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Who wants a leaky roof? Asking the right questions will help you determine if you found a real roofing professional, who will do the job properly. If not, you could be scaling a ladder during a rainstorm! This Contractor Hiring Guide & Checklist will help you with the right questions.

Below is a list of some columns to better prepare you in your search. You will gain valuable information regarding both roofing and dealing with contractors. Read about the various types of roofing materials and their pros and cons. Then discovery how to maintain the upper hand in dealing with contractors by knowing when to make payments. Money is the leverage.

Click on the titles to read the columns that are contained right here in this document. At the end of each section, there is a link to more information available at the AsktheBuilder web site.



But first, here are links to four exclusive Contractor Hiring Guide & Checklist videos that will help you with Finding a Pro, Contracts, Payments and Change Orders.



Finding a Pro is not always done on the Internet or using the phone book. Tim explains a better method.



After the bids are in and the contractor selected, what should be in the contract? Tim outlines eight items that must be in your contract.



Payments are important. When do you make them and how much? Tim explains three important concerns regarding your payments.



<u>Change Orders</u> can cost more than just additional money. They can delay the whole project. Discover what to do ahead of time.

Roofing

Roof Shingles - Replacing roof shingles is a hot, back-breaking, dirty job. Care must be observed when installing roof shingles. The pitch of the roof and the temperature can make roof shingle installation difficult for a do-it-yourselfers. Before you start, you have to purchase the right style and color asphalt shingles.

<u>Asphalt Shingle Installation Tips</u> - Do you know if felt paper is required on your roof? The place where roofs leak first 95 percent of the time is at a flashing! With planning, thought, these tips and some additional reading suggested here, your roofing project will be safe and successful.

Do it Yourself Roofing - Do it yourself roofing may sound like a great idea to save money, but in reality

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it can be a disaster. There are many important steps that must be followed to ensure roofs will not leak. If you do have friends help, do not break out the alcohol until the job is complete and leak-proof.

<u>Rubber Roofing</u> - Rubber roofing often needs an underlayment when it's installed. But roofers need to make sure they can get the new membrane roofing underlayment installed before they leave the jobsite for the day. Covering the unfinished work with a tarp is dangerous as the tarp can blow off in an overnight rainstorm. When that happens, water can seep into the house.

<u>Skylights and Skylight Leaks</u> - Skylights are a great addition to a home. A skylight allows natural light to enter a home. But these skylight windows can create confusion from time to time. Water that appears in and around the skylight might be condensation or it might be a skylight leak. The challenge is to discover the source of the water.

Roof Flashings Stop Leaks - Metal flashing cannot be replaced by a caulk in order to prevent roof leaks. The caulk can pull away from the surface due to expansion and contraction of materials, while metal flashing acts as shingles to repel water when installed correctly.

Roof Leak - Ten Most Common Leak Locations - A roof leak is a major nuisance for most homeowners. Finding a leak can be frustrating or relatively simple, depending on location and weather conditions. Leak detection may go easier with these tips for locating a water leak and roof leak repair.

<u>Slate Roofing - Repair or Replace?</u> - Slate is excellent for roofs. It is fireproof, resists hail damage and has a long service life. When it starts to crack or becoming brittle, you may need to do some slate roof repair. The causes of its stress could be loose nails or nature.

<u>Metal Roofing - Good Looking and Durable</u> - While the cost of metal roofs is expensive, they make a great roof for a residential home. Metal roof material is fireproof, attractive and wind resistant. You can create a flat or shingled look. Make sure your roofer follows the metal roof installation instructions exactly.

Roofing - Additional online columns are available on that deal with roofing, shingles, types of roofing materials and much more.

House Plans & Planning

<u>Home Plans</u> - House plans with detailed interior and exterior elevations and exact specifications will help make your dream home become reality. Be specific with house floor plans, and make your plans reflect exactly what you want down to the smallest detail. Avoid problems by drawing up precise home plans before your new home construction begins.

<u>Building a New Home - Get Organized</u> - Building a new home requires hundreds of choices. Get organized by keeping all of your choices and plans for your new home building project in a binder so no decisions fall through the cracks. Blueprints and specifications along with this binder will keep track of the entire project. Select amenities for your new home at the start so that workmen can plan openings and utility adaptations to stay on schedule.

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<u>Detailed Plans and Specifications Minimize Mistakes</u> - Detailed blueprints, plans and specifications will help you avoid being sued by a contractor. Keeping a detailed account of work each day, along with photos, will arm you with data should a problem with your contractor arise.

<u>House Plans</u> - Additional columns covering house plans can be found online in the House Plans section of Askthebuilder.com.

Payments

<u>Contract Payments</u> - Detailed contracts noting exact contractor and homeowner specifications and listing payment schedules help avoid payment disputes.

<u>Payment Suggestions</u> - Before payment or work begins, establish detailed contracts, building plans, payment dates, affidavits and helpful construction reports.

When to Pay for Remodeling Plans - Never pay all of the money due for remodeling plans before the plans are complete. Once you give cash in advance for incomplete work, you lose all of your leverage. Upfront payment has left tens of thousands of people disappointed when the person never finished the job after being paid.

<u>Home Remodeling</u> - Remodeling and new home construction share a lot of common items. But they differ in one major area - remodeling is done in the house where you are living. Daily routines are altered. Certain areas of your house may be unavailable during remodeling. No kitchen or bathroom will be a real problem. Read these tips to help minimize your interruptions.

<u>Payments</u> - Read other online columns regarding making payments during construction at the AsktheBuilder.com website.



The columns shown above are only a sampling of the <u>AsktheBuilder.com</u> columns available to help you.

Homeowner:	Contractor:		
Address:	Address:		
City/State/Zip:	City/State/Zip:		
Phone:	Phone:		
Email:	Email:		
Contractor's License Number # (where applicable	æ):		
Project Location (Jobsite Address):			
Date Bid Submitted: D	ate of Plans & Specifications:		
CHECKLIST			
Do you intend to remove the existing roofing?		Yes □ No □	
Will you install tar paper under the new roofing material? If yes, what weight? lb.		Yes □ No □	
What type of roofing material will be installed?			
Asphalt Shingle Metal Tile Wood Concrete Tile Slate Rubber Built-up Hot Tar Other			
Who manufactures the roofing material?			
What is the product or style name?			
What will the color be?			
How long is the manufacturer's warranty?	year(s)		
Will you install the product according to the manu	ufacturer's specifications?	Yes □ No □	
Newer asphalt shingles contain high amounts of calcium carbonate. This is a food Yes material for a certain roof algae which can quickly discolor a new roof. Will the shingles that you intend to apply have granules that contain copper that will prevent algae growth?		Yes □ No □	

f the answer above is "No", will you install copper strips at the top of the roof to prevent roof algae stains?		No □
Asphalt shingles have strict nailing requirements. Almost always each shingle requires 4 nails. These nails must be placed below the self sealing asphalt strip in almost all instances. Do you intend to nail the shingles in this fashion?	Yes □	No □
Many roofers install the starting row of asphalt shingles the wrong way. They simply put a full shingle on upside down. This is wrong. The lower five inches of base course needs to be trimmed off so that the first actual course you see is protected from wind lift. Do you intend to trim off the lower five inches instead of simply flipping the first shingle?		No □
What type of metal flashing will you use? Tin □ Aluminum □ Copper □ Galvanized □ Other		
Will the flashing be soldered where necessary?	Yes □	No □
Will you paint the metal?	Yes □	No □
Aluminum flashing can easily corrode if it comes into contact with the alkaline salts found in brick or stone mortar. As such, do you intend to use aluminum flashing if my house has brick or stone that passes through or alongside a roof?	Yes □	No □
Will you install a roof ventilation system?	Yes □	No □
If yes, will it be a continuous ridge vent system coupled with adequate soffit ventilation?	Yes □	No □
What is the Fire Classification Rating of the roofing material?		
Do you intend to install drip edge metal work at the bottom and sides of the roof?	Yes □	No □
Do you intend to install any specialized roofing membranes which will prevent water infiltration from ice dams and wind driven rain?		No □
If Yes, indicate all areas of the roof where you intend to install this material:		
Will you install these specialized materials in strict accordance with the manufacturer's instructions?	Yes □	No □
The best skylights made have wonderful leak proof factory made pre-engineered flashing kits. If installed correctly skylights simply will not leak. If skylights are part of this job, will they have pre-engineered flashings made by the skylight manufacturer?	Yes □	No □

Metal roofing absolutely must be installed according to manufacturer's instructions. Failure to do this can lead to leaks and premature corrosion. Prior to starting the job, will you supply me with the written installation instructions that are supplied by the roofing material manufacturer?	Yes □	No □
Will you obtain a building permit?	Yes □	No □
Who will perform the work? Own employees □ Sub-contractor □ Combination □		
Will you remove all debris from the jobsite?	Yes □	No □
What is your estimate of the quantity(# of squares) of material this job will require? (One square equals the amount of material necessary to cover 100 square feet.)		Squares
Will you leave extra material behind for future repair needs?	Yes □	No □
In the event that you discover rotten wood sheathing which needs to be replaced, what will you charge per square foot to replace the rotten wood with new wood? \$ per square foot.		
What is the length of your (installer's) warranty? year(s)		
Does it cover all labor and material?	Yes □	No □
Are you a member of the Better Business Bureau?	Yes □	No □

OPTIONAL ADDITIONAL NOTES

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JOB COST BREAKDOWN

Click <u>here to download</u> an Excel Spreadsheet to use to compare the quotations of three Contractors. The spreadsheet will automatically highlight the best bid and the high and low bid for each item.

MATERIALS	
Permit	
Emergency Tarps	
Felt Paper	
Ice-Dam Membrane	
Nails	
Valley Flashing	
Plumbing Vent-Pipe Flashings	
Gutter Apron Flashing	
Rake-Edge Flashing	
Step Flashing	
Shingles / Tiles / Metal Roofing	
Solder	
Torches and Torch Fuel	
Turbine Vents	
Hip Vent	
Ridge Vent	
Debris Removal	
Dumping Fees	
Dumpster Rental	
New Lumber to Replace Rotten Wood	
Chimney Sealer	
Paint for Flashings	

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LABOR	
Total Labor	
Insurance	
Workman's Compensation	
Unemployment Tax	
OVERHEAD	
PROFIT	
TOTAL JOB COST:	

PAYMENT SCHEDULE

Excessive advance or periodic payments before or during the work is completed often put a homeowner at risk. The homeowner basically becomes a lender. This is especially true if the job does not require any special or custom ordered materials at the beginning of the job. A fair payment schedule is one that allows the homeowner to pay only for labor and material that has been completed in a satisfactory manner. Periodic payments can occur every 3 - 4 days for small jobs or each week or month for large jobs. On large jobs, the amount of money paid out at any given time should not exceed the total sum of the items listed in the above cost breakdown plus a proportionate amount of contractor's overhead and profit for completed in-place work. A homeowner should not have to pay full price for work that is unsatisfactory or incomplete.

