Residential Foundation

- **Recognizing Shifts in the Home Foundation**
  Recognizing Shifts in the Home Foundation Subtle Clues That Indicate Structural Changes Early Indicators of Potential Foundation Damage Observing Signs of Settlement in Floors Identifying Hairline Cracks and Surface Gaps Evaluating Tilted Door Frames and Window Alignment Understanding Bowed Wall Patterns in Basements Detecting Weak Spots Beneath Interior Flooring Uncovering Gradual Shifts in Support Beams Pinpointing Areas Prone to Moisture Intrusion Checking for Stair-Step Cracks Along Walls Preventing Growth of Small Foundation Cracks
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Excavation is essential for deep foundation repair in affected areas **professional slab foundation repair service** masonry.

In the realm of building maintenance and construction, understanding and identifying areas prone to moisture intrusion is paramount. Moisture intrusion, the unwelcome guest in any structure, can lead to a host of problems, ranging from aesthetic degradation to severe structural damage. This essay delves into the critical task of pinpointing these vulnerable areas, offering insights into why it's essential and how it can be effectively accomplished.

At the heart of the matter, moisture intrusion is often a silent adversary. It creeps into buildings through seemingly innocuous paths, such as cracks in the foundation, gaps around windows and doors, and even through the roofing materials. The insidious nature of moisture means that by the time its effects are visible, significant damage may have already occurred. Therefore, the ability to identify potential entry points before they become problematic is crucial.

One of the primary areas to focus on when pinpointing moisture intrusion is the building's envelope. The envelope, comprising walls, windows, doors, and the roof, acts as the first line of defense against external elements. Regular inspections of these areas can reveal early signs of wear and tear, such as cracks or deteriorating sealants, which are prime entry points for moisture. For instance, a small crack in a wall might seem inconsequential, but over time, it can allow significant amounts of water to seep in, leading to mold growth and structural weakening.

Another critical area to consider is the foundation. Basements and crawl spaces are particularly susceptible to moisture intrusion due to their proximity to the ground. Poor drainage around the exterior of the building can exacerbate this issue, causing water to pool and eventually find its way inside. Inspecting the grading of the land around the foundation and ensuring that gutters and downspouts are functioning correctly can help mitigate these risks.

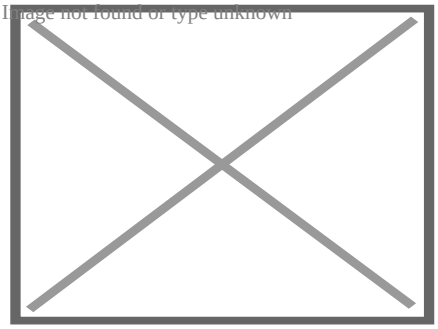
Inside the building, bathrooms and kitchens are hotspots for moisture-related issues. These areas are subjected to high levels of humidity due to daily activities such as showering and cooking. Without proper ventilation, this moisture can accumulate, leading to condensation on walls and ceilings. Over time, this can result in mold and mildew, not only damaging the building but also posing health risks to occupants. Ensuring that exhaust fans are operational and that there is adequate airflow can help prevent these problems.

In addition to these specific areas, it's essential to consider the overall design and construction of the building. Materials used in construction can greatly influence the building's susceptibility to moisture. For example, using non-breathable materials in humid climates can trap moisture within the structure, leading to long-term damage. Understanding the local climate and selecting appropriate materials can significantly reduce the risk of moisture intrusion.

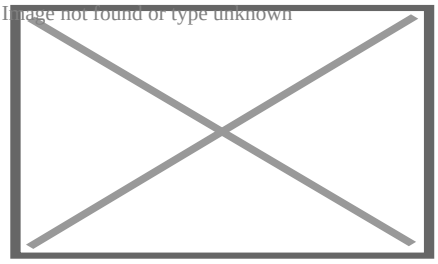
Technology also plays a vital role in pinpointing areas prone to moisture. Modern tools such as thermal imaging cameras can detect temperature differences that may indicate moisture intrusion. Similarly, moisture meters can be used to measure the moisture content in building materials, helping to identify areas that may be at risk.

In conclusion, pinpointing areas prone to moisture intrusion is a multifaceted task that requires a thorough understanding of building design, construction materials, and the local environment. By focusing on critical areas such as the building envelope, foundation, and high-humidity zones, and utilizing modern technology, it is possible to identify and address potential issues before they escalate. This proactive approach not only preserves the integrity of the structure but also ensures a healthier and more comfortable living environment for its occupants.

