Everything You Could Ever Want To Know About…

REMODELING and HOME IMPROVEMENT

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Choosing A Contractor

A good contractor earns every dime you pay them, a bad contractor will take every dime you have.

There are several reasons good contractors make good incomes. They work hard over many years to acquire a wide set of useful skills. Good contractors almost always started as workmen of one kind or another - carpenter, plumber, electrician, you name it.

They know first hand what it takes to become skilled in those trades. They know by sight what constitutes work well done and when a job was completed poorly. Beyond that, they learn to be good businessmen as well.

Many may not have accounting and finance skills, but they know how to hire well. They know how to bid a job fairly and how to manage sub-contractors and workmen fairly and firmly.

That's the kind you're looking for. They're out there. If you could get recommendations from friends and family about a reliable, competent contractor you wouldn't be reading this. So what to do beyond that? To find one, start with common sense guidelines.

Ask for references. Hiring a contractor is an expensive proposition and this is no time to be shy. Automatic, unfounded suspicion will poison any business relationship at the outset. But good contractors aren't sensitive about providing names and phone numbers for satisfied former clients. They know that referrals are the lifeblood of their business.

Once you have them, check them. Prepare a list of questions about the size and complexity of the previous project. Ask about the initial budget and schedule and whether they were met. It sounds intrusive, but most people will share that information gladly.

They, too, know that a good contractor is golden. They know it's in their interest also to see that person succeed. That way, the next time they need those services he (or she, many are female these days) will still be in business.

You're perfectly free to take risks. You're not required (at least for some projects) to hire a licensed contractor. Some unlicensed contractors are skilled and reliable professionals who simply prefer to do business 'under the radar'. But the odds are against you in that case, especially if the person is a stranger.

Ask for the license number and use it, along with the business and contractor's names to check the Better Business Bureau and other local business groups. Check with city and state agencies to see if there are any complaints or actions pending. Most contractors are honest and some of

those still find themselves subject to legal action. Clients, too, can be dishonest and ask for something they've no right to.

But, proceed with caution. Get any details you can. Many details of pending actions are kept confidential by law.

Interview the contractor as you would any employee. But remember to treat them as the skilled professional they are. Ask about previous work. Get details about size of the job, length, budget, etc.

Room remodeling is a much smaller job than a room addition. Deck additions are much simpler when it's an 8 ft x 10 ft, 10 inch high attached deck on the rear of the house. Eight foot high decks constructed in a backyard with a steep hill are an order of magnitude harder. Specifics count.

Above all, you'll have to judge the hardest thing of all to judge: character. Look for straight answers to straight questions. Look for someone who looks you in the eye. Watch for complaining or excuses about why the last job didn't go well or why his workers let him down.

Honest, competent professionals accept responsibility for all phases of the job - and the outcome. Luckily for you, most contractors are like that.

Pollution and Remodeling

It's easy to read magazines and conclude that your home is a danger to you and your family. But, as anyone can see, people are living longer, healthier lives than ever. Nevertheless, there are real risks associated with some remodeling projects. Some simple precautions can help minimize them.

Several potentially harmful gases can build up inside homes, especially newer ones that are often extremely well sealed. Radon is one of the more well known names.

Radon is a radioactive gas produced as a by-product of the natural decay of uranium, found in trace amounts in many rocks and soils. While there's some evidence that in small amounts it might actually be beneficial, everyone agrees that too much can be harmful.

Measure the amount, particularly in basements and other enclosed areas, using an inexpensive device available online. Follow guidelines listed about whether to call a professional to deal with any found. Four picocuries is the EPA (Environmental Protection Agency) figure for recommended action.

Take that into account when planning basement remodeling projects and allow for adequate venting. While long term exposure can be harmful, it's extremely rare for there to be enough present to represent immediate danger. Don't fear going into your basement.

Nitrogen dioxide and carbon monoxide are two more potentially harmful gases. They can both be produced in excess of recommended levels by poorly ventilated gas stoves or incorrectly installed appliances. Gas dryers and water heaters, for example. Wood stoves can produce substantial amounts, too.

Be sure to follow manufacturers guidelines when installing or replacing these. Keep them and ducting clean and all connectors tight. Devices similar to radon detectors can help measure levels of NO2 and CO.

There are several sources of health risks around the home besides gases. Dust is one common source.

Regular vacuuming with a machine fitted with a good HEPA filter is helpful. But replacing carpets, cabinets and other home projects can produce above average amounts. Be prepared to vacuum a little more often during those times, even though you've eliminated the visible effects, such as wood chips and large carpet shavings.

Dust mites are one of the nastier villains around the home, contributing to allergic reactions. Their waste products are believed to be responsible for the effect, but it can be minimized.

They live, as their name suggests, in dust and can build up on carpets, curtains and elsewhere. Naturally there'll be fewer when these items are being put in new, but installing them often kicks dust up into the air.

Again, a good vacuum will help control the problem. Wash curtains, sheets and bedspreads in hot water when possible. When the material doesn't allow that, they can be treated with inexpensive sprays that kills the mites or prevents them from reproducing. Air filtration systems are available that help reduce the concentration of mites, along with lots of other particulates.

Dust mites aren't the only living creatures sharing your home. Mold and mildew grow in moist, dark places and ducts are a prime candidate. Replacing ducts can stir up dust and release mold spores into the air.

Regular filter changes and proper vacuuming and cleaning of your heating and air conditioning ducts will keep them from presenting health risks.

Regular, common sense safeguards can help keep your home healthy and safe. The sky isn't falling, but it could use a few nails from time to time.

Do It Yourself Bathroom Remodeling

Few spaces in the home are as personal, and as practical, as the bathroom. Bathrooms are a place to refresh, re-group and prepare for the coming day. They're also a place to wind down from a day just past and prepare for bed.

Serving so many functions, and often for multiple individuals, makes bathroom design a challenge. But it's also an opportunity for tailoring what is often the smallest room in the house to suit the most important needs.

First, maximize the space available. Few have the chance to build a bathroom as large as we might want. Even in new home construction, costs often limit how much space can be allotted to the bathroom. But there are usually many pockets of wasted space that can be used to open up floor space and add elbow room.

Depending on the height and size of the bathroom users, medicine cabinets, shelves and under sink storage can often be relocated higher or around a corner. That can free up counter space for makeup application, shaving and so on. Lots of medicine cabinet designs, for example, aren't set in the wall but extend into the space a few inches.

Six to eight inch shelves are often placed at chest or chin height in a high traffic area. They tend to store less often used items like spare towels, perfume bottles, etc. Move them higher and provide a collapsible step stool for the shorter members of the household.

Cost is always a limiting factor, but there are two ways to maximize your dollars.

One way is to select higher quality materials and accept a higher initial outlay. The longer use will make the average cost per year the same as using cheaper materials with a shorter life span.

If that's not feasible, plan the design so that lower quality materials can be easily replaced every couple of years. Use screws into L-shaped hooks for large bathroom mirrors whose moulding will tarnish. Lay linoleum in a roll and secure with colored, invisible nails. Glue removal always makes a job many times harder and more time consuming.

Don't scrimp on the cost or installation effort for smaller, but important, fixtures. A noisy fan will quickly become an annoyance. Lights that don't sit at the right angle or provide harsh illumination will produce frustration every time they're used.

Make sure you allocate enough percentage of the budget for quality shower components. Shower heads, knobs, behind-the-wall valves, and so forth that don't last lead to leaks and more frequent replacement. A small behind-the-tile pipe leak can lead to hundreds of dollars in repair costs, increased insect invasion and weeks without a shower.

Consider heating options. For the first time in decades electrical heating is more cost-effective than gas, especially for small, confined spaces like bathrooms. And the odds are it will stay that way for some time to come. If you're planning a floor tile replacement, now is a good time to install radiant under-floor heating.

Several different styles are available, some as easy as rolling a thin sheet of material lined with wiring or mesh that connects to the house electrical system. They're safe and, since heat rises, help to take away not only that cold floor tile but warm the entire bathroom for pennies per day.

Often bathroom remodeling projects can be carried out in pieces. Floors one month, cabinetry the next, then showers or toilets and so forth. Make it easy on your budget and your back. Plan ahead and you can create that personal space that gives you the ideal place to wash your cares away.

Tips for Installing Leak-proof Showers

Shower installations are tough, no getting around it. Most home remodeling projects require care, but this is one case where even a small error can lead to disaster. Behind-the-wall or under-the-floor leaks can cause increased insect invasions and large repair bills. So, before you decide to undertake it, prepare to commit yourself to nothing less than a first rate job.

Most do-it-yourself'ers won't be installing all the plumbing from scratch, but just replacing or re-doing an existing shower. That's a big advantage but it presents the need to make sure you prepare all the surfaces properly.

After the old shower is removed it isn't necessary to chip away or sand every single spot of glue or silicon caulk. But you do need to ensure that wherever the new shower meets the drain pipe or wall surfaces that everything will fit flush and snug.

To do that, start with the drain pipe. Make sure the pipe is clean and smooth as new for at least an inch down its length. Clear away any build up from calcium carbonate (the white chalky mineral common in most water systems) and sand away any rust. If the pipe is corroded to the point it can't be well sealed, it will need to be replaced. A job for a professional, in most cases.

If you attach a copper pipe to a galvanized one, be sure to join the two with some insulating material. Because of natural electro-chemical activity between the two types of metal, corrosion will result over time otherwise. For plastic piping, this isn't a concern. Use a generous amount of Teflon tape or pipe sealing compound at any threaded joints.

Now that your surfaces are prepared, lay the pan or complete molded unit into place. For pan and shower-door installations you'll need to carefully seal the line around the base with silicon caulking. Most large hardware or home project stores have pre-made tubes that don't require use of a caulking gun, but those too are inexpensive.

Place the flange in the pan hole and connect according to the manufacturers directions. Here again, you'll need to seal the result with compound and/or silicon caulking. Take care to get everything at the proper angle.

One way to check for leaks, after the assembly has dried for an hour, is to build a small, temporary 'dam' around the flange. You can use any piece of non-absorbing material for this, it doesn't have to be water tight. Stop the drain, pour in a cup of water and see whether it leaks through.

