

Clear Answers to Messy Questions

A Homeowner's Quick Reference Guide:
**Tips on Handling Emergencies, Preventing Problems, and
Maintaining Your Plumbing, Drain, Heating and Air Conditioning
Systems—To Save Money, Headaches and Hassles.**

ClearView
Plumbing, Drain, Heating & Air Conditioning

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Introduction: Knowledge is Power

Someone has said that “knowledge is power.” And that is certainly true when it comes to protecting and maintaining your home plumbing, drain, heating and air conditioning systems. A little knowledge can often save you a lot of grief, wasted time, and unnecessary expense.

At ClearView Plumbing & Heating, we’ve used our knowledge to solve thousands of “Messy Problems” for Calgary homeowners, from frozen pipes to clogged sewer lines to furnace breakdowns in the middle of the night.

Now, we’re happy to share some of our knowledge with you in this quick-reference guide. This handy guide is divided into three parts:

PART ONE: BE PREPARED. This section provides troubleshooting tips for dealing with the most common plumbing, drain, heating and air conditioning problems and emergencies.

PART TWO: GETTING SATISFACTION. This section gives tips on working with plumbing, drain, heating and air conditioning technicians to make sure the job is done right, at the right time, and at the right price.

PART THREE: AN OUNCE OF PREVENTION. This provides simple maintenance tips that will save you money and grief by: (a) preventing plumbing, drain, heating and air conditioning problems, (b) extending the life of your equipment, and (c) reducing unnecessary waste of water and fuel.

There are two ways you can use this information. If you have a specific question or issue, simply click on the relevant chapter from the table of contents below.

Or you can [download Clear Answers to Messy Questions](#) in its entirety to your computer, so that you’ll always have this information handy and ready to refer to at a moment’s notice.

And if you need help in any way, for any problem large or small, any time of day or night, don’t hesitate: Just call ClearView!

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PART ONE: BE PREPARED

Troubleshooting Tips for Common Plumbing, Drain, Heating, and Air Conditioning Problems and Emergencies.

1. STAY IN THE FLOW: Troubleshooting Plumbing & Drain Problems and Emergencies

Overflow: When a Clogged Drain Backs Up Into Your Home

Q: Help! My bathroom is turning into a cesspool! My toilet is overflowing onto the floor and won't stop. I shut the water off right underneath the toilet and it helped a little, but it still keeps coming in.

A: When your toilet overflows right after you flush, it's usually a sign that the toilet itself has a blockage. However, if your toilet keeps overflowing even when you haven't flushed, this means the clog is in a drain pipe, possibly your main drain pipe. If this is the case, when you run water from any fixture, such as a shower, the water will back up from the main drain pipe and come out of your toilet bowl because it is the lowest point in your drain system. Of course, this makes it seem like the toilet is the problem when, in fact, it's your main drain pipe that isn't letting water go down. If you stop using water at other fixtures, the toilet will stop overflowing.

Powerful drain cleaning equipment is required to unblock a main drain. If it appears that your main drain might be clogged, call a professional as soon as possible.

If you have a private septic system, the problem may be that your septic tank is full and is causing your main drain to back up into your home. If your septic tank has not been pumped within the last eighteen months, you should have it done to see if this is the cause of your problem. Even if you discover that the problem was not in your septic tank, taking care of past due maintenance on your septic system is money well spent.

If you are on a town sewer system, it is possible that the city sewer is blocked and sewage from your home or your neighbors' homes is backing up into your home. Check with your neighbors to see if they are having any problem with their main drains. If they are, be sure to call your town sewer department. If your neighbors or town say they are having problems, your town will take care of unclogging the sewer pipe. If raw sewage has backed up into your home, you can call a professional cleaning company to handle the clean up and properly sanitize your home.

And by the way, whenever your toilet overflows, it is a good idea to turn off the water to the toilet because this eliminates any more water from being used until the problem is fixed. The shut off is beneath the bowl on the left side. If it turns out that the clog is in the toilet itself, you could try using a toilet plunger to move the blockage through the toilet.

Trouble from Above: A Leak in the Ceiling

Q: I discovered a small water spot in the center of my ceiling, close to the light fixture. The water seems to be going into the light fixture and that makes me nervous because I know electricity and water don't mix well. Where is the water coming from and how should I handle this safely?

A: Sounds like you have a leak coming from plumbing or heating that is above the ceiling. When water leaks into a ceiling, it travels along the face of the sheetrock until it reaches a low point, and then it pools up and comes through the sheetrock. The actual leak may be coming from a fixture that is far away from where the water is coming through. Light fixtures often act like drain holes for water that is traveling along the sheetrock, so it's common for water to come out there. While this is not a dangerous situation, you should keep the light fixture turned off until the problem is solved.

A common source of such leaks is a tub or shower; the strainer connection loses its seal over time and begins to leak. Or the leak could be coming from a toilet or sink. A simple test is to run one plumbing fixture at a time for a couple of minutes to see if water starts to drip. Take 15-minute breaks between running each one. It's important to know which plumbing fixture is actually the source of the leak because if you have to open up the ceiling for the repair, this will help you know exactly where to do so, saving costly (and messy) unnecessary holes. (About twenty percent of leaks through a ceiling require opening up the ceiling to fix the problem.)

Leaks that can be fixed at the fixture (without opening the ceiling) require a professional who has had experience and knows how to isolate the cause of the problem. If possible, it is a good idea to let your ceiling dry completely, by going a few days without using the plumbing fixture that is the source of the leak, before calling in a professional. This will help to diagnose the cause of the problem quickly with less chance of making an error.

Water, Water Everywhere: Active Pipe Leaks and Floods

Q: There are three inches of water in my basement coming from a water pipe that burst while I was at work. I should just turn off the water at the main shut-off valve, right? But what if that doesn't work? Is it safe to walk in the water to get to the shut-off? What is the best way to clean up the water?