About concrete slab



Suspended slab under construction, with the formwork still in place



Suspended slab formwork and rebar in place, ready for concrete pour.

A **concrete slab** is a common structural element of modern buildings, consisting of a flat, horizontal surface made of cast concrete. Steel-reinforced slabs, typically between 100 and 500 mm thick, are most often used to construct floors and ceilings, while thinner *mud slabs* may be used for exterior paving (see below).[1][2]

In many domestic and industrial buildings, a thick concrete slab supported on foundations or directly on the subsoil, is used to construct the ground floor. These slabs are generally classified as *ground-bearing* or *suspended*. A slab is ground-bearing if it rests directly on the foundation, otherwise the slab is suspended.[3] For multi-story buildings, there are several common slab designs (

see § Design for more types):

- Beam and block, also referred to as *rib and block*, is mostly used in residential and industrial applications. This slab type is made up of pre-stressed beams and hollow blocks and are temporarily propped until set, typically after 21 days.[4]
- A hollow core slab which is precast and installed on site with a crane
- In high rise buildings and skyscrapers, thinner, pre-cast concrete slabs are slung between the steel frames to form the floors and ceilings on each level. Cast in-situ slabs are used in high rise buildings and large shopping complexes as well as houses. These in-situ slabs are cast on site using shutters and reinforced steel.

On technical drawings, reinforced concrete slabs are often abbreviated to "r.c.c. slab" or simply "r.c.". Calculations and drawings are often done by structural engineers in CAD software.

Thermal performance

[edit]

Energy efficiency has become a primary concern for the construction of new buildings, and the prevalence of concrete slabs calls for careful consideration of its thermal properties in order to minimise wasted energy.[5] Concrete has similar thermal properties to masonry products, in that it has a relatively high thermal mass and is a good conductor of heat.

In some special cases, the thermal properties of concrete have been employed, for example as a heatsink in nuclear power plants or a thermal buffer in industrial freezers.[6]

Thermal conductivity

[edit]

Thermal conductivity of a concrete slab indicates the rate of heat transfer through the solid mass by conduction, usually in regard to heat transfer to or from the ground. The coefficient of thermal conductivity, *k*, is proportional to density of the concrete, among other factors.[5] The primary

influences on conductivity are moisture content, type of aggregate, type of cement, constituent proportions, and temperature. These various factors complicate the theoretical evaluation of a *k*-value, since each component has a different conductivity when isolated, and the position and proportion of each components affects the overall conductivity. To simplify this, particles of aggregate may be considered to be suspended in the homogeneous cement. Campbell-Allen and Thorne (1963) derived a formula for the theoretical thermal conductivity of concrete.[6] In practice this formula is rarely applied, but remains relevant for theoretical use. Subsequently, Valore (1980) developed another formula in terms of overall density.[7] However, this study concerned hollow concrete blocks and its results are unverified for concrete slabs.

The actual value of *k* varies significantly in practice, and is usually between 0.8 and 2.0 W $m^{?1}$ $K^{?1}$.[8] This is relatively high when compared to other materials, for example the conductivity of wood may be as low as 0.04 W $m^{?1}$ $K^{?1}$. One way of mitigating the effects of thermal conduction is to introduce insulation (

see § Insulation).

Thermal mass

[edit]

The second consideration is the high thermal mass of concrete slabs, which applies similarly to walls and floors, or wherever concrete is used within the thermal envelope. Concrete has a relatively high thermal mass, meaning that it takes a long time to respond to changes in ambient temperature.[9] This is a disadvantage when rooms are heated intermittently and require a quick response, as it takes longer to warm the entire building, including the slab. However, the high thermal mass is an advantage in climates with large daily temperature swings, where the slab acts as a regulator, keeping the building cool by day and warm by night.

Typically concrete slabs perform better than implied by their R-value.[5] The R-value does not consider thermal mass, since it is tested under constant temperature conditions. Thus, when a concrete slab is subjected to fluctuating temperatures, it will respond more slowly to these changes and in many cases increase the efficiency of a building.[5] In reality, there are many factors which contribute to the effect of thermal mass, including the depth and composition of the slab, as well as other properties of the building such as orientation and windows.