Do you agree with this philosophy? Yes □ No □

If "Yes", please complete the Payment Schedule on the next page.

PAYMENT SCHEDULE

First Payment:% of Total Job Cost.
To be paid when the following work is complete:
Second Payment:% of Total Job Cost.
To be paid when the following work is complete:
Final Payment:% of Total Job Cost.
To be paid when all work is complete and satisfactory and all debris is removed from jobsite.
INSURANCE DOCUMENTATION
Contractor's Workman's Compensation Risk number or Private Policy number and Carrier number:
(PLEASE ATTACH A COPY OF YOUR CURRENT STATE CERTIFICATE OR PRIVATE CARRIER CERTIFICATE)
Contractor's Liability Insurance Company and Policy number:
(PLEASE ATTACH A COPY OF CERTIFICATE OF INSURANCE)
ANTICIPATED STARTING DATE:
PROJECTED COMPLETION DATE:

REFERENCES (List only jobs of similar scope and nature)	
Job completed approximately 4 years ago:	
Name:	
Address:	
Phone Number:	
Job completed approximately 2 years ago:	
Name:	
Address:	
Phone Number:	
Job completed within the past 60 days:	
Name:	
Address:	
Phone Number:	
Bidding Contractor's Signature:	
Date:	

OPTIONAL COMMENTS

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CONTRACTOR HIRING GUIDE & CHECKLIST HELPFUL HINTS

Thanks for purchasing one or more of my Contractor Hiring Guide & Checklist products. I am quite sure you will be pleased with how they help you find a professional - or more importantly - allow you to quickly spot a scoundrel!

You will run into some resistance from contractors when they see the Contractor Hiring Guide & Checklist(s). Some will reject it entirely. That is OK. Be patient and continue to call contractors until you find one who accepts the Contractor Hiring Guide & Checklist at face value - a document that protects both you and the contractor.

USE TIPS

- 1. Insist that all questions be answered. Incomplete answers can lead to incomplete jobs.
- 2. Test the contractor's phone number on several occasions. Do you get a machine, voice mail or a human? Humans solve problems, not machines. Note response times. If it takes days to get a return call, this could spell trouble if you start a job with this type of person.
- 3. The cost breakdown is so important. It allows you to compare quotations quite easily. You can see why one quote is low and another is high. On larger projects, a blank space in the breakdown tells you an item has been forgotten!
- 4. Insurance coverage is mandatory. You want real copies with current dates to show that you will be covered if someone gets injured on your job. Remember that sub-contractors must have their own separate insurance coverage!
- 5. Start Stop Dates will help you determine if the contractor is serious about your job. Ask about who will be working on your job and when they intend to show up. Ask about delays what causes them and how long might they last.
- 6. References are critical. The key is to find ones from the different time periods. Ask the people different questions. The most recent reference can provide you with interesting data. For example, did the workers arrive when promised? If there was a delay, what was the problem? How long was the delay? Was the jobsite kept clean? Did anybody play loud music? What would the referral do differently if allowed to start the job over from the beginning?
- 7. Ask the referral from two years ago about warranty claims. Was repair work necessary? Were their severe problems? Was the contractor responsive? Were the defects fixed correctly the first time or were repeated attempts necessary?
- 8. The oldest referral has good information too. Ask how well the work has held up. Ask what they would do differently? Would they hire the contractor again, OR have they since found a different contractor who does better work? You might be surprised by their answers!

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9. Contract Documents - Give serious consideration to attaching/referencing the Checklist as a part - or addendum - to your contract that you and the contractor sign. It can be used as a fact sheet/specifications describing what was promised by the contractor. Since I am not an attorney, I can't give legal advice. You may wish to consult with an attorney to see if your state law permits these kinds of attachments or addendums. I believe that virtually every state permits you to do this.

HOW TO REALLY FIND A PRO

Finding a reliable, competent and skilled builder or remodeling contractor that can do all of the work will take some time but it is by no means impossible. If you understand some of the basic principles by which these people work, the task is not as mystical as it may seem. Quality contractors are proud of their work. They want it to be perfect or nearly so and they do not want any call-back or warranty problems. To achieve trouble free results, they know that high quality materials are an integral part of each project. Real professionals know that problems are public relations nightmares and drain profits.

Knowing this, you start your search for contractors by visiting the businesses that supply quality materials to these individuals. You might be surprised to find out that these businesses are often places that you have never heard of. In your instance, open the Yellow Pages and look under the heading Roofing Supplies. Many of the listings under this heading will be businesses that cater primarily to contractors and not consumers like you. Visit two or three of these places if possible. Try to do this in the middle of the morning or the mid-afternoon. Never go early in the morning, at lunch or the end of the business day. These are busy times when contractors are picking up supplies.

Once there, ask to speak with the manager or possibly the owner. Briefly describe your job to this person. Ask for a customer who has been buying for 15 or more years, one that routinely buys the highest quality materials, and who pays his monthly bill on time. If the business manager obliges you, you will have a list of high quality candidates. The final question to ask, if possible, would be names of contractors that this person would use to work on his or her own home.

If the manager will not release names, then go to Plan B. Do a stakeout of the business in the early morning and get business cards from the contractors who are buying supplies. Look for ones who are driving well kept vehicles that project a look of professionalism. You will still need to do more detective work, but your chances of hiring a pro are quite good.

Thanks again for your purchase. Don't hesitate to email me if I can help you in any way. Simply go to my website - <u>AsktheBuilder.com</u> - and look for the <u>Ask Tim</u> icon on the home page.

Click here for other Contractor Hiring Guide & Checklists available from AsktheBuilder.com.

Best regards!

Tim Carter - AsktheBuilder.com

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ROOF SHINGLES

DEAR TIM: I need new roof shingles, but am paralyzed by fear of making the right choice of material and color for my home. Installing roof shingles doesn't seem that difficult, so I am considering doing the work myself. How do I select high-quality roof shingles? Should I install the new roof over the top of my existing asphalt roof shingles? What other tips can you share about residential roof shingles? Vickie E., St. James, MN

DEAR VICKIE: Many books have been written about roof shingles, so it is unthinkable that I can fully discuss all you have asked. But I am sure I can point you in the right direction so you have years of leak-free performance from the new high-quality roof shingles you will be purchasing.

Let's first get realistic about what is involved when installing roof shingles. It is dirty, back-breaking work. If the air temperature is above 70 F, then you will be hot up on the roof. As the air temperature approaches 90 F and above, it can become dangerously hot on the roof. Dehydration can make you fatigued, dizzy and more prone to cutting corners. On top of all of this, is the inherent danger of simply working up on a roof. Whether you intend to or not, you will obey the Law of Gravity, and it can be both painful and/or deadly.

Can you do the work? The answer is maybe. I do not know your skills, and what tools you have. Did I face the same challenges when I did my first roofing job? You bet I did. For this reason, I say you should consider trying if your roof has a shallow pitch such that you can walk over it without fear of sliding off. The best thing you could do is to volunteer to reroof a neighbor's small shed to see if you have what it takes.

There are many different styles, textures and colors in asphalt shingles. There are almost as many different levels of quality. The price per square (a square is enough material to cover 100 square feet) is an excellent barometer of quality. As the price goes up, so does the quality and the warranty. If you need help visualizing a color and texture, consider buying just one bundle of the roof shingles and lay them on the roof as if they were nailed. Then get down on the ground and look at them to see if you like the color and texture.

I urge you to purchase your roof shingles from a roofing wholesaler that sells roofing supplies to roofers. Visit these well-hidden businesses and talk with the manager. You can discover these oases of information by doing an Internet search or looking in the standby Yellow Pages under "Roofing Supplies". The manager or owner will give you a quick education on the levels of quality across the different shingles. It is best to visit these businesses in mid-morning or mid-afternoon when the roofers are at their job sites.

You can sometimes install a new asphalt roof on top of an existing one. There are building-code considerations, so always check with your local building department. Personally, I have discovered over the years that you get a better job if you strip off the existing roofing materials. This is miserable work, even with the best tools.

Read all of the written instructions you can get from the roof-shingle manufacturer. Instructions are often printed on the packs of shingles, but do additional research to locate photos or videos of roofing

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tips.

Keep in mind that a majority of roof leaks happen where the roof touches up against something that is not a roof. Examples are skylights, plumbing-vent pipes, exhaust fans, chimneys, walls that extend higher than roofs, etc. You need to expertly install flashings at these locations. Flashings are transitional roofing materials that connect roofs to things that are not a roof.

When you strip off the old roofing material, check the wood sheathing for damage. Be sure the wood is securely nailed to the rafters and there is no wood rot. Install heavy felt paper or a modern water membrane in place of traditional felt paper. Consider using the special membranes that stop water leaks caused by ice dams or wind-driven rain.

You can buy roof shingles that mimic slate or ones that look like wood cedar shakes. From a distance, they do a very good job of fooling the untrained eye. I have used the slate-look asphalt shingles on my Victorian Shed, and they really make it look fantastic.

If you live in a humid climate, be sure you consider buying roof shingles that contain copper in the colored ceramic granules. This copper is a natural biocide that kills the common roof algae that is responsible for the ugly black streaks you see on many residential roof shingles.

Top-quality roofers will install edge flashings as well as a base or sill flashings. These are very important pieces of metal that help keep water away from your wood roof sheathing. Attention to detail is very important when working with flashings. Discover how these work and you will have a roof that keeps you dry in all types of weather.

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ASPHALT SHINGLE INSTALLATION TIPS

So, you want to install your own asphalt shingle roof? It isn't that hard, it just takes some planning. You need to think before you work. The first thing you must do is obtain the two publications I mention below. These will help supplement the information on the shingle packs and what I am about to tell you.

New Roofs vs. Old Roofs

The application of many asphalt shingles is the same for an old roof or a new roof. The main difference is that on a re-roof, you need to pay attention to how you start the shingles at the lower edge of the roof. If you copy the exact pattern as the first roof, the new roof may develop waves. Watch for this in the instructions!

Felt Paper and Drip Edges

Do you need to use felt paper? On new roofs the answer is yes. Re-roof jobs do not require it. I prefer to apply the felt as I go if at all possible. If you do the entire roof and the felt gets wet or dew covered, it will wrinkle. These wrinkles can telegraph through thin standard 3 tab shingles! Not only that, if the weather is hot and you walk up a felt covered roof, the felt can and will tear. You will be on the ground before you know what happened. If you apply felt as you go, you can just use a minimum amount of nails. Within minutes hundreds of nails from the shingles will pierce it.

Drip edges are corrosion resistant metal strips that protect the exposed ends of the roof deck at the bottom and sides of the roof. Drip edges go on the bottom of the roof before felt paper is applied. However, they are applied on top of the felt on the side edges of the roof. If you install a roof membrane, it must be installed before any of the drip edge. The membrane actually should lap over onto the gutter board!

