Foundation Work

- **Evaluating Structural Policy Coverage in Home Insurance**
  Evaluating Structural Policy Coverage in Home Insurance Understanding the Scope of Foundation Repair Guarantees Reviewing Contractor Backed Warranty Provisions Examining Conditions That Void Certain Warranties Checking if Homeowner Policies Cover Soil Movement Considering Add On Insurance for Extended Protection Determining Coverage Limitations for Pier Systems Clarifying Fine Print in Repair Service Agreements Seeking Assurance Through Third Party Backed Guarantees Exploring Extended Coverage for Unexpected Repair Costs Exploring Available Options for Warranty Transfers
  - **Visual Inspection Methods for Early Problem Detection**
    Visual Inspection Methods for Early Problem Detection Using Laser Level Surveys to Track Floor Movement Applying Ground Penetrating Radar for Subsurface Clarity Establishing Baselines with Digital Crack Gauges Harnessing Infrared Thermography for Hidden Moisture Installing Wireless Tilt Meters for Continuous Monitoring Scheduling Routine Evaluations of Structural Support Identifying Early Shifts with Smart Sensor Technology Analyzing Data from Remote Monitoring Systems Assessing Elevation Changes with Precision Tools Reviewing Signs of Deterioration in Hard to Reach Areas Interpreting Detailed Reports from Third Party Engineers
    - **About Us**

Understanding the types of warranties offered by foundation repair companies, including material, labor, and structural warranties.

When it comes to foundation repair, warranties provide homeowners with peace of mind, ensuring that their investment is protected. Timely foundation crack repair prevents costly structural damage **foundation repair service areas** structure. Foundation repair companies typically offer several types of warranties: material warranties, labor warranties, and structural warranties. Understanding these warranties and their potential limitations is crucial for homeowners.

Material warranties cover defects in the materials used during repairs. These warranties ensure that if any material fails due to manufacturing defects within a specified period-often ranging from one year to several years-the manufacturer will replace it at no cost to you. However, it's important to note that improper installation can void this warranty; hence ensuring professional installation is essential.

Labor warranties focus on covering defective workmanship during installation and repairs rather than material failures alone; they typically last between one year upwards depending upon company policies but again correct procedures must be followed otherwise these could become nullified too quickly if improperly handled by technicians originally hired thus leading back towards voided conditions mentioned earlier above meaning revisiting original installer might not always be viable option left available anymore unfortunately sometimes resulting into additional costs being borne directly out-of-pocket instead unfortunately sometimes too often sadly enough regrettably so indeed very unfortunately truly honestly speaking frankly quite bluntly even candidly really…

Structural warranties offer broader coverage compared to material and labor ones focusing primarily upon overall stability/integrity concerning entire foundational structure itself ensuring against future movements/settlement issues arising post-completion phase however certain exclusions apply here too including but not limited towards acts nature beyond control human intervention like earthquakes floodings etcetera plus also neglect maintenance regular inspections recommended schedules adherence thereto amongst other factors influencing longevity durability reliability robustness resilience steadfastness soundness solidity strength stability toughness trustworthiness viability vitality warranty worthiness altogether holistically completely fully entirely totally wholly conclusively definitively ultimately ...absolutely positively assuredly confidently certainly decisively effectively efficiently expeditiously proficiently skillfully successfully thoroughly meticulously diligently carefully attentively conscientiously responsibly prudently judiciously wisely sagaciously astutely shrewdly cleverly resourcefully ingeniously creatively innovatively progressively dynamically vigorously energetically enthusiastically passionately zealously fervently ardently devotedly dedicatedly committedly steadfastly resolutely determinedly unwaveringly unyieldingly relentlessly persistently tenaciously perseveringly patiently steadily consistently continuously perpetually eternally everlastingly timelessly boundlessly limitlessly infinitely immeasurably vastly enormously hugely greatly largely extensively widely broadly comprehensively inclusively universally globally worldwide internationally nationally regionally locally individually personally privately confidentially discreetly quietly silently secretively clandestinely covertly surreptitiously stealthily furtively slyly craftily cunningly wilily slickly smoothly suavely elegantly gracefully stylishly fashionably tastefully refinedly polishedly sophisticated cultured urbane cosmopolitan chic trendy modern contemporary cutting edge state art avant garde pioneering groundbreaking revolutionary transformative visionary futuristic forward thinking progressive liberal open mind

Examination of common conditions that can void warranties related specifically related foundation repair services provided . Conditions include improper maintenance post repair completion , modifications performed post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc . Each condition described separately . Highlight damage caused post repair completion via improper maintenance , structural modifications conducted post warranty period , failure caused external factors etc .. Also highlight standard industry practices regarding void conditions etc & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations . Each point described separately . Each point described separately . Each point described separately . Each point described separately . Each point described separately . Each point described separately . Each point described separately . Each point described separately . Each point described separately . Each point described separately .. Also highlight standard industry practices regarding void conditions etc & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations regarding void conditions & expert recommendations ."} , including improper maintenance post repair completion , modifications performed post warranty period , failure caused external factors etc

.Each condition described separately .. Also highlight standard industry practices regarding void conditions etc & expert recommendations ."} , including improper maintenance post repair completion , modifications performed post warranty period , failure caused external factors etc ..Each condition described separately .. Also highlight standard industry practices regarding void

When it comes to foundation repair services, warranties provide homeowners with a sense of security, ensuring that the work done is guaranteed for a certain period. However, there are several common conditions that can potentially void these warranties. It's crucial for homeowners to understand these conditions to avoid unexpected expenses and ensure the longevity of their foundation repairs.

One of the primary conditions that can void a foundation repair warranty is improper maintenance post repair completion . After repairs are done , homeowners must maintain proper drainage around their homes . This includes ensuring gutters are clear , downspouts extend far enough away from foundation ,and soil grades away from house . Failure adhere these maintenance practices lead water accumulation around foundation ,which cause soil expansion contraction . These shifts ultimately lead new foundation cracks settling . Such damage caused post repair completion via improper maintenance would typically fall outside warranty coverage . Homeowners expected regularly inspect perimeter property address potential issues promptly.