Thermal mass is also related to thermal diffusivity, heat capacity and insulation. Concrete has low thermal diffusivity, high heat capacity, and its thermal mass is negatively affected by insulation (e.g. carpet).[5]

Insulation

[edit]

Without insulation, concrete slabs cast directly on the ground can cause a significant amount of extraneous energy transfer by conduction, resulting in either lost heat or unwanted heat. In modern construction, concrete slabs are usually cast above a layer of insulation such as expanded polystyrene, and the slab may contain underfloor heating pipes.[10] However, there are still uses for a slab that is not insulated, for example in outbuildings which are not heated or cooled to room temperature (

see § Mud slabs). In these cases, casting the slab directly onto a substrate of aggregate will maintain the slab near the temperature of the substrate throughout the year, and can prevent both freezing and overheating.

A common type of insulated slab is the beam and block system (mentioned above) which is modified by replacing concrete blocks with expanded polystyrene blocks.[11] This not only allows for better insulation but decreases the weight of slab which has a positive effect on load bearing walls and foundations.

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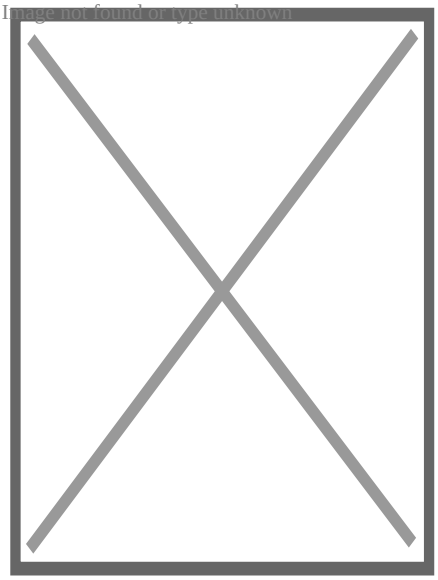

Formwork set for concrete pour.

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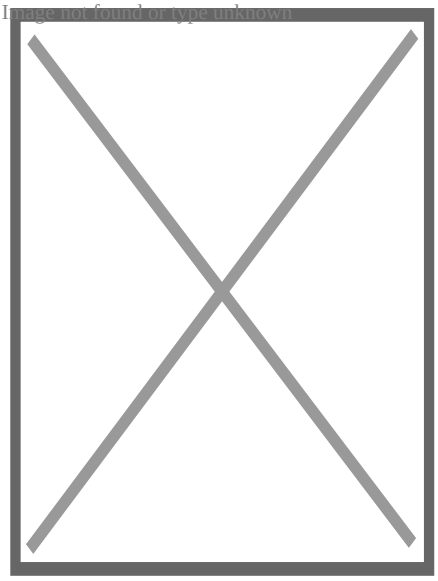

Concrete poured into formwork. This slab is ground-bearing and reinforced with steel rebar.

Design

[edit]
Further information: Marcus' method

Ground-bearing slabs

[edit]
See also: Shallow foundation § Slab on grade

Ground-bearing slabs, also known as "on-ground" or "slab-on-grade", are commonly used for ground floors on domestic and some commercial applications. It is an economical and quick construction method for sites that have non-reactive soil and little slope.[12]

For ground-bearing slabs, it is important to design the slab around the type of soil, since some soils such as clay are too dynamic to support a slab consistently across its entire area. This results in cracking and deformation, potentially leading to structural failure of any members attached to the floor, such as wall studs.[12]

Levelling the site before pouring concrete is an important step, as sloping ground will cause the concrete to cure unevenly and will result in differential expansion. In some cases, a naturally sloping site may be levelled simply by removing soil from the uphill site. If a site has a more significant grade, it may be a candidate for the "cut and fill" method, where soil from the higher ground is removed, and the lower ground is built up with fill.[13]

In addition to filling the downhill side, this area of the slab may be supported on concrete piers which extend into the ground. In this case, the fill material is less important structurally as the dead weight of the slab is supported by the piers. However, the fill material is still necessary to

support the curing concrete and its reinforcement.

There are two common methods of filling - *controlled fill* and *rolled fill*.[13]

- **Controlled fill**: Fill material is compacted in several layers by a vibrating plate or roller. Sand fills areas up to around 800 mm deep, and clay may be used to fill areas up to 400 mm deep. However, clay is much more reactive than sand, so it should be used sparingly and carefully. Clay must be moist during compaction to homogenise it.[13]
- **Rolled fill:** Fill is repeatedly compacted by an excavator, but this method of compaction is less effective than a vibrator or roller. Thus, the regulations on maximum depth are typically stricter.