Starter Strips - Almost Always Done Wrong!

You do need a row of shingles beneath the first regular row. Why? Because of the knockouts. Those thin lines in shingles are voids. You can see to the shingle below. Well, on the first row, there is no shingle. Well, there is going to be. You have to take a regular shingle and cut off the first 5 inches. This leaves you with the top 7 inches. Don't take a regular shingle and just turn it upside down. This is wrong! I like to allow the shingles to overhang the edge of the drip edge by 1 inch. Do NOT apply the shingles flush! Water, by capillary attraction, will pull its way up the shingle.

Keeping Them Straight

If you use regular 3 tab shingles, the vertical lines are the ones you see from the ground. These are the ones you should concentrate on. I feel the roof looks best if you let it overhang 1 inch on the sides. This means that you need to start your fist shingle 35 inches in from the edge. Shingles usually measure 36 inches wide. Standard 3 tab shingles also step over every 6 inches as you go up the roof. Without this step over, the knockouts of the shingle on the next row would be directly over where you just nailed! Talk about leaks.......

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Standard shingles usually have 5 inches of shingles exposed to the weather. A shingle is 12 inches wide. This means that 7 inches is covered by the next row of shingles. The horizontal lines must be chalked as well. But, don't chalk the bottom line of a shingle row. Chalk the top. This way the chalk will be covered. I like to check my alignment of the shingles with the top ridge of the roof every 5 feet or so as you progress up the roof. You want the shingles to be parallel with the ridge. You may have to adjust as you go to keep them parallel.

Flashings, Valleys, and Such

This is where the men are separated from the boys. All those fancy TV shows show you how easy it is to put shingles on. Big deal! The place where roofs leak first 95 percent of the time is at a flashing! Flashings are transition points between something that is a roofing material and something that isn't. For example, a chimney interrupts a roof. The shingles must but the chimney and interlock with a flashing to prevent water penetration. Tough to do? Yes, but if you obtain a good book (there are few out there - I've looked!) you may be able to figure it out. Flashings must be made from corrosion resistant metal that can be soldered! No aluminum PLEASE!

Don't rely on caulk on a roof either. Caulk is just not a really good roofing material, trust me. Metal flashings laced into shingles have withstood the test of time on many roofs. Do your homework, install them right and you will have a leak-free roof for years.

Roofing Literature

Would you like to obtain excellent pamphlets, booklets and other literature on asphalt roofing? If so, you need to contact:

Asphalt Roofing Manufacturers Association Public Information Department 1156 - 15th Street, NW., Suite 900 Washington, DC 20005

Tel: 202-207-0917 Fax: 202-223-9741

Web: http://www.asphaltroofing.org

Two of their many publications are outstanding. Do whatever is necessary to obtain a copy of the following two publications. Call, write or visit their website to find out pricing information for:

Residential Asphalt Roofing Manual and Good Application Makes A Good Roof Better.

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DO IT YOURSELF ROOFING

DEAR TIM: My husband and a friend are planning to install a new asphalt shingle roof on our home this summer. My task is to be the chief financial officer and job superintendent. I need to establish a budget for the project and uncover important installation tips. How do I calculate the cost of the project and what are the most important steps that need to be followed to eliminate roof leaks? Michelle L., East Tawas, MI

DEAR MICHELLE: You and your husband are absolutely sailing into uncharted waters. I am reminded of the clever television commercial where a bare-chested man is sitting at his kitchen table with a dinner knife in his one hand. He is on the phone with a surgeon who is telling him where to start the incision. The man at the table has a perplexed look on his face and says to the surgeon, "Shouldn't you be doing this?"

Installing asphalt shingles is not necessarily hard, although it can sometimes involve strenuous, dirty work. As with many crafts in the home building and remodeling field, there are many small steps and tricks that you must employ to ensure years of leak-free performance from your new roof. To think you will learn them all from this column is a folly. Entire books have been written on the subject and many of the ones I have reviewed have skipped very important steps.

Let's talk first about the financial aspects of the job. You need to create a detailed material list that will include the needed building permit, the asphalt shingles, underlayment, possible ice and wind-driven rain membranes, nails, flashing materials, drip and rake edge flashings, new or rental tools ladders, roof scaffolding, safety equipment, possible disposal costs if you are tearing off an existing roof, etc.

Roofing materials are sold by the square. One square of material covers 100 square feet of roof area. There is always a certain amount of waste, so calculate the exact square footage of what needs to be covered and add 8 to 10 percent for waste. Once you have selected the actual roofing shingles, refer to their written instructions for the exact type of approved nails. Try to locate hot-galvanized nails that are ring shanked. These have superior holding power in wood roof sheathing.

You can often get superb advice with your material list by opening your phone book. Look under the heading Roofing Supplies. You should find several companies that sell roofing materials to roofers. They typically do not advertise to consumers, but will often sell to them. They can help you make sure you are calculating all the things you will need. Take in drawings and photographs of your existing roof making sure you have all dimensions. Visit these businesses during their slow periods which are often mid-morning or mid-afternoon.

The best tips I can give you are fairly simple. Select the roofing material you are going to use and then obtain the actual written instructions from the local distributor, the manufacturer's website and/or from the package wrapping of a bundle of shingles. Read these until you absolutely understand what you are supposed to do.

Far and away the largest sources of roof leaks are flashings. Roof flashings are transitional roofing materials that connect the actual roofing material to things that are not roofing. You will find flashings where shingles touch up against walls, chimneys, plumbing vents, ventilation vents, intersection

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points where two different roofs touch one another, skylights, etc.

I suggest that you set up an experiment between now and this summer. I want you to build a test roof in your garage using one or possibly two sheets of plywood. Support the plywood with several 2x4s so that it is stiff just like a real roof. Create a slope by tilting and supporting the panel so you can get the feel of working on a slope.

Cover this piece of plywood with all of the materials you are going to use on your real roof. See how hard or easy it is to maintain straight lines. Try to install all of the flashing types you will have on your real roof. Your garage is the place to make mistakes, not up on the real roof when time, skill and safety are of the essence.

Be sure to be realistic about all of the costs involved in this do-it-yourself experiment. When you add up all of the costs, you may discover you are only saving several hundred dollars over the cost of a professional installation. Remember, a professional works much faster than your husband and his friend. They know all of the shortcuts and they have all of the right tools to make them highly productive.

Plan for disasters. What happens if your husband or his friend gets hurt? Who will complete the job? What will that cost? What happens if the inside of your house gets wet from a leak? Will it cost more to fix that problem than what you saved on the roofing job?

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RUBBER ROOFING

DEAR TIM: I just had a rubber membrane roof put on. Half my roof was stripped and plywood and insulation board were put down. The other half of the roof was scheduled to be worked on two days later. Before leaving my house, the contractor put a tarp down to protect the unfinished work.

That night the wind blew away a big piece of the tarp and the insulation board and plywood got rained on. The next day it was windy and overcast. When the contractor proceeded with his work, he said everything was dry as a bone and he put the rubber membrane on top of the insulation board and plywood. The amount of rain was enough that the water came into my kitchen. It had rained most of the night when the tarp had blown off.

The roof is now finished, but I know that some of the plywood and insulation board had gotten wet. The roofer used his tools to pry up the pieces of plywood to allow the space under the roof to dry. However soon after this was done, the rubber membrane was applied. Do I have any reason for concern? Rachel A., Norfolk, VA

DEAR RACHEL: Believe it or not, rain-soaked roof sheathing can dry pretty quickly if exposed to some breezy wind conditions and even moderate sunlight. I have seen dew-saturated plywood dry within 45 minutes in the right conditions. My experience tells me the roof sheathing was probably just fine as the work continued.

But the insulation under the plywood should be the concern. It could take days to dry. Now that the roof is covered with a rubber membrane that completely stops the movement of liquid water and virtually all water vapor, I would have a heightened level of concern if I were you.

The first thing to do is try to open up the ceiling in the kitchen to inspect the hidden cavity. See if the insulation is wet. If you discover moisture, take videos of the wet material and take plenty of photos to document the damage. I also suggest you do this in the presence of a disinterested friend or neighbor who will be able to sign a sworn affidavit at some future time. I am afraid to tell you that the entire ceiling needs to be opened up so the ruined insulation can be removed and the framing allowed to dry.

I would then call the roofing company and see what they will do to assist you to repair any damage, even if you just have to patch a small inspection hole. If you meet a little resistance from the roofer, ask for a certificate of insurance.

Actually, you should have had this important document in your possession before you accepted their bid. A certificate of insurance proves that a roofing company has a valid liability insurance policy. Obtaining this proof is very important anytime you hire a contractor to work on your home. Never feel ashamed or embarrassed to ask for this document. Remember, it is your home and you want to know that damage to it will be paid for in the event of an accident or poor workmanship practices such as improper attachment of a tarp.

While the roofer had great intentions covering your unfinished roof with a tarp, Mother Nature thought he was building a sailboat. Tarps that are not expertly secured can become giant sails in a gusty

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rainstorm. If the wind gets a purchase under one corner of the tarp, it can tear loose in short order. Imagine what would have happened if it rained for days and you lost all of the ceilings in your home? Believe me, this has happened to many people.

If the roofer gives you any trouble whatsoever, you should write a detailed letter to the roofing company telling them you have grave concerns about trapped moisture under the roof. Include a truthful time line of all of the events. Just state the facts. Do not editorialize or state things you think happened. Just state exactly what you know to be fact.

Reference the amount of rainfall and all facts including the loss of the temporary covering. Show photos of ceiling damage and the one you sent me. The roofer obviously was concerned about moisture under the wood since he is making an effort to get air under the wood by using his tools to lift up the edges of the plywood.

The letter you write to the roofer or any other contractor is part of the paper trail that is vitally important should the situation enter the legal arena. Attorneys, judges and juries love to see written correspondence.

If you want fantastic protection of your rights, the letter needs to contain a very important sentence at the end. I would write something like this:

If you disagree with any of the facts or the timing of the events that I have referenced above, please respond to me in writing within 10 business days. Be sure to include documentation that supports your statements and clearly shows that what I have presented above is in error.

The insurance company needs to be sent a copy of the letter to put them on notice of a possible claim. These letters need to be sent to both companies via certified mail with a return receipt being sent to you. Keep these very valuable receipts.