Another key factor is structural modifications conducted during or after the warranty period. If homeowners decide add rooms build decks or make other significant changes structure without consulting original repair company these alterations affect integrity foundation leading new problems like cracks uneven settling even collapse In such cases additional weight strain cause failures would likely considered responsibility rather than covered under initial repairs Additionally any DIY projects tampering with adjusted areas may also nullify warranties Therefore experts recommend always consulting professionals before making any structural changes your property after undergoing foundation repairs

External factors unrelated direct workmanship materials used during initial repairs can also cause failures resulting voided warranties Examples include natural disasters acts God such earthquakes floods hurricanes extreme weather events Similarly intrusive tree roots nearby construction activities causing soil disturbances vibrations could impact foundations adversely Unfortunately since these events beyond control service providers they generally do not fall within scope coverage Therefore important understand local environment potential risks discussing insurance options protecting against unforeseen circumstances

Standard industry practices dictate clear communication between service providers clients regards responsibilities expectations involved maintaining validity warranties Reputable companies typically outline terms conditions explicitly contracts proposals emphasizing importance regular upkeep avoiding unauthorized alterations educating clients recognizing signs trouble early intervention Moreover expert recommendations include having annual professional inspections ensuring ongoing stability foundations Documentation every step process including initial assessments performed work followup visits essential resolving disputes may arise Furthermore understanding legal requirements local building codes imperative adherence safety standards quality assurance purposes Lastly seeking second opinions trusted thirdparty evaluators wise confirm accuracy diagnoses proposed solutions Hence staying informed proactive approach necessary preserve validity warranties safeguard investments made protecting homes

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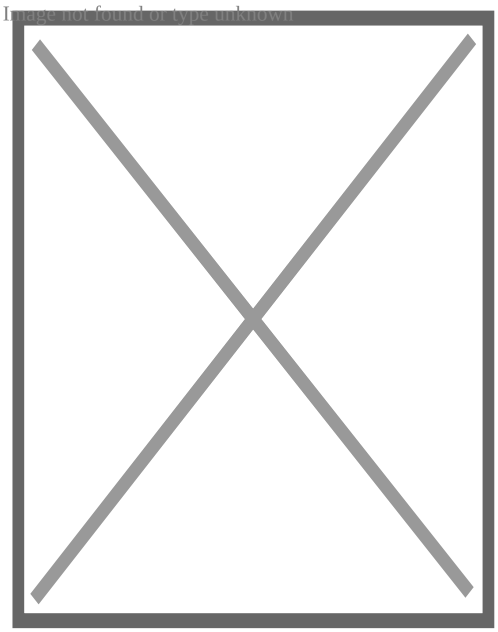
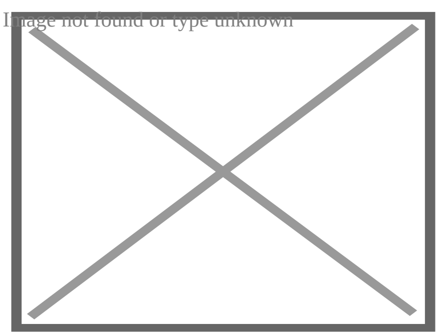
Residential Foundation Repair Services

Strong Foundations, Strong Homes

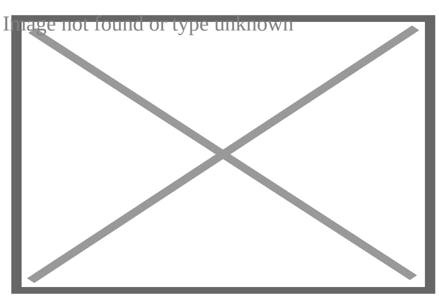
About geotechnical engineering



Boston's Big Dig presented geotechnical challenges in an urban environment.



Precast concrete retaining wall



A typical cross-section of a slope used in two-dimensional analyzes.

Geotechnical engineering, also known as **geotechnics**, is the branch of civil engineering concerned with the engineering behavior of earth materials. It uses the principles of soil mechanics and rock mechanics to solve its engineering problems. It also relies on knowledge of geology, hydrology, geophysics, and other related sciences.

Geotechnical engineering has applications in military engineering, mining engineering, petroleum engineering, coastal engineering, and offshore construction. The fields of geotechnical engineering and engineering geology have overlapping knowledge areas. However, while geotechnical engineering is a specialty of civil engineering, engineering geology is a specialty of geology.

History

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Humans have historically used soil as a material for flood control, irrigation purposes, burial sites, building foundations, and construction materials for buildings. Dykes, dams, and canals dating back to at least 2000 BCE—found in parts of ancient Egypt, ancient Mesopotamia, the Fertile Crescent, and the early settlements of Mohenjo Daro and Harappa in the Indus valley—provide evidence for early activities linked to irrigation and flood control. As cities expanded, structures were erected and supported by formalized foundations. The ancient Greeks notably constructed pad footings and strip-and-raft foundations. Until the 18th century, however, no theoretical basis for soil design had been developed, and the discipline was more of an art than a science, relying on experience.[1]

Several foundation-related engineering problems, such as the Leaning Tower of Pisa, prompted scientists to begin taking a more scientific-based approach to examining the subsurface. The earliest advances occurred in the development of earth pressure theories for the construction of retaining walls. Henri Gautier, a French royal engineer, recognized the "natural slope" of different soils in 1717, an idea later known as the soil's angle of repose. Around the same time, a rudimentary soil classification system was also developed based on a material's unit weight, which is no longer considered a good indication of soil type.[1][2]

The application of the principles of mechanics to soils was documented as early as 1773 when Charles Coulomb, a physicist and engineer, developed improved methods to determine the earth pressures against military ramparts. Coulomb observed that, at failure, a distinct slip plane would form behind a sliding retaining wall and suggested that the maximum shear stress on the slip plane, for design purposes, was the sum of the soil cohesion, c, and friction $\sigma \tan(\phi)$, where σ is the normal stress on the slip plane and ϕ is the friction angle of the soil. By combining Coulomb's theory with Christian Otto Mohr's 2D stress state, the theory became known as Mohr-Coulomb theory. Although it is now recognized that precise determination of cohesion is impossible because c is not a fundamental soil property, the Mohr-Coulomb theory is still used in practice today.[3]

In the 19th century, Henry Darcy developed what is now known as Darcy's Law, describing the flow of fluids in a porous media. Joseph Boussinesq, a mathematician and physicist, developed theories of stress distribution in elastic solids that proved useful for estimating stresses at depth in the ground. William Rankine, an engineer and physicist, developed an alternative to Coulomb's earth pressure theory. Albert Atterberg developed the clay consistency indices that are still used today for soil classification.[1][2] In 1885, Osborne Reynolds recognized that shearing causes volumetric dilation of dense materials and contraction of loose granular materials.

Modern geotechnical engineering is said to have begun in 1925 with the publication of *Erdbaumechanik* by Karl von Terzaghi, a mechanical engineer and geologist. Considered by many to be the father of modern soil mechanics and geotechnical engineering, Terzaghi developed the principle of effective stress, and demonstrated that the shear strength of soil is controlled by effective stress.[4] Terzaghi also developed the framework for theories of bearing capacity of foundations, and the theory for prediction of the rate of settlement of clay layers due to consolidation.[1][3][5] Afterwards, Maurice Biot fully developed the three-dimensional soil consolidation theory, extending the one-dimensional model previously developed by Terzaghi to more general hypotheses and introducing the set of basic equations of Poroelasticity.