If leaks exist, it can be frustrating. But, it's best to find out right away if the assembly needs to be re-done.

Once you have the flange fitted and sealed, and the pan or complete mold caulked and set, you can install the shower door hardware.

Here again you want to take care to prevent leaks. Though not disastrous if water leaks through to the bathroom, it's still unpleasant. While drilling and fastening rails and tracks according to the directions, seal the exterior surfaces only.

That way any small water build up can drain back into the tub. Also, since rails and tracks can experience small warps with changes in temperature, moisture inside small crevices can evaporate more readily. That helps cut down on mildew buildup.

Congratulations! You've now installed a safe, healthy shower that will last!

Do It Yourself Kitchen Remodeling

Apart from possibly the bathroom, kitchens get more traffic from more individuals in most homes than any other room. And, unlike bathrooms, they're one of the most visible. Make your kitchen functional and beautiful on a budget with these simple ideas.

For decades, despite their rectangular floor plan, kitchen design planning was based on the idea of a triangle. One person, usually a woman, performed most of the kitchen tasks. Designs centered on making work areas efficient for that one person.

Social and technology changes make that idea obsolete. Now, think round. Even when the floor plan is that same old boring rectangle, you can spruce it up by rounding the edges of countertops or adding an island.

Installing an oval island allows more than one person to work while providing multiple areas on the same space. And, despite what may appear a smaller workspace, the usable area can easily be larger. Corner areas don't make for good workspaces since you can't comfortably approach them. An oval allows working around the entire perimeter.

Maximize counter space by using under-the-cabinet microwave ovens, can openers and paper towel dispensers. But unlike traditional installations, lower them to a usable height while leaving enough above-the-counter space for food and drink preparation.

Open up the look of cabinetry and show off your crystal glasses by removing the doors on one or more side-by-side(s), or replace the doors with windowed versions.

Reveal your personal style by selecting from the hundreds of different knobs, handles and fixtures available today. If your remodeling is along the retro lines, select bright colors - yellows

or reds - or bright ceramic or painted wood. If your look is more elegant sophistication, go for dark woods and bronze or black and chrome.

Once you've selected the kind of countertops and handles that fit with your overall look, match the flooring and paint - not the reverse. Walls and floors should be background surfaces, highlighted by the appliances and knobs.

With modern life moving at a pace that seems always to increase, kitchens need to be practical as well as beautiful.

Countertops, built-in appliances and cabinetry should be easy to clean. Fortunately, today that doesn't mean being limited to linoleum and plastic. Even stone surfaces now come in composites that make cleaning fast and effective.

If you're doing a major remodeling avoid nooks and crannies that will be hard to inspect and reach. Food and liquids, not only dust and grime, have an amazing ability to reach places you would have to in order to remove them.

Make it easy on yourself by eliminating that small strip behind the kitchen faucet or move the microwave to a place it's easy to lift up a couple of inches.

Beware electrical and gas connections when you redo the dishwasher area or replace the stove. And keep the entire area sealed with plastic draped from the ceiling when re-doing wooden cabinetry or plaster walls that produce dust and sawdust.

Plan for lots of storage by adding shelves to little used upper areas and placing a handy collapsible step-stool nearby that minimizes space used.

Be sure to allocate a sufficient percentage of the budget for quality sink, faucet and dishwasher components. One behind-the-wall leak can prompt repairs costing hundreds, increase insect invasion and leave you without a sink for weeks.

Create a personal and functional space and remember that all the effort and expense will payoff quicker than any other home remodeling job. Done right, you'll actually want to spend more time in the kitchen.

Installing Kitchen Cabinets

Even beginning do-it-yourself'ers will find that installing kitchen cabinets is do-it-yourself-able. With care, the results can be as fine as any professional job. Here are some tips to achieve that goal.

One thing professionals know that most others don't is what tool makes the job easier. With kitchen cabinets there are more choices than you'd suspect. Key to installing cabinets that are level and secure, with low hassle, is to use a support system of some kind.

Assuming you don't have two or three people who are willing to stand and hold the cabinet in place for an hour or more, you'll want a support or jack. The people take up more room anyway and would just get in the way.

Everything from a standard car jack to specially designed jacks have been used. A simple wooden T-shaped brace will do for some jobs. The tool is nothing more than a horizontal member firmly attached to a vertical one. The cabinet is placed on top and the support wedged firmly underneath.

However, they can be subject to slipping, especially on slick floors. Also, unless you use several, the cabinet may wobble or tumble off. But they're inexpensive to make, tall and useful if the base cabinets have not yet been installed.

If base cabinets are already in place, take advantage of them and use a couple of short jacks with wide resting areas to support the cabinet while you work. Even tall, metal stain buckets topped by a thick phone book can serve, if you can make the system stable enough.

With that problem solved, you'll next need to find studs (2 x 4 support beams) to screw the cabinets into. Never install cabinets into drywall or wood panels alone. Most homes are constructed with studs 16 inches apart. Use an inexpensive, commercial stud finder to locate the first one. Measure 16 inches down the wall and search for the other stud. Try to find the center of each stud for maximum benefit.

Mark the stud locations along a line on the wall with a pencil. For easier installation, it might be worthwhile to pre-drill support screw holes. Be sure to use a drill bit smaller than the diameter of the screw.

Pre-drill any holes needed in the bottom of cabinets before lifting into place. Those holes may be needed for wiring, under-cabinet lighting fixtures, microwave ovens, paper-towel racks, etc.

Make all the necessary measurements on both the wall and the cabinet and hoist the cabinet into place. Set it securely on the supports. You'll want at least 18 inches of clearance from the countertop.

Using 3 inch support screws fasten the cabinet onto the studs, through the trim or corners - not through the thin back wall, if you can avoid it. Depending on the size, type and location of the cabinet and studs that may not be possible.

For extra support, take a 1 inch thick x 2 inch tall strip of wood at least a few inches wide and place under the bottom at a stud position. Screw into place.

In theory, you could place the bottom strips first then set the cabinet on top, making support easier. The difficulty is, cabinet placement almost always requires fine adjustment after they're hoisted. Once you screw in the supports you're locked into position.

Install any needed door handle hardware last. Congratulations! You just did it yourself.

Choosing Countertops

Choosing a material for your countertops involves considerations of cost, appearance and use. Some are as inexpensive as $10 per square foot, others as high as $100 or more. Which you choose will depend on your taste and budget, as well as how you plan to make use of the surface.

Laminates are the least expensive, at around $10-$40 per square foot. They're relatively easy to install, but they don't hold up well against scratching and gouging. They also tend to look old fairly quickly, though occasional replacement is a more viable option at those prices.

They come in a dizzying variety of textures and colors today and they offer good stain resistance. They're easy to clean as well. Laid down over plywood, they can be replaced in a weekend, though scraping glue off for hours isn't much fun. It's sometimes easier to replace the entire plywood plank.

Ceramic tile can be another modest cost option. Some tiles are as low as a few dollars per square foot, though prices can reach as high as $50 per tile. They're easy to install in new kitchens, but fairly difficult to replace or repair. Once glued down, they form a strong bond with the surface. Replacing them requires gouging out the grout and prying up the old tile.

Grout is always a problem with ceramic tiles, since the rough surface and the type of material make cleaning a difficult chore. Tiles are often very durable, but once they crack replacing them is often not carried out. Over time, the surface looks old and shoddy.

They do offer a very easy to clean surface and can last the lifetime of the house if they're well cared for. They're heat resistant and don't stain or scratch easily.

Styled concrete is one of the newer options, and it can often be installed for $50 per square foot. It's almost impossible to scorch and can be colored to taste.

Concrete is heavy, though, and requires extensive drying time before it can be used. It needs to be properly sealed, usually more than once. Installation is generally best left to professionals.

Stainless steel is also coming into vogue again. Costing around $50-$65 per square foot, it's in the middle of the pack in terms of price. It does show scratches easily, though some pre-roughened styles help to hide this. It's easy to clean, but the surface can become splotchy over time.

Marble has been around for countertop use for centuries. It can be expensive at $75 per square foot, but it looks great new or old. Since it's porous, it will require regular re-sealing to avoid absorbing stains and becoming discolored. Marble comes in a wide variety of styles, each one unique to the source of the material.

Granite makes for one of the best countertop surfaces, though you pay a premium for that. Prices start at $80 per square foot and rise rapidly. The material is highly resistant to scratching and won't stain if sealed properly. It looks stellar, but installations almost always make seams and have to be carried out by a professional.

Combining the best of old-world looks with modern technology, engineered stone is a good option. Mildly expensive, prices start at $50 per square foot and rise moderately. Just about any stone-like pattern can be reproduced and surfaces can be made unique.

The material never needs sealing and resists stains and scratches. Heat resistance is rarely a problem with these materials. Professional installation is common, but some can be carried out by skilled do-it-yourselfers.

Whichever you choose, consider how long you'll own the house and what you intend to use the surface for. Initial outlay should not be the only factor. Think long term.

Adding A Bedroom

The average cost for a room addition in the U.S. runs between $50,000 and $65,000. You may want to save that outlay by undertaking the effort yourself. But, be prepared.

Most room additions should be carried out with the help of professionals. But if you're good with tools and have the time and patience, there are projects that can be completed with minimal help.

If you're adding onto an existing home, some parts will definitely require the services of a professional. Amateur builders are simply not equipped to lay foundations, deal with complex zoning or permit issues, and the like.

But, if your project is simpler you may be able to carry it out yourself. Converting an attic to an additional bedroom is within the ability of most who have some experience with home projects. Converting a closet is usually even simpler. Dividing an existing room into two can sometimes be carried out in a few weekends.

First, look online for one of the many 'plans' sites. Room plans are often available for anywhere from $10-$100, often toward the lower end of that estimate. Shop around and ask for samples, since some are as simple as a few sketches containing ideas, while others have complete blueprints and plans.

Measure the space and decide whether you will be adding walls - such as a divider for an existing room - or tearing some down. Get estimates for 2 x 4's, panels, moulding, screws and nails, etc and form a budget.