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SKYLIGHTS AND SKYLIGHT LEAKS

DEAR TIM: I have three skylights in my house. They don't seem to leak during rain or the summer months but during the winter I get a drip in the family room and bathroom. It is damaging the drywall. I'm not sure if it's from condensation, ice or an actual leak. Due to the locations on the roof, I don't feel safe doing the work myself. If I call a contractor what should I ask or be looking for? How do I know they can actually correct the problem? Should I call a roofer or other type of contractor? Bev A., Sylvania, OH

DEAR BEV: It sounds to me as if you have spent some time in my kitchen and in my wife Kathy's sunroom. The five skylights in those two rooms are awash in natural light each day, even on overcast days. One wall of the sunroom faces east. When the sun is out and streaming through the single east-facing skylight, you feel like you are in paradise with the plants and brilliant sunshine.

I am a big fan of skylights for any number of reasons. I can clearly remember back in the 1970's when the plastic bubble skylights were the rage. I installed many and never had a problem with leaks from rain, ice or snow. But condensation was indeed the bane of these older-technology windows to the sky.

Those who installed them near kitchens, bathrooms or other rooms that had lots of live plants suffered as the invisible warm, humid air from these rooms floated up into the skylight tunnel. There the cool surface of the skylight caused the water vapor in the air to rapidly condense.

High-quality skylights that come from the factory with insulated glass as well as pre-engineered roof flashing systems are your best defense against leaks from external water sources as well as interior water vapor. But extreme exterior temperatures combined with abnormally high interior relative humidity can tax the limits of this technology. Even my skylights will drip when the exterior temperature drops below -10F.

Based upon your description, I don't feel you have a true roof or flashing leak. If the skylight is dry during severe summer rainstorms that often create lots of wind-driven rain, then the flashing system must be doing its job. Ice damming can indeed defeat most flashings that were not installed over the top of ice-dam membranes. These pliable membranes are applied in direct contact with the roof deck and the sides of the exterior of the skylight before the flashings are installed. They create a fantastic barrier to ice dam water that backs up under shingles and flashings. However, if your skylight drips when there is no snow on the roof, I think it is safe to assume the source of the annoying water is condensation.

The problem may not be with the insulated glass. My instincts tell me the source of the water is quite possibly condensation that is forming on the underside of the metal flashings as warm, moist air from your house escapes around the rough opening that was created for the skylight. The resulting liquid water probably is running down the underside of the flashing much like water runs down the mirror in your steamy bathroom. But once at the bottom of the flashing system, it is finding a pathway back into your home.

I have solved similar leaks with a two-fold approach. The first step is to remove the flashing system

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on the exterior of the skylight so that an ice-dam membrane can be installed between the wood roof deck and the sides of the skylight. These membranes often are a combination of asphalt and rubber compounds and are very sticky. When carefully lapped and folded, the membranes completely block the pathways between the skylight and the rough framing of the roof. This ensures no water that gets past the flashing will run into your home.

The second step is slightly more painful because the drywall must be removed from the sides of the skylight tunnel all the way up to the underside of the skylight. Dust and debris is often created during this process and it can spread throughout your home. Once exposed, the gap between the rough framing lumber and the skylight can be carefully filled with a spray-urethane insulation.

Once the foam has cured, trim away any excess foam, extend a vapor retarder film over the sides of the skylight tunnel or roof framing and then bend this film over the foam-filled gap so the vapor retarder stops right at the finished edge of the drywall or finished wall material. This interior vapor retarder will stop or hinder the water vapor from working its way to the colder surfaces of the skylight where it can condense and cause chaos.

To do this work I would hire an experienced remodeling contractor. He will undoubtedly have as part of his team an experienced roofer and drywall repair person who will do a majority of the work. If the remodeler is good, he will know how to work with the urethane foam insulation.

Never underestimate the sources of water vapor in your home. Large numbers of live plants can significantly contribute to elevated levels of indoor humidity as they transpire water from roots to the leaves. Cooking pasta and boiling water for just about any purpose liberates vast amounts of water into the air. Steamy baths and showers produce clouds of water vapor. Hanging wet laundry inside homes produces water vapor as well. Crawlspaces that do not have vapor retarders over the soil can also be condensation culprits.

Authors' Notes: After this column was posted to the website, I received an email from the owner of a company in Colorado that specializes in skylight repairs and installation. Here is part of the email:

"...... When asked where to search for a skylight repair person, you failed to inform your patrons that the best choice is to look for a skylight specialists. These expert skylight repair technicians can be found in the yellow pages under Skylights"

Well, consider yourself informed. I always appreciate these nuggets of helpful information and encourage people to send them to me as often as possible.

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ROOF FLASHINGS STOP LEAKS

DEAR TIM: I have a simple sloped roof over a side porch on my new home Each time it rains, water leaks down the wall of the porch. The vinyl siding above the roof simply touches the shingles and there is some caulk that has pulled apart. Can I stop the leak by adding more caulk? Is there a more permanent solution? Demise L., Beckley, WV

DEAR DENISE: Oh my! In my opinion, caulk is not an acceptable substitute for traditional metal roof flashings. Certain caulks are highly weather resistant, but they can fail if there is too much movement between the roofing materials and the things that are not roofing such as your vinyl siding.

Can you see how the brownish-red metal strip is just like a shingle and then the siding above are just more shingles? They all overlap one another just like the shingles on the roof.

Vinyl siding, for instance, has an enormous expansion / contraction coefficient. This simply means that as the temperature of vinyl siding goes up and down during the day and night, it expands and contracts dramatically. This movement can and does break the bond between the siding and the caulk or the caulk and the shingles.

The roofer that worked for your builder made an enormous mistake by not installing a simple metal flashing that should have covered over the top of the last course of shingles and then continued up the vertical face of the wall. This metal flashing piece is normally eight inches wide and perhaps ten feet long. Four inches of the metal laps over the shingles and the remaining four inches extends up the wall. If the roof is longer than ten feet where it butts up against the house, two or more pieces of flashing are overlapped and soldered to make one large continuous flashing.

Virtually all professional roofers own a tool called a metal break that enables them to quickly create a crisp bend in the metal flashing that matches the angle of the roof where it meets the house. They typically add a second small bend of about ten degrees one-half inch in from the edge of the metal that overlaps the shingles. The addition of this second break or bend takes the waviness out of the metal that often happens when the metal is cut using traditional metal cutting scissors or snips.

You can minimize or eliminate waves in the metal when cutting sheet metal such as tin or aluminum if you use the metal break tool as a cutting guide. When I had access to a break and had to cut sheet metal, I would insert the piece of metal into the break tool and push the clamping lever to lock the break's jaws down on the sheet metal. Using a razor knife equipped with a new blade, I would make score the metal along the top jaw of the break. The razor would actually cut partially through the metal and when the break handle was rotated up and down several times, the metal would separate much as the pop tab on an aluminum drink can breaks when bent back and forth.

Ask any professional roofer and they will often tell you that flashings are the source of over 90 percent of roof leaks. Unfortunately, many rookie roofers or ambitious do-it-yourselfers do not fully understand how flashings should be made and how they work.

The flashing that is missing at your home will work because it acts just like the shingles below it. The flashing overlaps the shingles and then extends up the wall of the home. The vinyl siding then

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overlaps the metal flashing. Each successive piece of vinyl siding overlaps the one below it. This overlapping system of materials does a fantastic job of stopping water.

Great roofers readily understand and see this and they know the correct materials to use. Look at professionally installed flashings and you will rarely see caulk. Solder is the product of choice to permanently seal seams and small holes created while overlapping and bending flashing metal around chimneys, dormers, wall corners, etc. that are routinely encountered when roofing materials touch up against things up that periodically penetrate a roof.

Not all flashing materials can be used universally up on a roof. Aluminum works well in many locations, but should not be used in contact with masonry of any type. The alkaline chemicals in mortar can react with the aluminum and cause corrosion.

Tin is also available in different weights. 20 and 40 pound tin are the most common. I prefer 40 pound tin as it lasts much longer. Copper, of course, is the premier flashing material. It can last up to 100 years without failure and is as easy to solder as tin. Galvanized metal and sheet lead can also be used, but they are more difficult to work with.

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ROOF LEAK - TEN MOST COMMON LEAK LOCATIONS

Roof leaks are a nuisance for many homeowners. They can be difficult to diagnose - that is a fact. To make matters worse, different weather conditions will produce leaks in different locations.

The vast majority of roof coverings operate using the principal of gravity. This can be a big help in locating a leak source. However, horizontal roof boards can trick you. A leak may actually be eight to 10 feet sideways from where you see the wet ceiling or spot in the attic.

Finding the source of some leaks is easy. Others will require detective work and possibly a garden hose and an inside spotter. If you don't feel comfortable on a roof, you will have to find an honest roofer to assist you. Sometimes this can be as hard as finding the smallest leak! Here are some tips that may help you find a pesky roof leak:

The Field of Shingles

If your roof is older, it is possible that the leak is within the roof field. This means the expanse of shingles, slate, shakes, whatever. If your roof is asphalt, then you can walk around with ease. Other materials such as slate, concrete tile or clay tile may not be so forgiving. You can crack roofing if you walk on it, so be careful. With regular shingles, look at the tops of the vertical knockouts. Look for missing colored granules. Look for cracks. Possibly a nail has backed itself out of the roof sheathing. Simply take your time and hunt.

Valleys

A valley is a line where two roof planes intersect. Here in Cincinnati we use a metal flashing in the valleys. Some areas use rolled roofing. Other places simply lace the shingles together. Valleys can be big problems if you do not trim the shingles correctly. When you trim a shingle for a valley you end up with a chisel point on the end of the shingle. If a second cut is not made to make this point like an arrow point, then water can travel along the top of the shingle and find its way inside your house. The shingle wrapper tells you how to make this simple second cut.

Head Wall Flashings

Some roofs stop at a vertical wall. A metal flashing must be in place to direct water streaming down the wall away from the stopping point of the shingles. This flashing may be behind wood siding or in front of a brick wall. The flashing should extend over the shingles at least three inches. If the wall is brick or other masonry, the flashing must bend and extend one inch into a mortar joint. Tar, caulk or roofing cement should never be used in conjunction with these materials. If you see them, it is a sign that someone tried to patch a leak!

Wall Step Flashing

Some roof leaks happen at step flashings. You find these flashings where a roof climbs alongside a vertical wall. As each row of shingles is laid, a step flashing is installed over the shingle next to the wall. Part of the flashing turns up on the wall and the other portion gets covered by the next row of

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shingles. Look for rust or holes in these flashings. In reality, if all is well, you will be able to see only the smallest portion of these flashings.

Chimneys

These devils are the source of many a leak. Chimneys contain four different types of flashing. All must be right or you will have a leak. Plus, the counterflashing that goes into the brick mortar joint must be right. A hairline crack above the flashing can allow vast amounts of water to run behind the flashings. Look for soldered corners of flashing that might have broken or have holes. Do not use caulk to repair these flashings!

Plumbing Vent Flashings

Newer vent flashings are a concern of mine. Many of these incorporate a rubber seal with an aluminum flashing. The rubber can fail in as little as 10 to 15 years. Look for cracked rubber around the plumbing pipe. The flashing should dive up and under the shingles that extend up roof from the middle of the plumbing vent. The bottom half of the flashing should be exposed and actually cover the shingles.