Proper curing of ground-bearing concrete is necessary to obtain adequate strength. Since these slabs are inevitably poured on-site (rather than precast as some suspended slabs are), it can be difficult to control conditions to optimize the curing process. This is usually aided by a membrane, either plastic (temporary) or a liquid compound (permanent).[14]

Ground-bearing slabs are usually supplemented with some form of reinforcement, often steel rebar. However, in some cases such as concrete roads, it is acceptable to use an unreinforced slab if it is adequately engineered (

see below).

Suspended slabs

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For a suspended slab, there are a number of designs to improve the strength-to-weight ratio. In all cases the top surface remains flat, and the underside is modulated:

- A *corrugated slab* is designed when the concrete is poured into a corrugated steel tray, more commonly called decking. This steel tray improves strength of the slab, and prevents the slab from bending under its own weight. The corrugations run in one direction only.
- A *ribbed slab* gives considerably more strength in one direction. This is achieved with concrete beams bearing load between piers or columns, and thinner, integral ribs in the perpendicular direction. An analogy in carpentry would be a subfloor of bearers and joists. Ribbed slabs have higher load ratings than corrugated or flat slabs, but are inferior to waffle slabs.[15]
- A *waffle slab* gives added strength in both directions using a matrix of recessed segments beneath the slab.[16] This is the same principle used in the ground-bearing version, the waffle slab foundation. Waffle slabs are usually deeper than ribbed slabs of equivalent strength, and are heavier hence require stronger foundations. However, they provide increased mechanical strength in two dimensions, a characteristic important for vibration resistance and soil movement.[17]

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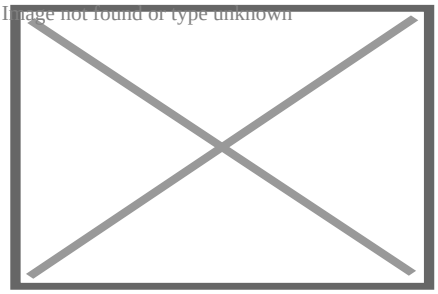

The exposed underside of a waffle slab used in a multi-storey building

Unreinforced slabs

[edit]

Unreinforced or "plain"[18] slabs are becoming rare and have limited practical applications, with one exception being the mud slab (

see below). They were once common in the US, but the economic value of reinforced ground-bearing slabs has become more appealing for many engineers.[10] Without reinforcement, the entire load on these slabs is supported by the strength of the concrete, which becomes a vital factor. As a result, any stress induced by a load, static or dynamic, must be within the limit of the concrete's flexural strength to prevent cracking.[19] Since unreinforced concrete is relatively very weak in tension, it is important to consider the effects of tensile stress caused by reactive soil, wind uplift, thermal expansion, and cracking.[20] One of the most common applications for unreinforced slabs is in concrete roads.

Mud slabs

[edit]

Mud slabs, also known as *rat slabs*, are thinner than the more common suspended or ground-bearing slabs (usually 50 to 150 mm), and usually contain no reinforcement.[21] This makes them economical and easy to install for temporary or low-usage purposes such as subfloors, crawlspaces, pathways, paving, and levelling surfaces.[22] In general, they may be used for any application which requires a flat, clean surface. This includes use as a base or "sub-slab" for a larger structural slab. On uneven or steep surfaces, this preparatory measure is necessary to provide a flat surface on which to install rebar and waterproofing membranes.[10] In this application, a mud slab also prevents the plastic bar chairs from sinking into soft topsoil which can cause spalling due to incomplete coverage of the steel. Sometimes a mud slab may be a substitute for coarse aggregate. Mud slabs typically have a moderately rough surface, finished with a float.[10]

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Substrate and rebar prepared for pouring a mud slab

Axes of support

[edit]

One-way slabs

[edit]

A *one-way slab* has moment-resisting reinforcement only in its short axis, and is used when the moment in the long axis is negligible.[23] Such designs include corrugated slabs and ribbed slabs. Non-reinforced slabs may also be considered one-way if they are supported on only two opposite sides (i.e. they are supported in one axis). A one-way reinforced slab may be stronger than a two-way non-reinforced slab, depending on the type of load.