In his 1948 book, Donald Taylor recognized that the interlocking and dilation of densely packed particles contributed to the peak strength of the soil. Roscoe, Schofield, and Wroth, with the publication of *On the Yielding of Soils* in 1958, established the interrelationships between the volume change behavior (dilation, contraction, and consolidation) and shearing behavior with the theory of plasticity using critical state soil mechanics. Critical state soil mechanics is the basis for many contemporary advanced constitutive models describing the behavior of soil.[6]

In 1960, Alec Skempton carried out an extensive review of the available formulations and experimental data in the literature about the effective stress validity in soil, concrete, and rock in order to reject some of these expressions, as well as clarify what expressions were appropriate according to several working hypotheses, such as stress-strain or strength behavior, saturated or non-saturated media, and rock, concrete or soil behavior.

Roles

[edit]

Geotechnical investigation

[edit]
Main article: Geotechnical investigation

Geotechnical engineers investigate and determine the properties of subsurface conditions and materials. They also design corresponding earthworks and retaining structures, tunnels, and structure foundations, and may supervise and evaluate sites, which may further involve site monitoring as well as the risk assessment and mitigation of natural hazards.[7][8]

Geotechnical engineers and engineering geologists perform geotechnical investigations to obtain information on the physical properties of soil and rock underlying and adjacent to a site to design earthworks and foundations for proposed structures and for the repair of distress to earthworks and structures caused by subsurface conditions. Geotechnical investigations involve surface and subsurface exploration of a site, often including subsurface sampling and laboratory testing of retrieved soil samples. Sometimes, geophysical methods are also used to obtain data, which include measurement of seismic waves (pressure, shear, and Rayleigh waves), surface-wave methods and downhole methods, and electromagnetic surveys (magnetometer, resistivity, and ground-penetrating radar). Electrical tomography can be used to survey soil and rock properties and existing underground infrastructure in construction projects.[9]

Surface exploration can include on-foot surveys, geologic mapping, geophysical methods, and photogrammetry. Geologic mapping and interpretation of geomorphology are typically completed in consultation with a geologist or engineering geologist. Subsurface exploration usually involves in-situ testing (for example, the standard penetration test and cone penetration test). The digging of test pits and trenching (particularly for locating faults and slide planes) may also be used to learn about soil conditions at depth. Large-diameter borings are rarely used due to safety concerns and expense. Still, they are sometimes used to allow a geologist or engineer to be lowered into the borehole for direct visual and manual examination of the soil and rock stratigraphy.

Various soil samplers exist to meet the needs of different engineering projects. The standard penetration test, which uses a thick-walled split spoon sampler, is the most common way to collect disturbed samples. Piston samplers, employing a thin-walled tube, are most commonly used to collect less disturbed samples. More advanced methods, such as the Sherbrooke block sampler, are superior but expensive. Coring frozen ground provides high-quality undisturbed samples from ground conditions, such as fill, sand, moraine, and rock fracture zones.[10]

Geotechnical centrifuge modeling is another method of testing physical-scale models of geotechnical problems. The use of a centrifuge enhances the similarity of the scale model tests involving soil because soil's strength and stiffness are susceptible to the confining pressure. The centrifugal acceleration allows a researcher to obtain large (prototype-scale) stresses in small physical models.

Foundation design

[edit]
Main article: Foundation (engineering)

The foundation of a structure's infrastructure transmits loads from the structure to the earth. Geotechnical engineers design foundations based on the load characteristics of the structure and the properties of the soils and bedrock at the site. Generally, geotechnical engineers first estimate the magnitude and location of loads to be supported before developing an investigation plan to explore the subsurface and determine the necessary soil parameters through field and lab testing. Following this, they may begin the design of an engineering foundation. The primary considerations for a geotechnical engineer in foundation design are bearing capacity, settlement, and ground movement beneath the foundations.[11]

Earthworks

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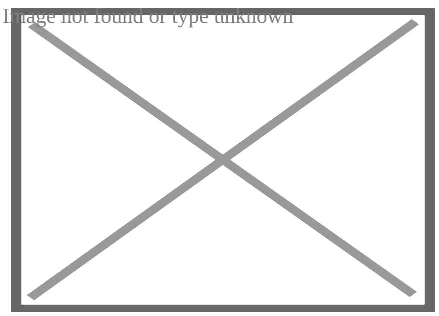

A compactor/roller operated by U.S. Navy Seabees

See also: Earthworks (engineering)

Geotechnical engineers are also involved in the planning and execution of earthworks, which include ground improvement,[11] slope stabilization, and slope stability analysis.

Ground improvement

[edit]

Various geotechnical engineering methods can be used for ground improvement, including reinforcement geosynthetics such as geocells and geogrids, which disperse loads over a larger area, increasing the soil's load-bearing capacity. Through these methods, geotechnical engineers can reduce direct and long-term costs.[12]

Slope stabilization

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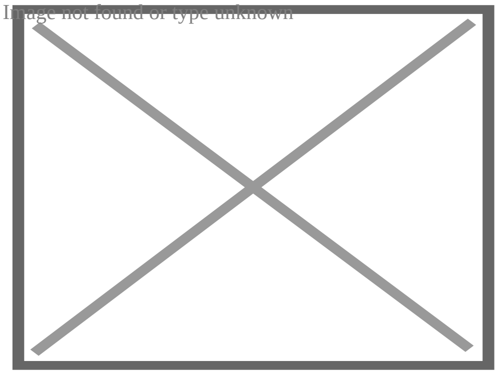

Simple slope slip section.

Main article: Slope stability

Geotechnical engineers can analyze and improve slope stability using engineering methods. Slope stability is determined by the balance of shear stress and shear strength. A previously stable slope may be initially affected by various factors, making it unstable. Nonetheless, geotechnical engineers can design and implement engineered slopes to increase stability.

Slope stability analysis

[edit]
Main article: Slope stability analysis

Stability analysis is needed to design engineered slopes and estimate the risk of slope failure in natural or designed slopes by determining the conditions under which the topmost mass of soil will slip relative to the base of soil and lead to slope failure.[13] If the interface between the mass and the base of a slope has a complex geometry, slope stability analysis is difficult and numerical solution methods are required. Typically, the interface's exact geometry is unknown, and a simplified interface geometry is assumed. Finite slopes require three-dimensional models to be analyzed, so most slopes are analyzed assuming that they are infinitely wide and can be represented by two-dimensional models.

