subcontractors, manufacturers of building products and materials, insurance companies, facility managers, tenants, and others. Codes regulate the design and construction of structures where adopted into law.

Examples of building codes began in ancient times.[³] In the USA the main codes are the International Building Code or International Residential Code [IBC/IRC], electrical codes and plumbing, mechanical codes. Fifty states and the District of Columbia have adopted the I-Codes at the state or jurisdictional level.[⁴] In Canada, national model codes are published by the National Research Council of Canada.[⁵] In the United Kingdom, compliance with Building Regulations is monitored by building control bodies, either Approved Inspectors or Local Authority Building Control departments. Building Control regularisation charges apply in case work is undertaken which should have had been inspected at the time of the work if this was not done.[⁶]

Types

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The practice of developing, approving, and enforcing building codes varies considerably among nations. In some countries building codes are developed by the government agencies or quasi-governmental standards organizations and then enforced across the country by the central government. Such codes are known as the **national building codes** (in a sense they enjoy a mandatory nationwide application).

In other countries, where the power of regulating construction and fire safety is vested in local authorities, a system of model building codes is used. Model building codes have no legal status unless adopted or adapted by an authority having jurisdiction. The developers of model codes urge public authorities to reference model codes in their laws, ordinances, regulations, and administrative orders. When referenced in any of these legal instruments, a particular model code becomes law. This practice is known as 'adoption by reference'. When an adopting authority decides to delete, add, or revise any portions of the model code adopted, it is usually required by the model code developer to follow a formal adoption procedure in which those modifications can be documented for legal purposes.

There are instances when some local jurisdictions choose to develop their own building codes. At some point in time all major cities in the United States had their own building codes. However, due to ever increasing complexity and cost of developing building regulations, virtually all municipalities in the country have chosen to adopt model codes instead. For example, in 2008 New York City abandoned its proprietary *1968 New York City Building Code* in favor of a customized version of the International Building Code.[⁷] The City of Chicago remains the only municipality in America that continues to use a building code the city developed on its own as part of the *Municipal Code of Chicago*.

In Europe, the Eurocode: Basis of structural design, is a pan-European building code that has superseded the older national building codes. Each country now has National Annexes to localize the contents of the Eurocodes.

Similarly, in India, each municipality and urban development authority has its own building code, which is mandatory for all construction within their jurisdiction. All these local building codes are variants of a National Building Code,[⁸] which serves as model code proving guidelines for regulating building construction activity.

Scope

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The purpose of building codes is to provide minimum standards for safety, health, and general welfare including structural integrity, mechanical integrity (including sanitation, water supply, light, and ventilation), means of egress, fire prevention and control, and energy conservation[⁹][¹⁰] Building codes generally include:

 Standards for structure, placement, size, usage, wall assemblies, fenestration size/locations, egress rules, size/location of rooms, foundations, floor assemblies, roof structures/assemblies, energy efficiency, stairs and halls, mechanical, electrical, plumbing, site drainage & storage, appliance, lighting, fixtures standards, occupancy rules, and swimming pool regulations

- Rules regarding parking and traffic impact
- Fire code rules to minimize the risk of a fire and to ensure safe evacuation in the event of such an emergency *citation needed*
- Requirements for earthquake (seismic code), hurricane, flood, and tsunami resistance, especially in disaster prone areas or for very large buildings where a failure would be catastrophic[[]*citation needed*]
- Requirements for specific building uses (for example, storage of flammable substances, or housing a large number of people)
- Energy provisions and consumption
- Grandfather clauses: Unless the building is being renovated, the building code usually does not apply to existing buildings.
- Specifications on components
- Allowable installation methodologies
- Minimum and maximum room ceiling heights, exit sizes and location
- Qualification of individuals or corporations doing the work
- For high structures, anti-collision markers for the benefit of aircraft

Building codes are generally separate from zoning ordinances, but exterior restrictions (such as setbacks) may fall into either category.

Designers use building code standards out of substantial reference books during design. Building departments review plans submitted to them before construction, issue permits [or not] and inspectors verify compliance to these standards at the site during construction.