The calculation of reinforcement requirements for a one-way slab can be extremely tedious and time-consuming, and one can never be completely certain of the best design.[*citation needed*] Even minor changes to the project can necessitate recalculation of the reinforcement requirements. There are many factors to consider during the structural structure design of one-way slabs, including:

- Load calculations
- Bending moment calculation
- Acceptable depth of flexure and deflection
- Type and distribution of reinforcing steel

Two-way slabs

[edit]

A *two-way slab* has moment resisting reinforcement in both directions.[24] This may be implemented due to application requirements such as heavy loading, vibration resistance, clearance below the slab, or other factors. However, an important characteristic governing the requirement of a two-way slab is the ratio of the two horizontal lengths. If $\displaystyle l_x$, $\displaystyle$ is the short dimension and $\displaystyle l_y$ is the long dimension, then moment in both directions should be

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considered in design.[25] In other words, if the axial ratio is greater than two, a two-way slab is required.

A non-reinforced slab is two-way if it is supported in both horizontal axes.

Construction

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A concrete slab may be prefabricated (precast), or constructed on site.

Prefabricated

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Prefabricated concrete slabs are built in a factory and transported to the site, ready to be lowered into place between steel or concrete beams. They may be pre-stressed (in the factory), post-stressed (on site), or unstressed.[10] It is vital that the wall supporting structure is built to the correct dimensions, or the slabs may not fit.

On-site

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On-site concrete slabs are built on the building site using formwork, a type of boxing into which the wet concrete is poured. If the slab is to be reinforced, the rebars, or metal bars, are positioned within the formwork before the concrete is poured in.[26] Plastic-tipped metal or plastic bar chairs, are used to hold the rebar away from the bottom and sides of the form-work, so that when the concrete sets it completely envelops the reinforcement. This concept is known as concrete cover. For a ground-bearing slab, the formwork may consist only of side walls pushed into the ground. For a suspended slab, the formwork is shaped like a tray, often supported by a temporary scaffold until the concrete sets.

The formwork is commonly built from wooden planks and boards, plastic, or steel. On commercial building sites, plastic and steel are gaining popularity as they save labour.[27] On low-budget or small-scale jobs, for instance when laying a concrete garden path, wooden planks are very common. After the concrete has set the wood may be removed.

Formwork can also be permanent, and remain in situ post concrete pour. For large slabs or paths that are poured in sections, this permanent formwork can then also act as isolation joints within concrete slabs to reduce the potential for cracking due to concrete expansion or movement.

In some cases formwork is not necessary. For instance, a ground slab surrounded by dense soil, brick or block foundation walls, where the walls act as the sides of the tray and hardcore (rubble)

acts as the base.

See also

[edit]

- Shallow foundation (Commonly used for ground-bearing slabs)
- Hollow-core slab (Voided slab, one-way spanning)
- Beam and block (voided slab, one way spanning)
- Voided biaxial slab (Voided slab, two-way spanning)
- Formwork
- Precast concrete
- Reinforced concrete
- Rebar
- Concrete cover

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External links

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- *Concrete Basics: A Guide to Concrete Practice*
- *Super Insulated Slab Foundations*
- *Design of Slabs on Ground* Archived 2021-05-08 at the Wayback Machine

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Concrete

History

- Ancient Roman architecture
- Roman architectural revolution
- Roman concrete
- Roman engineering
- Roman technology

Composition

- Cement
  - Calcium aluminate
  - Energetically modified
  - Portland
  - Rosendale
- Water
- Water–cement ratio
- Aggregate
- Reinforcement
- Fly ash
- Ground granulated blast-furnace slag
- Silica fume
- Metakaolin

Production

- Plant
- Concrete mixer
- Volumetric mixer
- Reversing drum mixer
- Slump test
- Flow table test
- Curing
- Concrete cover
- Cover meter
- Rebar

Construction	○ Precast ○ Cast-in-place ○ Formwork ○ Climbing formwork ○ Slip forming ○ Screed ○ Power screed ○ Finisher ○ Grinder ○ Power trowel ○ Pump ○ Float ○ Sealer ○ Tremie
Science	○ Properties ○ Durability ○ Degradation ○ Environmental impact ○ Recycling ○ Segregation ○ Alkali–silica reaction

Types

- AstroCrete
- Fiber-reinforced
- Filigree
- Foam
- Lunarcrete
- Mass
- Nanoconcrete
- Pervious
- Polished
- Polymer
- Prestressed
- Ready-mix
- Reinforced
- Roller-compacting
- Self-consolidating
- Self-leveling
- Sulfur
- Tabby
- Translucent
- Waste light
- Aerated
  - AAC
  - RAAC

Applications

- Slab
  - waffle
  - hollow-core
  - voided biaxial
  - slab on grade
- Concrete block
- Step barrier
- Roads
- Columns
- Structures