Sub-disciplines

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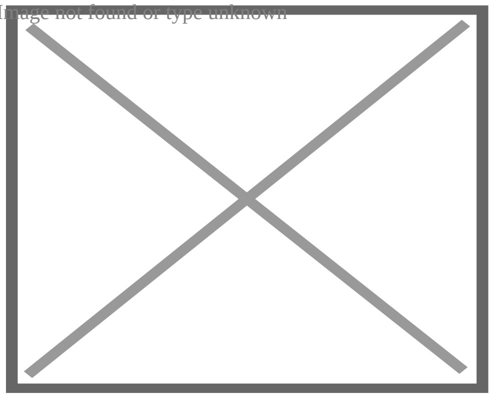
Geosynthetics

[edit]
Main article: Geosynthetics



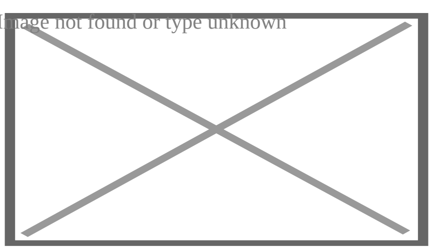
A collage of geosynthetic products.

Geosynthetics are a type of plastic polymer products used in geotechnical engineering that improve engineering performance while reducing costs. This includes geotextiles, geogrids, geomembranes, geocells, and geocomposites. The synthetic nature of the products make them suitable for use in the ground where high levels of durability are required. Their main functions include drainage, filtration, reinforcement, separation, and containment.

Geosynthetics are available in a wide range of forms and materials, each to suit a slightly different end-use, although they are frequently used together. Some reinforcement geosynthetics, such as geogrids and more recently, cellular confinement systems, have shown to improve bearing capacity, modulus factors and soil stiffness and strength.[14] These products have a wide range of applications and are currently used in many civil and geotechnical engineering applications including roads, airfields, railroads, embankments, piled embankments, retaining structures, reservoirs, canals, dams, landfills, bank protection and coastal engineering.[15]

Offshore

[edit]
Main article: Offshore geotechnical engineering



Platforms offshore Mexico.

Offshore (or *marine*) *geotechnical engineering* is concerned with foundation design for human-made structures in the sea, away from the coastline (in opposition to *onshore* or *nearshore* engineering). Oil platforms, artificial islands and submarine pipelines are examples of such structures.[16]

There are a number of significant differences between onshore and offshore geotechnical engineering.[16][17] Notably, site investigation and ground improvement on the seabed are more expensive; the offshore structures are exposed to a wider range of geohazards; and the environmental and financial consequences are higher in case of failure. Offshore structures are exposed to various environmental loads, notably wind, waves and currents. These phenomena may affect the integrity or the serviceability of the structure and its foundation during its operational lifespan and need to be taken into account in offshore design.

In subsea geotechnical engineering, seabed materials are considered a two-phase material composed of rock or mineral particles and water.[18][19] Structures may be fixed in place in the seabed—as is the case for piers, jetties and fixed-bottom wind turbines—or may comprise a floating structure that remains roughly fixed relative to its geotechnical anchor point. Undersea mooring of human-engineered floating structures include a large number of offshore oil and gas platforms and, since 2008, a few floating wind turbines. Two common types of engineered design for anchoring floating structures include tension-leg and catenary loose mooring systems.[20]

Observational method

[edit]

First proposed by Karl Terzaghi and later discussed in a paper by Ralph B. Peck, the observational method is a managed process of construction control, monitoring, and review, which enables modifications to be incorporated during and after construction. The method aims to achieve a greater overall economy without compromising safety by creating designs based on the most probable conditions rather than the most unfavorable.[21] Using the observational method, gaps in available information are filled by measurements and investigation, which aid in assessing the behavior of the structure during construction, which in turn can be modified per the findings. The method was described by Peck as "learn-as-you-go".[22]

The observational method may be described as follows:[22]

1. General exploration sufficient to establish the rough nature, pattern, and properties of deposits.
2. Assessment of the most probable conditions and the most unfavorable conceivable deviations.
3. Creating the design based on a working hypothesis of behavior anticipated under the most probable conditions.
4. Selection of quantities to be observed as construction proceeds and calculating their anticipated values based on the working hypothesis under the most unfavorable conditions.
5. Selection, in advance, of a course of action or design modification for every foreseeable significant deviation of the observational findings from those predicted.

6. Measurement of quantities and evaluation of actual conditions.
7. Design modification per actual conditions

The observational method is suitable for construction that has already begun when an unexpected development occurs or when a failure or accident looms or has already happened. It is unsuitable for projects whose design cannot be altered during construction.[22]

See also

[edit]

- icon Image not found or type unknown Engineering portal

- Civil engineering
- Deep Foundations Institute
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- Geoprofessions
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- International Society for Soil Mechanics and Geotechnical Engineering
- Karl von Terzaghi
- Land reclamation
- Landfill
- Mechanically stabilized earth
- Offshore geotechnical engineering
- Rock mass classifications
- Sediment control
- Seismology
- Soil mechanics
- Soil physics
- Soil science

Notes

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1. ^ ***a b c d*** *Das, Braja (2006). Principles of Geotechnical Engineering. Thomson Learning.*