One plan for dividing an existing room, for example, is simplicity itself. It uses a homosote panel - a kind of pressboard in service for over 100 years - held between strips of moulding. The panel is placed along a line to divide the room and held in place at the top with double-sided tape or L-braces screwed into studs. Some materials provide soundproofing as effective as ordinary plaster drywall.

Next up in the level of difficulty is the classic skeleton of 2 x 4's. With an assistant to hold ends, tools, etc this can be erected in a few weekends. Be sure to take the time and care to make cuts at right angles and fit pieces together precisely.

Some are simply nailed together, but L-braces will provide for better structural integrity. Sections, and sometimes the entire wall, can be constructed on a cleared floor and hauled up into place.

Be sure to develop plans for any needed wiring or computer cabling before you get out the hammer and nails. Unless you have extensive experience, electrical work is almost always better carried out by a professional. Non-professional wiring work can violate home insurance policy rules, so read the fine print and consult your insurer.

Be sure to research any permit, environmental, safety codes or other legal issues before getting started. The room addition inspection and permitting process usually has different components. Basic foundation and carpentry aspects are covered. But, depending on the kind of construction, plumbing and electrical permits may be required. You don't want city, county, or state inspectors requiring you to make expensive adjustments after you're done.

Basement Problems Turned Around

Remodeling your basement presents several challenges, which can all be turned into advantages. Here's how...

Basements can be cold. Easily solved by turning the latest rage - radiant floor heating - on its side. The grids used underneath tile or wood floors can, with very little adaptation, be hung rather than laid.

The proper glue or nailing around the edges (avoiding the wire mesh, of course!), can make these systems easy to use as radiant wall heaters. Placed behind wood wall panels they operate essentially the same as floor systems, if there's air movement in the room. Naturally, any water leakage or moisture problems will need to be dealt with first.

Basements can be dark. But that makes them perfect for a darkroom or home entertainment center.

If used for a darkroom, you'll need to plan for proper ventilation and cold/hot water plumbing. You'll also need to plan for partitioning, unless you can guarantee no one will open the basement entrance during those critical moments.

A home entertainment center provides a number of opportunities for creativity. Inexpensive kits today offer a half dozen speakers which can be placed at acoustically advantageous spots for that true theater experience.

You'll want to investigate materials for sound control. Acoustic ceiling and wall tile or wall hangings, non-shag carpet and so forth will all be necessary. Wood floors and walls are attractive, but provide too 'live' an environment for home music or theater systems.

You'll also want to plan the proper lighting system. Track lighting is popular, but difficult to place to keep glare off the screen. Think about building some reflective shelves or sconces, with bounced light off of light wood or metal, make for good alternatives. Not everyone prefers watching movies in complete darkness.

Basements can be wet. Too much seepage can present a hazard and no amount of creativity can turn that to advantage. But, within limits, a moist environment can be a good thing for certain uses - saunas or greenhouses for example.

To plan a sauna, you'll need to investigate current options for hot-water plumbing and steam generation. Several modular systems are available in a variety of price ranges. Drainage is key, since water build up has to be dealt with.

Fortunately, though basements can be cool, since they're enclosed they're generally easy to keep hot once warmed up. Good insulation is key. Cork works well, but can accumulate mold. There are dozens of modern materials with low heat conductivity available.

Proper partitioning can keep the actual sauna area small, while a tiled area can be used for cooling down or toweling off. Paint in warm colors, but allow plenty of time for complete drying.

Greenhouses are easy to make in most basements. Though care has to be taken to control mold and mildew, inexpensive heating lamps can provide both warmth and light for growing orchids and other 'hot-house' flowers.

Extra care has to be observed in planning electrical systems to control water contact. Luckily, modern materials for wrapping under-floor pipes and running wiring through conduit are light-weight and inexpensive.

Whatever you plan to design, be sure to get one of the low-cost devices for measuring radon gas (very seldom a problem, despite hype in the media) and carbon monoxide levels. Proper ventilation is critical for comfort and health.

Take advantage of antique stores, old school remodeling projects and other sources to obtain interesting floors, wall coverings and decorative items. You'd be surprised by what can be picked up for little or no money.

With the average cost of basement remodeling running around $35,000, what better way to turn that problem around?

Options for Lighting Your Home

Thanks to advances in materials science and other techno-wizardry, your lighting design options today are, well, blinding. Any look you want, for any part of the home with any layout is available.

Here are some guidelines and choices...

First and foremost, when shopping keep in mind any electrical codes and the limitations of your home. Many families today are refurbishing beautiful older homes. These elegant houses were often well built, but wiring systems were not what they are today.

You may have to contact a contractor to help decide whether to replace that older wiring system. At minimum, you'll need to take measurements and develop a list of usage (loads), circuit breakers, etc. Find out what your system can handle before you start loading it up.

Fortunately today, installing newer systems can actually mean consuming less electricity while providing more illumination.

Compact fluorescent bulbs, for example, can now reproduce a very natural color balance while consuming 30% less electricity. Gone are the days of the greenish overcast. They're made in a variety of shapes, sizes and amounts of illumination.

LED (Light Emitting Diode) lights are the latest rage, and for good reason. Despite being more expensive to purchase, they're actually more economical in the long run, thanks to their long lifetimes.

Some are rated to last as long as 35 years. Few will want to keep the same lighting design for that long, but a bulb that lasts 5-7 years would certainly come in handy. One type (Enlux) is rated at 50,000 hours and consumes only 22 watts. Burning 24 hours per day every day, it would last almost six years. Ideal for porch lights, or that dark corner area you want to brighten up.

For an ultra-modern option look to something like Light Transmitting Concrete. Yes, concrete. LiTraCon blocks can provide a unique look, with light given off by embedded fiber optics that transmit light when the brick is backlit.

A similar technique is used in Luminex fabric. The cloth comes in a variety of weights and colors and provides a very soft illumination via a mesh of optical fibers woven into the fabric. The fibers are connected to LEDs and a power source. Perfect for the bedroom.

Rooms differ in their lighting profile. Most people want bathrooms that are bright and cheery, but still suitable for shaving and applying makeup. Bedrooms are often designed with more subdued lighting. Living rooms require a dynamic profile from bright and even to indirect and soft. Whatever style or type you select you'll want to keep some simple 'lighting physics' in mind.

Natural light causes objects to appear as they do in large part because of its 'temperature', measured in degrees Kelvin. (The Kelvin scale is identical to Celsius, just offset by 273 degrees.) A northern sky under clear conditions at noon will be around 7,000K-8,000K.

Bulbs often provide light that looks unnatural because they generally have lower 'color temperatures'. A regular fluorescent bulb is around 4,000K while incandescents are about 2,800K.

Selecting one of the modern types can help you more closely approach that natural lighting temperature, if that's your goal. To get a softer, more 'candlelight' look go for recessed lighting and lower temperature profiles.

Explore some of the new options modern science has put at your design fingertips, just be sure not to get burned!

How To Lay Indoor-Outdoor Carpet

Laying carpet is often one of those projects where paying a professional is worth the cost. But if you have a simple installation, or really want to save the money, here are some guidelines to follow for a professional looking job.

Installations will divide neatly into padded or non-padded. Indoor-outdoor carpet doesn't require a pad, while pile carpet usually does.

You'll need to start with a smooth, clean surface. Whether the underfloor is concrete or wood, sweep and/or vacuum thoroughly. Check that the area is clear of any nails, screws, etc. Check for any concrete bumps or defects in wood, such as broken boards, etc. Smooth or repair, as needed.

For indoor-outdoor installations, get a few weather reports and aim for a period of moderate temperature and low humidity, if possible. Obviously, you don't want to lay carpet outdoors during periods of rain, but temperature and humidity are important, too. Carpet and adhesive materials shouldn't be too cold nor too hot for best results. Excess moisture in the air will make adhesive less effective.

Some jobs will require glue, where carpet is subject to very forceful traffic, such as dogs or children sliding or running. Glue is also recommended for fully-exposed outdoor installations. For most cases, double-sided adhesive tape will work fine.

Measure the area and lay out a few test rows, before putting down glue or adhesive tape. Some indoor-outdoor carpet comes in rolls, but squares are generally easier to work with. Lay out some 'tiles', starting from the center. Try to arrange the layout so that no less than a 'half-tile' is needed around the perimeter.

Lay double-faced tape around the edges of the room first, using long strips (6ft or more, if possible). Within the room area, place tape in the shape of a large 'X' (6in x 6in crossed strips will do), every foot over the entire surface. Leave the paper attached to the upper side of the tape.

Starting at the center, remove the tape from a few "X"'s. Press carpet 'tiles' firmly onto the tape, taking care not to twist.

If installing in rolls, roll the carpet across a small section then lift and remove the tape. Press firmly down.

At the wall, you'll need to cut tiles or rolls to fit. Place a tile firmly along the edge of completed carpet, letting the excess fold up the wall. Take a thin piece of chalk and a straightedge and mark precisely where you need to cut.

Using a sharp utility knife cut along the outside of the chalk line. Always cut just slightly larger than the area to be covered, but not enough to cause the carpet to bow upwards. If you're sliding the carpet underneath molding you'll have a little leeway.

Remove the adhesive or glue the tile and slide firmly into place. Try to ensure that fibers run in the same direction, unless you're aiming for a checkerboard pattern.

Tips for Installing A Tile Floor

Installing a tile floor is one of the more difficult home remodeling projects. But with care, it's within reach of anyone.

Start off on the right foot by acquiring one of the many home design software packages. Most will have a section on laying tile. It can't prepare a floor or apply glue, but they're terrific at helping you visualize the result and avoid mistakes. They provide design alternatives, measurement help and tips on dealing with glue, cutting tile and so forth.

Choose your tile according to taste, but keep in mind some differences in the options. Stone or slate tiles are beautiful, but generally higher priced than ceramic. They also require sealing after the job is done, in order to prevent staining and make for easy cleaning.

Be sure to select floor tiles, not wall tiles. The latter are thinner and won't stand up to the pressure from walking.

Give some thought to how to prepare the area.

If it's smooth and not too worn old vinyl or linoleum can be used under the tile. But over time it's subject to warping. Soft spots under the tile can cause cracking.