There are often additional codes or sections of the same building code that have more specific requirements that apply to dwellings or places of business and special construction objects such as canopies, signs, pedestrian walkways, parking lots, and radio and television antennas.

Criticism

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Building codes have been criticized for contributing to housing crisis and increasing the cost of new housing to some extent, including through conflicting code between different administrators[11] Proposed improvements include regular review and cost-benefit analysis of building codes[12] promotion of low-cost construction materials and building codes suitable to mass production[11] reducing bureaucracy, and promoting transparency.[13]

History

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Antiquity

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Building codes have a long history. The earliest known written building code is included in the Code of Hammurabi,^[3] which dates from circa 1772 BC.

The book of Deuteronomy in the Hebrew Bible stipulated that parapets must be constructed on all houses to prevent people from falling off.^{[14}]

In the Chinese book of rites it mentions that ancestral temples and houses should be a certain standard length in ancient China they measured land in the chu or well field system so it was important to be precise though most of the actual lengths are lost or obscure [¹⁵][¹⁶]

In ancient Japan a certain official destroyed a courtiers house because the size was above his rank. $\left[^{17}\right]$

Modern era

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France

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In Paris, under the reconstruction of much of the city under the Second Empire (1852–70), great blocks of apartments were erected[¹⁸] and the height of buildings was limited by law to five or six stories at most.

United Kingdom

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After the Great Fire of London in 1666, which had been able to spread so rapidly through the densely built timber housing of the city, the Rebuilding of London Act 1666 was passed in the same year as the first significant building regulation.^[19] Drawn up by Sir Matthew Hale, the act regulated the rebuilding of the city, required housing to have some fire resistance capacity and authorised the City of London Corporation to reopen and widen roads.^[20] The Laws of the Indies were passed in the 1680s by the Spanish Crown to regulate the urban planning for colonies throughout Spain's worldwide imperial possessions.

The first systematic national building standard was established with the Metropolitan Buildings Act 1844. Among the provisions, builders were required to give the district surveyor two days' notice before building, regulations regarding the thickness of walls, height of rooms, the materials used in repairs, the dividing of existing buildings and the placing and design of chimneys, fireplaces and drains were to be enforced and streets had to be built to minimum requirements.²¹

The Metropolitan Buildings Office was formed to regulate the construction and use of buildings throughout London. Surveyors were empowered to enforce building regulations, which sought to improve the standard of houses and business premises, and to regulate activities that might threaten public health. In 1855 the assets, powers and responsibilities of the office passed to the Metropolitan Board of Works.

United States

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The City of Baltimore passed its first building code in 1891.^[22] The Great Baltimore Fire occurred in February 1904. Subsequent changes were made that matched other cities.^[23] In 1904, a Handbook of the Baltimore City Building Laws was published. It served as the building code for four years. Very soon, a formal building code was drafted and eventually adopted in 1908.

The structural failure of the tank that caused the Great Molasses Flood of 1919 prompted the Boston Building Department to require engineering and architectural calculations be filed and signed. U.S. cities and states soon began requiring sign-off by registered professional engineers for the plans of major buildings.^[24]

More recently, the 2015 Berkeley balcony collapse has prompted updates to California's balcony building codes, set for 2025, which include stricter material requirements, enhanced load-bearing standards, and mandatory inspections which known as SB326 and SB721.^{[25}]These laws mandate regular inspections every six years for multifamily buildings. Property owners and HOAs are required to address any structural or waterproofing issues identified during inspections to ensure compliance and safety. Failure to comply can result in fines, increased liability, and legal consequences. The updates aim to prevent tragedies like the Berkeley collapse, which was caused by dry rot and structural failure, by ensuring the long-term safety and durability of elevated structures.^{[26}]

Energy codes

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The current energy codes [*clarification needed*] of the United States are adopted at the state and municipal levels and are based on the International Energy Conservation Code (IECC). Previously, they were based on the Model Energy Code (MEC). As of March 2017, the following residential codes have been partially or fully adopted by states:[²⁷]