Furnace or B-Vent Flashing

These flashings are basically identical to plumbing vent flashings. However, they sometimes have a metal storm collar. These simply fit tightly around the vertical pipe that exits the roof. If they become loose, the storm collars can cause leaks.

Ice Dam Leaks

Ice dam leaks plague people in the Snow Belt. These leaks can happen even if everything on your roof is just fine! Ice dams block the natural flow of water down a roof. The water begins to back up under flashings, shingles, tar paper, etc. Once water begins to flow into the house, it can drip for days. The only means of prevention is to install membranes under the roofing. The membranes won't stop the ice but will stop water leaks if installed properly.

Wind Blown Rain Leaks

Wind driven rain can also be a major problem. Once again, you could actually have a good roof and wind will drive water up and under your roofing materials. The only lines of defense are tar paper and the ice dam membranes.

If you have metal valleys, you may want to hem the edges. This means that the hidden edges of the valley actual have a 180 degree bend. This creates a channel that directs windblown rain back to the bottom of the valley.

Roofing cement under shingles on the edges of roofs that face the wind are also a good idea. Don't underestimate the power of a 70 mph sustained wind-driven rain.

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Non-Roof Leaks!

Sometimes you think you have a roof leak when in fact the roof is fine. Attic condensation is a prime example. High humidity can cause condensation and "rain" to fall in your attic. It can also make the underside of the roof sheathing look wet. You think you have a leak instead.

Chimney crowns can develop cracks. The inside surface of the chimney gets discolored or the plaster bubbles. You think a roof leak is the cause.

Siding can be missing above a roof. This can cause water to enter behind head flashings. Be a good gumshoe and snoop around for the leaks!

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SLATE ROOFING - REPAIR OR REPLACE?

DEAR TIM: My older home has a slate roof. Some of the pieces of slate have cracked and fallen. Entire pieces have come loose. The slate is very brittle. Is it time for my roof to be replaced? If not, why is the slate breaking and falling? In my attic you can see the bottom of the slate. Half of my roof boards are missing. Is this the cause of my problems? D. D.

DEAR D. D.: Brittle is good! If you had told me that your slate was soft and flaky like my favorite dinner rolls, you would have a major job ahead. Slate is one of the finest roofing materials available. It is fireproof, resists hail damage, possesses unquestionable beauty, and often has a service life of 100 years or more.

Prior to the development of asphalt roofing products, slate was a major player in the roofing products industry. Slate peaked in popularity at the turn of the century. The move away from steep roof slopes and less expensive roofing products have caused the slate roofing industry to shrink to one twentieth of its original size. Cost is a factor as well. New slate roofs can cost as much as \$900 per square (100 square feet) installed! Compare that figure to say \$60 per square for a standard asphalt shingle roof.

There are several possibilities why your slate is cracking and falling. Slate is a rigid natural stone product. Think of it as a piece of glass. If you stress a piece of glass, it usually cracks. Slate is no different.

Stress can be introduced to slate in several ways. The nails used to attach the individual pieces of slate are possibly to blame. They need to be fastened so that the slate merely hangs on the nail much like a picture on your wall. If the nail is pounded too tightly, it will pinch the slate. Should the nail stick slightly above the slate, the overlapping piece above may crack from this hidden pressure point. There is very little room for error.

The wood decking may be to blame. Wide swings in temperature and humidity cause your wood roof sheathing to expand and contract. This creates stresses on the slate. If the nails are in a bind, a corner may pop off and the slate will crack or fall.

The nails themselves may have failed. If a galvanized nail was used, it simply may have reached the end of its life. Nails, flashings, etc. used in conjunction with slate roofing should have the same service life as the slate itself. Copper nails and heavy gauge copper flashings are a must.

Slate can succumb to the forces of nature. Not all slate is created equal; quality can vary significantly. Acid rain and freezing temperatures can damage slate and shorten its life. It is important that slate dries as rapidly as possible after a rain. Your missing roof boards allow the slate to dry rapidly. Your roof was built this way on purpose.

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METAL ROOFING - GOOD LOOKING AND DURABLE

DEAR TIM: I am in the market for a new roof. Asphalt shingles - even the fancy dimensional ones - do nothing for me. I really like the old fashioned look of the tin metal roofs. I see painted replicas on some commercial buildings. Can you install metal roofing on residential houses? Will painted metal roof colors fade? What kinds of metal roofs are available? Sally P., Simi Valley, CA

DEAR SALLY: Tin metal roofing was immensely popular in the late 1800's and early 1900's. Labor was inexpensive at that time and there was an abundance of craftsmen who could easily install the material. Metal roofing systems are still available and great strides have been taken to simplify their installation. Metal roofing also has a history of proven performance. Simple flat seam metal roofs have been found in buildings dated to 3,000 B.C.

Metal roofing is a superb material for residential buildings. If you choose the right system, you can get a roof that will easily last your lifetime and quite possible an additional 50 years or so. Expect to pay for this performance, however. Metal roofing is pricey. A metal roof can cost at least three to four times what you might expect to pay for a high quality asphalt shingle installation.

There are numerous advantages to using metal roofing. First of all, it is totally fireproof. If you live in an area that experiences wildfires, a metal roof just might save your home from a devastating roof fire caused by a windblown ember. Metal roofs are made with environmentally friendly recyclable metals, such as steel, tin, aluminum and copper. A house with a metal roof can be extremely distinctive. When installed correctly, metal roofs are extremely wind resistant. A light colored metal roof can actually reflect a portion of the sun's radiant energy, thus lowering your cooling costs.

Aside from the traditional standing seam look, you can also install flat lock metal roofs and ones that look like traditional overlapping shingle type or Spanish clay tile roofs. Certain manufacturers have gone so far as to coat the metal roofing shingles with colored ceramic granules to simulate the look of asphalt shingles!

Don't hesitate to select a painted metal roof product. This is especially true if the paint has been treated with a clear fluoropolymer resin. This coating was originally used to inhibit corrosion on the inside of steel piping used in chemical plants. Fortunately someone decided to try it on top of paint to stop ultraviolet (UV) degradation and fading of colored paints. It works so well that painted roofs can retain 85 percent of their original color after 20 years of exposure.

If you decide to purchase a metal roof system, make sure that the installer uses all matching components during the installation. In other words, all assembly parts must come from the same metal roof manufacturer. Pay particular attention to instructions with respect to ventilation. Metal roof failures can happen and often the corrosion begins on the underside of the roofing. Condensation can form under some metal roofs. You need to make sure that the underside of your metal roof can breathe readily and dissipate the condensate water and water vapor.

Be sure your roofer follows written installation instructions to the letter. If you live in a high wind area, pay attention that the bottom and top edges of the roof are installed correctly. These areas of the roof receive the highest loads during sustained wind storms. Most metal roofs need to expand and

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contract readily. Special metal clips and fastening techniques are employed that allow the roof to move yet remain watertight. Be sure you hire a roofer that understands this vital concept.

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HOME PLANS

Home plans are the core documents that communicate what the home owner wants and what the builder needs to build. Without great house plans, a new home construction project can quickly become a sea of confusion, frustration and arguments. Many people think that house plans are just pretty pictures and floor plans, but believe me, they serve a far more important purpose.

Can you remember the last time you were involved in a dispute over anything? Chances are you prevailed if you had some form of tangible written evidence, photograph or object that proved your statements were true. But all too often people argue about spoken words that frequently turn into broken promises, simple misunderstandings, or worse yet - deception. This misery takes place every day in the residential building arena. Homeowners get into heated disputes with builders and remodelers about any number of issues.

The sad fact is a vast majority of new home construction disputes can be settled quickly and efficiently with crisp plans and specifications that are developed long before the first spade of soil is turned at the jobsite. There are many reasons why good plans and specifications never get developed. Often the customer is unwilling to pay for the time and effort to produce the documents. Another common reason is the homeowner looks at a set of blueprints and thinks they are sufficient. Without ever seeing a first-class set of prints I can see why they might feel a deficient set will make do. After all, if they are good enough for the building department then they must be good enough for all involved.

Perhaps a few examples of dispute issues might convince you that you need top drawer plans and specifications for your new home. Imagine if you will a discussion between you and your builder about crown molding. You say you want it in all downstairs rooms. The builder agrees and draws one simple squiggly line on the plans in the cross section and adds "Crown Molding" with an arrow pointing to the line.

Months later while walking through the house as the finish work is being completed you see a small and simplistic paint-grade crown molding that is barely noticeable up in several rooms. You grumble and wonder why the carpenter didn't install the two-piece stained oak crown molding you "thought" you mentioned to the builder.

As you walk into the bathrooms upstairs you shake your head and wonder who in the world put the toilet paper holder on the opposite wall from the toilet. It is barely reachable. Fortunately the carpenter who installed it walks in and you ask about the placement of this fixture. He simply states that is where he always put them. Need I go on?

The failure to develop good specifications and plans can also lead to cost overruns and a limited product selection for your finishes. A great set of plans includes numerous interior elevations that show you in two dimensions what a wall will look like when it is finished. These elevations can be as detailed so as to show exact locations of electrical outlets, switches and yes, toilet paper holders. New computer software allows architects and designers to show these in three dimensions as well.

Knowing what you are going to see before it happens can often prevent costly change orders. Many

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people are unable to visualize what something might look like looking at a simple floor plan. Elevations help solve this problem.

Plans and specifications that do not include the actual selections of all fixtures, cabinets, tops etc. can cause you problems if you try to decide what you want during construction. A builder may ask you to go to the tile store 6 weeks before he needs the tile. But once there, you fall in love with a special order tile that takes 10 weeks to get. Who will pay for the time delay should you decide to order the special tile?

There are hundreds of scenarios that can be described. But one thing is for sure: Detailed plans with clear and precise specifications that outline each and everything you want will save you if push comes to shove. Time and again when I consult in the forensic construction expert work I perform I find that a great set of plans that were ignored by a builder or sub leads to their capitulation if the dispute is headed for a courtroom.

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BUILDING A NEW HOME - GET ORGANIZED

DEAR TIM: My husband and I are getting ready to build a new home. I am astonished at all of the details that need to be addressed. Each time we have a meeting with our builder all sorts of decisions need to be made. I am afraid that lots of information is going to fall through the cracks before the final walk through. What is a good way to keep track of all of this information? Julie J., Stillwater, MN

DEAR JULIE: Many people decide not to build a new home for this very reason! They are overwhelmed with the decision and product selection process and simply don't know where to start. Many people are afraid of making the wrong decision. The key is to approach the task in an orderly manner and start making product selections and decisions long before ground is broken.

