



- **Understanding Expansive Clay and Its Impact on Foundations**
Understanding Expansive Clay and Its Impact on Foundations Examining Sandy Loam for Residential Support Identifying Areas Vulnerable to Soil Erosion Evaluating Soil Moisture Fluctuations Beneath Homes Approaches for Chemical Soil Stabilization Techniques for Addressing Soil Heave Issues Managing Settlement with Targeted Soil Compaction Recognizing Soil Drainage Limitations Investigating Soil Stress Testing in Residential Sites Incorporating Root Barriers to Prevent Shifts Examining Seasonal Swelling and Shrinking of Soil Employing Sustainable Methods for Long Term Soil Health
- **Planning French Drains for Effective Water Control**
Planning French Drains for Effective Water Control Setting Up Sump Pumps to Prevent Basement Flooding Extending Gutter Downspouts for Extra Protection Excavation Basics for Residential Construction Projects Coordinating Soil Compaction Methods on Site Limiting Erosion Through Proper Grading Techniques Evaluating Perimeter Drain Systems for Dry Foundations Installing Exterior Waterproof Barriers for Walls Adapting Site Plans to Local Rainfall Patterns Understanding Swale Placement for Controlled Water Flow Enhancing Overall Site Drainage with Gravel Trenches Minimizing Subsurface Water Accumulation Around Foundations
- **About Us**



Common causes of subsurface water accumulation around foundations

When it comes to maintaining the integrity of a building's foundation, understanding the common causes of subsurface water accumulation is essential. Timely foundation crack repair service prevents costly long-term damage [foundation repair service near me](#) brick. This phenomenon, if left unchecked, can lead to serious structural issues over time. Let's explore some of the primary factors contributing to this problem.

Firstly, poor drainage is a significant culprit. If the landscape around a building is not graded properly, water may pool near the foundation instead of flowing away. This can happen due to the natural slope of the land or improper installation of gutters and downspouts. Ensuring that water is directed away from the foundation is crucial in preventing subsurface accumulation.

Another common cause is the presence of compacted soil. When soil becomes compacted, either through construction activities or heavy foot traffic, its ability to absorb water is severely reduced. As a result, water may sit on the surface or run off towards the foundation, exacerbating the problem.

Additionally, broken or leaking irrigation systems can contribute to subsurface water accumulation. Sprinkler systems that are not maintained properly can release excessive amounts of water into the ground, leading to saturation around the foundation. Regular inspection and maintenance of these systems are vital to preventing such issues.

Furthermore, the type of soil surrounding the foundation plays a critical role. Clay soils, for example, have a high capacity for retaining water, which can lead to increased moisture levels near the foundation. Understanding the soil composition and taking appropriate measures, such as installing French drains, can help mitigate this risk.

Lastly, heavy rainfall and snowmelt can overwhelm even the best-designed drainage systems. During periods of extreme weather, additional precautions may be necessary to protect the foundation from excess water. This could include the use of sump pumps or temporary barriers to redirect water flow.

In conclusion, addressing the common causes of subsurface water accumulation around foundations is vital for the long-term stability of any structure. By focusing on proper drainage, soil management, maintenance of irrigation systems, understanding soil types, and preparing for extreme weather, homeowners and builders can significantly reduce the risk of foundation damage.

Signs and symptoms of subsurface water accumulation in residential properties

Certainly!

When it comes to maintaining the structural integrity of residential properties, one aspect that often goes unnoticed until it becomes a problem is subsurface water accumulation around foundations. Recognizing the signs and symptoms early can be crucial in preventing extensive damage and costly repairs. Here's what homeowners should be on the lookout for:

Firstly, one of the most obvious signs of subsurface water accumulation is the appearance of damp or wet patches in the basement or crawl space. This moisture can lead to a musty smell, indicating that water is seeping through the foundation walls or floor.

Another tell-tale symptom is the presence of cracks in the foundation itself. Over time, the pressure exerted by accumulating water can cause the foundation to shift or crack, compromising the stability of the entire structure.

Additionally, homeowners may notice that doors and windows begin to stick or become difficult to open and close. This is often a result of the foundation settling unevenly due to subsurface water pressure, causing the frame of the house to warp slightly.

Moreover, the landscape around the house can provide clues. If you observe that the ground near the foundation appears consistently soggy or puddles form after rain, it may indicate poor drainage or an ineffective grading slope, leading to water pooling near the house.