- 2015 IECC or equivalent (California, Illinois, Maryland, Massachusetts, Michigan, Pennsylvania, New Jersey, New York, Vermont, Washington)
- 2012 IECC or equivalent (Alabama, Connecticut, Delaware, District of Columbia, Florida, Iowa, Minnesota, Nevada, Rhode Island, Texas)
- 2009 IECC or equivalent (Arkansas, Georgia, Idaho, Indiana, Kentucky, Louisiana, Montana, Nebraska, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Virginia, West Virginia, Wisconsin)
- 2006 IECC or equivalent (Utah)
- 2006 IECC or no statewide code (Alaska, Arizona, Colorado, Kansas, Maine, Mississippi, Missouri, North Dakota, South Dakota, Wyoming)

Australia

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Australia uses the National Construction Code.

See also

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- Building officials
- Construction law
- Earthquake-resistant structures
- Energy Efficiency and Conservation Block Grants
- Outline of construction
- Seismic code
- Uniform Mechanical Code
- $\circ\,$ Variance (land use) permission to vary zoning and sometimes building to code

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- Banksman
- Boilermaker
- Bricklayer
- Carpenter
- Concrete finisher
- Construction foreman
- Construction worker

Trades workers (List)

Glazier

• Electrician

- Ironworker
- Millwright
- Plasterer
- Plumber
- Roofer
- Steel fixer
- Welder
- American Institute of Constructors (AIC)
- American Society of Civil Engineers (ASCE)
- Asbestos Testing and Consultancy Association (ATAC)
- Associated General Contractors of America (AGC)
- Association of Plumbing and Heating Contractors (APHC)
- $\circ\,$ Build UK

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- Construction History Society
- Chartered Institution of Civil Engineering Surveyors (CICES)
- Chartered Institute of Plumbing and Heating Engineering (CIPHE)
- Civil Engineering Contractors Association (CECA)
- The Concrete Society
- Construction Management Association of America (CMAA)
- Construction Specifications Institute (CSI)

Organizations

- Home Builders Federation (HBF)
- Lighting Association
- National Association of Home Builders (NAHB)
- National Association of Women in Construction (NAWIC)
- National Fire Protection Association (NFPA)
- National Kitchen & Bath Association (NKBA)
- National Railroad Construction and Maintenance Association (NRC)
- National Tile Contractors Association (NTCA)
- Railway Tie Association (RTA)
- Royal Institution of Chartered Surveyors (RICS)
- Scottish Building Federation (SBF)
- Society of Construction Arbitrators

By country	 India Iran Japan Romania Turkey United Kingdom United States
Regulation	 Building code Construction law Site safety Zoning
Architecture	 Style List Industrial architecture British Indigenous architecture Interior architecture Landscape architecture Vernacular architecture
Engineering	 Architectural engineering Building services engineering Civil engineering Coastal engineering Construction engineering Structural engineering Earthquake engineering Environmental engineering Geotechnical engineering
Methods	 List Earthbag construction Modern methods of construction Monocrete construction Slip forming

- Building material
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 - Millwork
- Construction bidding
- Construction delay
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- Construction loan
- Construction management
- Construction waste
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- Design—bid—build
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- Heavy equipment
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- **Other topics**
- Lists of buildings and structures
 - List of tallest buildings and structures
- Megaproject
- Megastructure
- Plasterwork
 - Damp
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About home inspection



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A disaster inspector at work in the United States assessing tornado damage to a house

A **home inspection** is a limited, non-invasive examination of the condition of a home, often in connection with the sale of that home. Home inspections are usually conducted by a **home inspector** who has the training and certifications to perform such inspections. The inspector prepares and delivers to the client a written report of findings. In general, home inspectors recommend that potential purchasers join them during their onsite visits to provide context for the comments in their written reports. The client then uses the knowledge gained to make informed decisions about their pending real estate purchase. The home inspector describes the condition of the home at the time of inspection but does not guarantee future condition, efficiency, or life expectancy of systems or components.