If you're starting with a concrete surface, check to ensure there are no high spots. You can do this in a few different ways. If you have a long level (three foot or more), lay it across the surface and look for light coming through.

Similarly, this can be done with a 2" x 4", but getting one straight enough can be challenging. To check, take two boards and lay them against one another. Now turn one around 180 degrees and lay it against the other again. That prevents being fooled by both being curved in the same direction.

If you have high spots, they can be smoothed by a coarse belt or disc sander. Small bumps can be chiseled away, but take care not to make the situation worse.

No surface will be perfectly flat, but anything more than 1/16th of an inch can lead to 'rocking' of the tiles. Since they're glued in place, they don't actually rotate. But pressure differences across the surface can cause cracks during use.

Floor surfaces need to be strong enough, too, to prevent flexing that would lead to the same 'rocking' problem. Uneven floors can be smoothed and strengthened with cement-fiber board or by using a composite spread across the surface with a very flat, wide tool.

Now find the center of your floor by taking two strings and laying them across the diagonals of the room. You can use chalk string to mark the lines on the floor and a Sharpie marker pen to mark the center.

Dry lay a few rows of sample tile, starting from the center, to get a feel for the pattern desired and to experiment with spacing for grout. Try to space tiles so that you have no less than a half-tile width at the walls.

Some tiles have built in spacers making alignment easy. Others can be spaced properly using rubber or plastic spacers. For an even look, it's important that the width of the grout (the spacing between tiles) does not vary by more than 1/32nd of an inch (0.8mm).

Trowel out adhesive using a notched or saw-toothed trowel. For tight spots, lay the adhesive on the tile instead. In both cases, aim for low, long ridges. Lay the tile down and rotate back and forth slightly to seat.

Once a few rows are laid, and before the adhesive sets hard, take that long, wide, surface checking tool and a rubber mallet to tap tiles into final adjustment for a level floor.

Grout is easier to apply with one of the nozzled tubes. Lay a bead of a few feet long and wipe away any excess with a damp cloth before it sets.

Floors should cure for a few days to a week before use.

How To Prepare to Install Moulding

As with any remodeling project, the first step - and the hardest - is preparation. Surfaces on which moulding is to be installed need to be clean, dry and smooth. The moulding itself may need to be cut, sanded and finished.

To prepare the moulding, you'll need a mitre box, a cope saw, clamps and any needed finishing materials along with a box or two of 1/2 inch finishing nails.

Mitre boxes come in various shapes and sizes, but they all serve the same purpose: to hold pieces at the correct angle for cutting. Even with pre-molded trim you'll need to make several joint cuts, usually at 45 degree angles.

Measure the room carefully, then allow a slight amount extra for losses from cutting. You can always make the piece shorter. Making it longer creates a seam. Pieces will usually be joined at 45 degree angles either at a corner or where a moulding piece doesn't extend the entire length of room.

Extra care needs to be taken at corners, where any errors are the most visible and exact joins are hardest to make. There are several ways to help yourself out. One technique involves deliberately making pieces end shortly before the corner.

Corners can then be finished with small, pre-made pieces, often rounded. Another option is to make pieces fit as carefully as possible and then fill with wood putty at the corner and sand carefully.

Keep in mind that houses are never constructed precisely, nor ever exactly level. Allow for small irregularities.

Joining pieces together can be done with finishing nails hammered in near the ends and/or with glue on the joining surfaces. When using nails, be sure to hammer them in at slightly different levels on the adjoining trim pieces. This ensures that you're not hammering a nail on one piece into the nail on the adjoining piece. That can lead to cracking the trim.

Trim cracking can occur in any case. Minimize the risk by pressing on the surface with a piece of wood or plastic while nailing. That allows the nail to compress the wood internally, rather than crack outward.

A cope saw will allow you to make free hand or clamped cuts to make small adjustments. Professional-looking moulding installations always have very precisely fitting pieces. Nothing says 'amateur' more than gouges, incorrect angles, gaps and bent nails. Stain can only cover up so much.

Depending on the kind of trim purchased, you may need to sand the pieces. Obtain several grades of sandpaper, including very fine grit. Always sand with the grain of the wood and carefully remove fine sawdust afterward. Wiping with a slightly moist, small towel helps get the surface prepared for staining.

It's usually best to finish pieces before installing. Ensure that any nicks and irregularities have been puttied. Let dry, then sand the putty down even with the moulding surface and wipe with the moist cloth. Allow to dry completely.

Finish can be stain, varnish or paint depending on taste and room décor. Check the guidelines on the container to find out what kind of wood is best with what kind of finish. Oak, for example, isn't generally painted but stained or varnished. Painted moulding will usually require at least two coats, one primer, one final.

When planning your project you may want to get a few weather reports. Aim for days of moderate temperature and low humidity. Glues and finishes will dry best under those conditions. Also, you'll want to allow for plenty of ventilation during the project to prevent unpleasant and potentially harmful odors.

TV Stand Design Ideas

With the new HDTV sets coming onto the market the shape and weight requirements (not to mention the price) of stands has changed. If you don't want to shell out a few hundred dollars for a stand, increasing the TV's total price by 20% or more, here are a couple of alternatives.

Steel kits are available for around $100. They're strong, come in various sizes and can be constructed in an hour or less even by those without superior 'do-it-yourself' skills. They typically will hold a DVD, cable box and the TV itself. Many of the newer HDTV sets come with a slot for a cable card, sometimes eliminating the need for a separate, external box.

Most stands will hold up to 90kg (200 lbs) easily, which is fully adequate for most TV models. For those who like the 'modern' look, they're simple, stylish and some come with glass shelves for the DVD, cable box and TV. For the TV shelf, if you want something clear, make sure you get a strong acrylic or Plexiglas shelf. A little more costly than glass, it's much safer for this heavy component.

Alternatively, you can build your own TV/DVD stand out of wood. There are dozens of free plans online. Here's one elegant and simple style with a low-cost parts list.

Purchase two 90cm by 60 cm (3 ft x 2 ft) planks of cedar, 2.5cm (1 inch) thick. Cedar is naturally beautiful and doesn't require staining, though you can use a semi-transparent stain if you want to finish the wood.

Take a saw and, starting at the base, cut a curved pattern. Try a shape similar to a folk guitar. The curve makes for a nice design and adds strength to the support. Sand the edges smooth.

Groove the planks a centimeter and a quarter (half an inch) deep, several centimeters (a few inches) from the top. These are called 'dadoes'. Make additional grooves for shelves to hold the DVD, etc. Grooves can be made with a router or the old-fashioned way with a gouging tool.

Purchase shelves at whatever width you need for your set. They should be wood to maintain the simple, natural-looking style, though you could use glass or even metal. Slide the shelves in, then - if needed - screw in four 2.5cm (1 inch) brass L-shaped supports under each shelf for added strength and stability.

Instead of grooving or L-bracing, you could drill holes for shelf support dowels. This allows some flexibility for shelf height. Tiny metal pins just the right size can sometimes be tricky to find, though.

To hide the wires, you can attach a 10cm (4 inch) strip along one or both sides. Run the wires along the shelves and down the strip to the floor or electrical outlets. You can secure them against the strips with U-shaped tacks. The tacks are inexpensive and easy to tap in, yet tall and wide enough to enclose one or two wires.

You can purchase a stand with your TV, of course. But how often do the ones available fit your particular room and furniture at a reasonable price? Building your own is inexpensive, takes less than a day and is customized to your individual style. Try it!

Home Air Conditioning Maintenance Made Easy

Left alone, cool things warm up from their warmer surroundings. Every air cooling system takes advantage of some very interesting laws of physics to reverse this and make your home temperature lower than the outdoors. Fortunately, you don't have to be a scientist to keep that system working well. Here are some simple tips to do just that...

The most common AC system problems result from something being at least partially clogged. There are several possible sources for that congestion, but the most common is dirty drain lines.

Just like clogged arteries, when your drain line gets filled with material your system will have a 'heart attack'. In this case, the cooling capacity is reduced and sometimes compressors will stop functioning altogether.

Every system has a condensate drain pan and drain line. AC systems don't just cool the air, they de-humidify it too. The moisture removed from the interior has to go somewhere. That somewhere is into the cooling coil and out the condensate drain line.

Since that water almost always contains minerals, and often some mildew, lines can get clogged. Quarterly cleaning will help keep that part of the system healthy and functioning efficiently. Use a commercial coil cleaner and a wire brush a few minutes every few months and your system will stay in good working order.

Apart from cleaning the system, do a little preventive maintenance to head the problem off before it happens. Change the filter monthly every month it's in use, and before first use. Most modern filters have an anti-microbial capacity, but check to make sure.

That has the added advantage of reducing mold, mildew and algae buildup within the system. It also helps keep it out of your home where it can contribute to discomfort and cause medical problems. And it helps to keep dust from being blown inside the house.

Lots of allergies are made worse by dust-borne pollen, dust-mites and other air-circulated nasties. You'll be doing the allergy sufferer in the house a favor by keeping the system clean.

AC systems often have places that moisture gathers and remains where mold, mildew or algae can build up despite the best filters' efforts. Heavy buildup may need to be removed by a professional. But for smaller jobs, a mild disinfectant will help eliminate the problem. Just spray into the filter intake and let the system do its job normally.

Help keep the motor working efficiently by following the manufacturers guidelines. Usually that amounts to no more than a few drops of electric motor oil squirted into the oil ports once a year. While you're at it, inspect the blower motor fan blade to check for mold or mildew buildup.

Since the whole idea of an AC system is to take warm air, cool it and put it into the house (expelling even warmer air outside), your system should be several degrees cooler than any other area. The duct temperature should be from 15-25 degrees cooler than the air inside your home. It warms slightly as it moves through the system.

Check the supply duct with a stem-type or electronic wire thermometer. If the difference is too small, check filters, lines, circuit breakers, etc. If need be, call for professional help.

How To Diagnose Central Heating Systems

Home heating systems serve a simple purpose. But to achieve it they employ a surprisingly complicated set of components, some of which are prone to failure. Let's start with the simple and obvious (and cheap!) things first.

If you're getting no heat at all out the vent, check the pilot light and circuit breakers.

