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## Understanding water control issues and their impact on residential foundations.

Understanding water control issues and their impact on residential foundations is crucial for homeowners and builders alike. Timely foundation crack repair prevents costly structural damage **foundation crack repair service** construction. Water, when not properly managed, can lead to a myriad of problems that affect the structural integrity of a home. One effective solution to combat these issues is the installation of French drains.

French drains are a time-tested method for redirecting water away from the foundation of a house. They consist of a perforated pipe laid in a trench filled with gravel. The pipe collects water and channels it to a designated discharge point, such as a storm drain or a dry well. This system is particularly effective in preventing water from pooling around the foundation, which can lead to cracks, erosion, and even basement flooding.

The impact of water on residential foundations is significant. When water saturates the soil around a foundation, it can cause the soil to expand, exerting pressure on the foundation walls. Over time, this pressure can lead to cracks and shifts in the foundation, compromising the stability of the entire structure. Additionally, water can seep into basements and crawl spaces, leading to mold growth, wood rot, and a host of other issues that can deteriorate the home's condition and value.

Planning for the installation of a French drain involves several key considerations. First, it is important to assess the specific water control issues at the property. This may involve identifying areas where water tends to pool, examining the slope of the land, and understanding the soil composition. A thorough evaluation helps in designing a French drain system that effectively addresses the unique challenges of the site.

Next, the design of the French drain must be carefully planned. This includes determining the optimal location for the trench, the depth at which the pipe should be laid, and the choice of materials. The trench should be deep enough to capture groundwater but not so deep that it interferes with utility lines or the home's structural elements. The choice of gravel and pipe size is also critical, as these factors influence the system's efficiency in draining water away from the foundation.

Installation of a French drain requires precision and attention to detail. The trench must be dug to the correct specifications, and the gravel must be evenly distributed to ensure proper water flow. The perforated pipe should be laid with a slight slope towards the discharge point to facilitate gravity-fed drainage. Additionally, a layer of filter fabric can be placed over the gravel to prevent soil from clogging the pipe.

In conclusion, understanding water control issues and their impact on residential foundations is essential for maintaining the structural integrity of a home. French drains offer an effective solution to manage water and prevent damage. By carefully planning and installing a French drain system, homeowners can protect their foundations from the

detrimental effects of water, ensuring a stable and secure living environment.

## **Assessing the need for French drains in residential properties.**

When it comes to maintaining a healthy and dry residential property, one of the key considerations is effective water control. Excess water can lead to a host of problems, from damp basements and soggy lawns to foundation damage and even mold growth. This is where French drains come into play. But how do you assess the need for French drains in your residential property? Let's dive into the topic and explore the planning process for effective water control with French drains.

First and foremost, it's essential to understand what a French drain is and how it works. A French drain is a trench filled with gravel or rock that is designed to redirect water away from an undesired area. It's a simple yet effective solution for managing surface and subsurface water, preventing it from accumulating and causing damage.

So, how do you determine if your residential property needs a French drain? The assessment process begins with a thorough evaluation of your property's drainage patterns and water flow. Look for signs of water accumulation, such as puddles, soggy spots, or areas where water seems to pool after rain. These are clear indicators that your property may benefit from a French drain.

Additionally, consider the topography of your property. If your home is built on a slope or in a low-lying area, you may be more prone to water accumulation and drainage issues. In such cases, a French drain can help redirect water away from your foundation and towards a designated drainage area, such as a storm drain or dry well.

Another factor to consider is the type of soil on your property. Clay soils, for example, tend to retain water and may require more extensive drainage solutions, including French drains. On the other hand, sandy soils drain more readily and may not necessitate the installation of a French drain.

It's also important to assess the condition of your existing drainage systems. Clogged or inadequate gutters, downspouts, and surface drains can contribute to water accumulation and may indicate the need for a French drain to supplement your existing drainage infrastructure.

In some cases, professional evaluation by a licensed contractor or drainage specialist may be necessary to accurately assess the need for a French drain. They can conduct a thorough site analysis, taking into account factors such as soil composition, water table levels, and existing drainage systems to determine the most effective solution for your property.