Inside the home, warped floors or peeling paint and wallpaper could also be symptomatic of subsurface water issues. The moisture seeping through the foundation can cause the wooden structure to expand and contract, leading to visible distortions.

Lastly, an increase in the growth of mold or mildew, particularly in the basement or on exterior walls, is a clear indicator of excessive moisture levels, which can be traced back to subsurface water accumulation.

Addressing these signs promptly is essential. Homeowners should consider implementing a comprehensive drainage system, ensuring proper grading around the property, and possibly installing a sump pump to mitigate the effects of subsurface water accumulation. By staying vigilant and proactive, the longevity and safety of residential properties can be significantly enhanced.

Preventive measures to minimize subsurface water accumulation around foundations

To effectively minimize subsurface water accumulation around foundations, implementing preventive measures is crucial. These strategies not only protect the structural integrity of buildings but also enhance their longevity. One of the primary preventive measures is the installation of proper drainage systems. This includes the use of French drains, which are

trenches filled with gravel or rock that channel water away from the foundation. Additionally, ensuring that the ground slopes away from the building can significantly reduce water accumulation. Regular maintenance of gutters and downspouts is also essential, as they should be kept clear of debris to allow for efficient water flow away from the foundation. Another important measure is the use of permeable materials in landscaping, such as gravel or permeable pavers, which allow water to infiltrate the ground rather than pooling around the foundation. Furthermore, installing a vapor barrier beneath the soil can help prevent moisture from rising and accumulating near the foundation. Lastly, regular inspections and monitoring of the soil moisture levels around the foundation can help identify potential issues early, allowing for timely interventions. By adopting these preventive measures, property owners can significantly reduce the risk of subsurface water accumulation and the associated damages to their foundations.

Effective techniques for managing and redirecting subsurface water away from foundations

Absolutely! Managing and redirecting subsurface water away from foundations is crucial for maintaining the integrity of a building's structure. Here are some effective techniques to achieve this:

Firstly, installing a well-designed drainage system is paramount. This includes French drains, which are trenches filled with gravel or rock that channel water away from the foundation. They are typically installed around the perimeter of a building and direct water to a designated discharge point, such as a storm drain or a dry well.

Another effective method is the use of gutter systems. Ensuring that gutters and downspouts are clean and functioning properly can significantly reduce the amount of water that accumulates near the foundation. Extending downspouts away from the building, preferably at least five to ten feet, ensures that water is discharged far enough to prevent it from seeping back toward the foundation.

Additionally, grading the landscape properly can play a significant role in managing subsurface water. The ground around the foundation should slope away from the building at a gradient of about 6 inches for the first 10 feet. This simple adjustment can help water to run off rather than pooling near the foundation.

Furthermore, installing a vapor barrier in the form of a thick plastic sheet under the gravel in the French drain can prevent water from seeping through the soil and reaching the foundation.

Lastly, regular maintenance of the drainage systems and monitoring the moisture levels around the foundation can help in early detection of any issues, allowing for timely interventions.

In conclusion, a combination of proper drainage systems, effective gutter management,

appropriate landscaping, and regular maintenance forms the cornerstone of minimizing subsurface water accumulation around foundations.

Case studies and success stories of residential foundation repair services addressing subsurface water accumulation

Certainly! Here's a human-like essay on the topic:

In the realm of residential foundation repair, addressing subsurface water accumulation is a critical challenge that homeowners and professionals alike must confront. Through a series of case studies and success stories, we can gain valuable insights into effective strategies and techniques for minimizing subsurface water accumulation around foundations.

One notable case study involves a suburban home plagued by persistent foundation issues due to subsurface water accumulation. After a thorough assessment, the repair team implemented a comprehensive solution that included installing a French drain system around the foundation perimeter. This system effectively intercepted and redirected water away from the foundation, significantly reducing hydrostatic pressure. Over time, the homeowner reported a marked improvement in the stability of the foundation, with no further signs of cracking or shifting.

Another success story comes from a coastal region where homes are particularly vulnerable to water-related foundation problems. In this instance, a residence experienced severe foundation settling due to subsurface water accumulation exacerbated by high groundwater levels. The repair experts employed a combination of techniques, including the installation of perimeter drainage pipes and the application of waterproof sealants to the foundation walls. Additionally, they elevated the home slightly to prevent future water intrusion. The result was a dramatic stabilization of the foundation, providing the homeowner with peace of mind and long-term protection against water-related issues.