If your system isn't delivering enough heat, check filters first. Filters gradually become blocked with dust, animal hair, etc. They're cheap. Don't bother to wash, which ruins them anyway. Replace.

Check that vents are open and unblocked. Don't rely only on what you can see from a standing height. For high vents, get out the ladder and shine a flashlight into the vent. For low vents, get down to the cat's eye level.

If the vents are open and unblocked, you'll need to access the attic to check ducts. Many heating system ducts are in plain view on top of ceiling insulation. Check for obvious breaks. Turn on the system, then take a tissue and run it along any joints to check for air movement.

If you've ever had mice or rats (not unknown even in very well-to-do developments, especially when constructed near fields), you may have suffered damage. A mouse or rat can chew through a duct in a few minutes.

To repair breaks, paradoxically, don't use duct tape. It breaks down rapidly from temperature and humidity changes causing air leaks. It's also forbidden by building codes in some locales. Go figure. Obtain mastic (a paste, sometimes on tape) or similar sealing material.

Some systems can be improved by wrapping ducts with insulation. Many lose heat through conduction, even when there are no breaks. Check building codes and obtain the proper wrapping material.

If you hear squeaks or rattles there are several possible culprits.

Some heating systems are belt driven. Like the fan belt in your car they can stretch with age and temperature changes. Loose belts squeak because they slip along the pulley they ride on or help turn. Replacement is usually simple and inexpensive.

Rattles are usually the result of either loose screws connecting plates or ducts, or caused by metal expansion and air movement. There's little you can do about the latter, except wrap or replace with a different material.

Sometimes it's possible to make a small dent in the material. That edge helps make the surface more rigid. Take care not to break the part. Loose screws can be tightened, when they're accessible, but take care not to puncture wires or insulation.

It's possible that the heat pump on your system simply doesn't produce enough output to warm the size home you have. You can often see the ratings on tags on the pump, or check the documentation online. Upgrading is a job best left to a professional.

Similarly, ductwork may not be large enough to handle the air flow needed. Flow ratings should be 50-60 liters per second per kilowatt-hour or 400-500 cubic feet per minute per ton. Replacement can be carried out by a do-it-yourself'er, but is often more trouble than it's worth.

Obtain estimates from several sources. Go with someone trustworthy, not necessarily the cheapest. Cheap is always more expensive in the long run.

Remember that if you smell a gas leak, or have other heating problems, that utility companies will generally send a technician to the home for free. Take advantage of their services and have your system diagnosed. They have the skills and the tools to tell you whether you need to repair or upgrade your system.

Insulation

A riddle: which one of the important 'systems' of your home has no moving parts and is spread throughout the house? Answer: insulation.

Insulation helps keep homes cooler in summer and warmer in winter. Temperature control is one of the chief reasons houses were invented, after all.

Insulation works by preventing the transfer of heat by one of three basic ways: convection, radiation and conduction. Convection occurs when hot air moves to a cooler area. Insulation helps block or trap air, preventing the movement. Warmer bodies radiate heat to cooler surroundings. Radiation can't be prevented, but it can be directed, or insulated against. Insulation conducts very little heat, and is placed between parts that do, preventing heat movement.

How well insulation carries out those tasks is measured by something called the R-value. The 'R' stands for 'resistive', in this case to heat transfer. The higher the R-value the more effective the insulation.

Which R-value insulation is appropriate for your home depends on several factors: local climate, the other components in the house (walls, ceilings and floors, carpets, windows, etc) and the general quality of the construction. Which is actually used depends largely on local building codes and costs.

Keep in mind, you don't always want the highest number possible. Houses have to breathe in order to maximize your health. You can get some guidance for which is best for your circumstances by contacting the local utility company or by talking to a knowledgeable person at the building supply nearest you.

Apart from walls, carpets and windows there are two basic elements of insulation in most homes: weather stripping and foam.

Weather stripping usually takes the form of rubber moulding placed around doors and sometimes windows. Replacing it is just a matter of removing the old strip and gluing or tacking the new one in place.

Foam generally comes in two types, sheet and particle.

Sheet foam is a strip of insulating material similar in texture to dried cotton candy (only not sticky!) and often available in long rolls. The woven material contains numerous air pockets that, along with its non-conductive nature, provides insulative ability. Sometimes the strips are covered with a kind of paper, sometimes even backed by a type of aluminum-like foil.

Laying the sheets down is simple when the area is accessible. In attic areas, for example, the sheets can simply be unrolled between two by four support members. Make sure to step only on the beams (joists), never in between. Ceilings aren't made to be walked on.

The other major type of insulation comes in small chunks, often 'blown in' by professionals using a specially made machine. You don't need a multi-thousand dollar machine, however, to replace small amounts. The material is often some kind of fiberglass. Other kinds of insulation, such as cellulose, silicates, etc are sometimes used within walls.

Obtain as many bags as you require to cover the area at least a few inches deep. How much you need depends, obviously, on your climate, the size of the area, etc. Consult your local building supply or knowledgeable home center store clerk.

When working in an attic area, again stepping only on the beams, put on some latex gloves and toss the material over the area needed. The gloves aren't for safety, per se. The insulation isn't toxic, but if you work with it for a couple of hours you might find your hands uncomfortably dry and itchy.

Avoid crushing the foam after it's spread over the area. The air pockets formed are part of what help provide insulation.

Fixing Your Sink

Whether kitchen or bathroom, fixing a sink can be straightforward or it can be a nightmare. Much depends on the condition of the valves and hoses leading to them.

In most cases do-it-yourselfers can shut off the water valves under the sink with a few clockwise twists. But if those valves are old and have never been turned since they were installed they can break, causing a leak.

Be prepared by having a partner stand near the main shutoff valve with a walkie-talkie ready to turn off the water to the whole house.

Main shutoff valves for most tract homes are near the curb, covered by a cement lid with a small rectangular hole. The hole allows public utility workers to lift the lid with a small metal rod with a hook at the end. But they can usually be lifted with a finger.

Rural homes often have a well house or other exterior assembly where the main valve is located. Locate it before you get started.

Once the water is shut off, there can only be a small amount of spill from any remaining water in the hoses and pipes. Clear the undersink area and put down a few towels flat and have a pan at hand.

Undo the connectors. These can be brass nuts or small tin clamps or smaller versions of the screw clamps that attach car radiator hoses to the water pump and radiator. The variety is extensive.

Examine the valves and hoses and replace as needed. In theory that's straightforward. Buy replacement parts and be sure to get plenty of Teflon plumbers tape. In practice a few things can go wrong.

In rare cases, older valves may need to be cut off with a hacksaw or small torch. In very rare cases, older valves were welded on. Replace with the threaded type. Try to leave enough pipe

to re-thread, using a rethreading tool. At this stage you will begin to think about paying a plumber. Your call.

Valves and hoses that have been in place for several years will usually have some calcium carbonate build up. That's the white, chalky substance that forms on the surface of cups in the bathroom or shower stalls.

It's usually the guilty party when things stick, but can often be loosened with a few sharp twists. Try not to tug hard, since that can pull pipes loose or cause breaks. Once broken, pipes have to be re-sealed or replaced. Either is usually an unhappy chore since the breaks tend to be where you can't get at them easily.

Once everything is removed, clean the surfaces well with fine sandpaper and/or steel wool, sponge, etc.

Now for the (relatively) easy (but definitely tricky) part. Wrap several layers of plumbers tape to the threaded and smooth surfaces where valves and hoses will be replaced. Most important: remember to thread the tape in the direction in which the valve or hose will be turned. You want to tighten the tape when screwing on the valve or hose, not loosen it.

Screw on the valve, attach the hose and tighten any clamps. Don't over tighten. Things need to be snug, but not to the limit of your wrench.

Turn the valve on slowly, a couple of turns, looking for leaks. If you've done the job carefully, the combination of well fitting threads and carefully laid tape will be fully sufficient to prevent leaks.

Sometimes two or three tries is necessary to get the hang of the technique. One of the reasons for not over tightening the valves. Don't be frustrated if you have to take it off and re-do. It's typically only a once in several years job.

Fixing Clogged Pipes and Drains

Modern chemistry has created both friend and challenge. Hand soaps, shaving cream and other concoctions make life a lot more healthy and convenient than it was a hundred years ago. But some traditional problems are still with us: clogs.

Correspondingly there are traditional ways and some modern, that help overcome the problem.

If you have metal pipes, try pouring a pan of boiling water slowly down the sink. If there's not too much accumulated water, and the clog isn't too severe, the plug of hair and soap (the typical villains) may be dissolved, freeing the clog. Follow with a steady rinse of hot water.

For plastic pipes, the boiling water method may soften joints presenting a risk of leakage. Unless you know your pipes are made of material that can withstand the heat, it's best to use

another method. Some can even stand up to hot grease, which may have cooled and caused the problem in the first place.

For more stubborn clogs an ordinary plunger may do the trick. Be sure to use a cup plunger, not a flange plunger. The latter is shaped for use with toilet bowls.

In double-sided sinks it may be necessary to use two simultaneously or plug up the second hole. Often a towel is sufficient, sometimes you'll need to improvise with a heavy pan, a plastic bowl or some other means.

Plunges should be sharp and short. If pressure is going to relieve the plug, it will need to be high, but not long. If that seems to have worked, once again follow with a long rinse of hot water. That will both cleanse out remaining debris and test the results.

For those serious stoppages, you'll need an augur or at minimum a straightened metal coat-hanger. If you can find the latter anymore! An augur is a stiff, coiled wire typically in a metal housing with a handle for moving the wire.

Take care when using the augur not to puncture pipes or drain traps. Did we mention you should first remove the plastic and/or metal drain stop? Sometimes removing hair and soap from this is enough to clear the passage.

Extend the augur or snake the coat-hanger down a few inches. It will be difficult to distinguish between resistance from curving pipe versus running into the clog, but try. Turn the crank handle firmly, but don't force it.

Be careful not to force the snake or augur to the point that in-pipe traps or filters are broken. Those plastic pieces will make a bigger problem to solve, requiring you to remove the pipe. Some types of augurs can be attached to a drill, but if the clog is that severe you'll generally want to try other methods first.

