

Leaks—Part 1

Every winter we, like every other remodeling contractor, get any number of phone calls from homeowners that are plagued by leaks in their home. Often they report that they have tried various remedies with no success. Frequently they are extremely frustrated and upset with whoever has been attempting to repair their past leaks. Often they want to “change horses in mid-stream” and try someone else, figuring that the next guy may be able to more expeditiously solve their problem.

Certainly, sometimes that is true. Our company, for example, has made a lot of money over the years re-doing work performed by others, including work performed by some of the most reputable and qualified contractors in the area. No doubt other companies have spent quite a bit of time repairing leaks that we have “caused”.

What's going on with leaks? Why are they so hard to fix? Why cannot even reputable and experienced companies immediately find the source and put a stop to leaks?

In order to answer this question, I am going to resort to a well-known theoretical construct called “McCutcheon's theory of multiple causes of leaks”. This theorem was formulated by me many years ago after having the experience of having to return multiple times to finally staunch certain leaks. It is also based on bitter experience of having clients insist we take responsibility for the entire waterproofing system of their house, even if we only touch one small part of it.

Perhaps a story will make the point. Some years ago, we were doing a major kitchen remodel which involved a large addition to the house. Since we had a roofer working on site, our owners asked us to have the roofer “re-roof” a small deck area off their master bedroom. We did this as a favor to them, thinking that we were providing “superior service”.

Turns out that the area continued to leak the following winter, even though we had replaced the roof per the owner's request. Naturally, we invited the roofer to return and repair the problem. Their solution was to apply some caulking and comment that it was not their fault. Sound familiar? Of course, their superficial solution was no solution, and the area continued to leak. To make a long story short, over the course of several years, we continued to return (at no charge) to troubleshoot and stop various leaks. Each time, we were able to temporarily stop the problem, but after a few months, the leaks would recur.

Eventually, my owner contacted me directly and demanded we quit messing around and fix their leak permanently. I explained that we had never been hired to “fix their leak”. We had been hired to “replace the roof”, which we did successfully. I explained that it was obvious that surrounding areas were causing the ongoing leaks, and that the roof work had not been the only source of the problem.

Needless to say, my owner did not want to hear that. “I hired you to fix a leak, and I want it

fixed no matter what you have to do!” Having some integrity, and some degree of cowardice I suppose, we proceeded to tear the whole surrounding area apart—tile roof, stucco walls, and parapet. We found the main source of the leak to be faulty flashing around the parapet area, which we repaired with new copper flashing. We patched everything back together and it has not leaked since. This cost us about \$15,000 out of pocket. The original roof replacement had cost about \$2,000.

The moral to the story for us is to always do two crucial things when asked to repair a leak. (1) Make sure to ask a lot of questions about the owner's expectations. Are you asking us to simply replace the roof (or window or whatever), or are you asking us to guarantee that your house won't leak? And (2) always explain that leaks frequently have multiple causes.

Leaks—Part 2

As we mentioned in Part 1 of this series on leaks, contractors should approach leak detection and repair with extreme caution. Homeowners most often seem to take an unrealistic “hero” approach to leaks. Contractors, out of ignorance (or their natural competitiveness) often fall into this trap by claiming that they have some special expertise and experience that will allow them to go right to the heart of the problem. Owners almost always are tempted by low-price contractors to save money. Mix those factors in with the fact that most leaks have multiple causes, and you have a Molotov cocktail of circumstance waiting to explode in everyone's face.

A story will illustrate some of the problems. Last year, we were asked to “bid” on a leak repair in Montclair. Our staff reviewed the owner's problems and recommended removing and replacing all of the windows and siding on the side of their house where they had multiple leaks. We would have liked to have removed and replaced the deck someone else had recently installed, since deck to house connections are often also a source of leaks, but the owner prohibited such work because it was too expensive. I think our price was something like \$50,000. Another, smaller contractor, bid something like \$45,000. The owner elected to take that bid because we were “too expensive”.

Last week the owner called me to report that the project was a disaster. The original contractor was messy, unpleasant, and his staff may have even disturbed their personal belongings, perhaps even taking some for themselves! In addition to that unpleasantness, their leaks have continued unabated. She reported that other experts who have looked at the work have commented that the other contractor's work was shoddy and needs to be re-done in its entirety.