Once the need for a French drain has been established, the planning process can begin. This involves determining the optimal location and design for the drain to ensure maximum

effectiveness. Factors such as the slope of the property, the location of water sources (such as downspouts and natural water flow), and the desired drainage destination will all influence the design of the French drain.

In conclusion, assessing the need for French drains in residential properties is a crucial step in maintaining effective water control and preventing water-related damage. By carefully evaluating drainage patterns, property topography, soil type, and existing drainage systems, homeowners can determine whether a French drain is necessary and plan for its installation to ensure a dry and healthy living environment.

### **Key factors to consider when planning French drains for effective water control.**

When planning French drains for effective water control, several key factors must be taken into consideration to ensure the system functions optimally and meets your specific needs.

Firstly, understanding the landscape and topography of your property is crucial. The slope of the land determines the direction in which water will naturally flow. By assessing the elevation and contours, you can strategically place the French drain to intercept and redirect water away from areas prone to flooding or water accumulation.

Secondly, the type of soil present on your property plays a significant role in the design and effectiveness of the French drain. Soil composition affects water permeability and drainage capabilities. Sandy or gravelly soils drain more efficiently than clay soils, which tend to retain water. Knowing your soil type helps in selecting the appropriate size and depth for the drain, as well as the type of aggregate material to use within the drain.

Another critical factor is the volume and frequency of rainfall in your area. Regions with heavy or frequent rainfall require more robust drainage solutions compared to areas with minimal precipitation. Understanding local weather patterns allows you to design a French drain system that can handle peak water volumes without becoming overwhelmed.

Additionally, consider the intended purpose of the French drain. Are you aiming to prevent basement flooding, protect landscaping, or manage stormwater runoff? Each objective may require different design elements, such as the depth of the drain, the size of the perforated pipe, and the choice of filter fabric to prevent clogging.

Lastly, proper maintenance and longevity of the French drain should be factored into the planning process. Regular inspections and cleaning are essential to ensure the system remains effective over time. Designing access points for maintenance can simplify these tasks and prolong the lifespan of the French drain.

In conclusion, effective planning of French drains involves a comprehensive assessment of the landscape, soil type, rainfall patterns, intended purpose, and maintenance requirements. By considering these key factors, you can create a robust and efficient drainage system that provides long-term water control solutions for your property.

## Steps to design and install French drains in residential settings.

Certainly! Let's delve into the practical steps involved in designing and installing French drains in residential settings, focusing on effective water control.

First and foremost, understanding the purpose of a French drain is crucial. Its primary function is to redirect excess water away from areas where it could cause damage, such as foundations, lawns, or driveways. This is particularly important in regions prone to heavy rainfall or where the soil has poor drainage capabilities.

The initial step in designing a French drain is assessment. Take a close look at your property to identify areas prone to water accumulation. This could be low-lying spots in your yard, areas near the foundation that seem perpetually damp, or places where water pools after a rain. Understanding the natural flow of water on your property is key to effective drain placement.

Next, consider the layout. French drains can be surface-level or subsurface. Surface drains are easier to install and maintain but are more visible. Subsurface drains are less obtrusive but require more effort to install and maintain. Decide which type suits your needs and aesthetic preferences.

Once you've chosen the type, it's time to plan the route. The drain should slope away from the area you're trying to protect, typically at a gradient of about 1% (1 foot of fall for every 100 feet of length). This ensures gravity assists in water flow. The outlet of the drain should lead to a place where water won't cause issues, like a dry well, storm drain, or a spot in your yard that can handle extra moisture.

Material selection is another critical aspect. The most common material for French drains is perforated PVC pipe, but you can also use slotted PVC or even flexible drain tile. Surrounding this pipe, you'll need gravel or crushed stone. The size of the gravel is important – too small, and it won't allow for adequate water flow; too large, and it might not fit well around the pipe.

Installation is the next step. Begin by digging a trench along the planned route. The depth and width of the trench will depend on the size of the pipe and the amount of water you expect it to handle. Place a layer of gravel at the bottom of the trench, lay the pipe on top, and cover it with more gravel. This gravel acts as a filter, allowing water to flow into the pipe while keeping out soil and debris.

Finally, once the trench is filled and the drain is in place, backfill the area with topsoil and restore the landscape. It's important to maintain your French drain by periodically checking for blockages and ensuring the gravel and pipe are in good condition.