The building and remodeling playing field is actually a minefield. Making decisions out of order or selecting a product without checking for conflicts with other products can trigger an explosion of extra costs and delays. Once upon a time a client of mine picked two elegant wall light fixtures that hung on each side of a bathroom medicine cabinet. Once they were installed I quickly discovered they prevented the medicine cabinet from opening. Because the homeowner had fallen in love with the fixtures, the problem was solved by relocating the electrical boxes. It was a costly mistake that I paid for.

You can avoid nightmares like mine with a simple job organizational binder. This is a nifty tool that works alongside your blueprints and any written specifications. I have found that the binder works best when it contains a section for each room of the house as well as a separate section for the exterior. Typical things you would find in each section would be photographs or illustrations of fixtures, installation instructions for appliances, fixtures or products, technical information showing supply pipe sizes, wire sizes, and the proper rough-in locations of these utilities.

Each section of the binder should also have a room finish schedule. This is a table that communicates to the builder and his subcontractors exactly what you want on every wall, floor ceiling, trim, door surface in each room. If the data in these schedules is accurate it is entirely possibly for the workers to finish the job with little or no verbal communication.

You will need more than one binder for the job. At the very minimum you need three: one for you, one for the builder and one that is safely stored in a lockbox at the job site. The subcontractors need the job site binder to refer to as they work each day. Use clear plastic pocket protectors to keep the individual pieces of paper safe from wet job site conditions.

Creating a complete organizational binder means that you need to make product selections before construction begins. This may seem unusual but you might as well resign yourself to it. There are numerous advantages. Pressure decisions are eliminated. Because it is early in the process, you have time to get items that might have to be special ordered. Waiting until the last minute to make selections often eliminates certain items because the job may have to grind to a halt for weeks or months.

Carpenters, plumbers and electricians need to know what they are installing three or four months from now so they get openings, pipes and wires in the correct spots. Every time I have tried to use

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ESP because I was trying to guess what a customer would want, I guessed wrong. Providing your builder with the correct information simply takes the guesswork out of the process.

If you really want your job to run smoothly you and your builder need to look at all of your selections and insure that there are no conflicts. Imagine your dismay when you discover that the electrical outlet for your night stand is behind your bed. Similar frustration happens when a central vacuum outlet becomes hidden behind a door that is always open. Pesky mistakes like this can be avoided with a little thought and attention to detail.

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DETAILED PLANS AND SPECIFICATIONS MINIMIZE MISTAKES

DEAR TIM: Recently, I received a summons to appear in civil court. The contractor who walked off my job is suing me for the remainder of the unpaid money stated in the contract. Because he avoided repeated calls and letters, I hired other workers to finish the job. What do you think is the best evidence I can produce to prove to the court system that I was a victim? In my opinion he deserves no money. Sue D., Sedona, AZ

DEAR SUE: Let me begin by telling you that I am not an attorney and can offer no legal advice. I can tell you, based upon my many years of being involved in differences of opinion with homeowners, what has saved me from having to work for free. The items that eventually become supporting evidence can be a thorn in one's side as the job progresses, but they are worth their weight in gold if a dispute arises at a later date. Hopefully you have many of the following things.

Perhaps the most powerful weapon a homeowner can possess when the going gets rough is an excellent set of plans and specifications. All too often standard plans have far too little detail. Too much is left to interpretation. For example, if the plans say you are to get crown molding does this mean a small thin piece of molding or a large combination crown molding? Detailed plans and specifications make these issues black and white not various shades of gray.

Almost every job requires multiple face to face meetings where many issues are discussed. It can be hard to take notes during these meetings, but this written record of the discussions can help jog the memory of a participant when the wrong light fixtures or floor tile are delivered or installed. These notes become iron clad if you write a letter summarizing the key points and send a copy to all who participated in the meeting. To make the notes armor plated, consider including a sentence stating that if a participant disagrees with anything in the letter they must respond in writing in a timely manner.

Photograph or video tape the progression of the job. Be sure to use a camera that can burn the date onto the image. Take many photographs, including close up photos, of things that will be hidden at a later date. Photos of structural connections where things are nailed or bolted together are often critical. Try to photograph concrete forms just before the concrete is poured. Imagine how difficult it is to guess the thickness of a concrete slab without doing destructive testing or using an expensive diagnostic device. A 35 cent photograph may come to your rescue.

A detailed diary of the events that happened each day can be very helpful. Long delays or periods of time when no one showed up to work are cast in stone with written daily notes kept in a journal. It is very hard to reconstruct events if they are taken from memories that are six or nine months old. Write down who showed up and what was accomplished. Photographs can be added to the diary that show daily progress.

In certain instances, weather data may help support your arguments. If you are not a trained meteorologist, data that you keep may not be considered accurate or true. Fortunately you can obtain vast amounts of weather data at little or no cost from your local National Weather Service office. They keep hourly logs of temperature, humidity, precipitation etc. On more than one occasion this precise data has won a court case for me.

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Almost all jobs have changes as the work progresses. These change orders must always be in writing. In addition to the description of what is changing and the cost of the change, each change order must contain a section that states how much extra time the change will add or detract from the job. You can see the value of this added feature when it is used in conjunction with the start and completion dates that are contained in the original contract.

Finally, if all communications break down, then all contact with the contractor must be in writing. All letters must be sent certified mail with a signed receipt request. You want to be able to prove that you tried your best to keep the lines of communication open at all times.

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CONTRACT PAYMENTS

DEAR TIM: You and other people constantly write about how homeowners need to protect themselves from contractors who take their money and perform shoddy work or no work and disappear. What about homeowners who don't pay for work? I have had several customers who nitpick a job to death and withhold tens of thousands of dollars until several small items are completed. I have bills to pay just like everyone else. What is a fair way to solve money problems between homeowners and contractors? Robin S., Kansas City, MO

DEAR ROBIN: Touché! Years ago, I was in a similar situation. I am convinced that hundreds and thousands of homeowners torment contractors for all sorts of reasons. Some of them are legitimate while others are based on past bitter experiences, lack of goodwill, and distrust of contractors as a whole. Unfortunately, there is a small group of very bad homeowners who simply wish to cheat contractors out of money just as there are deceitful contractors who abscond with hard earned homeowner dollars.

When I perform autopsies on these problems, I typically discover a common flaw. The contract between the parties is very vague about the payment terms and conditions. In some instances, wording allows contractors to get too much money in advance. In other instances, homeowners advance money to contractors in a spirit of good faith. Unless these homeowners are working with a contractor who has the highest level of professionalism and honor, the advancement of money before certain things are complete can be a recipe for disaster. The incentive to continue to work at the highest level of efficiency and quality has been removed once the money has been paid.

Contractors routinely present contracts to homeowners that contain loopholes. Imagine language that states, "Payment is due upon completion of work." Well, if I were a homeowner, I could feel justified in holding back the monies if the job were not completely finished. Imagine the nightmare of a job where \$100.00 worth of exterior work can't be completed until the spring thaw yet \$80,000.00 or more is due upon the total completion of the job. If both parties agree to the terms of a contract, then I maintain that they should abide by what the contract states.

There are countless ways to solve payment problems. Several have worked well for me no matter how large or how small a job might be. One element missing in almost every contract I have seen is a tiebreaker clause. It is wise for the parties to agree up front on an independent inspector who is willing to give a ruling as to the quality and completeness of work. In the event of a dispute between the parties, the inspector issues a written ruling that goes one way or the other.

I have found that it is very effective to state that progress payments are made on given dates for the work that is in place and completed to the satisfaction of the homeowner and/or independent inspector. A job cost breakdown that assigns a fair and real number to each aspect of a job is invaluable for this to happen in a fair way for both parties.

The homeowner has a given amount of time to make the payment after the bill is produced. Since the homeowner knows when monies are due, all inspections would have to be scheduled in advance. This allows the homeowner to feel confident the work is satisfactory as he writes the check to meet the deadline. The contract could contain language allowing the contractor to pull off the job if the

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money is not paid on time. No contractor really wants to do this for any number of reasons, but it limits the amount of financial exposure to a fixed sum of money. It also gives the contractor some leverage as very few homeowners want their job to be at a standstill.

Set standards in the contract, if possible and reasonable, with respect to work meeting the building code or more importantly set forth manufacturers' specifications. A benchmark of quality must also be established or you may never meet certain homeowner's expectations. The independent inspector may come into play in this event as well.

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PAYMENT SUGGESTIONS

DEAR TIM: My house was severely damaged by a natural disaster. My husband and I hired a contractor who was referred by a friend and whose state license is in good standing. We visited other smaller jobs to review his work. We signed a contract with him to perform \$250,000 in repairs. He has taken all of our money and only 1/3 of the work is complete, much of it against code. What should we have done to avoid this nightmare? J.C.

DEAR J. C.: After reviewing all of the details of your story, I can see that this person was a con artist from the start. All of the facts that you have presented indicate that this individual was not capable of performing a job of your scope. Furthermore, it appears that he had every intention of stealing your money. He has no honor and makes life miserable for all honest, stable, and trustworthy contractors.

Some state laws permit contractors to ask for and accept deposit money the day the contract is signed. In many cases, deposit money forwarded by a homeowner to a contractor is nothing more than a loan. You put yourself and your money at great risk if you advance money to a contractor for no good reason. Some contractors use deposit money to pay the bills of other jobs currently in progress. This business practice is often referred to as under-capitalization. In other words, their financial gas tank is running near empty.

Contractors deserve advance money in certain instances. For example, they may have to order custom non-returnable objects such as kitchen cabinets or custom windows or doors. A build/design firm may want the cost of the design work and the building permit covered as these items can only be used on your job. Design and planning costs can be negotiated during the bidding process. Costs for custom materials can be verified by asking for copies of the quotes from suppliers. Honest contractors generally will not hesitate to provide you with these numbers.

I also noticed that you allowed the contractor to begin work without finished, detailed plans that were approved by your local building department. This was a critical error on your part. It is vitally important to have finished plans and specifications BEFORE the contract is signed. The plans should be an integral part of the contract documents. An investment of \$250 or so with a attorney to review your contract would have been very prudent. The contract could have contained language telling the contractor that all work must be performed in accordance to the plans and specifications.

Payments of additional monies as the work progresses must be tied to specific progress points. You can agree to pay weekly or monthly for work that is complete and satisfactory. To aid you in determining what is a fair price to pay at each of these times, a detailed cost breakdown of the job costs is required. Had you obtained this breakdown of costs on your job, the money to pay for the yet unfinished work would still be in your possession.

I suggest that you contact your local building department as well. Often these agencies provide written progress reports during construction. These reports tell you whether or not the work is being completed in accordance with the building code laws. Make the contractor submit these reports, if they are available, at each request for payment.

In addition, be sure you receive notarized affidavits from each person who has worked on your

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property or material supplier who has delivered materials. If your contractor has not yet paid these people, your nightmare is just beginning.