Interestingly, the original contractor has been asking for permission to come back and fix the problems. The owner reported to me that she did not want them back, and wondered if we would do it. In essence, I told her that for us to be able to guarantee the work, we would have to remove everything and start over. I recommended it might be more cost effective to give the original contractor another chance to repair the work. I also said she might want to hire a waterproofing consultant (Aquatech, McGinnis Chen, or equal) to help check the work and make sure it will be done properly.

Ok, so what do we have here? Low bid contractor meets leak. Prepares low-ball proposal. Gets

hired. Performs abysmally. Owner freaks out. Owner tries to get more reputable bidder that was “too expensive” to fix the low-bid contractor's mistakes. Reputable contractor declines. Owner left between a rock and a hard place...

How do you avoid being in that awful situation?

First of all, be realistic about leak repairs. Even for the best of companies, leak repairs are tricky and a great source of risk and frustration. Leak repairs can be expensive. Anyone who guarantees against all future leaks without pulling the entire assembly apart up through the roof is crazy (or just woefully inexperienced). Even when the entire assembly is pulled apart and re-done (as in the story above), it is necessary for the work to be done with great care and precision. Even the slightest flaw in waterproofing can cause a big problem!

My advice is to find the most reputable and experienced contractor you can to work on your leaks. Be prepared to work with them over time to fix the problems. Be prepared to pay for their time, even when their first efforts do not stop the problem! Hire a waterproofing consultant (as mentioned above) to help specify and monitor the work, if you really want it done right.

By taking all the right steps, you can reduce the risk of frustration and failure in your leak detection and repair. Finally, be mature enough to realize that you are the one who bought the house! It is your problem ultimately, not anyone else's! Get on with it, find someone you can trust, and work with them to get the bottom of your leaks.... Good luck!

Leaks – Part 3

Here are some more thoughts about handling leaks -----

First, realize that **your insurance may not cover all of the problem**. Actually, your homeowners insurance will only cover the damage caused by the leak. It will not pay to repair the “proximate cause”. That is to say, you have to repair the leak, and they only have to pay for the damage caused by the leak.

Furthermore, if you ignore a long-standing leak, and your willful avoidance of the repair causes additional damage, the insurance company may not pay for any damage caused by your negligence. Once you know you have a leak, it is incumbent upon you to work diligently to stop the flow of water in order to minimize subsequent damage. Otherwise, you risk having no coverage for the additional damage.

There is at least one other wrinkle. If you have damage to your home that would obviously cause water intrusion (let's say your skylight blows off in a storm), the insurance company has the right to expect you to temporarily cover the opening to prevent further water intrusion and damage. Typically, the insurance company will reimburse you for reasonable expenses to protect your home from further damage, but it's up to you to make sure the work is done.

Second, there are at least **two basic approaches to solving leak problems**. One is what I will call the **intuitive method**, the other a **systematic approach**. Most experts will use a

combination of both, but a working understanding of both approaches may help you better understand what they are doing.

The “intuitive” method involves a visual investigation followed by a recommendation for a priority-driven leak repair strategy. “There it is! It must be the flashing over that window!” Or, more expertly, “That window flashing looks suspicious. I think we should start there. If that doesn't do it, we may have to take apart some of the siding. If that still doesn't get it, we might want to take a closer look at the window above, or even the gutter and downspout.”

The “systematic” method also starts with a visual inspection, typically followed by water testing, starting from the “bottom up”. Water is systematically and patiently sprayed in a gentle fashion (ideally following ASTM protocol) to simulate natural rain and wind. Someone is posted on the inside to look for water intrusion. When water is found, if the process went slowly enough, it is possible to “pin-point” the leak, or at least one of the leaks. Then repairs can proceed, followed by more water testing to identify any other problems. The testing and repairs proceed systematically up the entire assembly until the leaks are fully eradicated.

Either method (intuitive” or “systematic”) frequently requires a great deal of patience and persistence to arrest the leak. Remember, leaks often have multiple causes, both large and small, that contribute to the problem(s). Water can migrate, not only downwards and horizontally, but even vertically when under pressure (as from wind driven rain). Capillary action is also a potential factor, since it allows water to “creep uphill”. The nature of wood is another factor. Trees are designed with tubes built into their wood fiber with the express purpose of transporting water upwards (transpiration). So your wood is acting like a sponge, soaking up water. When you expose end grain to water, the wood fibers soak up the water and can transport it vertically for at least several inches.

All these factors and more make leak detection tremendously challenging. My best advice is to hire professionals you really trust and work with them through all the difficulties to eventually solve your problems. To be safe, hire a waterproofing consultant to help navigate the challenges. With any luck, you will stay high and dry through all the winters of your life....