In conclusion, designing and installing a French drain in a residential setting is a practical solution for effective water control. It requires careful planning, the right materials, and

proper installation techniques. When done correctly, a French drain can significantly reduce water-related problems around your home, providing peace of mind and protecting your property.

### **Maintenance tips for ensuring the longevity and effectiveness of French drains.**

Maintaining a French drain is crucial to ensuring its longevity and effectiveness in managing water flow around your property. Here are some practical tips to keep your French drain in top condition:

Firstly, regular inspections are key. At least once a year, check the drain for any signs of clogging or damage. Look for areas where water may be pooling, which could indicate a blockage. Early detection of issues can prevent more significant problems down the line.

Secondly, keep the area around the French drain clear of debris. Leaves, branches, and other organic matter can accumulate and block the drain. Regularly cleaning the gravel or mulch around the drain can help prevent this. Additionally, avoid planting trees or shrubs directly over the drain, as their roots can grow into the pipe and cause blockages.

Thirdly, consider scheduling professional maintenance checks. A specialist can provide a more thorough inspection and cleaning, ensuring that any hidden issues are addressed. They can also offer advice on any necessary repairs or upgrades.

Lastly, be mindful of what you discharge into the drain. Avoid pouring grease, oil, or other non-biodegradable substances down drains connected to your French drain system, as these can cause clogs and damage the pipes.

By following these maintenance tips, you can ensure that your French drain remains an effective tool for water control, protecting your property from water damage and ensuring a long-lasting solution.

### **Common mistakes to avoid when planning and installing French drains.**

Certainly! When planning and installing French drains, it's crucial to avoid common mistakes that can lead to ineffective drainage and potential damage to your property. Here are some key pitfalls to watch out for:

Firstly, one of the most common errors is underestimating the importance of proper grading. A French drain relies on gravity to move water away from your home or garden. If the drain isn't installed on a slight slope, water won't flow effectively, rendering the system less efficient. Ensure that the drain slopes away from the area you're trying to protect at a rate of about 1% grade per foot.

Another frequent mistake is choosing the wrong location for the French drain. It's essential

to place the drain where it can collect the maximum amount of water. This usually means along the base of a slope or in low-lying areas where water tends to pool. Avoid placing the drain too close to trees or large shrubs, as their roots can clog the system over time.

Improper sizing of the drain is another critical error. The size of the drain should be proportionate to the amount of water it needs to handle. A drain that's too small won't be able to manage heavy rainfall, leading to overflow and potential flooding. Conversely, an oversized drain is unnecessary and more expensive.

Using the wrong type of gravel or perforated pipe can also hinder the effectiveness of a French drain. The gravel should be clean and free of fine particles that can clog the system. The perforated pipe should be of adequate size and have sufficient perforations to allow water to enter freely.

Lastly, neglecting regular maintenance is a common oversight. Over time, debris can accumulate in the drain, reducing its efficiency. Regularly check and clean the drain to ensure it continues to function effectively.

In conclusion, careful planning and attention to detail are essential when installing a French drain. By avoiding these common mistakes, you can ensure that your French drain system provides effective water control for years to come.

### **Case studies demonstrating successful French drain installations in residential properties.**

Certainly!

When it comes to managing excess water around residential properties, French drains have proven to be an invaluable solution. These subsurface drainage systems are designed to redirect water away from foundations, lawns, and other areas where water accumulation can cause damage. To illustrate the effectiveness of French drains, let's delve into a few case studies that demonstrate successful installations in residential settings.

In the first case, a homeowner in a rain-heavy region faced consistent issues with a soggy backyard and basement flooding. After consulting with a drainage expert, they decided to install a French drain along the perimeter of their property. The system was carefully planned to capture rainwater from the roof and surface runoff. Within a few months, the homeowner noticed a significant reduction in backyard moisture and no further basement flooding, even during heavy rains. This success highlighted the importance of proper planning and precise installation.

Another compelling example involves a hillside home that suffered from erosion and water pooling near the foundation. The residents opted for a French drain installation coupled with retaining walls to stabilize the soil. The drain was constructed with a gravel-filled trench lined with a geotextile fabric to prevent soil infiltration. Post-installation, the property experienced minimal erosion, and the water pooling issue was resolved. This case underscored the



benefits of integrating French drains with other landscape modifications for comprehensive water management.