2. ^ ***a b*** *Budhu, Muni (2007). Soil Mechanics and Foundations. John Wiley & Sons, Inc. ISBN 978-0-471-43117-6.*
3. ^ ***a b*** Disturbed soil properties and geotechnical design, Schofield, Andrew N., Thomas Telford, 2006. ISBN 0-7277-2982-9
4. **^** *Guerriero V., Mazzoli S. (2021). "Theory of Effective Stress in Soil and Rock and Implications for Fracturing Processes: A Review". Geosciences.* ***11*** *(3): 119. Bibcode:2021Geosc..11..119G. doi:10.3390/geosciences11030119.*
5. **^** Soil Mechanics, Lambe, T.William and Whitman, Robert V., Massachusetts Institute of Technology, John Wiley & Sons., 1969. ISBN 0-471-51192-7
6. **^** Soil Behavior and Critical State Soil Mechanics, Wood, David Muir, Cambridge University Press, 1990. ISBN 0-521-33782-8
7. **^** Terzaghi, K., Peck, R.B. and Mesri, G. (1996), *Soil Mechanics in Engineering Practice* 3rd Ed., John Wiley & Sons, Inc. ISBN 0-471-08658-4
8. **^** Holtz, R. and Kovacs, W. (1981), *An Introduction to Geotechnical Engineering*, Prentice-Hall, Inc. ISBN 0-13-484394-0
9. **^** Deep Scan Tech (2023): Deep Scan Tech uncovers hidden structures at the site of Denmark's tallest building.
10. **^** *"Geofrost Coring". GEOFROST. Retrieved 20 November 2020.*
11. ^ ***a b*** *Han, Jie (2015). Principles and Practice of Ground Improvement. Wiley. ISBN 9781118421307.*
12. **^** *RAJU, V. R. (2010). Ground Improvement Technologies and Case Histories. Singapore: Research Publishing Services. p. 809. ISBN 978-981-08-3124-0. Ground Improvement – Principles And Applications In Asia.*
13. **^** *Pariseau, William G. (2011). Design analysis in rock mechanics. CRC Press.*
14. **^** Hegde, A.M. and Palsule P.S. (2020), Performance of Geosynthetics Reinforced Subgrade Subjected to Repeated Vehicle Loads: Experimental and Numerical Studies. Front. Built Environ. 6:15. https://www.frontiersin.org/articles/10.3389/fbuil.2020.00015/full.
15. **^** *Koerner, Robert M. (2012). Designing with Geosynthetics (6th Edition, Vol. 1 ed.). Xlibris. ISBN 9781462882892.*
16. ^ ***a b*** Dean, E.T.R. (2010). Offshore Geotechnical Engineering – Principles and Practice. Thomas Telford, Reston, VA, 520 p.
17. **^** Randolph, M. and Gourvenec, S., 2011. Offshore geotechnical engineering. Spon Press, N.Y., 550 p.
18. **^** Das, B.M., 2010. Principles of geotechnical engineering. Cengage Learning, Stamford, 666 p.
19. **^** Atkinson, J., 2007. The mechanics of soils and foundations. Taylor & Francis, N.Y., 442 p.
20. **^** Floating Offshore Wind Turbines: Responses in a Sea state – Pareto Optimal Designs and Economic Assessment, P. Sclavounos et al., October 2007.
21. **^** Nicholson, D, Tse, C and Penny, C. (1999). The Observational Method in ground engineering – principles and applications. Report 185, CIRIA, London.
22. ^ ***a b c*** Peck, R.B (1969). Advantages and limitations of the observational method in applied soil mechanics, Geotechnique, 19, No. 1, pp. 171-187.

References

[edit]

- Bates and Jackson, 1980, Glossary of Geology: American Geological Institute.
- Krynine and Judd, 1957, Principles of Engineering Geology and Geotechnics: McGraw-Hill, New York.
- Ventura, Pierfranco, 2019, Fondazioni, Volume 1, Modellazioni statiche e sismiche, Hoepli, Milano

- Holtz, R. and Kovacs, W. (1981), *An Introduction to Geotechnical Engineering*, Prentice-Hall, Inc. ISBN 0-13-484394-0
- Bowles, J. (1988), *Foundation Analysis and Design*, McGraw-Hill Publishing Company. ISBN 0-07-006776-7
- Cedergren, Harry R. (1977), *Seepage, Drainage, and Flow Nets*, Wiley. ISBN 0-471-14179-8
- Kramer, Steven L. (1996), *Geotechnical Earthquake Engineering*, Prentice-Hall, Inc. ISBN 0-13-374943-6
- Freeze, R.A. & Cherry, J.A., (1979), *Groundwater*, Prentice-Hall. ISBN 0-13-365312-9
- Lunne, T. & Long, M.,(2006), *Review of long seabed samplers and criteria for new sampler design*, Marine Geology, Vol 226, p. 145–165
- Mitchell, James K. & Soga, K. (2005), *Fundamentals of Soil Behavior* 3rd ed., John Wiley & Sons, Inc. ISBN 978-0-471-46302-3
- Rajapakse, Ruwan., (2005), "Pile Design and Construction", 2005. ISBN 0-9728657-1-3
- Fang, H.-Y. and Daniels, J. (2005) *Introductory Geotechnical Engineering : an environmental perspective*, Taylor & Francis. ISBN 0-415-30402-4
- NAVFAC (Naval Facilities Engineering Command) (1986) *Design Manual 7.01, Soil Mechanics*, US Government Printing Office
- NAVFAC (Naval Facilities Engineering Command) (1986) *Design Manual 7.02, Foundations and Earth Structures*, US Government Printing Office
- NAVFAC (Naval Facilities Engineering Command) (1983) *Design Manual 7.03, Soil Dynamics, Deep Stabilization and Special Geotechnical Construction*, US Government Printing Office
- Terzaghi, K., Peck, R.B. and Mesri, G. (1996), *Soil Mechanics in Engineering Practice* 3rd Ed., John Wiley & Sons, Inc. ISBN 0-471-08658-4
- Santamarina, J.C., Klein, K.A., & Fam, M.A. (2001), "Soils and Waves: Particulate Materials Behavior, Characterization and Process Monitoring", Wiley, ISBN 978-0-471-49058-6
- Firuziaan, M. and Estorff, O., (2002), "Simulation of the Dynamic Behavior of Bedding-Foundation-Soil in the Time Domain", Springer Verlag.

External links

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Specialties and interdisciplinarity

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- Optical
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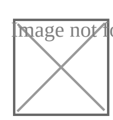
- Signal processing
- Telecommunications



Engineering education	◦ Bachelor of Engineering ◦ Bachelor of Science ◦ Master's degree ◦ Doctorate ◦ Graduate certificate ◦ Engineer's degree ◦ Licensed engineer
Related topics	◦ Engineer

Glossaries	◦ Engineering
	    ◦ A–L
	    ◦ M–Z
	◦ Aerospace engineering
	◦ Civil engineering
	◦ Electrical and electronics engineering
	◦ Mechanical engineering
	◦ Structural engineering

Other

- Agricultural
- Audio
- Automation
- Biomedical
    - Bioinformatics
    - Clinical
    - Health technology
    - Pharmaceutical
    - Rehabilitation
- Building services
    - MEP
- Design
- Explosives
- Facilities
- Fire
- Forensic
- Climate
- Geomatics
- Graphics
- Industrial
- Information
- Instrumentation
    - Instrumentation and control
- Logistics
- Management
- Mathematics
- Mechatronics
- Military
- Nuclear
- Ontology
- Packaging
- Physics
- Privacy
- Safety
- Security
- Survey
- Sustainability
- Systems
- Textile

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Soil science

- History
- Index

Main fields

- Pedology
- Edaphology
- Soil biology
- Soil microbiology
- Soil zoology
- Soil ecology
- Soil physics
- Soil mechanics
- Soil chemistry
- Environmental soil science
- Agricultural soil science