Sometimes confused with a real estate appraiser, a home inspector determines the condition of a structure, whereas an appraiser determines the value of a property. In the United States, although not all states or municipalities regulate home inspectors, there are various professional associations for home inspectors that provide education, training, and networking opportunities. A professional home inspection is an examination of the current condition of a house. It is not an inspection to verify compliance with appropriate codes; building inspection is a term often used for building code compliance inspections in the United States. A similar but more complicated inspection of commercial buildings is a property condition assessment. Home inspections identify problems but building diagnostics identifies solutions to the found problems and their predicted outcomes. A property inspection is a detailed visual documentation of a property's structures, design, and fixtures. Property Inspection provides a buyer, renter, or other information consumer with valuable insight into the property's conditions prior to purchase. House-hunting can be a difficult task especially when you can't seem to find one that you like. The best way to get things done is to ensure that there is a property inspection before buying a property.

North America

[edit]

In Canada and the United States, a contract to purchase a house may include a contingency that the contract is not valid until the buyer, through a home inspector or other agents, has had an opportunity to verify the condition of the property. In many states and provinces, home inspectors are required to be licensed, but in some states, the profession is not regulated. Typical requirements for obtaining a license are the completion of an approved training course and/or a successful examination by the state's licensing board. Several states and provinces also require inspectors to periodically obtain continuing education credits in order to renew their licenses. *Licitation need* Unless specifically advertised as part of the home inspection, items often needed to satisfy mortgage or tile requirements such as termite ("pest") inspections must be obtained separately from licensed and regulated companies.

In May 2001, Massachusetts became the first state to recognize the potential conflict of interest when real estate agents selling a home also refer or recommend the home inspector to the potential buyer. *citation needed* As a result, the real estate licensing law in Massachusetts was amended ^[1] *non-primary source needed* to prohibit listing real estate agents from directly referring home inspectors. The law also prohibits listing agents from giving out a "short" name list of inspectors. The only list that can be given out is the complete list of all licensed home inspectors in the state.

In September 2018, the California state legislature passed Senate Bill 721 (SB 721),^[2] which requires buildings with specific conditions, such as having exterior elevated structures, to undergo inspections by licensed professionals. These inspections must be conducted by qualified individuals, such as structural engineering firms,^[3] and a detailed report must be issued. Failure to comply with these requirements can result in penalties for property owners.

Ancillary services such as inspections for wood destroying insects, radon testing, septic tank inspections, water quality, mold, (or excessive moisture which may lead to mold), and private well inspections are sometimes part of home inspector's services if duly qualified.

In many provinces and states, home inspection standards are developed and enforced by professional associations, such as, worldwide, the International Association of Certified Home Inspectors (InterNACHI); in the United States, the American Society of Home Inspectors (ASHI), and the National Association of Home Inspectors (NAHI)(No Longer active 10/2017); and, in Canada, the Canadian Association of Home and Property Inspectors (CAHPI), the Professional Home & Property Inspectors of Canada (PHPIC) and the National Home Inspector Certification Council (NHICC).

Currently, more than thirty U.S. states regulate the home inspection industry in some form.

Canada saw a deviation from this model when in 2016 an association-independent home inspection standard was completed. This was developed in partnership with industry professionals, consumer advocates, and technical experts, by the Canadian Standards Association. The CAN/CSA A770-16 Home Inspection Standard was funded by three provincial governments with the intent to be the unifying standard for home inspections carried out within Canada. It is the only home inspection standard that has been endorsed by the Standards Council of Canada.

In Canada, there are provincial associations which focus on provincial differences that affect their members and consumers. Ontario has the largest population of home inspectors which was estimated in 2013 as part of a government survey at being around 1500.^[4]

To date, Ontario Association of Certified Home Inspectors is the only association which has mandated that its members migrate to the CAN/CSA A770-16 Home Inspection Standard, with a date of migration set as February 28, 2020. Other national and provincial associations have set it as an option to be added to other supported standards.

In Canada, only Alberta and British Columbia have implemented government regulation for the home inspection profession. The province of Ontario has proceeded through the process, with the passage of regulatory procedure culminating in the Home Inspection Act, 2017 to license Home Inspectors in that province. It has received royal assent but is still awaiting the development of regulations and proclamation to become law.