Organizations

- American Concrete Institute
- Concrete Society
- Institution of Structural Engineers
- Indian Concrete Institute
- Nanocem
- Portland Cement Association
- International Federation for Structural Concrete

Standards	○ Eurocode 2 ○ EN 197-1 ○ EN 206-1 ○ EN 10080
See also	○ Hempcrete

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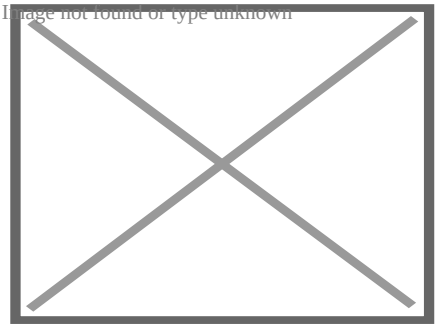
About home improvement

For the 1990s sitcom, see Home Improvement (TV series). For other uses, see Home improvement (disambiguation).



Merchandise on display in a hardware store

The concept of **home improvement**, **home renovation** or **remodeling** is the process of renovating, making improvements or making additions to one's home.[1] Home improvement can

consist of projects that upgrade an existing home interior (such as electrical and plumbing), exterior (masonry, concrete, siding, roofing) or other improvements to the property (i.e. garden work or garage maintenance/additions). Home improvement projects can be carried out for a number of different reasons; personal preference and comfort, maintenance or repair work, making a home bigger by adding rooms/spaces, as a means of saving energy, or to improve safety.[2]

Types of home improvement

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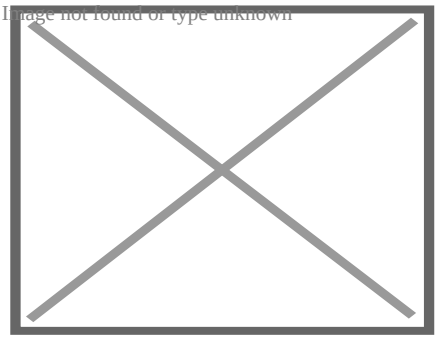


Man painting a fence

While "home improvement" often refers to building projects that alter the structure of an existing home, it can also include improvements to lawns, gardens, and outdoor structures, such as gazebos and garages. It also encompasses maintenance, repair, and general servicing tasks. Home improvement projects generally have one or more of the following goals:[*citation needed*]

Comfort

[edit]

- Upgrading heating, ventilation and air conditioning systems (HVAC).
- Upgrading rooms with luxuries, such as adding gourmet features to a kitchen or a hot tub spa to a bathroom.
- Increasing the capacity of plumbing and electrical systems.
- Waterproofing basements.
- Soundproofing rooms, especially bedrooms and baths.

Maintenance and repair

[edit]

Maintenance projects can include:

- Roof tear-off and replacement.
- Replacement or new construction windows.
- Concrete and masonry repairs to the foundation and chimney.
- Repainting rooms, walls or fences
- Repairing plumbing and electrical systems
- Wallpapering
- Furniture polishing
- Plumbing, home interior and exterior works
- Shower maintenance

Additional space

[edit]

Additional living space may be added by:

- Turning marginal areas into livable spaces such as turning basements into recrooms, home theaters, or home offices – or attics into spare bedrooms.
- Extending one's house with rooms added to the side of one's home or, sometimes, extra levels to the original roof. Such a new unit of construction is called an "add-on".[3]

Saving energy

[edit]

Homeowners may reduce utility costs with:

- Energy-efficient thermal insulation, replacement windows, and lighting.
- Renewable energy with biomass pellet stoves, wood-burning stoves, solar panels, wind turbines, programmable thermostats,[4] and geothermal exchange heat pumps (see autonomous building).

Safety, emergency management, security and privacy

[edit]

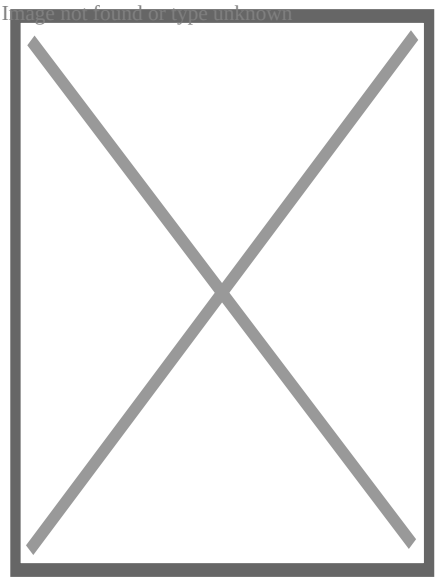
The need to be safer or for better privacy or emergency management can be fulfilled with diversified measures which can be improved, maintained or added. Secret compartments and passages can also be conceived for privacy and security.