A: With an active pipe leak, you could end up with a flooded house or flooded basement. So any time a pipe breaks, you want to immediately turn off the water at the shut-off valve that brings water into your home (usually it's located close to the water meter). Or if you have your own private well, the shut-off is located near the well holding tank (usually a blue tank).

If, for any reason, shutting off your main valve does not work, you should immediately call your local City Water Department and they can shut off your water at the street curb. Or if you have your own private well, you can turn off the electrical supply to the well

pump to stop the leak. Find your electrical panel(s) and look for a circuit breaker labeled for your well pump and switch it off.

If you have any live electrical cords that are submerged, or electrical outlets that are covered by the standing water, you should wait for your plumber to come shut off the water, or you should immediately call your local City Water Department. Generally, if there are less than three inches of standing water, no electrical outlets or fixtures will be submerged and it will be safe to walk through the water. But if you have any doubts about safety, wait for the professionals to come.

If you're not sure where your main shut-off valve is, it's better to go looking for it now and make sure everyone in your home knows where it is. That way, if there's ever an emergency, you won't waste time looking.

Call your plumber right away to get the break repaired. Your plumber can also help by pumping out most of the standing water in your basement. If you have carpets or other home furnishings damaged by the water, you can call a Water Restoration Company to help clean up and take care of the mess.

Finally, if there is any damage to your home furnishings, call your home insurance company to find out about your coverage.

In Hot Water: When the Water Heater Leaks

Q: My water heater is leaking from the bottom. How do I stop the water from flooding the floor?

A: When your water heater leaks from the bottom, this usually means the tank has a hole in it. In this case, the entire contents of the tank, usually 40 gallons, could drain onto your floor! There are a couple of things you can do to minimize the problem. First, turn off the water to your water heater at the shut-off valve for the heater (typically, it's located 8" to 18" above the heater at the right side on the cold water pipe that leads into the tank).

If you have an electric water heater, turn off the power to the heater at the electric panel. Look for a circuit breaker labeled for the water heater and switch it off. If you have a gas water heater, the water dripping from the bottom may interfere with the flame and make a hissing noise. While this is not dangerous, you could turn the gas off to the heater at the gas shut-off valve on the gas pipe that leads into the heater. If you are not certain which valve does what, you can turn off all of the valves within four feet of the water heater without disturbing any other fixture.

Next, make sure all of the hot water faucets are turned off. By keeping them turned off, you won't let any air into your system and the leak will slow down considerably.

Finally, you could also use a garden hose to drain water from the tank. Hook up your garden hose to the drain located at the bottom of your heater and run the other end to a low drain in your basement (like a floor drain or basement sink). Open all of your hot water faucets to let air into your system and the tank will begin to drain. When water stops flowing, close all of the hot water faucets.

Write down the type of water heater you have (gas, oil, or electric), as well as the size, make and model, and call your plumber right away. With this information, your plumber can be sure to bring the right type of new water heater to your home in case it needs to be replaced.

Sometimes, a leak from a fitting will travel down the side of the inner tank and make it look as though the heater is leaking from the bottom. In this case, a repair will be in order, rather than a replacement.

It's a Wrap: Keeping Pipes from Freezing

Q: To prevent pipes from freezing, we've wrapped and insulated all of our exposed pipes. Anything else we can do?

A: That's a good start. But cold air can wriggle through the smallest gap or opening. So watch out for places where cold air can get into your walls and get to your pipes. For example, check any holes in outside walls where television cables or telephone lines come into the home. These may be letting cold air in. Look for cracks and holes in outside walls or in the foundations near water pipes. These should be sealed with caulking to keep the cold away from the pipes.

When it is very cold, you can open the cabinet doors underneath sinks so that warm air from the room can circulate around those pipes and keep them warmer.

Here's another idea. You might even consider getting electric heating tapes and cables, which can run along pipes to keep the water from freezing. You'll want to use these with extreme caution and follow the manufacturer's instructions carefully to avoid the risk of fire. (Check to make sure that the product conforms to UL 2049). For an added degree of safety, you can actually purchase electrical heating tapes and cables that have a built-in thermostat which will turn heat on and off as needed. If you get the kind that does not have a thermostat, you'll have to plug them in each time heat is needed and then remember to unplug them.

Little Drip, Big Hero: Keeping Frozen Pipes from Breaking

Q: In extreme cold spells I worry about pipes freezing and breaking. So we keep a cold water faucet dripping to keep the water flowing and the pipe from freezing. Are we doing the right thing? Does it matter which faucet we open?

A: Actually, you are partly right. The little drip works, but not because it keeps the pipe from freezing. It doesn't. Opening the faucet and letting it drip *keeps the water pressure from building up inside the pipe*. And this is important, because it is actually not the ice that breaks the pipe. Pipes break because of the build up of excessive water pressure in the pipe between the ice blockage and the faucet.

So yes, it is a good idea to let a faucet drip during cold weather, because this relieves the excess pressure so that even if the pipe freezes, it won't break. Here are some guidelines for letting a "drip" be your "hero":

- (a) Since a dripping faucet wastes water, you should only open the faucets that are connected to the pipes that you think are vulnerable to freezing (such as pipes that may run through an unheated or uninsulated space).
- (b) The drip can be very slight. Even the slowest drip will provide the relief of pressure that you need.
- (c) If both hot and cold lines feed into one spigot, open both so that they both contribute slightly to the drip (since both could potentially freeze).
- (d) If the dripping stops, leave the faucet(s) open. A pipe may have frozen and will still need the pressure relief to keep from breaking.