These case studies underscore the importance of tailored solutions in addressing subsurface water accumulation. Whether through the installation of drainage systems, the application of waterproofing materials, or a combination of both, successful foundation repair hinges on a thorough understanding of the specific challenges posed by each property. By learning from these real-world examples, homeowners and professionals can better navigate the complexities of foundation repair and ensure lasting results.

Expert tips for homeowners to maintain a dry and stable foundation environment

Certainly! Maintaining a dry and stable foundation is crucial for the longevity and safety of any home. Here are some expert tips for homeowners to minimize subsurface water accumulation around their foundations:

Firstly, it's important to understand that water can cause significant damage to a home's foundation. When water accumulates around the foundation, it can lead to cracks, shifts, and even structural failure over time. Therefore, managing water flow around your home is key.

Start by ensuring your gutters and downspouts are clean and functioning properly. This might seem like a small task, but it's incredibly important. Gutters should direct water away from your home, not towards it. If your gutters are clogged with leaves or debris, water can overflow and seep into the ground close to your foundation.

Next, consider the grading around your home. The ground should slope away from your house, not towards it. This natural slope helps water move away from your foundation. If you notice that the ground is sloped towards your home, you may need to adjust the grading. This can be a DIY project for those handy with a shovel, or you might need to hire a professional for larger adjustments.

Installing a French drain is another effective strategy. A French drain is a trench filled with gravel or rock that is designed to redirect water away from your foundation. It's a bit more involved than cleaning gutters or adjusting grading, but it can be very effective in managing subsurface water.

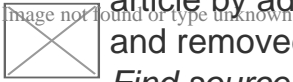
Don't forget about your landscaping. Plants and trees can absorb a lot of water, but they can also contribute to subsurface water accumulation if they're too close to your foundation. Ensure that large trees and shrubs are planted at a safe distance from your home.

Lastly, be mindful of your watering habits. While it's important to keep your lawn and garden hydrated, overwatering can lead to excessive moisture around your foundation. Water your plants in the morning to allow any excess water to evaporate before evening, and avoid watering directly against your home.

In conclusion, maintaining a dry and stable foundation requires a bit of effort, but it's well worth it for the peace of mind and structural integrity it provides. By managing water flow, adjusting grading, considering a French drain, being mindful of landscaping, and careful watering, homeowners can significantly minimize subsurface water accumulation around their foundations.

About basement waterproofing

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Basement waterproofing involves techniques and materials used to prevent water from penetrating the basement of a house or a building. Waterproofing a basement that is below ground level can require the application of sealant materials, the installation of drains and sump pumps, and more.

Purpose

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Waterproofing is usually required by building codes for structures that are built at or below ground level. Waterproofing and drainage considerations are especially important in cases where ground water is likely to build up in the soil or where there is a high water table.

Water in the soil causes hydrostatic pressure to be exerted underneath basement floors and walls. This hydrostatic pressure can force water in through cracks, which can cause major structural damage as well as mold, decay, and other moisture-related problems.

Methods

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Several measures exist to prevent water from penetrating a basement foundation or to divert water that has penetrated a foundation:

French Drain

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French drain

Interior wall and floor sealers

- Interior water drainage
- Exterior drainage
- Exterior waterproofing coatings

- Box type waterproofing^[1]
- Foundation crack injections
- French drains
- Sump pump

Interior sealants

[edit]

In poured concrete foundations, cracks and pipe penetrations are the most common entry points for seepage. These openings can be sealed from the interior. Epoxies, which are strong adhesives, or urethanes can be pressure injected into the openings, thus penetrating the foundation through to the exterior and cutting off the path of the seepage.

In masonry foundations, interior sealers will not provide permanent protection from water infiltration where hydrostatic pressure is present. However, interior sealers are good for preventing high atmospheric humidity inside the basement from absorbing into the porous masonry and causing spalling. Spalling is a condition where constant high humidity or moisture breaks down masonry surfaces, causing deterioration and shedding of the concrete surfaces.

Other coatings can be effective where condensation is the main source of wetness. It is also effective if the problem has minor dampness. Usually, interior waterproofing will not stop major leaks.