As a next to last resort, chemical drain cleaners can be useful. Used according to the directions, they're safe for pipes and people. Always be prepared to wash off any that contacts your hands or arms, and wear safety goggles if there's any risk of splashing.

Really severe clogs may require removal of the pipe. Usually it's the bend in the U-shaped pipe that contributes to the clog. But if you can't clear the clog without removal, you may or may not make any better progress having the pipe in hand. Sometimes a plumber is your only remaining option.

Replacing Screens

If carried out correctly, replacing your screens can be a snap. Be careless and you really will have to replace the whole screen, frame and all.

Most screens come in two basic types: standard window screens and screen doors.

Screen doors sit on rollers on springs and can typically just be lifted out with slight pressure. Lift and tilt the bottom toward your feet a couple of centimeters (an inch) to clear the bottom frame, then let the screen down. Never force it, don't tilt too far before dropping it and don't twist. You don't want to bend the frame or break the rollers.

Window screens are held in by friction and often a set of bow-shaped springs attached to the frame at the top and/or sides, also. Use the tabs integrated into the frame to lift up or sideways, whichever direction you have the most space.

Work at least one corner free, being careful not to twist more than a centimeter (half an inch). Screens aren't moved often and tend to stick. Be patient and work them loose a little at a time.

Lay the screen flat on a large, smooth surface. If you're concerned about scratching paint off the frame, put down a sheet or blanket first. Remove any stays or screws inserted through the mesh.

Screens are held in with a spline (a thin, cylindrical piece of rubber-like material) inserted into a shallow channel. Find the point where the spline ends and work it loose with an ice pick, tweezers or a screwdriver. Pull gently, but firmly, until the spline is removed. The screen mesh should pull out easily now. Always take care not to bend the frame.

Rolls of replacement mesh can be purchased at hardware stores or online in various lengths and widths. Kits typically come with a length of replacement spline. Measure your screen and allow for some waste. Pick up a spline roller, too. A small, wooden-handled tool with a metal roller on one or both ends, a spline roller looks like a pizza slicer with a dull circular blade.

Measure the inner frame twice, then the mesh twice. ('Measure twice, cut once' the old saying goes.) Cut to size, leaving about half a centimeter extra (2/10ths of an inch) on each side. You want to avoid having excess to cut off when the mesh is in place, but still have enough to get in the channel and around the spline.

Make sure the channel is completely free of any debris (old spline pieces, screen mesh, tiny gravel, etc). Place the mesh over the frame and stretch it tight, but not tight enough to cause ripples. It helps to have a partner at this stage. Work the spline into the channel, making sure the mesh doesn't twist or slip from underneath. Stretch the spline slightly as you go.

You can measure and pre-cut the spline but it isn't necessary. Leaving it uncut allows you to make adjustments as you work it into the channel. Place the spline along one edge at a time, starting in the middle and working toward the corners. Work your way around the channel, keeping the screen stretched smooth and taut.

Avoid ending a spline piece at a corner. More tension on the mesh occurs there and you don't want the corners to work loose. Try to keep the lines of the screen mesh parallel to the edges of the frame.

And did I mention you should avoid bending the frame? Ok, last time for that.

Cut the spline and work the end into the channel. Clean out any dirt and debris from the window frame where the screen will be placed. Lift the screen into place and adjust using the tabs and frame so as not to leave any air gaps. And be careful not to bend... oh, you know that by now.

Replacing Doors

Replacing doors falls into two categories: (1) replacing just the door, (2) replacing the door plus the frame. The first is easy, but the second is within the skill set of the average do-it-yourselfer as well. Here, we'll cover the first case only.

To remove the original door, open it far enough to expose the hinges and give yourself ample working room. Whenever possible, put a wedge under the door on each side to take the pressure off the hinges. One on each side helps prevent the door from falling in either direction after the pins are removed. In most cases, the door is attached to the frame with a two-part hinge - one part attached to the door, the other to the frame.

Take a hammer and a flat-head screwdriver, with a thin blade and flat, sturdy handle and tap the pin on the bottom hinge upward. Try to get it about 7/8 of the way out then stop. Tap the top pin up the same amount.

Pins can stick for any number of reasons. If the door hasn't been used for a while, or if the hinges are rusty or painted over, you may find it necessary to apply rust remover or paint remover first. Usually tapping with persistent, sharp blows is enough to do the job, however. Avoid scraping the frame with the blade of the screwdriver.

At this stage, it's helpful to have a partner to ensure the door doesn't fall after the pins are completely removed. Remove the bottom pin first, while holding the edge of the door to prevent movement. Take care to keep your fingers out of the space between the inner door edge and the frame. If the door moves, you'll get a nasty pinch. Holding, or with your partner holding, the outer edge of the door remove the top pin.

With luck, the door will still be balanced on the hinges and you can insert your fingers into the inner edge and lift the door away. If necessary, grab the outer edge and the top and lift away.

Provided the old door isn't too warped, it can be useful for size comparison with the new door. New doors sometimes need to have the bottom trimmed an inch or two. Trimming is best carried out at the location you bought the new door, if possible. Measure the old one before you purchase.

If you need to replace the hinges, unscrew the hinges from the frame and the old door. If you plan to reuse the old hinges, now is a good time to clean them and dust the hinge cracks with carbon or silicon powder.

It's possible to use sewing machine oil or light grease to lubricate hinges. But, over time, that causes them to accumulate dirt and grit and eventually wear and squeak. A better method involves using a kind of powder popular with professional locksmiths.

This very fine carbon or silicon powder is sprayed inside the lock to keep tumblers rotating smoothly. It makes for a good lubricant for hinges, too, and can be easily wiped away cleanly.

Check the door frame and ensure that the screw holes will stand up well to reuse. If necessary, fill with wood putty, let dry, then drill a small starter hole for new screws.

Screw the refurbished or new hinge into the door frame. Measure and trim the new door to size and attach the hinge. Set the door onto the hinges and work the top pin in first about half way. Then work the bottom pin in part way (at least half, if possible).

Tap the pins in the rest of the way. Congratulate yourself on a job well done.

Six Tips For Decks Built to Last

With only a few dozen deck screws, lag screws, galvanized nails, bolts, joists, posts, braces, flashing, concrete bags, gravel, stain, thinner, drill, level, plumb bob, hammer, measuring tape... you too can build a deck. Sounds complicated already, eh? No one can teach you to build a deck in one page. But here are some tips about how to build a deck that's stronger, lasts longer and gives you the result you want.

Tip #1
First, this is one time doing things the old-fashioned way may not be entirely the best idea. Get one of the many good software packages to help you design your deck. It won't cut wood, but they're terrific at helping you visualize the result. They provide design alternatives, materials lists, tools needed, measurements and sometimes even building codes.

Tip #2
Once you have careful plans you need materials. Pressure treated 2 x 4's or 2 x 6's and 4 x 4's of pine, cedar or redwood are good choices. But consider also the newer alternatives. Several manufacturers offer composites that look and feel very much like wood, especially from further away than a few feet. Though the initial outlay is higher, they'll far outlast even stained wood. They require no staining or painting every few years and are stronger and less subject to warping.

Tip #3
Every deck needs a strong foundation. Unless you have the tools and skills to level prepare ground, create good concrete pier holes and pour concrete, then apply perfectly vertical anchors at the proper moment, this is a step you may want professional help for. All other steps are well within the reach of the average do-it-yourself'er with a little assistance.

Tip #4
Building codes in most localities determine the required distance between support piers. Within those limits, though, you have some choice. Since most lumber comes in 8 foot or 12 foot lengths, making support distances equal to or less than that leads to fewer cuts. Make it easy on yourself.

Tip #5
In most designs, ledger boards lay up against the house to support the joists (support beams under the walking surface). Some designs have Z-shaped flashing that lays up against the house, on the ledger board top and side surfaces.

If placed correctly that can work well. But metal flashing can warp with temperature changes. Nail or screw holes can leave small entrances for water. Sealing the flashing is one extra step that requires skill and care.

To avoid the hassle and avoid moisture buildup - leading to mold, corrosion, etc - move the ledger board away from the wall slightly with metal washers. That can also eliminate the need to remove siding.

Tip #6
Use screws and bolts wherever possible, not nails. Even the best nails rust. Stain, used on most decks, doesn't stick well to them, eventually leaving them exposed. Over time they're more prone to becoming loose. Screws rust, too, of course. But they retain their fastening power far longer.

The downside is: nails are often quicker and easier to hammer in than installing screws or bolts. But with a good power screwdriver attachment to your hand-held drill, that problem is easily solved.

However you choose to build your deck, one old-fashioned idea is still valid: thorough planning, measuring and careful execution avoids costly and unsightly mistakes. Take your time. The results will show.

Three Steps To Refinish Your Decks

Keeping decks sturdy and looking new is a three step process that can be low cost and require only moderate effort.

First, test the condition of your deck by performing a simple test. Drip water from a turkey basting or similar tool onto the surface. If it beads well, refinishing isn't necessary. If it soaks in rapidly, a full treatment is required.

Next, get a few different weather reports. Pick a period of a week where you expect moderate temperatures and low humidity. Several drying intervals will be needed.

Washing - the critical step

Decks wear and weather unevenly. Some areas get heavy foot traffic, others very little. Some parts are exposed to more hours of sunlight, while others are constantly shaded. Those shaded areas often get much less rain, snow and even wind that blows wearing dust across the surface.

But it's important to start with a uniform surface, throughly clean and mildew free and prepared to absorb stain or sealer. Some will require only a mild dish detergent wash with a long handled scrub brush, followed by a rinse from the garden hose.

Ensure that any debris between the slats is removed. Wash away spider webs, leaves, pebbles and so forth. If a hose isn't adequate a stiff paint brush or putty knife may be needed.

For more severely weathered decks, renting a pressure washer is often a low cost, low hassle alternative. Check for ones that deliver at least 1,000 psi of pressure and have nozzles that spray a jet 30 degrees wide or more. Hold the nozzle about 6 inches above the surface and spray slowly in line with the grain, then allow to dry for a few days.