Thaw Thoughts: What to Do (and Not to Do) When Pipes Freeze

Q: If your pipes freeze, is it okay to use a hair dryer to try to thaw them out?

A: Actually, it is. But first, call a plumber; don't take any chances.

Then, while you're waiting for the plumber, you might be able to thaw the pipe using a hand-held hair dryer. Slowly apply heat to the pipe, starting close to the faucet end of the pipe, with the faucet open. Then, work toward the coldest section of the pipe. (As always, be careful not to use any electrical appliances when you're standing in water; you could get electrocuted.)

You might also try an electric spot heater. Make sure the area where the pipe is frozen will be exposed to the heat (open cabinet doors, for example). Then point the heater toward the frozen area and it will gradually heat the area around the pipe to thaw it.

A couple of warnings are in order. Follow the manufacturer's directions for safe use of electric spot heaters. And do not try to thaw a frozen pipe with any kind of open flame; this will damage the pipe and could even start a fire. You *could* try using a heat gun to try to thaw the pipe, but be careful. Heat guns get very hot, and you don't want to start a fire.

Bad Breaks: What To Do When a Frozen Pipe Bursts

Q: If a pipe breaks, I should just turn off the water at the main shut-off valve, right? But what if that doesn't work?

A: Yes. If a pipe freezes and breaks, once the ice thaws you could end up, literally, all wet—with a flooded house or flooded basement. So any time a pipe breaks, you want to immediately turn off the water at the shut-off valve that brings water into your home; (usually it's located close to the water meter).

If, for any reason, your main valve does not work, you should immediately call your local City Water Department so that they can shut off your water at the street curb.

If your basement has flooded because of the burst pipe, you want to consider if you have any live electrical cords that are submerged, or electrical outlets that are covered by the standing water before you walk in the water to get to the shut-offs. Generally, if there is three inches or less of standing water, no electrical outlets or fixtures will be submerged and it is safe to walk through the water. However, if you are in doubt about safety, you should wait for a plumber to come shut off the water, or you should immediately call your local City Water Department.

If you're not sure where the shut-off valve is, better to go looking for it now and make sure everyone in your home knows where it is. That way, if there's ever an emergency, you won't waste any time looking. And, of course, you'll also want to call your plumber right away to get the break repaired.

2. KEEP THE HEAT ON: Troubleshooting Heating Problems and Emergencies

TROUBLESHOOTING GAS FURNACE AND BURNER PROBLEMS

Gas Basics: Common Issues with Gas Furnaces

Q: What are the most basic things we should be aware of with a gas furnace?

A: Some of the modern gas systems use electric ignition components that can sometimes lock up like a computer. If your gas system stops, try re-setting the system by turning the power switch off for a few minutes. You can locate the service switch on the side of the furnace, or the red switch at the head of the stairs to your basement. Make sure both switches are in the off position for a few minutes. Then turn them back on and see if the burner starts up to heat up the system.

Some furnaces have a pilot light, and on a very windy day the pilot light can be blown out through a down draft. Or it could go out due to an interruption of the gas supply. If you have a furnace with a pilot light that is out, as a first step, just follow the directions on the instruction plate on your furnace for relighting the pilot.

If your pilot does not stay lit, it could be that your **thermocouple** is defective. You can call your plumbing and heating company to replace this, or if you are handy, you can remove the thermocouple and take it to a hardware store to purchase an identical thermocouple. The thermocouple is a small fitting that the pilot flame touches and heats up.

Another common problem with gas furnaces is a worn fan motor belt. If your fan motor is running but you're not getting any heat, it may be that the **fan belt** is broken. Replacements for your fan belt should be available at your local hardware store and you can replace this yourself, or call your plumbing and heating company to do it for you.

Gas Checklist: What to Do When the Gas Burner is Off and There's No Heat

Q: My burner is off. Are some things I should check before calling my heating company?

A: Let's start with the easiest things to check. First, check your thermostat and make sure it hasn't somehow gotten turned down below the room temperature. Gas burners need the thermostat to be "calling for heat" in order to run.

If your system uses propane gas, the next easiest thing to check is whether you have run out of propane. There is a sight gauge on the top of your propane tank. If the gauge shows that the tank is almost empty, you may be out of propane and you will need to call your gas company for an emergency delivery. (You may also get a sulfur "rotten egg" smell in your home right before you run out of propane.)

Or it could be that the circuit breaker connected to your heating system has tripped. This happens from time to time. Turn your furnace switch to Off, then go to your electrical box, locate the fuse or circuit breaker for your heating system (hopefully it's labeled). Is the fuse or circuit breaker "tripped"? In other words, is the switch half-way between On and Off? If so, then this is your problem. Turn it to Off, then wait a couple of seconds and turn it all the way to On. It should stay On. Then, when you turn your furnace switch back to On, and you should hear the furnace come on.

If the circuit breaker doesn't stay on when you turn it to On, then there may be a short in the electrical circuit to the gas burner, or you may have a faulty circuit breaker. You can replace the circuit breaker yourself, if you're familiar with how to do this. Make sure you turn the circuit breaker to Off. Then remove the circuit breaker, take it to your local hardware store and get a replacement, then install the new circuit breaker and switch it to On. If the burner works, you know the problem was the circuit breaker. If it doesn't work, or if you're not comfortable doing this yourself, you'll need to call an electrician.

Some gas systems use a pilot light. If your pilot light is not burning, you'll simply need to relight the pilot by following the directions on the burner instruction plate.

If this is not the problem, it could be that your **thermocouple** is defective. You can call your heating company to replace this, or if you or someone you know is handy, you can remove the thermocouple and take it to a hardware store to purchase an identical thermocouple.

Or it could be that the pilot flame might be too small to heat the thermocouple tip, in which case you would need to remove the pilot and clean it, or call your heating company to do this for you.