Interior water drainage

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Although interior water drainage is not technically waterproofing, it is a widely accepted technique in mitigating basement water and is generally referred to as a basement waterproofing solution. Many interior drainage systems are patented and recognized by Building Officials and Code Administrators(BOCA) as being effective in controlling basement water.

A common system for draining water that has penetrated a basement involves creating a channel around the perimeter of the basement alongside the foundation footers. A French drain, PVC pipe, or other drainage system is installed in the newly made channel. The installed drain is covered with new cement.

The drainage system collects any water entering the basement and drains it to an internally placed sump pump system, which will then pump the water out of the basement. The Federal Emergency Management Agency (FEMA) recommends basement waterproofing with a water alarm and "battery-operated backup pump" as a preventive measure against the high cost of flooding.^[2] Wall conduits (such as dimple boards or other membranes) are fastened to the foundation wall and extend over the new drainage to guide any moisture down into the system.

Exterior waterproofing

[edit]

Waterproofing a structure from the exterior is the only method the U.S. International Building Code (IBC) recognizes as adequate to prevent structural damage caused by water intrusion.

Waterproofing an existing basement begins with excavating to the bottom sides of the footings. Once excavated, the walls are then power washed and allowed to dry. The dry walls are sealed with a waterproofing membrane,^[3] and new drainage tiles (weeping tiles) are placed at the side of the footing.

A French drain, PVC pipe, or other drainage system is installed and water is led further from the basement.

Polymer

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Over the past ten years, polymer-based waterproofing products have been developed. Polymer-based products last for the lifetime of the building and are not affected by soil pH. Polymer-based waterproofing materials can be sprayed directly onto a wall, are very fast curing, and are semi-flexible, allowing for some movement of the substrate.

Causes of water seepage and leaks

[edit]

Water seepage in basement and crawl spaces usually occurs over long periods of time and can be caused by numerous factors.

- Concrete is one of the most commonly used materials in home construction. When pockets of air are not removed during construction, or the mixture is not allowed to cure properly, the concrete can crack, which allows water to force its way through the wall.
- Foundations (footings) are horizontal pads that define the perimeter of foundation walls. When footings are too narrow or are not laid deep enough, they are susceptible to movement caused by soil erosion.
- Gutters and downspouts are used to catch rain water as it falls and to discharge it away from houses and buildings. When gutters are clogged or downspouts are broken, rainwater is absorbed by the soil near the foundation, increasing hydrostatic pressure.
- Weeping tile is a porous plastic drain pipe installed around the perimeter of the house. The main purpose of external weeping tile is preventing water from getting into a basement. However, these pipes can become clogged or damaged, which causes excess

water to put pressure on internal walls and basement floors.

- Water build up inside window wells, after heavy rain or snow, can lead to leaks through basement window seams. Window well covers can be used to prevent water from accumulating in the window well.
- Ground saturation is another common form of basement leaks. When the footing drain fails the ground around the basement can contain too much water and when the saturation point is met flooding can occur.

Warning signs of water damage

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Signs that water is seeping into a basement or crawlspace often take years to develop and may not be easily visible. Over time, multiple signs of damage may become evident and could lead to structural failure.

- Cracked walls: Cracks may be horizontal, vertical, diagonal or stair-stepped. Severe pressure or structural damage is evident by widening cracks.
- Buckling walls: Usually caused by hydrostatic pressure. Walls appear to be bowed inward.
- Peeling paint: Water seeping through walls may lead to bubbling or peeling paint along basement walls.^[4]
- Efflorescence: White, powdery residue found on basement walls near the floor.
- Mold: Fungi that usually grow in damp, dark areas and can cause respiratory problems after prolonged exposure.

Foundation crack injections

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Foundation crack injections are used when poured concrete foundations crack, either from settlement or the expansion and contraction of the concrete. Epoxy crack injections are typically used for structural purposes while hydrophobic or hydrophilic polyurethane injections are used to seal cracks to prevent penetration of moisture or water. Concrete is both strong and inexpensive, making it an ideal product in construction. However, concrete is not waterproof.