- Interventions for fire protection and avoidance. Possible examples are fire sprinkler systems for automatic fire suppression, smoke detectors for fire detection, fire alarm systems, or passive fire protection (including some wildfire management strategies).

- Technical solutions to increase protection from natural disasters, or geotechnical and structural safety (e.g. hurricane or seismic retrofit).
- Interventions and additions to increase home safety from other hazards, like falls, electric injuries, gas leaks or home exposure to environmental health concerns.
- Physical security measures:
  - Access control systems and physical barriers, which can include fences, physical door and window security measures (e.g. grilles, laminated glass, window shutters), locks;
  - Security lighting, security alarms and video surveillance.
- Safes and vaults.
- Spaces for emergency evacuation, like emergency exits and rarer escape tunnels.
- Spaces which provide protection in the event of different emergencies: areas of refuge, storm cellars (as protection from tornadoes and other kinds of severe weather), panic rooms, bunkers and bomb shelters (including fallout shelters), etc.
- Home renovations or additions used to increase privacy can be as simple as curtains or much more advanced, such as some structural surveillance counter-measures. They may overlap with physical security measures.
- Public utility outage preparedness, like backup generators for providing power during power outages .

Home improvement industry

[edit]



Screws and bolts in an OBI home improvement store in Poland

Further information: Hardware store

Home or residential renovation is an almost $300 billion industry in the United States,[5] and a $48 billion industry in Canada.[6][*full citation needed*] The average cost per project is $3,000 in the United States and $11,000–15,000 in Canada.

Professional home improvement is ancient and goes back to the beginning of recorded civilization. One example is Sergius Orata, who in the 1st century B.C. is said by the writer Vitruvius (in his famous book De architectura) to have invented the hypocaust. The hypocaust is an underfloor heating system that was used throughout the Roman Empire in villas of the wealthy. He is said to have become wealthy himself by buying villas at a low price, adding spas and his newly invented hypocaust, and reselling them at higher prices.[7]

Renovation contractors

[edit]

Perhaps the most important or visible professionals in the renovation industry are renovation contractors or skilled trades. These are the builders that have specialized credentials, licensing and experience to perform renovation services in specific municipalities.

While there is a fairly large "grey market" of unlicensed companies, there are those that have membership in a reputable association and/or are accredited by a professional organization. Homeowners are recommended to perform checks such as verifying license and insurance and checking business references prior to hiring a contractor to work on their house.

Because interior renovation will touch the change of the internal structure of the house, ceiling construction, circuit configuration and partition walls, etc., such work related to the structure of the house, of course, also includes renovation of wallpaper posting, furniture settings, lighting, etc.

Aggregators

[edit]

Aggregators are companies that bundle home improvement service offers and act as intermediary agency between service providers and customers.

In popular culture

[edit]

Home improvement was popularized on television in 1979 with the premiere of *This Old House* starring Bob Vila on PBS. American cable channel HGTV features many do-it-yourself shows, as does sister channel DIY Network.[8] Danny Lipford hosts and produces the nationally syndicated *Today's Homeowner with Danny Lipford*. Tom Kraeutler and Leslie Segrete co-host the nationally syndicated *The Money Pit Home Improvement Radio Show*.

Movies that poked fun at the difficulties involved include: *Mr. Blandings Builds His Dream House* (1948), starring Cary Grant and Myrna Loy; *George Washington Slept Here* (1942), featuring Jack Benny and Ann Sheridan; and *The Money Pit* (1986), with Tom Hanks and Shelley Long.

The sitcom *Home Improvement* used the home improvement theme for comedic purposes.