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Soil topics

- Soil
- Pedosphere
    - Soil morphology
    - Pedodiversity
    - Soil formation
- Soil erosion
- Soil contamination
- Soil retrogression and degradation
- Soil compaction
    - Soil compaction (agriculture)
- Soil sealing
- Soil salinity
    - Alkali soil
- Soil pH
    - Soil acidification
- Soil health
- Soil life
- Soil biodiversity
- Soil quality
- Soil value
- Soil fertility
- Soil resilience
- Soil color
- Soil texture
- Soil structure
    - Pore space in soil
    - Pore water pressure
- Soil crust
- Soil horizon
- Soil biomantle
- Soil carbon
- Soil gas
    - Soil respiration
- Soil organic matter
- Soil moisture
    - Soil water (retention)

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Soil classification

World Reference Base for Soil Resources (1998–)	◦ Acrisols ◦ Alisols ◦ Andosols ◦ Anthrosols ◦ Arenosols ◦ Calcisols ◦ Cambisols ◦ Chernozem ◦ Cryosols ◦ Durisols ◦ Ferralsols ◦ Fluvisols ◦ Gleysols ◦ Gypsisols ◦ Histosol ◦ Kastanozems ◦ Leptosols ◦ Lixisols ◦ Luvisols ◦ Nitisols ◦ Phaeozems ◦ Planosols ◦ Plinthosols ◦ Podzols ◦ Regosols ◦ Retisols ◦ Solonchaks ◦ Solonetz ◦ Stagnosol ◦ Technosols ◦ Umbrisols ◦ Vertisols
USDA soil taxonomy	◦ Alfisols ◦ Andisols ◦ Aridisols ◦ Entisols ◦ Gelisols ◦ Histosols ◦ Inceptisols

Applications	○ Soil conservation ○ Soil management ○ Soil guideline value ○ Soil survey ○ Soil test ○ Soil governance ○ Soil value ○ Soil salinity control ○ Erosion control ○ Agroecology ○ Liming (soil)
Related fields	○ Geology ○ Geochemistry ○ Petrology ○ Geomorphology ○ Geotechnical engineering ○ Hydrology ○ Hydrogeology ○ Biogeography ○ Earth materials ○ Archaeology ○ Agricultural science ○ Agrology
Societies, Initiatives	○ Australian Society of Soil Science Incorporated ○ Canadian Society of Soil Science ○ Central Soil Salinity Research Institute (India) ○ German Soil Science Society ○ Indian Institute of Soil Science ○ International Union of Soil Sciences ○ International Year of Soil ○ National Society of Consulting Soil Scientists (US) ○ OPAL Soil Centre (UK) ○ Soil Science Society of Poland ○ Soil and Water Conservation Society (US) ○ Soil Science Society of America ○ World Congress of Soil Science

Scientific journals

- *Acta Agriculturae Scandinavica B*
- *Journal of Soil and Water Conservation*
- *Plant and Soil*
- *Pochvovedenie*
- *Soil Research*
- *Soil Science Society of America Journal*

See also

- Land use
- Land conversion
- Land management
- Vegetation
- Infiltration (hydrology)
- Groundwater
- Crust (geology)
- Impervious surface/Surface runoff
- Petrichor

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- Category soil science
- Image not found or type unknown List of soil scientists

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Geotechnical engineering

Offshore geotechnical engineering

Investigation and instrumentation

Field (*in situ*)

- Core drill
- Cone penetration test
- Geo-electrical sounding
- Permeability test
- Load test
  - Static
  - Dynamic
  - Statnamic
- Pore pressure measurement
  - Piezometer
  - Well
- Ram sounding
- Rock control drilling
- Rotary-pressure sounding
- Rotary weight sounding
- Sample series
- Screw plate test
- Deformation monitoring
  - Inclinometer
  - Settlement recordings
- Shear vane test
- Simple sounding
- Standard penetration test
- Total sounding
- Trial pit
- Visible bedrock
- Nuclear densometer test
- Exploration geophysics
- Crosshole sonic logging

Soil

- Types
  - Clay
  - Silt
  - Sand
  - Gravel
  - Peat
  - Loam
  - Loess
- Properties
  - Hydraulic conductivity
  - Water content
  - Void ratio
  - Bulk density
  - Thixotropy
  - Reynolds' dilatancy
  - Angle of repose
  - Friction angle
  - Cohesion
  - Porosity
  - Permeability
  - Specific storage
  - Shear strength
  - Sensitivity

Structures (Interaction)	Natural features	◦ Topography ◦ Vegetation ◦ Terrain ◦ Topsoil ◦ Water table ◦ Bedrock ◦ Subgrade ◦ Subsoil

	Earthworks	◦ Shoring structures
		    ◦ Retaining walls
		    ◦ Gabion
		    ◦ Ground freezing
		    ◦ Mechanically stabilized earth
		    ◦ Pressure grouting
		    ◦ Slurry wall
		    ◦ Soil nailing
		    ◦ Tieback
		◦ Land development
		◦ Landfill
		◦ Excavation
		◦ Trench
		◦ Embankment
		◦ Cut
		◦ Causeway
		◦ Terracing
		◦ Cut-and-cover
		◦ Cut and fill
		◦ Fill dirt
		◦ Grading
		◦ Land reclamation
		◦ Track bed
		◦ Erosion control
		◦ Earth structure
		◦ Expanded clay aggregate
		◦ Crushed stone
		◦ Geosynthetics
		    ◦ Geotextile
		    ◦ Geomembrane
		    ◦ Geosynthetic clay liner
		    ◦ Cellular confinement
		◦ Infiltration

	Foundations	◦ Shallow ◦ Deep

Mechanics

- Forces
  - Effective stress
  - Pore water pressure
  - Lateral earth pressure
  - Overburden pressure
  - Preconsolidation pressure
- Phenomena/ problems
  - Permafrost
  - Frost heaving
  - Consolidation
  - Compaction
  - Earthquake
    - Response spectrum
    - Seismic hazard
    - Shear wave
  - Landslide analysis
    - Stability analysis
    - Mitigation
    - Classification
    - Sliding criterion
    - Slab stabilisation
  - Bearing capacity * Stress distribution in soil

Numerical analysis software

- SEEP2D
- STABL
- SVFlux
- SVSlope
- UTEXAS
- Plaxis

Related fields	○ Geology ○ Geochemistry ○ Petrology ○ Earthquake engineering ○ Geomorphology ○ Soil science ○ Hydrology ○ Hydrogeology ○ Biogeography ○ Earth materials ○ Archaeology ○ Agricultural science ○ Agrology

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Construction

Types	○ Home construction ○ Offshore construction ○ Underground construction ○ Tunnel construction
History	○ Architecture ○ Construction ○ Structural engineering ○ Timeline of architecture ○ Water supply and sanitation