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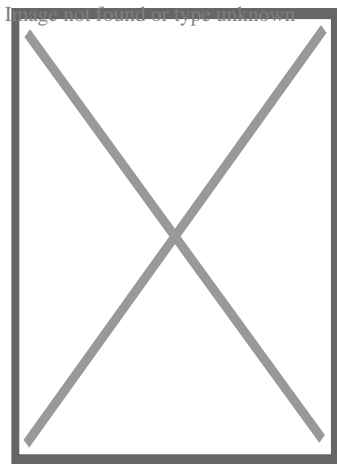
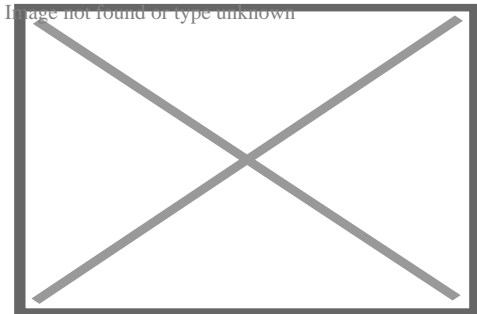
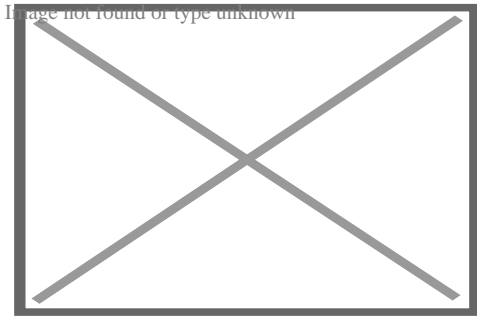
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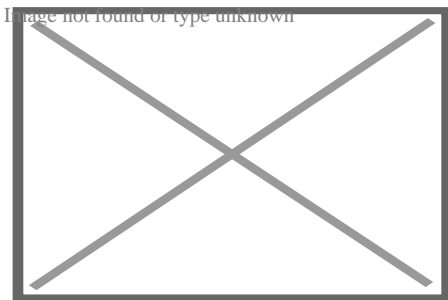
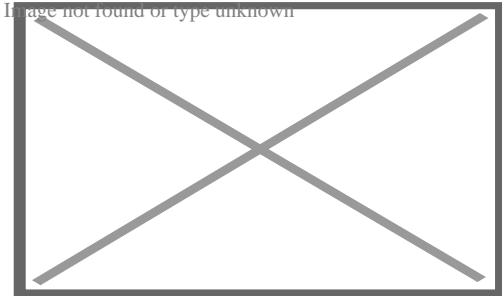
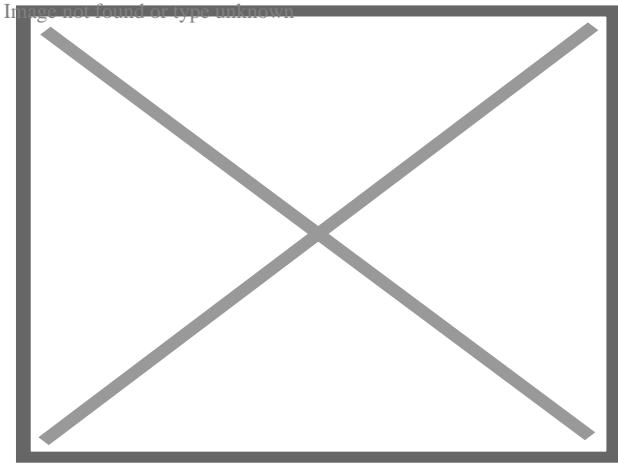
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About ceiling

For other uses, see Ceiling (disambiguation).





Various examples of ornate ceilings

A **ceiling** /ˈsiːlɪŋ/ is an overhead interior roof that covers the upper limits of a room. It is not generally considered a structural element, but a finished surface concealing the underside of the roof structure or the floor of a story above. Ceilings can be decorated to taste, and there are many examples of frescoes and artwork on ceilings, especially within religious buildings. A ceiling can also be the upper limit of a tunnel.

The most common type of ceiling is the dropped ceiling,^[*citation needed*] which is suspended from structural elements above. Panels of drywall are fastened either directly to the ceiling joists or to a few layers of moisture-proof plywood which are then attached to the joists. Pipework or ducts can be run in the gap above the ceiling, and insulation and fireproofing material can be placed here. Alternatively, ceilings may be spray painted instead, leaving the pipework and ducts exposed but painted, and using spray foam.