In Ontario, there are two provincial Associations, OAHI (the Ontario Association of Home Inspectors) and OntarioACHI (the Ontario Association of Certified Home Inspectors). Both claim to be the largest association in the province. OAHI, formed by a private member's Bill in the Provincial Assembly, has the right in law to award the R.H.I. (Registered Home Inspector) designation to anyone on its membership register. The R.H.I. designation, however, is a reserved designation, overseen by OAHI under the Ontario Association of Home Inspectors Act, 1994. This Act allows OAHI to award members who have passed and maintained strict criteria set out in their membership bylaws and who operate within Ontario. Similarly, OntarioACHI requires equally high standards for the award of their certification, the Canadian-Certified Home Inspector (CCHI) designation. To confuse things, Canadian Association of Home and Property Inspectors (CAHPI) own the copyright to the terms Registered Home Inspector and RHI. Outside of Ontario, OAHI Members cannot use the terms without being qualified by CAHPI.

The proclamation of the Home Inspection Act, 2017, requires the dissolution of the Ontario Association of Home Inspectors Act, 1994, which will remove the right to title in Ontario of the RHI at the same time removing consumer confusion about the criteria for its award across Canada.

United Kingdom

[edit]

A home inspector in the United Kingdom (or more precisely in England and Wales), was an inspector certified to carry out the Home Condition Reports that it was originally anticipated would be included in the Home Information Pack.

Home inspectors were required to complete the ABBE Diploma in Home Inspection to show they met the standards set out for NVQ/VRQ competency-based assessment (Level 4). The government had suggested that between 7,500 and 8,000 qualified and licensed home inspectors would be needed to meet the annual demand of nearly 2,000,000 Home Information Packs. In the event, many more than this entered training, resulting in a massive oversupply of potential inspectors.

With the cancellation of Home Information Packs by the coalition Government in 2010, the role of the home inspector in the United Kingdom became permanently redundant.

Inspections of the home, as part of a real estate transaction, are still generally carried out in the UK in the same manner as they had been for years before the Home Condition Report process. Home Inspections are more detailed than those currently offered in North America. They are generally performed by a chartered member of the Royal Institution of Chartered Surveyors.

India

[edit]

The concept of home inspection in India is in its infancy. There has been a proliferation of companies that have started offering the service, predominantly in Tier-1 cities such as Bangalore, Chennai, Kolkata, Pune, Mumbai, etc. To help bring about a broader understanding among the general public and market the concept, a few home inspection companies have come together and formed the Home Inspection Association of India.⁵

After RERA came into effect, the efficacy and potency of home inspection companies has increased tremendously. The majority of homeowners and potential home buyers do not know what home inspection is or that such a service exists.

The way that home inspection is different in India^[6] than in North America or United Kingdom is the lack of a government authorised licensing authority. Apart from the fact that houses in India are predominantly built with kiln baked bricks, concrete blocks or even just concrete walls (predominantly in high rise apartments) this means the tests conducted are vastly different. Most home inspection companies conduct non-destructive testing of the property, in some cases based on customer requirement, tests that require core-cutting are also performed.

The majority of homeowners are not aware of the concept of home inspection in India. The other issue is that the balance of power is highly tilted toward the builder; this means the home buyers are stepping on their proverbial toes, because in most cases, the home is the single most expensive purchase in their lifetime, and the homeowners do not want to come across as antagonising the builders.

Home inspection standards and exclusions

[edit]

Some home inspectors and home inspection regulatory bodies maintain various standards related to the trade. Some inspection companies offer 90-day limited warranties to protect clients from unexpected mechanical and structural failures; otherwise, inspectors are not responsible for future failures.[^a] A general inspection standard for buildings other than residential homes can be found at the National Academy of Building Inspection Engineers.