Lastly, a suburban household dealing with a consistently damp lawn decided to install a French drain to improve the yard's aesthetics and functionality. The drain was installed beneath the lawn, strategically placed to intercept water before it could saturate the soil. The result was a drier, healthier lawn that could be used year-round without worry. This example shows how French drains can enhance the usability and appearance of residential outdoor spaces.

These case studies collectively demonstrate the versatility and effectiveness of French drains in residential water control. Whether addressing basement flooding, erosion, or lawn dampness, a well-planned and expertly installed French drain can provide long-lasting solutions to common water management challenges.

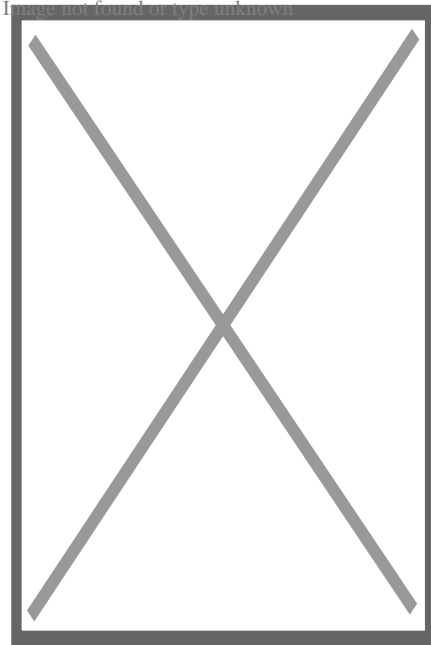




## About home inspection



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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.<sup>[citation needed]</sup> 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.<sup>[citation needed]</sup> As a result, the real estate licensing law in Massachusetts was amended<sup>[1]</sup><sup>[non-primary source needed]</sup> 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),<sup>[2]</sup> 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,<sup>[3]</sup> 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.<sup>[4]</sup>

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.<sup>[5]</sup>

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<sup>[6]</sup> 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.<sup>[a]</sup> 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.<sup>[11]</sup> 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.<sup>[12]</sup>

## 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.<sup>[13]</sup>

## 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.<sup>[14]</sup>



# 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,<sup>[7]</sup> ASHI,<sup>[8]</sup> InterNACHI,<sup>[9]</sup> or IHINA<sup>[10]</sup> websites.

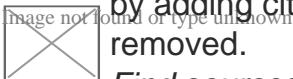
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## About basement waterproofing

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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

[edit]

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

[edit]

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<sup>[1]</sup>
- 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**

[edit]

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.<sup>[2]</sup> 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,<sup>[3]</sup> 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

[edit]

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

[edit]

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.<sup>[4]</sup>
- 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

[edit]

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.

## References

[edit]

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2. <sup>^</sup> *"FloodSmart | How to Prepare for a Flood and Minimize Losses". Archived from the original on 9 May 2020. Retrieved 20 March 2020.*
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## Things To Do in Cook County

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### Photo

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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

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Driving Directions From Palmisano (Henry) Park to

Driving Directions From Lake Katherine Nature Center and Botanic Gardens to

Driving Directions From Navy Pier to

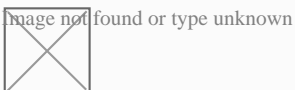
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## Reviews for

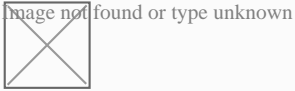
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**Jeffery James**

**(5)**

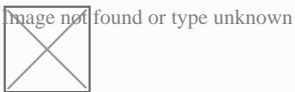
Very happy with my experience. They were prompt and followed through, and very helpful in fixing the crack in my foundation.



**Sarah McNeily**

**(5)**

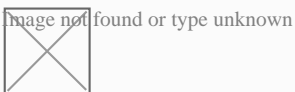
USS was excellent. They are honest, straightforward, trustworthy, and conscientious. They thoughtfully removed the flowers and flower bulbs to dig where they needed in the yard, replanted said flowers and spread the extra dirt to fill in an area of the yard. We've had other services from different companies 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.

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