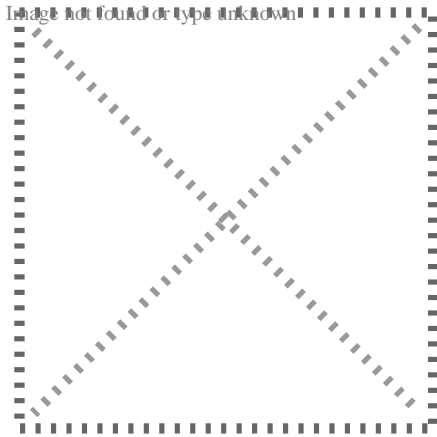
A subset of the dropped ceiling is the suspended ceiling, wherein a network of aluminum struts, as opposed to drywall, are attached to the joists, forming a series of rectangular spaces. Individual pieces of cardboard are then placed inside the bottom of those spaces so that the outer side of the cardboard, interspersed with aluminum rails, is seen as the ceiling from below.

This makes it relatively easy to repair the pipes and insulation behind the ceiling, since all that is necessary is to lift off the cardboard, rather than digging through the drywall and then replacing it.

Other types of ceiling include the cathedral ceiling, the concave or barrel-shaped ceiling, the stretched ceiling and the coffered ceiling. Coving often links the ceiling to the surrounding walls. Ceilings can play a part in reducing fire hazard, and a system is available for rating the fire resistance of dropped ceilings.

Types

[edit]



California tract home with an open-beam ceiling, 1960

Ceilings are classified according to their appearance or construction. A cathedral ceiling is any tall ceiling area similar to those in a church. A dropped ceiling is one in which the finished surface is constructed anywhere from a few inches or centimeters to several feet or a few meters below the structure above it. This may be done for aesthetic purposes, such as achieving a desirable ceiling height; or practical purposes such as acoustic damping or providing a space for HVAC or piping. An inverse of this would be a raised floor. A concave or barrel-shaped ceiling is curved or rounded upward, usually for visual or acoustical value, while a coffered ceiling is divided into a grid of recessed square or octagonal panels, also called a "lacunar ceiling". A cove ceiling uses a curved plaster transition between wall and ceiling; it is named for cove molding, a molding with a concave curve.^[1] A stretched ceiling (or stretch ceiling) uses a number of individual panels using material such as PVC fixed to a perimeter rail.^[2]

Elements

[edit]

Ceilings have frequently been decorated with fresco painting, mosaic tiles and other surface treatments. While hard to execute (at least in place) a decorated ceiling has the advantage that

it is largely protected from damage by fingers and dust. In the past, however, this was more than compensated for by the damage from smoke from candles or a fireplace. Many historic buildings have celebrated ceilings. Perhaps the most famous is the Sistine Chapel ceiling by Michelangelo.

Ceiling height, particularly in the case of low ceilings, may have psychological impacts. [3]

Fire-resistance rated ceilings

[edit]

The most common ceiling that contributes to fire-resistance ratings in commercial and residential construction is the dropped ceiling. In the case of a dropped ceiling, the rating is achieved by the entire system, which is both the structure above, from which the ceilings is suspended, which could be a concrete floor or a timber floor, as well as the suspension mechanism and, finally the lowest membrane or dropped ceiling. Between the structure that the dropped ceiling is suspended from and the dropped membrane, such as a T-bar ceiling or a layer of drywall, there is often some room for mechanical and electrical piping, wiring and ducting to run.

An independent ceiling, however, can be constructed such that it has a stand-alone fire-resistance rating. Such systems must be tested without the benefit of being suspended from a slab above in order to prove that the resulting system is capable of holding itself up. This type of ceiling would be installed to protect items above from fire.

An unrestrained non-loadbearing ceiling undergoing a 4-hour fire test. Deflection is measured off

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An unrestrained non-loadbearing ceiling undergoing a 4-hour fire test. Deflection is measured off the I-beam.

- Durasteel ceiling after successful fire test, being raised from the furnace and readied for an optional

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Durasteel ceiling after successful fire test, being raised from the furnace and readied for an optional 45PSI (3.1 bar) hose-stream test.