Many inspectors may also offer ancillary services such as inspecting pools, sprinkler systems, checking radon levels, and inspecting for wood-destroying organisms. The CAN/CSA-A770-16 standard allows this (in-fact it demands swimming pool safety inspections as a requirement) and also mandates that the inspector be properly qualified to offer these. Other standards are silent on this.

Types of inspections

[edit]

Home buyers and home sellers inspections

[edit]

Home inspections are often used by prospective purchasers of the house in question, in order to evaluate the condition of the house prior to the purchase. Similarly, a home seller can elect to have an inspection on their property and report the results of that inspection to the prospective buyer.

Foreclosure inspection

[edit]

Recently foreclosed properties may require home inspections.

Four point inspection

[edit]

An inspection of the house's roof, HVAC, and electrical and plumbing systems is often known as a "four-point inspection", which insurance companies may require as a condition for homeowner's insurance.

Disaster inspection

[edit]

Home inspections may occur after a disaster has struck the house. A disaster examination, unlike a standard house inspection, concentrates on damage rather than the quality of everything visible and accessible from the roof to the basement.

Inspectors go to people's homes or work places who have asked for FEMA disaster aid.

Section 8 inspection

[edit]

In the United States, the federal and state governments provide housing subsidies to low-income people through the Section 8 program. The government expects that the housing will be "fit for habitation" so a Section 8 inspection identifies compliance with HUD's Housing Quality Standards (HQS).

Pre-delivery inspection

[edit] See also: Pre-delivery inspection

An inspection may occur in a purchased house prior to the deal's closure, in what is known as a "pre-delivery" inspection.

Structural inspection

[edit]

The house's structure may also be inspected. When performing a structural inspection, the inspector will look for a variety of distress indications that may result in repair or further evaluation recommendations.

In the state of New York, only a licensed professional engineer or a registered architect can render professional opinions as to the sufficiency structural elements of a home or building [¹¹] Municipal building officials can also make this determination, but they are not performing home inspections at the time they are rendering this opinion. Municipal officials are also not required to look out for the best interest of the buyer. Some other states may have similar provisions in their licensing laws. Someone who is not a licensed professional engineer or a registered architect can describe the condition of structural elements (cracked framing, sagged beams/roof, severe rot or insect damage, etc.), but are not permitted to render a professional opinion as to how the condition has

affected the structural soundness of the building.

Various systems of the house, including plumbing and HVAC, may also be inspected[¹²]

Thermal imaging Inspection

[edit]

A thermal imaging inspection using an infrared camera can provide inspectors with information on home energy loss, heat gain/loss through the exterior walls and roof, moisture leaks, and improper electrical system conditions that are typically not visible to the naked eye. Thermal imaging is not considered part of a General Home Inspection because it exceeds the scope of inspection Standards of Practice.

Pool and spa inspection

[edit]

Inspection of swimming pools and spas is not considered part of a General Home Inspection because their inspection exceeds the scope of inspection Standards of Practice. However, some home inspectors are also certified to inspect pools and spas and offer this as an ancillary service $\begin{bmatrix} 13 \\ 13 \end{bmatrix}$

Tree health inspection

[edit]

Inspection of trees on the property is not considered part of a General Home Inspection because their inspection exceeds the scope of inspection Standards of Practice. This type of inspection is typically performed by a Certified Arborist and assesses the safety and condition of the trees on a property before the sales agreement is executed.^[14]

Property inspection report for immigration

[edit]

The UKVI (United Kingdom Visa and Immigration) issued guidance on the necessity of ensuring that properties must meet guidelines so that visa applicants can be housed in properties which meet environmental and health standards. Part X of the Housing Act 1985 provides the legislative grounding for the reports - primarily to ensure that a property is not currently overcrowded, that the inclusion of further individuals as a result of successful visa applications - whether spouse visa, dependent visa, indefinite leave to remain or visitor visa, can house the applicants without the property becoming overcrowded. Reports are typically prepared by environmental assessors or qualified solicitors in accordance with HHSRS (Housing Health and Safety Rating Scheme). Property inspection reports are typically standard and breakdown the legal requirements.