On Again, Off Again: When the Burner Cycles On and Off Frequently

Q: My burner is going on and off, and I'm not getting enough heat.

A: While gas systems tend to have short cycles between "Off" and "On," if you are not getting enough heat, this frequent cycling may be a symptom of a real problem. Dirty **filters** may be blocking the air flow, causing the short cycles and lack of heat. If your filters are very dirty, try replacing them.

Or it could be that a **fan belt** is loose so that the fan does not turn fast enough to remove heat from the furnace; as a result the furnace overheats and shuts off. Then, when the furnace cools down, the burner comes on again for a short period until it overheats again. Your home won't heat up enough between cycles.

It is also possible that a limit switch is defective and cutting out the burner too early, or that your distribution is undersized. Your plumbing and heating company can check these things for you.

Problem Avoidance: Preventing Problems with Gas Heating Systems

Q: Are there some things I can do to avoid problems with my gas furnace?

A: The problems I have described in this chapter are just some of the most basic problems that can occur with a gas furnace. There are others as well. But the key to avoiding problems like these is good maintenance: make sure your heating system *completely and expertly cleaned and tuned every year*. [See Chapter 13 for more details on heating system maintenance.]

Also, anytime you have an unpleasant, unusual smell from a gas system, you should call your plumbing and heating professional or gas company (or even your fire department if neither of the first two can be reached). *Call right away*. The odor could be coming from a small gas leak that, if left unchecked, could grow into a much more dangerous problem. Or, when the furnace runs, the exhaust might be backing up into your home because the venting system is not working properly. This may produce poisonous levels of carbon monoxide gas.

3. KEEP YOUR COOL: Troubleshooting Air Conditioning Problems and Emergencies

Breaker, Breaker: When a Breaker Keeps Tripping

Q: In the past, I've had the problem where our air conditioning wasn't coming on and I just had to go to the electrical box and reset the breaker (or replace the fuse). But what if I reset the breaker, the air conditioner starts, and then it stops again? Is it okay to just keep resetting the breaker?

A: Occasionally a breaker trips or a fuse burns out (once every couple of years). In that case, sure, you can reset the breaker or replace the fuse again and see if that works. There's no problem with doing that. However, if the problem persists and the unit keeps starting and stopping, then you need to call your service technician. Something is clearly wrong that is causing the breaker to keep tripping.

Not Cool: Your Air Conditioner is Just Not Getting the Job Done

Q: Our air conditioner is working, but not very well—certainly not well enough to keep us comfortable! What causes this?

A: There are a few things that could diminish the cooling capacity of your air conditioner. The most common causes for this are a **clogged filter**, or a **loose fan belt**, or it might be that your system is **low on refrigerant**. Also, if your air conditioner starts and stops frequently, this might also be caused by any of these same three problems. You can check to see if the air filter is dirty.

Unless you are familiar with air conditioning systems, a service technician will need to check whether the fan belt is loose or if the system is low on refrigerant. Still, these are simple problems to fix.

Other problems that diminish cooling capacity stem from the system design. For example, lack of return air ducts, or even oversized equipment, are a couple of conditions that will diminish cooling ability. These problems can be solved, but they are naturally more involved and more costly.

Noise Pollution: Noisy Air Conditioner Problems

Q: My air conditioner is making some weird noises. Is this just because it's old and cranky, or do I have a problem?

A: You probably do have a problem, but the kind of problem you have depends on the kind of noise it is making.

For example, if the outdoor unit is very noisy when it first starts up, this could mean that the compressor is laboring hard. You could check to see if leaves or grass are blocking the fins on the unit.

If there are no leaves or grass blocking the fins, yet the unit is still making noise, or if it makes a humming noise but doesn't really start up, the compressor itself might be burned out and would need to be replaced.

If you hear an unusual chattering noise, this means that the **contact points** in the wiring for your system are burned. You'll need to call a service technician to get them replaced.

Frost and Found: Not Getting Enough Cool Air

Q: I am not getting enough cool air from my system. I checked to see if the furnace was running and noticed some water on the floor around my furnace. Is there any connection here?

A: Your cooling coil may be frosted inside your system. This happens when there's not enough air getting through the system and passing over the cooling coil. Some simple things that you or your technician can check are: is the air filter dirty? Do you have a lot of closed registers blocking the air flow? Are there some closed dampers in the duct lines? Replacing your filter and opening some of these up will allow air to flow again. To defrost the system, run your heat for thirty minutes, then try the cooling again.

Your cooling coil can also frost up again after you defrost it if your system is low on refrigerant. So have your service technician check the refrigerant level and make sure you have the right amount.

PART TWO: GETTING SATISFACTION

Tips on Working with Plumbing, Drain, Heating and Air Conditioning Technicians to Make Sure the Job is Done Right, at the Right Time, and at the Right Price.

4. MAKE THE RIGHT CALL: Choosing the Right Contractor to Work With

Hedge Your Bets: Improving Your Chances of Getting Good Service

Q: We all take a chance the first time we call any kind of service person to come to our home. What should I look for to protect myself against a bad experience?

A: When you have service work done in your home, you literally have to live with the results. And since the work you're having done has to do with your family's comfort and safety, you really want to choose someone you can trust. Here are some steps you can take to protect yourself.

First, look for a company that works with trained, licensed professionals, not just someone who does this kind of work on the side. You may save a little money working with a "sideliner" but chances are you'll pay for it later, because the "sideliner" won't have state-of-the-art training, knowledge or equipment that the professional has. And this could mean costly mistakes.

Another downside of working with a "sideliner" is you may find yourself a bit uneasy about who is coming into your home. With ClearView, you'll never have to worry about that. Our technicians are employees of ClearView (not subcontractors); they are certified, licensed, and continuously trained in their fields of expertise. They are drug-tested and have been background-checked.