Gallery

[edit]

- Gothic ceiling in the Sainte-Chapelle, Paris, 1243-1248, by Pierre de Montreuil[4]

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Gothic ceiling in the Sainte-Chapelle, Paris, 1243-1248, by Pierre de Montreuil [4]

Renaissance ceiling of the Henry II staircase in the Louvre Palace, Paris, by Étienne Carmoy,

○

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Renaissance ceiling of the Henry II

staircase in the
Louvre Palace,
Paris, by
Étienne
Carmoy,
Raymond
Bidollet, Jean
Chrestien and
François
Lheureux, 1553[
5]

Renaissance ceiling of the king's bedroom in the Louvre Palace, by Francisque Scibecq de Carpi

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Renaissance
ceiling of the king's
bedroom in the
Louvre Palace, by
Francisque Scibecq
de Carpi, 1556[6]

○ Baroque ceiling of the Salle des Saisons in the Louvre Palace, by Giovanni Francesco Romanelli

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Baroque
ceiling of the
Salle des
Saisons in the
Louvre
Palace, by
Giovanni
Francesco

Romanelli,
Michel Anguier
and Pietro
Sasso, mid
17th century^[7]

- Neoclassical ceiling of the Salle Duchâtel in the Louvre Palace, with The Triumph of French Pa

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Neoclassical
ceiling of the
Salle Duchâtel in
the Louvre
Palace, with The
Triumph of
French Painting.
Apotheosis of
Poussin, Le
Sueur and Le
Brun in the
centre, by
Charles Meynier,
1822, and
ceilings panels
with medallion
portraits of
French painters,
1828-1833^[8]

- Neoclassical ceiling of the Mollien staircase in the Louvre Palace, designed by Hector Lefuel in 1

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Neoclassical ceiling of the Mollien staircase in the Louvre Palace, designed by Hector Lefuel in 1857 and painted by Charles Louis Müller in 1868-1870^[9]

Moorish Revival ceiling in the Nicolae T. Filitti/Nae Filitis House (Calea DorobanÈ›ilor no. 18), BU

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Moorish Revival ceiling in the Nicolae T. Filitti/Nae Filitis House (Calea DorobanÈ›ilor no. 18), Bucharest, Romania, de Ernest Doneaud, c.1910^[10]

Demonstrative reconstruction of a Roman suspended ceiling in an Imperial palace of circa AD 30

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Demonstrative reconstruction of a Roman suspended ceiling in an Imperial palace of circa AD 306 at Trier, Italy

- Part of the ceiling of the Sistine Chapel in Vatican City in Rome, showing the ceiling in relation to

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Part of the ceiling of the Sistine Chapel in Vatican City in Rome, showing the ceiling in relation to the other frescoes

Ceiling of the Villa Schutzenberger from Strasbourg, France, decorated with Art Nouveau ornaments

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Ceiling of the Villa Schutzenberger from Strasbourg, France, decorated with Art Nouveau ornaments

- Painted ceiling in Liège, Belgium

Image not found or type unknown

Painted ceiling in Liège, Belgium

- Traditional Chinese ceiling of Dayuan Renshou Temple at Taoyuan, Taiwan

Image not found or type unknown

Traditional Chinese ceiling of
Dayuan Renshou Temple at
Taoyuan, Taiwan

- Dropped ceiling

Image not found or type unknown

Dropped ceiling

- Wooden beam ceiling

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Wooden beam ceiling

See also

[edit]

- Beam ceiling
- Hammerbeam roof
- Hollow-core slab
- Moulding (decorative)
- Popcorn ceiling

- Scottish Renaissance painted ceilings
- Tin ceiling
- Passive fire protection
- Fire test
- Hy-Rib

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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
- Gynaecium
 - 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

-  Category: Rooms

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- Israel

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

Image not found or type unknown

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+In+Chicago/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/United+Structural+Systems+of+Illinois%2C+In+Chicago/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+Systems+of+Illinois%2C+In+Chicago/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

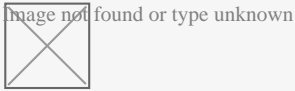
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Jeffery James

(5)

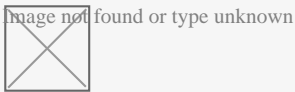
Very happy with my experience. They were prompt and followed through, and very helpful in fixing the crack in my foundation.



Sarah McNeily

(5)

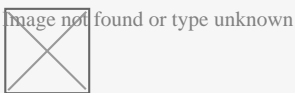
USS was excellent. They are honest, straightforward, trustworthy, and conscientious. They thoughtfully removed the flowers and flower bulbs to dig where they needed in the yard, replanted said flowers and spread the extra dirt to fill in an area of the yard. We've had other services from different companies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



Jim de Leon

(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!



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.

Minimizing Subsurface Water Accumulation Around Foundations [View GBP](#)

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