Professions	◦ Architect ◦ Building engineer ◦ Building estimator ◦ Building officials ◦ Chartered Building Surveyor ◦ Civil engineer ◦ Civil estimator ◦ Clerk of works ◦ Project manager ◦ Quantity surveyor ◦ Site manager ◦ Structural engineer ◦ Superintendent
Trades workers (List)	◦ Banksman ◦ Boilermaker ◦ Bricklayer ◦ Carpenter ◦ Concrete finisher ◦ Construction foreman ◦ Construction worker ◦ Electrician ◦ Glazier ◦ Ironworker ◦ Millwright ◦ Plasterer ◦ Plumber ◦ Roofer ◦ Steel fixer ◦ Welder

Organizations	◦ 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) ◦ Build UK ◦ 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) ◦ FIDIC ◦ 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

Other topics

- Building material
  - List of building materials
  - Millwork
- Construction bidding
- Construction delay
- Construction equipment theft
- Construction loan
- Construction management
- Construction waste
- Demolition
- Design–build
- Design–bid–build
- DfMA
- Heavy equipment
- Interior design
- Lists of buildings and structures
  - List of tallest buildings and structures
- Megaproject
- Megastructure
- Plasterwork
  - Damp
    - Proofing
  - Parge coat
  - Roughcast
    - Harling
- Real estate development
- Stonemasonry
- Sustainability in construction
- Unfinished building
- Urban design
- Urban planning

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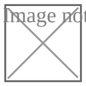
- Israel

About home inspection



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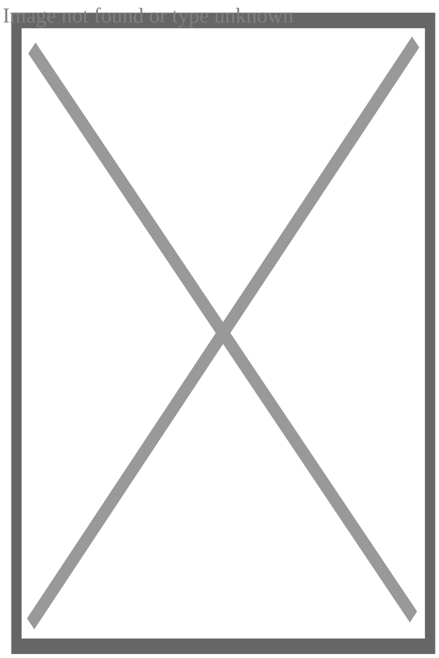

A disaster inspector at work in the United States assessing tornado damage to a house

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.[*citation needed*] 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.[13]

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.

References

[edit]

1. **^** *"General Laws: CHAPTER 112, Section 87YY1/2". Malegislature.gov. Archived from the original on 2012-04-27. Retrieved 2012-05-29.*
2. **^** *"SB 721- CHAPTERED". leginfo.legislature.ca.gov. Retrieved 2025-02-13.*
3. **^** *"SB721 Inspection California | DRBalcony". 2024-09-12. Retrieved 2025-02-13.*
4. **^** http://www.ontariocanada.com/registry/showAttachment.do?postingId=14645&attachmentId=22 Archived 2017-06-27 at the Wayback Machine [*bare URL PDF*]
5. **^** *"Home Inspection Association of India". Archived from the original on 2019-09-07. Retrieved 2019-08-30.*
6. **^** *"End-to-End Expert Property Inspection Services". Archived from the original on 2022-08-26. Retrieved 2022-08-26.*
7. **^** *"NAHI". Archived from the original on 1998-01-29. Retrieved 2011-02-05.*
8. **^** *"ASHI". Archived from the original on 2008-05-09. Retrieved 2009-12-11.*
9. **^** *"InterNACHI". Archived from the original on 2010-08-30. Retrieved 2010-08-27.*
10. **^** *"IHINA". Archived from the original on 2012-01-07. Retrieved 2012-02-09.*
11. **^** *"NYS Professional Engineering & Land Surveying:Laws, Rules & Regulations:Article 145". www.op.nysed.gov. Archived from the original on 2018-02-27. Retrieved 2018-04-04.*
12. **^** *"Material Defects & Useful Remaining Life of Home Systems". Archived from the original on 2019-02-02. Retrieved 2019-02-01.*
13. **^** *"InterNACHI's Standards of Practice for Inspecting Pools & Spas - InterNACHI". www.nachi.org. Archived from the original on 2019-03-21. Retrieved 2019-04-09.*
14. **^** *"Property Inspection Report | From £80". Property Inspection Report - Immigration & Visa. Archived from the original on 2022-05-19. Retrieved 2022-05-12.*

About building code

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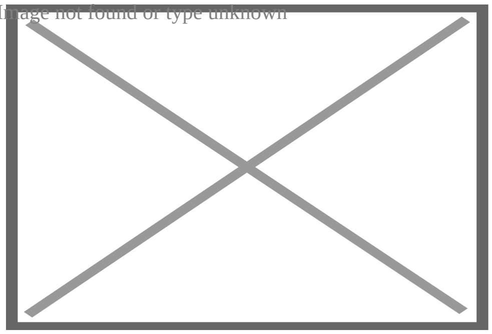
Not to be confused with Zoning laws.



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 structuresÃ¢â,¬Å —Ã¢â,¬Å 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

[edit]

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

[edit]

This section **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources in this section. Unsourced material may be challenged and removed. *(October 2016) (Learn how and when to remove this message)*

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

[edit]

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

[edit]

Antiquity

[edit]

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.[17]

Modern era

[edit]

France

[edit]

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

[edit]

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

[edit]

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

[edit]

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

[edit]

Australia uses the National Construction Code.