Second, look at basic credentials and stability. How long has the contractor been in business? What are the company's capabilities and experience? (ClearView has been doing business in the greater Calgary area for over a decade. We are large enough to handle your needs and small enough to care.)

Third, look at reputation and references. ClearView is a member in good standing of the Better Business Bureau. We have thousands of satisfied customers. You can read some of our customer testimonials online.

Fourth, is the company licensed and insured? ClearView is licensed in Alberta.

Fifth, does the company offer any warranties and guaranties? ClearView offers some of the strongest warrantees in the industry.

Sixth, is the contractor affiliated with major manufacturers? ClearView supplies, installs and repairs all major manufacturer's equipment, and we are factory trained.

Finally, also make sure the contractor you're working with:

- Puts work orders in writing and gives firm upfront quotes and price guarantees.
- Will meet or exceed all manufacturer and local building code requirements and coordinate all permits applicable to the installation.
- Has an excellent credit rating and a good professional relationship with vendors.

ClearView does all of the above.

Get Technical: Avoiding the Poorly Trained Technician

Q: The guys who came to install our heating system spent half of the first day trying to figure out how they were going to make our new equipment connect to the existing pipes and ducts. They didn't appear very professional. We were even a little uncomfortable having them in our house.

A: That's one reason why you should be a bit wary of someone who gives you a very low bid. Maybe the reason he can give you a low bid is he's hiring underpaid, unskilled people to do his installations. And this is really a problem because, on average, about 65% of how well a piece of equipment performs in your home is directly related to how well the whole system was installed and adjusted to run correctly in your home.

In heating and central air conditioning systems, for example, bad installation accounts for the loss of 30% to 50% of energy in many homes. And industry experts say that over 66% of equipment failure is a result of poor installation and a lack of proper maintenance. Installation is *that* important!

So if you're getting bids from companies, ask if they background-check and certify the employees who will be installing your equipment. Ask if they are bringing in their own employees, or hiring subcontractors. Ask them how well trained their installers are.

If you're getting a heating system, ask if they will tune your furnace or boiler and test it for efficiency after it is installed. (It may have been tuned at the factory, but it needs to be retuned because the conditions in your home are different from those in the factory.) Ask if the installer will "balance the air flow" by making sure the setting on the furnace fan is matched to the size and characteristics of your ductwork. If you start getting vague or unconvincing answers, you might want to cross them off the list.

The Underbidder: When Cutting Corners Puts You in a Corner

Q: We got three estimates on a system, and one of the estimates was a lot lower than the others. I'm wondering if the cheaper company is really a good deal, or if they are just cutting corners.

A: They are probably cutting corners. And if they install equipment that can't really do the job right for you, you'll be stuck in a corner because they probably won't be able or willing to fix it for you!

This happens, and a big reason for it is the bidding process itself. A contractor who is hungry for business may recommend a smaller, less expensive heating or AC system so that he can underbid the other companies and get the job. You may not notice the difference until you get to a very cold day in winter, or a very hot day in summer—and then you may discover that the system you bought can't quite do the job and keep you comfortable.

But there's another problem that is even more subtle, and that has significant long-range implications: to save money, a contractor may decide to cut corners on *air ducts*. The National Comfort Institute says, "It's not unusual to see return air system undersized by 30% to 50%." If your air ducts are too small, your equipment will have to work harder to push air through them, and this puts more wear and tear on your equipment. In fact, many equipment problems and failures are often a result of improperly sized and installed air duct systems.

So, yes, be wary of the "underbidder." Ask each company you are bidding to describe the system they will be installing, including the air duct system. Ask them how big the air ducts will be, and how they will make sure that the air duct system is the right size and right design for your situation. Then compare what different companies say.

5. GET ON THE FAST TRACK: Getting Prompt Service When You Need It

Phone Problems: Seeking a Cure for the Common “Hold”

Q: I hate playing phone tag or calling and getting put on hold for a long time. And I really hate it when I leave a message and they take *forever* to get back to me.

A: It's true. Some companies don't seem to understand that how they answer the phone is just as important as anything else they do. After all, the moment when you call is a very important moment: you've got a problem right then, and you need help fast.

Every company gets very busy at times, of course. But if a company *consistently* puts you on hold or is consistently slow to return calls, that is an indication that either (a) they do not understand the importance of courtesy, or, (b) their business is so poorly managed that they cannot keep up with the calls that come in. Either way, you may want to look elsewhere for the help you need.

Or, you can just call ClearView. During business hours, we have friendly employees who answer the phone and are trained so that they can answer some of your immediate questions and get you the help you need as soon as possible. After hours, our answering service answers the phone. If you have an emergency, they will immediately page one of our technicians on call.

“Wait” Reduction: Overcoming the “Wait” Problem

Q: We had a problem, and our plumbing company said they would be there at 11:00 a.m., but they don't show up until 5:30. I had stayed home from work all day to wait for them, and it turns out I could have gone to work after all! As I told my husband, they are giving me a serious “wait” problem!

A: I hear you, and this is an age-old problem in the industry. When you're looking for a plumber, you might ask them what their usual “appointment window” is. The standard in the industry is four hours. So the 6 ½ hours you had to wait is excessive.

At ClearView, we're very serious about “wait reduction.” That's why we have initiated a *Never Wait, Never Late* plan, which works like this. You can give us your work phone number or your cell phone number, and we'll call you when we're on our way to your home. That way you can leave work (or whatever else you're doing) and meet us at your home. It minimizes your down time.

The Stalling Installer: Dealing with Installation Delays

Q: We had an installer who took forever to get back to us with an estimate. And then we had to wait even longer for them to get around to coming and doing the installation.