Pre-Listing Home Inspection

[edit]

A pre-listing inspection focuses on all major systems and components of the house including HVAC, electrical, plumbing, siding, doors, windows, roof and structure. It's a full home inspection for the seller to better understand the condition of their home prior to the buyer's own inspection.

See also

[edit]

- List of real estate topics
- Real estate appraisal

Notes

[edit]

1. A general list of exclusions include but are not limited to: code or zoning violations, permit research, property measurements or surveys, boundaries, easements or right of way, conditions of title, proximity to environmental hazards, noise interference, soil or geological conditions, well water systems or water quality, underground sewer lines, waste disposal systems, buried piping, cisterns, underground water tanks and sprinkler systems. A complete list of standards and procedures for home inspections can be found at NAHI^[7] ASHI^[8] InterNACHI^[9] or IHINA^[10] websites.

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[edit]

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Things To Do in Cook County

Sand Ridge Nature Center

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River Trail Nature Center

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Palmisano (Henry) Park

4.7 (1262)

Driving Directions in Cook County

Driving Directions From Palmisano (Henry) Park to

Driving Directions From Lake Katherine Nature Center and Botanic Gardens to

Driving Directions From Navy Pier to

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Reviews for



Jeffery James

(5)

Very happy with my experience. They were prompt and followed through, and very helpful in fixing the crack in my foundation.

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Sarah McNeily

(5)

USS was excellent. They are honest, straightforward, trustworthy, and conscientious. They thoughtfully removed the flowers and flower bulbs to dig where they needed in the yard, replanted said flowers and spread the extra dirt to fill in an area of the yard. We've had other services from different companies and our yard was really a mess after. They kept the job site meticulously clean. The crew was on time and friendly. I'd recommend them any day! Thanks to Jessie and crew.

Jim de Leon



It was a pleasure to work with Rick and his crew. From the beginning, Rick listened to my concerns and what I wished to accomplish. Out of the 6 contractors that quoted the project, Rick seemed the MOST willing to accommodate my wishes. His pricing was definitely more than fair as well. I had 10 push piers installed to stabilize and lift an addition of my house. The project commenced at the date that Rick had disclosed initially and it was completed within the same time period expected (based on Rick's original assessment). The crew was well informed, courteous, and hard working. They were not loud (even while equipment was being utilized) and were well spoken. My neighbors were very impressed on how polite they were when they entered / exited my property (saying hello or good morning each day when they crossed paths). You can tell they care about the customer concerns. They ensured that the property would be put back as clean as possible by placing MANY sheets of plywood down prior to excavating. They compacted the dirt back in the holes extremely well to avoid large stock piles of soils. All the while, the main office was calling me to discuss updates and expectations of completion. They provided waivers of lien, certificates of insurance, properly acquired permits, and JULIE locates. From a construction background, I can tell you that I did not see any flaws in the way they operated and this an extremely professional company. The pictures attached show the push piers added to the foundation (pictures 1, 2 & 3), the amount of excavation (picture 4), and the restoration after dirt was placed back in the pits and compacted (pictures 5, 6 & 7). Please notice that they also sealed two large cracks and steel plated these cracks from expanding further (which you can see under my sliding glass door). I, as well as my wife, are extremely happy that we chose United Structural Systems for our contractor. I would happily tell any of my friends and family to use this contractor should the opportunity arise!

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Chris Abplanalp

(5)

USS did an amazing job on my underpinning on my house, they were also very courteous to the proximity of my property line next to my neighbor. They kept things in order with all the dirt/mud they had to excavate. They were done exactly in the timeframe they indicated, and the contract was very details oriented with drawings of what would be done. Only thing that would have been nice, is they left my concrete a little muddy with boot prints but again, all-in-all a great job



Dave Kari

(5)

What a fantastic experience! Owner Rick Thomas is a trustworthy professional. Nick and the crew are hard working, knowledgeable and experienced. I interviewed every company in the area, big and small. A homeowner never wants to hear that they have foundation issues. Out of every company, I trusted USS the most, and it paid off in the end. Highly recommend.

Evaluating Soil Erosion and Its Impact on StabilityView GBP

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