See also

[edit]

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

References

[edit]

1. **^** *CEN (2004). EN1998-5:2004 Eurocode 8: Design of structures for earthquake resistance, part 5: Foundations, retaining structures and geotechnical aspects. Brussels: European Committee for Standardization.*

2. **^** *Ching, Francis D. K.; Winkel, Steven R. (22 March 2016). Building Codes Illustrated: A Guide to Understanding the 2015 International Building Code. John Wiley & Sons. ISBN 978-1-119-15095-4.*
3. ^ ***a b*** *"Hammurabi's Code of Laws". eawc.evansville.edu. Archived from the original on 9 May 2008. Retrieved 24 May 2008.*
4. **^** *"About ICC". www.iccsafe.org. Retrieved 8 December 2013.*
5. **^** *Canada, Government of Canada. National Research Council. "Codes Canada - National Research Council Canada". www.nrc-cnrc.gc.ca. Retrieved 1 April 2018.*
6. **^** Northampton Borough Council, Building Control - regularisation charges www.northampton.gov.uk Archived 11 May 2021 at the Wayback Machine, accessed 15 March 2021
7. **^** NYC Construction Codes www.nyc.gov Archived 2 July 2006 at the Wayback Machine
8. **^** National Building Code www.bis.org.in
9. **^** Hageman, Jack M., and Brian E. P. Beeston. *Contractor's guide to the building code*. 6th ed. Carlsbad, CA: Craftsman Book Co., 2008. 10. Print.
10. **^** Wexler, Harry J., and Richard Peck. *Housing and local government: a research guide for policy makers and planners*. Lexington, Mass. u.a.: Lexington Books, 1974. 53. Print.
11. ^ ***a b*** *Listokin, David; Hattis, David B. (2005). "Building Codes and Housing". Cityscape.* ***8*** *(1). US Department of Housing and Urban Development: 21–67. ISSN 1936-007X. JSTOR 20868571. Retrieved 25 July 2024.*
12. **^** *Nwadike, Amarachukwu Nnadozie; Wilkinson, Suzanne (3 February 2022). "Why amending building codes? An investigation of the benefits of regular building code amendment in New Zealand". International Journal of Building Pathology and Adaptation.* ***40*** *(1): 76–100. doi:10.1108/IJBPA-08-2020-0068. ISSN 2398-4708.*
13. **^** *Nwadike, Amarachukwu; Wilkinson, Suzanne (2021). "Promoting Performance-Based Building Code Compliance in New Zealand". Journal of Performance of Constructed Facilities.* ***35*** *(4). doi:10.1061/(ASCE)CF.1943-5509.0001603. ISSN 0887-3828.*
14. **^** Deuteronomy 22:8
15. **^** *Confucius (29 August 2016). Delphi Collected Works of Confucius - Four Books and Five Classics of Confucianism (Illustrated). Delphi Classics. ISBN 978-1-78656-052-0.*
16. **^** *Mencius (28 October 2004). Mencius. Penguin UK. ISBN 978-0-14-190268-5.*
17. **^** *Shonagon, Sei (30 November 2006). The Pillow Book. Penguin UK. ISBN 978-0-14-190694-2.*
18. **^** New International Encyclopedia
19. **^** 'Charles II, 1666: An Act for rebuilding the City of London.', Statutes of the Realm: volume 5: 1628–80 (1819), pp. 603–12. URL: british-history.ac.uk, date accessed: 8 March 2007.
20. **^** 'Book 1, Ch. 15: From the Fire to the death of Charles II', A New History of London: Including Westminster and Southwark (1773), pp. 230–55. URL: http://www.british-history.ac.uk/report.asp?compid=46732. Date accessed: 7 March 2007.
21. **^** *"A Brief History of Building Regulations". www.npt.gov.uk.*
22. **^** *Baltimore (Md.) (1891). Ordinances and Resolutions of the Mayor and City Council of Baltimore ... – via books.google.com.*

23. **^** Baltimore: The Building of an American City, Sherry H. Olson, Published 1997, Johns Hopkins University Press, Baltimore (Md.), ISBN 0-8018-5640-X, p. 248.
24. **^** *Puleo, Stephen (2004). Dark Tide: The Great Boston Molasses Flood of 1919. Beacon Press. ISBN 0-8070-5021-0.*
25. **^** *"SB 721- CHAPTERED". leginfo.legislature.ca.gov. Retrieved 15 January 2025.*
26. **^** *gh, amir (18 December 2024). "California Balcony Building Code Updates 2025 - DrBalcony". Retrieved 15 January 2025.*cite web: CS1 maint: url-status (link)
27. **^** *"Residential Code Status | The Building Codes Assistance Project". bcapcodes.org. 12 November 2015. Retrieved 11 September 2018.*

External links

[edit]

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Wikimedia Commons has media related to ***Building and Fire Code Violations***.

- IAPMO Website
- IAPMO Codes Website

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Construction

Types

- Home construction
- Offshore construction
- Underground construction
  - Tunnel construction

History

- Architecture
- Construction
- Structural engineering
- Timeline of architecture
- Water supply and sanitation

Professions	○ Architect ○ Building engineer ○ Building estimator ○ Building officials ○ Chartered Building Surveyor ○ Civil engineer ○ Civil estimator ○ Clerk of works ○ Project manager ○ Quantity surveyor ○ Site manager ○ Structural engineer ○ Superintendent
Trades workers (List)	○ Banksman ○ Boilermaker ○ Bricklayer ○ Carpenter ○ Concrete finisher ○ Construction foreman ○ Construction worker ○ Electrician ○ Glazier ○ Ironworker ○ Millwright ○ Plasterer ○ Plumber ○ Roofer ○ Steel fixer ○ Welder

Organizations

- 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)
- Build UK
- 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)
- FIDIC
- 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
    - List of building materials
    - Millwork
- Construction bidding
- Construction delay
- Construction equipment theft
- Construction loan
- Construction management
- Construction waste
- Demolition
- Design–build
- Design–bid–build
- DfMA
- Heavy equipment
- Interior design

Other topics

- Lists of buildings and structures
    - List of tallest buildings and structures
- Megaproject
- Megastructure
- Plasterwork
    - Damp
        - Proofing
    - Parge coat
    - Roughcast
        - Harling
- Real estate development
- Stonemasonry
- Sustainability in construction
- Unfinished building
- Urban design
- Urban planning

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About Cook County

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Things To Do in Cook County

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Sand Ridge Nature Center

4.8 (96)

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River Trail Nature Center

4.6 (235)

Photo

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

https://www.google.com/maps/dir/Navy+Pier/United+Structural+Systems+of+Illinois%2C-87.6050944,14z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1sunknown!2m2!1d-87.6050944!2d41.8918633!1m5!1m1!1sChIJ-wSxDtinD4gRiv4kY3RRh9U!2m2!1d-88.1396465!2d42.0637725!3e0

https://www.google.com/maps/dir/Lake+Katherine+Nature+Center+and+Botanic+Gardens-87.8010774,14z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1sunknown!2m2!1d-87.8010774!2d41.6776048!1m5!1m1!1sChIJ-wSxDtinD4gRiv4kY3RRh9U!2m2!1d-88.1396465!2d42.0637725!3e2

https://www.google.com/maps/dir/Palmisano+%28Henry%29+Park/United+Structural+Sys-87.6490151,14z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1sunknown!2m2!1d-87.6490151!2d41.8429903!1m5!1m1!1sChIJ-wSxDtinD4gRiv4kY3RRh9U!2m2!1d-88.1396465!2d42.0637725!3e1

Reviews for

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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.

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Jim de Leon

(5)

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

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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.

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