Then when he finally got here, he got half-way through the installation and said he was missing a part, and left. We didn't see him again until two days later!

A: Some contractors overcommit themselves because they don't want to say "No" to any potential job; then, fearing that customers might take their business elsewhere if they knew how long it would actually take to get the job done, they make vague promises about timing. Finally, they end up breaking promises as they run in circles trying to keep the plates spinning on all their commitments. That leaves you stranded.

To avoid this problem, look for a contractor who seems to demonstrate being organized and who has the resources to get the job done as promised. How prompt is he in getting you an estimate, and scheduling your job? Does he explain things in a clear, organized way? Is his truck well-stocked and well-organized? If a contractor can't meet your expectations initially, the delays and chaos will probably get worse before the job is done.

Finally, hold 50% of the total price to be paid only when the job is 100% complete. Although this doesn't prevent the problem, it does help to keep a contractor motivated to finish the job.

6. CUT THROUGH THE SMOKE: Getting Good, Clear Communication

Lost in Translation: What to Do When Your Technician Speaks “Plumberese”

Q: Some service men use vague or technical terms when they explain what the problem is; then, if you ask a question, the way they answer it makes you feel dumb. Well I’m sorry, but I don’t speak ‘plumberese,’ and if I don’t understand what they’re doing, then I don’t know what I’m paying for. How can I get a better handle on what’s going on?

A: Good technicians love their work. They love everything about it, even the terminology; so that’s why they love using technical jargon to describe what’s going on. The good news is, they really want you to understand what they are talking about; the bad news is, they may not realize that you don’t really understand what they are saying. Technicians with a lot of experience have usually figured this out. However, if your technician hasn’t learned this yet, or if he forgets, you should feel comfortable saying, “Hey, that sounds like plumberese to me. I don’t understand it. Could you explain it a little more clearly?” You’ll probably get a smile and a clearer explanation.

The Bait and Switch: High Pressure Sales Techniques vs. Valid Suggestions for Extra Work

Q: It’s a little annoying when a technician comes to fix a small problem and then tries to sell me something much bigger. A man came to clean my furnace and said, ‘Gee, it would be nice if you got a tankless water heater instead of one that is connected to your boiler.’ Well, yes, that would be nice, but it turns out it would cost about six thousand dollars! I told him, I am not going to spend six thousand right now. And then he admitted that I didn’t really *need* the tankless water heater. I want them to be the experts and give me advice, but I don’t what to feel they are always pushing something on me.

A: These days, with all of the options that are available (and many of them good ones), it’s common to have technicians explore the potential of upgrading equipment or range of work. You may have had a similar experience when you’ve had your car serviced. You bring your car in for a brake noise and they come back with a list of things to be done besides fixing the brakes. The suggestions are usually valid and often make sense to offer. However, if a company always seems to be putting on the pressure to increase the sale, you may feel that you always have to be on your guard whenever you have a minor problem. Not every problem has options, after all.

You want to work with technicians who will first focus on getting your problem solved, and then, secondarily, will explain other options to you in a helpful, non-pressure manner.

The “One Way” Technician: Making Sure You Hear All the Options

Q: A guy came out once and fixed a heating problem we had. About a year later, I had the same problem and found out there were a couple of other ways to fix the problem that would have cost a little more but would have worked a lot better in the long run. Now I am going to spend more money, and I went without heat again for the second time in a year.

A: You may want to call the guy who did the quick fix and ask him to reimburse you for his repair! The problem is, some technicians don't see the forest for the trees. Take the example of a leaky pipe. A pipe leak can be caused by several things, from a poor connection to excessive water pressure. However, if a technician simply fixes the connection and doesn't determine if the root of the problem is excessive water pressure, then the same problem will probably occur again at some point. Fixing the leaky pipe didn't solve the problem, even though it needed to be done.

Experienced technicians avoid this trap by always giving options on every problem. When you get all of the options on the table, you know the technician is using his expertise to see the whole problem rather than just a part of it. It's worth mentioning upfront to the technician that you're looking for more than one way to fix the problem, if that's possible.

Service Interrupted: When You Have to Wait and Wait for Parts on Order

Q: A technician told me he would have to order a part for my heating system, then he left. I waited two weeks and never heard a thing about when the part would be in or when it could be fixed. When I called to find out about this, his box told me he would order it again and it would take another week before he would have it to install.

A: Unfortunately, with many companies, you need to check on your order so that the ball doesn't get dropped. It's like a relay race, where the hand-off of the baton to the next runner keeps everyone in the race. Coordinating parts for your equipment requires teamwork and timing. Some technicians don't have a team supporting them, and they have to chase down whatever they are missing themselves, in between taking care of other calls. It's like running a relay race with no one to hand off to! They get tired, they forget, and sometimes they don't finish. Getting parts in a timely manner requires a dispatcher, a parts person, and a supply house person all working as a team. If you are dealing with a small company or an individual who appears to “do it all himself,” you may want to call a couple of days after the technician's visit to check on your order.

7. GET WHAT YOU PAY FOR: Making Sure Your Problem is Fixed Right

The Bad Luck Truck: Beware of the Messy, Disorganized Truck

Q: A plumber showed up in my driveway in a truck that looked like it had been through a war! At first, before I knew it was the plumber driving up, it actually made me nervous about who was coming up my driveway. But when I realized who it was, my next thought was, “Uh-oh, I’m out of luck.” And once I got a look in the back of his truck, I thought, “How does he ever find anything in there?” I know you can’t judge a book by its cover, but can’t you judge a plumbing outfit by its trucks?