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WHEN TO PAY FOR REMODELING PLANS

DEAR TIM: My husband and I are remodeling our home to accommodate for our new arrival. We've been working with an architect who is not fully licensed at this time. This individual has been drawing up plans for our new project. The plans are not yet signed and sealed as he wants to send them to a licensed architect to have this done. But he wants us to pay the full amount of the plans prior to getting them signed and sealed. We're not sure if we should pay for the plans until everything is finalized. Please let me know if we should pay for them up-front or if we should wait until the plans are completely done. Julie S., Orlando, FL

DEAR JULIE: Congratulations on the expanding family! The answer is very simple if you ask me. I feel you should never pay in full for something until such time as you are completely satisfied. The fact that the unlicensed architect-to-be asked for the money before the job is complete is very troubling to me.

There are all sorts of reasons you should not pay in full until the job is complete. The money in your account is the only leverage you possess. The instant you hand over all of the money for the plans, you then rely on integrity, hope and good will to get what you want. This individual may have all of these qualities and more, but I do know he does not yet possess good business sense.

I can produce countless examples in the real world where you do not pay for things in advance in-full before you get them. There are many things where you do put down a deposit and possibly make timed payments as the work progresses, but to pay in full before delivery is a recipe for disaster.

Here is a true story that just happened to the son of a close friend. This young man wants to become a commercial pilot. He signed up for flying lessons and all the necessary ground school training to get the commercial license. The cost was staggering - somewhere above \$15,000. My friend co-signed a loan for his son with a bank, took the funds and paid the flight school for the flying lessons and schooling. They did this in advance to get a slightly reduced price. A month ago the flight school went bankrupt and the son only had 10 percent of his training complete.

The son and father still owe the money to the bank and they have virtually nothing to show for it. A similar thing could happen to you. This unlicensed architect may have made an enormous amount of mistakes in your plans. It could take many hours of redrawing to correct them. Once he has the money, he may be reluctant to make the changes in a timely manner. One thing we know for sure is that his incentive to do so will be greatly reduced. In fact, he will find that the additional work will create a large mental obstacle as he feels he is not getting any money to correct his mistakes should they exist.

At this point in time, you have enormous leverage. The plans he has been working on are of no value to anyone but you and your husband. No other homeowner would have interest in them as they are house-specific remodeling plans.

You simply tell this person that you are more than willing to write a check for 90 percent of the total due once the plans are signed and sealed by a real licensed architect. You then tell the architect-to-be that the remaining 10 percent of the money will be paid as soon as the building permit is issued.

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Keep in mind that the building department may request minor changes in the plans before a permit is issued. You still want to have some financial leverage in the event this happens.

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HOME REMODELING

25 Things You Must Know If You're Remodeling

Remodeling is as different from building a new home as night from day. When you visit your new home construction site, you can look around and then go home. You don't have to deal with the workers and the mess.

Remodeling is the exact opposite. Your normal routine is rocked to its core. Strangers, whom you have never seen, invade your home. The excitement of the job starting soon wears off and becomes a dull headache.

If the remodeling job is a major one, such as kitchen remodeling, or bathroom remodeling or even a room addition, the impact on your life will be significant. Many people are not prepared for the disruption, dust, and missed deadlines.

To make a remodel job go smoothly, it require enormous amounts of planning. Be sure to convey your bathroom remodeling ideas or basement remodeling concerns or what ever room you are doing to your contractor at the beginning of the remodeling projects. The remodeling contractor is responsible for this, but you must make sure he or she has covered all of the bases. In my opinion, you can only do this if you have a clear understanding of all of the things that can go wrong during the remodeling process. With this knowledge, you can already have a strategy in place to eliminate problems before they happen.

Asbestos and Lead

Harmful basic chemical elements lurk like hidden time bombs in many existing homes. Two of the most prominent are asbestos and lead. Asbestos was commonly used in insulation pads that sat on top of furnaces and was used in wrapping materials around forced-air heating and cooling ducts.

Asbestos was also used in floor tiles, roofing, piping, adhesives, etc. In other words, it can be found just about everywhere. You need to make sure you identify potential trouble areas in your home and make sure your contractor deals with the danger in an approved manner during the asbestos removal.

Lead is a very serious hazard that can be found in many homes built prior to 1978. If your remodeling job involves scraping, sanding or removing anything that might contain lead paint, you better make sure all precautions are taken so your home does not become listed as a Superfund site. Lead poisoning is a possibility if not handled properly.

Bid Breakdowns

When you are soliciting bids from different contractors for your upcoming remodeling project, it is imperative that they submit detailed itemized bids. You need to know how much money is allocated for the labor and material for each part of the job.

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This information will be used by you to why the low bidder is low and why the high bidder is high. If there is an enormous amount of disparity between contractors when you compare the cost of the same task, this is an area that needs further discussion. For example, if you are getting a new roof put on and painting done and you have specified the exact shingle you want, then the actual itemized number for the shingles should be within \$50 or so of one another as both contractors should have calculated the same number of shingles.

The breakdown will also be an invaluable tool when you need to make payments. When a payment is requested, it becomes your job to view the work that is complete and ensure it is satisfactory. Refer to the initial bid breakdown and make sure to only pay for that amount of work along with a pro rata portion of contractor overhead and profit.

Customizing Touches

One of the most fulfilling things, I experienced as a remodeling contractor, was doing extra special things for customers. Creating special nooks or crannies, delightful custom window seats, maybe it was a special set of steps leading from a deck to a patio.

If you start to gather photographs from magazines and even the Internet that depict things you especially like, an experienced carpenter, painter or other trades person might be able to create it for you with very little extra work.

But you need to communicate these wants and desires in the planning stages. Photographs are an ideal tool for communicating what you want. My wife did this exact thing with me as she saw a gorgeous wood picket fence in a magazine. Without any plans and just working from the photo, I created a nearly exact copy. It doesn't cost one dime to ask for a price or express an idea.

Debris Removal

It is surprising to many people how much debris and garbage are created during a moderate to large remodeling job. The problem on a remodeling job is that you don't want it scattered or piled in the yard or left inside if at all possible. Any trash that is combustible represents a serious fire hazard as it is commonly stacked so there is lots of air around it. A spark from a plumber's torch, a carelessly discard cigarette, etc. can create an inferno that can cause serious damage.

To make matters worse, when debris is being created, often the structure is being altered. Some structures can lose much of its fire stop characteristics, especially if drywall and plaster have been removed. Open walls and ceilings provide a pathway for rapid fire spread.

Include in your contract that all debris will be cleaned up each day and placed in a metal container that is placed safely away from your home. Request that the work area be broom clean each day and vacuumed at the end of each work week.

Duration of Job

The last thing you want is your house torn up for an extended period of time. If you have seen your

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friends', relatives', co-workers' and neighbors' homes go through a remodeling job of any size, you know it can take a while. Anything that delays the job causes the pain threshold to rise exponentially.

Using your past experience and observations of other people's projects, you might be able to get a feel for the length of time a job should take. If a contractor says they can do a small room addition from start to finish in 10 days, ask him what magician will show up. You may be surprised as he may have the addition pre-built at a modular home factory!

It is possible to compress time schedules, but your job during the bidding process, is to request a detailed time line of what tasks are going to happen each day or each week. Compare the schedules that each contractor provides to see if each one has accounted for each task. If a contractor refuses to produce a schedule, it might be a sign of disorganization.

Dust Control

Even small remodeling jobs create dust. Large-scale demolition can create dust storms within homes. When you are interviewing contractors, during the bidding process, have detailed discussions about dust.

Take notes during these discussions. If the contractor says something that doesn't sound right, ask for clarification. When you talk with past customers of each contractor, ask specific questions about how well dust was controlled.

Some dust is inevitable, unless the contractor sets up a negative pressurization environment where the work is taking place. This setup costs extra money and is widely used by the mold abatement companies if you or someone in your family is sensitive to dust.

Keep in mind that homes equipped with recirculating forced air systems must be turned off during periods of dust creation. The return air aspect of the system can inadvertently pull dust into the system and broadcast it throughout the home.

Extra Telephone

It seems as if everyone has a cellular telephone today. But it is entirely possible for a battery to die or a cell phone to be forgotten at home or become damaged at the jobsite.

The last thing you want is a contractor or one of his subcontractors using your phone. One or two phone calls is not bad, but day-after-day use of your home phone can become very annoying.

It gets worse, some contractors give out your telephone number because they might expect a return call. You then become an unpaid secretary or a receptionist for the branch office of your contractor.

The solution is simple. Place language that your contractor must install a temporary land telephone line or at the very least buy a temporary cell phone that is kept at the jobsite for all subcontractors and employees to use. We have more options now than ever with respect to communication.

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Fumes

Many parts of the remodeling process can and do create fumes. The assembly of PVC plumbing pipes creates very noticeable fumes. Soldering copper tubing creates fumes as well, Drying paint liberates vapors into the air that contain a brew of different chemicals.

Urethanes, adhesives, etc. all create fumes that can invade your home during time periods where windows must be closed. These accumulated fumes can cause discomfort and actually sickness to people who might be acutely sensitive to some of these very peculiar chemical vapors.

Temporary space heaters used for all sorts of heating and drying purposes can create deadly carbon monoxide. Fumes can enter your home quite by accident and cause a problem. A heater placed innocently next to an air intake might cause massive amounts of carbon monoxide to be inject into your interior air. It is extremely important to discuss fumes with the bidding contractors and what they plan to do to minimize them in your home as they work.

HVAC Sizing

If your remodeling project involves adding additional space, there is a strong possibility you will have to upgrade or modify your existing heating and cooling system. Your existing furnace and air conditioner might be at the limit now with respect to the amount of heating and cooling BTU's they can handle.

It is extremely important that you discuss this possibility with the remodeling contractors during the bidding process. Talk with them about heat gain and heat loss calculations. If the contractor or sales person squints or tilts their head when you mention those words, you might be talking with the wrong person.

Once you have awarded the job to a contractor, it is imperative that the heating and cooling contractor come out and gather the necessary data to perform the needed calculations. These tell them whether or not your existing heating and cooling equipment will work.

Insurance Certificates

Unfortunately, we live in a society that seems to be over-populated with attorneys. These people need to feed their families and some of them seem to love to work on accident claim cases. You need to make sure you are never named as a party to one of these lawsuits.

You can do this by taking about insurance certificates with the bidding contractors. It is not always enough for a remodeling contractor to show you he has coverage for his employees. What is important is that each and every person who shows up to work at your home is indeed covered.

Although it is a lot of work, you must insist upon doing it. You must make it very clear to the bidding contractors that they must supply you with current workman's compensation and general liability insurance certificates for all subcontractors who plan to work on your job. These documents need to be produced the day the contract is signed.

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Matching Materials

Clothing, automotive, etc. styles change on a constant basis. The same is true for products used to build your home. Your existing home may have very unusual interior and exterior woodwork or plaster. If your remodeling contractor is a professional, he or she will know how to get exact matches on many of the materials used in your job.