If your deck is more than a couple of years old, you will probably want to pre-treat the wood by using a deck cleaner. Despite the wide variety available, simple oxalic acid solutions still do a perfectly good job. Test the cleaner on a non-conspicuous area before treating the entire surface. Again, allow to dry for a couple of days.

For stubborn mildew buildup a cup of TSP (trisodium phosphate) mixed with a cup of household liquid bleach makes for a good spot remover. Apply, then rinse after 15 minutes.

Stripping and Repairing

After the deck is thoroughly washed and dried, stripping any remaining stain, paint or earlier applied sealer is carried out. At this stage, you'll want to replace any broken screws, cracked boards and make any other needed repairs.

Most recommend doing this first. The advantage to leaving it until after the wash is eliminating any washing of new boards, many of which are specially treated. The downside is you'll have used some material and effort to wash boards you intend to replace.

Allow to dry for a couple of days.

Finishing

Now for the (relatively) easy part.

Select a stain that's water repellent or water proof, don't settle for one that's merely 'water resistant'. Ask for one that has good fiber penetrating ability. Stains that soak in deeply protect best and last longest. Most will contain some kind of mildewcide, but check to be sure and ask about UV protection.

Mask off any metal thresholds, molding, etc. Do nooks and crannies first with a small brush or rag. Apply to the larger surfaces with a smooth nylon or lamb's wool roller. Allow to dry for at least two days before walking on.

Done. Whew...

Installing Your Hot Tub

If you've ever installed an outdoor deck and patio and hooked up an indoor dishwasher, you've got the skills needed to install your own hot tub.

Depending on the layout of your yard, installation choices vary from a simple gravel and sand pad to a raised platform. You can get help designing your installation from one of the many good home design software packages available. They don't pour concrete, but they'll help you visualize the results, provide measurements and sometimes even contain local building codes.

Start by measuring the base of your hot tub, then add two feet around each side for access. Multiply the width (plus the four extra feet) by the length (plus the four extra feet). That gives you the area occupied by the installation.

Now find out how much water your tub holds. You could calculate the volume, but most manufacturers will list the figure in the specs.

Each gallon of water weighs about eight pounds (3.6kg). A filled tub can weigh 5,500 pounds. Add the weight for, say, four people and that total is over 6,000 pounds on average. You need to ensure that the surface holding your tub can support that weight over the area of the tub.

If you're installing on the ground, level the surface with a rake and long two by four, ensuring there aren't any rocks that can puncture the underside. If your tub has a wooden skirt, you may not have to do anything more than lay some weed paper over the dirt.

A raised wooden or concrete platform helps to increase the beauty and utility of your tub. It gives you a nicer view of the yard and can help prevent moisture buildup around the base, which leads to mildew and wood decay.

Once again, the key is to ensure you have a level surface and that it can support the needed weight over the area. The pressure on a surface is the force - in this case the weight - divided by the area. It's the pressure that really counts, not just the total weight.

Making concrete platforms that are strong and level requires skill and patience, but it's within range for most do-it-yourself'ers. You'll need to build a retaining box into which you pour the concrete. Follow the guidelines provided by local building codes.

A wooden platform is both attractive and fully capable of supporting most tubs. A series of a dozen 2 x 6's laid on edge, bordered with 2 x 6's and attached via good L-braces on a platform

of 4 x 4's can support a medium sized hot tub safely. 4 x 4's could be used for the entire platform, though of course the results will be lower by the two inch difference.

Lay out the grid on level ground, ensuring the spacing is compliant with local building codes, generally no more than 12 inches between joists (individual boards). Boards can be attached via bolts and nuts through pre-drilled holes, or via strong L-braces.

Even empty hot tubs weigh in the neighborhood of several hundred to a thousand pounds. You'll need several strong helpers to move the tub into position.

Most wiring jobs, to run the controls, lights and motor are best carried out by an electrician. But if you're skilled in that area, it's possible to do this step yourself, as well.

Run PVC conduit from the junction box at least 18 inches deep in a trench. Use an electrician's fish tape or similar device to pull wires from the 240V GFCI protected equipment. Connect the wires according to the manufacturer's instructions.

(Fish tape is a flexible reel used to snake down pipe. Wires are attached and pulled back through. Computer cable installers use long flexible wire hooks to perform the same task.)

Be sure to have your installation inspected before filling the tub. If you can avoid it, you don't want to have to drain the tub in order to re-do anything that's non-compliant. Hot tub cleaning chemicals can be hard on nearby grass, and you'll have wasted the money to fill and heat the tub.

Low Hassle Exterior Painting

Fortunately, painting the outside of most homes is easier today than ever. Easier... not easy. When the average cost of a professional paint job runs several thousand dollars (though they do earn it), you may want to tackle it yourself.

Get started right by investing in one of the many home design software packages available. You can't judge color and finish on a computer monitor. But, it will help you estimate the amount of paint needed, provide a list of materials and assist you in budgeting.

Unless you know the effect of a particular paint on your home, try some inexpensive and quick experiments. Buy a pint of your proposed color and finish and try it on a small, out-of-the-way section of the house.

Prepare the surface as you would for the whole job, by cleaning and sanding, if necessary. Scrape off any chips or cracking sections. Apply and let dry for a week and, if possible, observe in different weather conditions (cloudy, sunny, overcast). Take into account the amount of shade in your test area. You may have to try it in more than one spot to get a realistic idea.

You can repeat the experiment using both latex-based and alkyd(oil)-based paints. In years past, oil would have been the hands down favorite for exterior work, but as paint products evolve the choice is now a toss up.

Latex is easier to work with and dries faster, but tends to be less durable. It also bonds more readily with weather stripping. It breaths well, allowing moisture in the wood to come out (or in, unfortunately) more easily. Clean up generally requires no more than dish detergent and water.

Oil-based paints stand up well to wear, making it especially good for doors, trim, porches and so forth. Clean up is more difficult though, particularly since disposal now requires special procedures. Some cities fine residents for placing oil-paint cans into trash, requiring disposal at stores or special facilities - usually for a fee.

If you select latex-based paint, use a synthetic material roller, such as nylon. Couple that with synthetic bristle brushes for trim and crevices. Natural fiber brushes absorb the moisture in latex paint, making spreading more difficult. For oil-based paint jobs use a natural bristle brush. Pair that with a roller made of lamb's wool or other natural material.

Rollers come in different pile lengths, from very smooth to very rough. For a more polished look and/or use on smooth surfaces the smoother roller is an option. For rough surfaces, you'll need the rougher roller in order to get good coverage with minimal hassle.

To save time on clean up when using oil-based paints, experiment with popping the brushes and rollers into plastic bags and freezing. The next day or following weekend, allow to thaw for an hour and take up where you left off.

Before you begin, inspect the entire area and prepare the surfaces. Sand any rusty nail heads (or replace, if practical). Putty cracks and sand smooth the result after drying. Remember that paint dries slower on plastic than newspaper. Visit the local journal and pick up a few stacks of returns to cover those plastic drop cloths.

As you plan your job, get two or three weather reports. Aim for a period of moderate temperatures and low humidity.

Low Hassle Roof Repair

Roof repair can be simple and cheap... or you can wait until the damage spreads and you have a condition only a professional can solve - for hundreds of dollars.

Damage comes in all forms - cracked tiles, warped or torn shingles, bent flashing - the list is endless. But most of them are a problem for the same reason: the possibility of water damage from a leak.

Most damage that leads to a leak doesn't give you any warning. You find out after the water has already started coming in. But you can turn that problem into an asset.

If the roof isn't too high, steep or slick, you can perform an exterior inspection where you suspect the damage is centered. If your roof is tile or wood shingle, look for the obvious: cracked or broken elements. For asphalt or composite, look for shingles that have slipped out of position or for warping ('fishmouth' or 'loose lap', etc).

In newer, scalloped adobe tile roofs or single roll asphalt, the problem is sometimes less obvious, though. You may have to wet the roof briefly or perform an interior inspection to find the ingress.

Wherever you find a crack or hole put a flashlight at that point if the damage is too small to be seen from the interior. Of course, sometimes sunlight is enough and the flashlight isn't necessary. We're assuming it's cloudy or overcast, during rain threatening conditions.

Now for the interior inspection.

Inside the attic, take a hammer and a few four inch nails with you and step only on the support beams. With luck you'll see the light coming through the crack in the interior. If not, repeat the exterior procedure used to locate cracks or torn sheeting.

Look for moisture on beams. Locating the problem just by looking for water can be a little tricky though. If you've had recent heavy rains, water can flow along beams a long distance from the source of the opening. Try to trace it over and up to the origin.

Once you locate the opening, take a long nail and drive it through the roof as close as possible to the damage. Of course, beware of hitting any electrical wiring, cables, etc. Note this technique is for asphalt or composite, even sometimes wood shingles. It should NOT be used for adobe tile roofs, since it will only cause more damage.

For tile, try squeezing enough toothpaste through the crack to get to the exterior. Toothpaste is not the only option, but it washes away so you don't have the problems associated with using, say, silicone gel. Naturally, if the crack is small enough to be fixed by squeezing some silicone gel into it, do it and call it a day.

If the light technique doesn't work, try locating the crack and take careful measurements from one edge, then another at right angles. This technique is difficult to use in most houses because of varying roof height sections, difficult to access crawl spaces, etc.

The tough part is over, if the crack is in a place that allows re-papering from the interior or replacing of an asphalt shingle or adobe tile from the exterior.

Any major repairs should be undertaken by professionals. But for single shingle or tile replacement, just remove the broken element and replace. For asphalt or wood, nail all four corners.

Sometimes asphalt can simply be nailed or glued back into place, when the problem is minor curling, for example. For tile, carefully chip away the remaining portion. Get the proper size replacement and glue back into place.

For some asphalt repairs, shingle replacement won't be enough. Tarring may be necessary. Except for small, easy to access jobs that's usually best carried out by a professional. Similarly, replacing roofing felt - a type of tar paper used to seal - usually requires skill and experience beyond most do it yourself'ers.

By all means fix what you can yourself, when you can do the job right. But keep in mind the obvious. Water damage can quickly do enough harm to the attic and your ceilings and rugs to justify the cost of professional services.