A: You absolutely can, and you should. A well-organized, well-stocked truck is not only an indication that your plumber is well-trained, well-organized and on top of things, it also means that the job is probably going to go more smoothly. At ClearView, for example, we think of our trucks as “mini-warehouses.” We bring a large, well-organized, fully-stocked truck to the driveway for every job. Our technicians are able to quickly find whatever they need, and in many cases, they’ll have what they need on the truck to fix your problem on the spot, so they won’t have to go running around looking for parts. When you see one of our trucks coming, you know you’re in luck!

The Hit-and-Run Job: Avoiding the Job that is Rushed, Sloppy, or Poorly Done

Q: A guy came to work on my furnace and he was fast and sloppy: he finished the job quickly and left a big mess behind. My basement looked like the scene of a ‘hit and run’ accident! So this left me nervous that maybe he hadn’t done the job right.

A: Some companies put their employees on quota to do so many jobs per day. So naturally, they are motivated to rush through your job and get on to the next one. Other companies pay their employees a percentage of the jobs they do; so if you’re job is not a very expensive one, they’ll rush through it to get on to the bigger, higher-paying job. And sometimes the problem is just lack of training and professionalism.

At ClearView, we give our technicians the best technical training and equipment and we encourage them to do whatever they can to solve customers’ problems *to the customer’s satisfaction*. We train them to give your job their full attention, whether it’s a small job or a big job. We also require that they cover their boots when they come into your home and clean up completely before they leave your home. With ClearView, instead of a hit-and-run job, you get a job that runs smoothly.

The Unfinished Job: When a Problem Lingers On and On

Q: I had a company out to fix a problem but they didn’t really finish the job. I had some small lingering problems which occurred after the main problem was fixed, but because I was afraid of the possible added expense, I didn’t call them. I’ve just had to live with the problems—and that’s a real pain!

A: It is, and that's why, before you work with a plumbing or heating or air conditioning contractor, you should first ask about the kind of warranties they offer. The warranty tells you something about how committed they are to standing behind their work.

For example, with ClearView you get a 2-year Parts and Labor Warranty on almost everything we do. We're able to stand behind our work and offer that warranty for one reason: our professional technicians are committed to fixing your problem right, so that it stays fixed! In other words, our warranty is basically a warranty that you won't need the warranty!

8. GET COMFORTABLE: Choosing Just the Right Heating or Air Conditioning System for Your Home

Getting Warm Without Getting Burned: Avoiding a Heating System That is Oversized or Undersized for Your Home

Q: I've heard horror stories about what happens when you get a heating system that is too big for your house or too small, or one that is problem-prone. How can I make sure I'm getting just the right heating system for my particular home and situation?

A: It's true, some contractors will try to sell you an "undersized" or "underpowered" system if they think they can get the job by offering you a lower price. Other contractors may install air ducts that are too small for your system; this will cause your system to labor harder to push the air through the ducts. And this can wear your equipment out faster and reduce its life. Other contractors may try to sell you an "oversized" or "overpowered" system "just to be on the safe side." If he hasn't kept up with the technological advances in heating, he may not realize that today's systems are so advanced and so efficient, that a "smaller" unit can often do a better job.

So how can you tell if you're getting the right heating system for your home? A good place to start is to read Appendix A: [GETTING WARMER: 6 Things You Should Know Before You Buy a New Home Heating System](#). It will just take five minutes to read, but will get you started on the right foot.

You'll no doubt want to get written bids from several companies. Reading "GETTING WARMER" will help you know what to look for and how to make sure you're comparing "apples to apples."

But ClearView also offers another service that will help you in your search: you can request a **Free, No-obligation Home Heating Survey**. For this, a ClearView technician will call you and make an appointment to come to your home and carefully study your house. He will then give you a complete report and recommendation on the heating system that is *just right* for your situation, including a firm estimate.

In this way you'll be armed with the most complete information to help you make the best decision.

Making the Cool Choice: Choosing the Right Air Conditioning System

Q: We want to put in a central air conditioning system, but there are so many variables. How can I make sure I'm making the right choice?

A: First read Appendix B: [COOL FACTS: 5 Things You Should Know Before You Buy a New Home Air Conditioning System](#). It will give you a good, quick, 5-minute

overview. As you're getting bids, it will help you know what to look for and how to make sure you're comparing "apples to apples."

But for more in-depth information, you can also request a **Free, No-obligation Home Comfort Survey**. A ClearView technician will call you and make an appointment to come to your home and carefully study your house. He will then give you a complete report and recommendation on the air conditioning system that is *just right* for your situation, including a firm proposal and quote. In this way you'll be armed with the most complete information to help you make the best decision.

9. DO THE NUMBERS: Making Sure You Get the Right Price

Hide-and-Seek Pricing: Making Sure You Get a Clear-cut Estimate

Q: Some companies don't itemize their charges clearly, so you can't really tell what you are being charged for. You just see these miscellaneous charges added onto the bill and you don't know what they are for. It may be all absolutely correct, but it does make you wonder, and it causes me to lose a little trust. I wonder if they are hiding something. It feels like a game—but it's not a game I want to play.

A: You have a right to expect clear, firm, upfront estimates and explanations of the work that is going to be done—in language that you can understand—without games! Always ask for a step-by-step explanation of exactly how the work will be done and a step-by-step explanation of each item on the estimate, so that you'll understand exactly what you're paying for. If you sense hesitation or vagueness, you may want to go with a different contractor.

At ClearView, we always provide clear, firm, *upfront* estimates, and our technicians are trained to patiently and clearly answer any questions that customers may have and explain the options to the customer. We want you to be very clear about exactly what you're getting, what your options are, and what you'll be paying. With ClearView, you'll know exactly what you're going to pay before any work is done.