See also

[edit]

- Image not found or type unknown Housing portal

- Home repair
- Housekeeping
- Maintenance, repair and operations

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[edit]

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2. **^** https://www.collinsdictionary.com/us/dictionary/english/home-improvements
3. **^** *"Add-on". English Oxford Living Dictionary (US). Oxford University Press. Archived from the original on February 21, 2017. Retrieved February 20, 2017.*
4. **^** Use a Programmable Thermostat, Common Sense, to Reduce Energy Bills Archived July 19, 2009, at the Wayback Machine, Brett Freeman, oldhouseweb.com
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7. **^** *"Canada Homeowners Community - Example of Low-Cost Advices used by Canadian Homeowners (Community) for Home Improvement that boost the sale of your Home". Canada Homeowners Community. January 12, 2020.*
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Further reading

[edit]

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- *Michael W. Litchfield (2012). Chip Harley (ed.). Renovation (4th, Completely revised and updated. ed.). Newtown, Conn.: Taunton Press, Incorporated. ISBN 978-1600854927.*

External links

[edit]

- Image not found or type unknown Media related to Home improvement at Wikimedia Commons

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Wikibooks has a book on the topic of: ***Kitchen Remodel***

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Rooms and spaces of a house

Shared rooms

- Bonus room
- Common room
- Den
- Dining room
- Family room
- Garret
- Great room
- Home cinema
- Kitchen
  - dirty kitchen
  - kitchenette
- Living room
- Gynaeceum
  - harem
- Andron
  - man cave
- Recreation room
  - billiard room
- Shrine
- Study
- Sunroom

Private rooms

- Bathroom
  - toilet
- Bedroom / Guest room
  - closet
- Bedsit / Miniflat
- Boudoir
- Cabinet
- Nursery

Spaces

- Atrium
- Balcony
- Breezeway
- Conversation pit
- Cubby-hole
- Deck
- Elevator
  - dumbwaiter
- Entryway/Genkan
- Fireplace
  - hearth
- Foyer
- Hall
- Hallway
- Inglenook
- Lanai
- Loft
- Loggia
- Overhang
- Patio
- Porch
  - screened
  - sleeping
- Ramp
- Secret passage
- Stairs/Staircase
- Terrace
- Veranda
- Vestibule

Technical, utility and storage	○ Attic ○ Basement ○ Carport ○ Cloakroom ○ Closet ○ Crawl space ○ Electrical room ○ Equipment room ○ Furnace room / Boiler room ○ Garage ○ Janitorial closet ○ Larder ○ Laundry room / Utility room / Storage room ○ Mechanical room / floor ○ Pantry ○ Root cellar ○ Semi-basement ○ Storm cellar / Safe room ○ Studio ○ Wardrobe ○ Wine cellar ○ Wiring closet ○ Workshop

Great house areas

- Antechamber
- Ballroom
- Kitchen-related
  - butler's pantry
  - buttery
  - saucery
  - scullery
  - spicery
  - still room
- Conservatory / Orangery
- Courtyard
- Drawing room
- Great chamber
- Great hall
- Library
- Long gallery
- Lumber room
- Parlour
- Sauna
- Servants' hall
- Servants' quarters
- Smoking room
- Solar
- State room
- Swimming pool
- Turret
- Undercroft

Other

- Furniture
- Hidden room
- House
  - house plan
  - styles
  - types
- Multi-family residential
- Secondary suite
- Duplex
- Terraced
- Detached
- Semi-detached
- Townhouse
- Studio apartment

Architectural elements	○ Arch
	○ Balconet
	○ Baluster
	○ Belt course
	○ Bressummer
	○ Ceiling
	○ Chimney
	○ Colonnade / Portico
	○ Column
	○ Cornice / Eaves
	○ Dome
	○ Door
	○ Ell
	○ Floor
	○ Foundation
	○ Gable
	○ Gate
	  ○ Portal
	○ Lighting
	○ Ornament
	○ Plumbing
	○ Quoins
	○ Roof
	  ○ shingles
	○ Roof lantern
	○ Sill plate
	○ Style
	  ○ list
	○ Skylight
	○ Threshold
	○ Transom
	○ Vault
	○ Wall
	○ Window

Related

- Backyard
- Driveway
- Front yard
- Garden
  - roof garden
- Home
- Home improvement
- Home repair
- Shed
- Tree house

- Image not found or type unknown Category: Rooms

About Cook County

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Things To Do in Cook County

Photo

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Sand Ridge Nature Center

4.8 (96)

Photo

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River Trail Nature Center

4.6 (235)

Photo

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Palmisano (Henry) Park

4.7 (1262)

Driving Directions in Cook County

Driving Directions From Palmisano (Henry) Park to

Driving Directions From Lake Katherine Nature Center and Botanic Gardens to

Driving Directions From Navy Pier to

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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.

Check our other pages :

- **Uncovering Gradual Shifts in Support Beams**
- **Exploring Slab on Grade Construction Details**
- **Detecting Weak Spots Beneath Interior Flooring**
- **Checking for Stair-Step Cracks Along Walls**

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