There are many woodworking mills that can easily create identical profiles for door and window casing as well as crown molding and baseboards. It will cost more than buying stock trim, but the long-term value you add to your home by doing this will be well worth it.

With lots of extra effort, it is sometimes possible to get very close matches on brick and even ceramic tile. If you are trying to match brick, always go for the color match first and then the texture match. From the street, you rarely can detect texture but readily notice differences in color.

Pavement Problems

Do you have a gorgeous driveways, sidewalks and patios right now? If so, it would behoove you to take very good photographs to prove it. Remodeling activity almost always causes damage to existing paving materials around a house.

Dumpster deliveries, concrete trucks, lumber trucks, etc. can not only crack and break apart paving, but they can spill seas of motor or hydraulic oil on pristine concrete or blacktop.

It is imperative that you and the bidding contractors talk about how your paved surfaces will be impacted by the remodel job. Document what each contractor says and decide who has the best plan to protect your current investment. The last thing you need is an argument that a crack or an oil stain was already there. This is the reason for the photos you took prior to the remodeling project.

Be aware that large loaded delivery trucks can weigh as much as 20 times what your car weighs. It is no wonder thin concrete slabs crack and blacktop driveways crumble when a truck backs up onto it. Read the delivery tickets that are signed by the workers and most have damage waivers that relieve the truck companies of responsibility if a person allows them to drive onto your paved surfaces.

Payment Schedules

This is one of the most important parts of your remodeling job. The money you possess is the only leverage you have to ensure your job gets completed and done to a level of quality you have agreed upon in your contract.

All too often, people advance large sums of money to the contractor when the contract is signed. The only time this is necessary is when your job requires special order materials to be ordered before the job starts. Examples of this might be semi-custom or custom cabinets, a custom front door, custom garage doors, etc. Any materials that are commodity items that can be purchased at supply house do not qualify.

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Keep in mind that your contractor should have open accounts at all suppliers. If he does, why would he need advance money? He doesn't pay workers in advance, nor does he pay for supplies in advance.

You must always retain a sufficient amount of money to complete the project no matter what stage it is in. When you do pay for completed work, the contractor must supply you with notarized affidavits from all who have work on the job as well as all companies that have supplied material. Never issue a payment without having these documents. Get your payment calculator out and be sure the total amount you pay each time needs to match the amounts on all of the affidavits.

Plans - Triple Check Accuracy

As with new construction, the plans, blueprints, and written specifications are the primary tool that communicates to the remodeling contractor, suppliers and all subcontractors what is going to happen at your home. The ideal set of house plans would be ones that are so complete and so detailed that no one ever has to ask you a question. It is possible to do this as I have been blessed to work on such a job.

But this goal is very hard to reach. It requires you to think through the simplest things, such as the exact place where a toilet paper holder might go. You need to make all product selections, even paint and stain, before the job is even bid.

Is there a value to all of this? Absolutely, yes. If your plans are this complete, the bids you receive should be highly competitive. Dishonest contractors can't play the famous bait and switch game with absurdly low allowances for things when plans and specifications are complete and accurate.

Plumbing Disruptions

Many remodeling jobs involve plumbing. What may seem to be a very simple task of just turning off your main water valve and turning it back on can wreak havoc in an older home. When water lines refill from the rapidly incoming water, it can dislodge pieces of sediment from the sides of the older pipes. This sediment can clog faucet aerators, toilet fill valves and faucet valve cartridges.

It is very important that you discuss all plumbing jobs with your contractor before work begins. If water needs to be shut off to solder pipes, what happens if a small fire starts? If drain lines need to be cut into to install a new branch drain line, how long will the toilets in the house be inoperative? These simple questions need solid answers.

Avoid major plumbing changes on Fridays. If leaks develop after workers go home, will you be able to get instant repair service over the weekend? If you must have work done on a Friday, have a contingency plan in place. Make arrangements such that you can easily contact the plumber or the remodeling contractor in the event of plumbing problems.

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Porta-Potty

Bathrooms are private places. The last thing you need is a bunch of strangers with dirty clothes and muddy boots walking onto the clean throw rugs in your bathrooms or powder rooms.

Major remodeling jobs that will see many people at your home for weeks on end need a temporary toilet facility. Many of these are quite discreet and they allow you to maintain control of a very important part of your home. This is an important issue and you should not budge on it.

Make it very clear to the bidding contractors that a temporary toilet must be on the jobsite and that it must be serviced once or twice a week.

Pre-Order Materials

Any type of delay on a remodeling job creates havoc and stress. You can minimize delays by making sure the exact materials you need are at the jobsite long before they are needed.

This concept may seem simplistic, but it is often overlooked. If you have a safe and secure place to store products that are not readily available, why not buy them in advance and have them on hand?

Examples of this would be specialty faucets, hardware, light fixtures, ceramic tile, special-order windows and doors, and any other material that is not ordinarily in stock. It is also very important to inspect these items to make sure there are no defects and that they are exactly what you ordered. It is not uncommon for the wrong product to be shipped.

Protecting Finishes

Imagine how many trips up and down your stairs a remodeling contractor and his subcontractors might make as they remodel a second-floor bathroom. Without protection, the stairs, carpeting, handrails, walls, etc. can easily be damage or scuffed.

I suggest having a very frank and open discussion with your contractor about what steps will be taken to protect all existing surfaces both inside and outside of your home. Take very good notes and write down in the contract any promises the contractor makes with respect to what he or she intends to do.

The marketplace is crammed with many surface-protection products that help contractors keep dirt and dust away from things that are important to you.

But keep in mind it doesn't stop with existing materials. Many a new tub has been scratched by a drywall or ceramic tile subcontractor. Finish carpenters can scratch new hardwood floors with tools when they come back to install toe stripping. Discuss all of these issues with your contractor so things that are in excellent shape stay that way.

Scheduling

One of the top complaints of homeowners who have gone through a major remodeling job are delays

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caused by scheduling snafus. Large construction projects employ special people who are experts at coordinating the arrival of both materials and workers so that the job continues from start to finish with no disruption.

Small remodeling contractors can create simple charts that do the same thing. The trick is to correctly identify the realistic amount of time it takes to do a particular task and then place it in the right position on the schedule.

The next task is to determine which jobs can occur on the job at the same time. It is often possible for a plumber to be working inside a room addition while a bricklayer or siding contractor is applying the outer skin to the job.

Request a written schedule from your contractor in the bidding phase. See if any of the contractors you are talking with can produce one they are currently using on an existing job. If they can't, you better talk with past customers to see if the jobs they did progressed with little or no interruptions.

Selecting the Real Professional

I often think this is the Holy Grail of both new home building and remodeling. Every homeowner wants the best contractor, who is both professional and honest. These people do exist. They can often be found in just about every city and county in the nation.

If you hope you have the right contractor for the job, you may already be in trouble. You can't ever base decisions on hope. You start the process of finding the professional by conducting a thorough and in-depth interview. This may seem unusual, but it is a common practice in the business world.

You can ask very interesting questions and get some fascinating information. For example, ask a contractor the names of the last three books he has read. Ask if he attends remodeling conventions. If not, ask why. Ask them if they volunteer time. If so, where? Do they coach children's teams? When asked to produce an ID, does the contractor show you a driver's license or some other card? Never forget that it is your home and it represents an enormous investment. You must be sure you and your contractor are a close, if not perfect, fit.

Temporary Kitchens and Baths

If you have never kneeled down to wash dishes in a bathtub, you are not missing a thing. It is miserable and it is humiliating. It is also unnecessary.

If your kitchen is going to be torn up for several weeks, ask the bidding contractors how they intend to provide you and your family with temporary sinks, cooking appliances and refrigeration. Creative and professional remodeling contractors can often throw together a temporary kitchen that can roll into and out of the kitchen in progress each day.

Bathrooms are even more critical. It is not uncommon for a professional remodeling contractor to build a temporary shower in some location while the primary bathroom is being remodeled. Sinks and toilets are a must. There must always be functioning sanitary plumbing fixtures for you at all times.

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Excuses are reasons for failure. Do not tolerate them.

Trees and Landscaping

The landscaping around your home may be priceless. How many years has it taken a particular tree to reach its current height? You may have tens of thousands of dollars invested in expensive flower, bushes, shade plants, etc. The last thing you need is permanent and irreversible damage to your trees and vegetation caused by an unknowledgeable contractor, subcontractor, excavator or delivery truck driver.

The best way to ensure you preserve all of your plants is to arrange a consult with a certified arborist long before your project begins. Get written instructions from this person as to what needs to be done to make sure all trees and plants will survive the remodeling ordeal.

Make these written instructions part of the bidding documents and part of your contract. Be sure the contractor you choose has sufficient general liability insurance to cover damages and that the policy specifically covers damage to trees and landscaping.

Valuables

This is an uncomfortable subject, but one that must be discussed. There is no doubt in my mind that your home contains valuables. They may be cash, jewelry, guns, art or stamp collections or even musical instruments.

Remember that your remodeling job will bring with it people you have never met, and employees who work for those people who may have never been properly screened. Never tempt these people by leaving valuable objects in plain view.

If you have things of great monetary or sentimental value in your home, it may behoove you to move them to another safe location during the remodeling process. Accidents can happen. Fires can start. Worse yet, loose talk at a drinking establishment might tip off criminals who learn about all of the wonderful and tantalizing things within the confines of your four walls. Eliminate this problem from the start by eliminating the source of temptation.

Weather Protection

Many remodeling jobs involve opening up your house to the weather. Extreme jobs could actually involve tearing off your entire roof or a part of it to add a second story or a large dormer. The job might be as small as adding a skylight. But Mother Nature might spoil the fun with a pop up thunderstorm or five days of non-stop rain. A snowstorm may even be thrown in for good luck.

The point is simple. You must know how your remodeling contractor is going to protect your home against all forms of weather while your home's outer defenses have been compromised by work-in-progress. You need to understand that giant tarps can blow away in moderate winds. Wind pressure can be enormous over large expanses of plastic or fiberglass.

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Not only can rain and wind-driven rain be a problem, but extremes of heat and cold can create enormous amounts of discomfort. Discuss with your contractor, before the job starts, how air leaks will be stopped until such time as enough work is in place to minimize any loss of conditioned air from your home.

Work Days

Within a week or two, you will grow tired of the flow of people who come to your home to perform the remodeling work. It is important for your sanity and peace of mind for the workers to maintain a strict work schedule. When you get home from work, the last thing you need is noise, dust and activity at your home. Yes, that may be part of your families ordinary activities, but you don't need additional input for the remodeling contractor.

When you are bidding the job, ask each contractor to state the normal times workers will arrive and leave each day. Ask about weekend work. If you do not want workers to be around on weekends, make it clear for the beginning.