Gardens for Profit and Beauty

Gardens provide a healthy, relaxing hobby and give beautiful results, enhancing the appearance of any home or business. But they can also be profitable.

It isn't necessary to produce flowers in abundance and market them in order for your efforts to pay off. An investment of a small amount of cash and a couple of hours per week for a few weeks can substantially raise the value of your home.

Drive around your neighborhood as if you were in the market for a new home. Examine the houses you pass and decide which appeal to you visually and which are boring or unattractive. Discard those that are good looking because of the house and lawn and focus on what's left. You'll find that many are greatly enhanced because of the gardens.

You can create a garden to raise the value of your home, or simply because you want to enjoy the beauty yourself. In either case, here are some simple, low-cost, easy guidelines for creating one or more gardens.

Keep it low maintenance. Unless you have lots of spare time (rare these days) and want to spend much of it weeding, pruning, spraying, etc, plant things which require minimal maintenance.

Perennials are flowers that you plant once, then bloom for several years. (Hence the name.) Non-perennials or annuals generally bloom once and die, unless you live in a climate that stays warm all year.

Annuals often provide more color and variety and you can sprinkle them around, but perennials make for a low time-investment option. And with a little effort, perennials can be found in a variety of colors: blue, pink, yellow, purple, red and others.

Foxgloves, lupins, daises, irises and many other species are colorful and bloom year after year with very little or no work. Poppies are another popular type that comes in different colors, such as yellow and pink.

Non-flowering or minimal flowering plants help to flesh out a garden, provide ground cover, and look great. Hostas, herbs such as oregano and sage, or yarrow all work well.

You can even find plants, like tansy, that contain natural insecticides. Rubbing your hands and arms with the juice from the leaves helps keep mosquitoes off. They also produce a beautiful, tiny yellow flower.

Besides looking good, these plants often have delightful aromas that can be smelled from much further away than many flowers.

All are low cost, especially since they usually have to be purchased only once in order to last for years.

Weeding is probably the major time consumer, after initial planting. To minimize the yearly effort, put down a layer of weed cloth, then cover with an inch of dirt. It lasts for years and provides a barrier that keeps weed seeds from blooming by lowering the amount of heat and sunlight passing through, as well as suppressing physical growth.

Many people don't have 'green thumbs'. Use these guidelines and, provided the garden has adequate water and decent starting soil, you'll have a colorful healthy garden for many years.

Judging Construction

Beyond the basics of grading, foundation and floors, and walls and roofs, there are a host of smaller - but still essential - elements to inspect.

A house has an amazing number of distinct systems: electrical, plumbing, insulation, siding and/or paint, air conditioning and heating, windows and doors and several others. If defective, or poorly built or installed, headaches can run from expensive repairs to life-threatening conditions.

Even those without expert knowledge of home construction can learn some simple guidelines to reassure themselves that the home they're buying has been made well. Always get a professional inspection, but go one step further and get that added confidence that comes from seeing for yourself.

Whenever possible take advantage of viewing the house during construction.

Insurance regulations will often forbid anyone but licensed professionals from seeing the house during working hours. But carpenters and other home-building professionals start early and leave in the afternoon when there is usually still daylight. Take a little trip and look around.

Don't make a pest of yourself or try to confront the contractor when you think you see something done wrong. Polite questions are ok, but angry accusations generally have the opposite of the desired effect. Use an intermediary to express your concerns.

At various stages, look for electrical systems that are designed to carry the appropriate amount of current and if needed, 220 volt outlets for your needs. Most homebuilders are honest, but sometimes they shave costs by installing circuit breakers and other components that are lower rated than you might need.

Perform some simple arithmetic by adding up all the wattage for computers, appliances, etc that you expect to have. Increase the amount by at least 30%, then divide up among the different circuits in the house.

Check to ensure that insulation isn't lying against sharp metal edges. Even though the wiring is stationary, insects and rodents can chew through these and expose the wire, producing a short.

Check the plumbing to ensure that pipes are routed in a way that will make later replacement and/or repair as simple and low-cost as possible. If the house is already constructed or far along, there's little you can do to change it, but it's always best to know.

If construction has reached the stage where running water is available, check for leaks. It's not unheard of for even brand new homes to have second floor toilets or sinks that leak water down the insides of walls. Though it's unpleasant to have to make other living arrangements or argue with homebuilders, it's better to know before you move in.

At the later stages, windows and doors will be placed in frames. Both are generally made very precisely by manufacturers in standard sizes. But frames, sometimes unfortunately, are always hand made and can be out-of-square and even have the wrong dimensions.

Take a measuring tape and a T-square. Measure some frames to ensure they're standard sizes. You'll want later to be able to buy shades that fit properly. If the windows and doors are in place, check that there are no air gaps.

Most homes are well-constructed by honest, highly competent professionals with years of experience. But, occasionally, you'll find a job where costs have been shaved or the workmanship isn't up to par. Don't be shy about protecting what in most cases is your largest investment, not to mention your future home.

Judging Construction – Ground and Walls

Even when a homeowner doesn't have the advantage of watching the progress of construction from the beginning, it's still possible to judge the final result. Professional inspectors do it all the time, and they have extensive lists of what needs to be checked.

The site needs to be graded properly, in order to provide adequate run-off after rains or even from simple lawn watering. The house doesn't need to be at the peak of a high hill, but the ground nearby should be at worst flat, preferably with at least a slight slope away from the foundation.

That helps prevent standing water from forming around the base, which inevitably finds its way under the floor or into tiny cracks in the foundation. A tiny amount of moisture isn't disastrous, but over time several harmful effects can occur from even small amounts.

Mold can build up, sometimes making its way into noses and lungs. Continual moisture against walls can wet drywall, leading to weakening and eventual peeling. Plywood floors can be warped, producing bulges in flooring and carpets.

In more serious cases, homeowners can find themselves faced with basements that have an inch or more of standing water. Sump pumps can deal with the problem, but unless the area also holds a dehumidifier or air-conditioner, mold and mildew will form.

It's no accident that foundations are flat and horizontal and walls are vertical and at right angles to the foundation. True, there are architecturally distinct homes that form exceptions. But in the overwhelming number of cases, the simple facts of gravity, human biology and sun movement dictate how a house needs to be built.

Walls not at right angles don't merely look wrong, they're weaker. Trusses that provide support for roofs and cross-members that make walls rigid are all placed to maximize strength, to resist wind, rain and/or earthquakes. Pieces need to be at the correct angle and fit well to minimize leaks and maximize support.

Those simple engineering facts provide even those who lack detailed construction knowledge with a basis to judge the soundness of the job.

Few homes will have joints that fit perfectly, or floors that are perfectly level, or walls that are perfectly vertical. But these elements should be within a very narrow tolerance range in order to properly perform their functions.

Do what inspectors do. Get up above the ceiling and take a look. Even homes without formal attics will almost always have a crawl space of some kind. Be careful to step only on beams, not in between. Unless the house does have a real attic, the 'floor' isn't intended to be walked on.

Check the trusses. There are several standard styles, 'M', 'W', 'Scissors' and others. But they all have to have angled ends that meet well with other members of the roof and walls. Most will have metal on both sides of the member to join pieces. Check for any long cracks in the beam where these metal pieces attach.

A well-constructed home will be on solid, level or sloping-away ground with good drainage and have a strong, well-joined skeleton. Without those two basics, even when all else is done well, homeowners will be faced with expensive problems.

A little inspection goes a long way. Don't rely solely on a professional inspectors report. Even though they're qualified experts, get that added confidence that comes from seeing for yourself.

Choosing An Alarm System, Hardware AND People

Few things are as important to most homeowners as the security of his or her home. Fortunately, today there are more options than ever. Here are some tips on how to select one with confidence...

Home security systems aren't just hardware, though that's important. A key component of the overall package is the company and people that support the system.

Find out about hiring practices. Most security professionals are dedicated, trained personnel. But, unfortunately, it's often difficult to know whether you are dealing with an experienced individual or a newcomer.

Some are low paid and becoming a guard can sometimes be accomplished with very little training. Be cautious about those wanna-be police officers. Individuals who repeatedly fail the entrance requirements are sometimes resentful and bitter. Weed out companies that hire them.

This is one time it doesn't pay to give the benefit of the doubt. Be courteous, but rigorous when asking questions of any prospective alarm system provider. Check with the local police department and the Better Business Bureau and other local organizations.

You'll also want to find out about their procedures when the alarm is triggered. Everyone hopes it's a false alarm. Ask how they distinguish those accidental alarms from the real thing. Find out about response times, password procedures and so forth.

Find out about any charges associated with false alarms. Most companies will allow one or two accidents per month, then charge a fee thereafter. This is reasonable, but check the policy. Discuss some scenarios.

Only after you're confident you've selected a company with good personnel and practices, should you investigate hardware.

Alarm systems come in a variety of technologies. For decades, and still today, many window systems consisted of a tape or wire system through which passes an electric current. They typically include magnetic contacts around the door and window frames. When the window is lifted or the door opened, the current is interrupted and the alarm tripped.

Such systems aren't bad, but a good glass cutter can make them useless. If the intruder doesn't interrupt the current by opening a door or tearing the tape or wire, no alarm is sounded. Some systems make this difficult by activating if a screen or frame is removed. Ask your company for details.

Newer systems offer several alternative supplemental methods. Infrared or motion detectors, floor pressure and window vibration sensors are some of the devices employed. Some include glass breakage sensors that can detect when the glass is cut or broken.

Ask about the details of how these systems operate from your prospective security company. Many are good at distinguishing false alarms from the real thing, but you want to be sure.

Closed-circuit TV systems are usually available, but at a significantly higher cost. Much of the cost is not the extra hardware but the people behind them. If the owner takes on all monitoring function, the cost is less. If the signal is transmitted to an outside location, the costs are much higher, naturally.

Many systems operate through the phone lines, since they retain electrical power during most outages. Check to find out whether they're redundantly supported with cellular or radio systems.

Ask about annual or more frequent system testing and maintenance. You want to be sure your system continues to operate over the life of your occupancy. After all, there are lives occupying the home.