Apples-to-Oranges: Dealing with Comparative Pricing Problems

Q: I often wonder how prices compare and whether I am truly getting the best deal for my money. There doesn't seem to be a standard price list for things they do, and every company does things differently and prices things differently—so it's like comparing apples to oranges.

A: The bidding process can be a bit complicated and tricky. Some may try to underbid everyone else, but that may mean they are cutting corners with the equipment. Others may try to convince you that you need more equipment than you really need “just to be on the safe side.”

That's why it's so important to get clear, upfront, written bids for any installation work you're going to have done—such as the installation of a new heating system or AC system or air filter system. Make sure the contractor takes you through the bid step by step, explaining all equipment and procedures in detail. And if there's anything you don't understand, don't hesitate to ask. A good contractor won't make you feel “dumb” about asking questions, and anyone who does is probably not someone you want to work with. Besides, it's better to ask all the questions upfront than it is to be caught by surprise later when you discover a big charge that you didn't understand.

And when you get bids, make sure you're getting bids on “the entire job.” Suppose you are buying a new furnace, for example. Some contractors focus on getting the sale by

just pricing “boxes” (equipment only) instead of offering a total solution. But the estimate should include things like fittings and adjustments required, any changes to the ductwork or piping, plus tuning, balancing and adjusting the entire system so that it all works together and works efficiently in your home, plus any required city permits.

It’s a bit of a hassle to do it this way, but in the long run, you’ll be glad you did.

PART THREE: AN OUNCE OF PREVENTION

**Tips that will save you money and grief by:
preventing plumbing, heating and air conditioning problems,
extending the life of your equipment, and
reducing unnecessary waste of water and fuel**

10. GO WITH THE FLOW: Tips on Avoiding Drain Problems

Q: Seems like something is always getting clogged in our house—either the kitchen sink, the toilet or the tub. Any tips for avoiding clogs?

A: Yes, there are several simple things you can do to prevent clogs.

Of Trash and Toys: Avoiding Clogged Toilets

To help prevent clogged toilets, keep in mind that the toilet is not a trash can. Except for toilet paper, other paper products such as soap wrappers or women's sanitary products should not be put into the toilet because they will expand and create blockage. Keep a wastebasket in the bathroom for items like this.

And, if you have small children, keep toys out of the bathroom and the lid down. A child may decide that the toilet makes a good “swimming pool” for their toys, and the next thing you know you have a clogged toilet.

Slivers and Coils: Eliminating Common Clogs in Showers and Sinks

The most common clogging culprits in showers and sinks are soap and human hair.

Hair is a real problem. It doesn't deteriorate, and, in fact, it coils up like a spring and builds up to lodge in the drainpipe. Check the strainers at the sink or tub drain outlets to make sure they are in proper condition and not worn. Good strainers will keep hair from going into the drain, lodging in clumps, and blocking the drains. However, remember to remove the hair the strainer catches after each use, otherwise hair will work its way into the drain. If you don't have drainers, you should install them.

The problem with soap is when you get down to that last sliver, and it ends up down the drain and contributes to the clog. You can prevent this by remembering to throw the soap in the wastebasket before it becomes a tiny sliver.

The Kitchen Sink: Keeping Clogs Out of the Kitchen

Of course, kitchen sinks are usually equipped with strainer baskets to keep food particles or other things from getting into the drain. (If your sink doesn't have a strainer basket, by all means buy one.)

However, grease, which will pass through the strainer, is a common cause of kitchen sink clogs. When cooking fatty goods, try to capture the grease and pour it into a cup or bowl rather than letting it go down the drain when you clean up. When the grease hardens in the cup, you can scrape it into the garbage. Also, after cleaning up greasy pots and plates, fill the sink with warm water and let it drain. This will help reduce grease buildup in the drainpipes.

And special care should be exercised in using a garbage disposal, if you have one. First, check the manual and make sure you know which food materials the disposal is designed to handle without becoming clogged. Second, when you put food scraps in the disposal, put them in loosely; tightly packed scraps can clog the machine. Third, make sure you're running cold water (not hot) when you're operating the disposal, and let the water keep running for a minute or two after you turn the disposal off to flush food residue out of the drainpipe. Also, when you're not using the disposal, it's a good idea to keep the cover on it so that stray kitchen items don't fall in and either clog or damage the machine.

Laundry Lessons: Avoiding Lint Clogs and Floods

To avoid clogs in laundry machines, clean out the lint trap in the washing machine after each use. Additionally, you can install a nylon mesh lint trap over the washing machine's discharge hose, to catch lint and keep it from entering the drain.

Also, after you've done your laundry, it's a good idea to turn off the shutoff valves on the hot and cold water lines that bring water into your machine. This is an especially good idea if you're going to be away from home for a while. Here's why: when you leave the water on, these water hoses will be under constant pressure, and if the water hoses happen to burst when you're away from home, you'll come home to a flooded laundry area.

The Brainy Drain: Protecting Your Plumbing When You're Away During Winter

Q: We're going to be away for three months during the winter. Should we drain our water system before we go?

A: Yes, draining is the smart thing to do. Obviously, if there's no water in the pipes, you're not going to have a problem with freezing. But there's more to consider, because draining down your water system only minimizes damage to pipes from freezing. Some pipes are level and won't drain back to the lowest point. If your heating system breaks down, your home temperature would drop well below freezing, and some pipes may freeze and split even though the main water is shut off and the system is drained down.

With this in mind, you should keep your heat on with the thermostat set at fifty-five degrees while you're away, because your heat is the main source to prevent pipes from freezing. Another form of protection is a heating monitor that will alert you in the event that your heating stops working. The device is simple to connect to your heating

equipment, it's affordable, and it uses your phone system to contact you—on your cell phone, for example—to let you know when your heating system is not working.

Another option that would ensure 100% protection to pipes and fixtures (in the event that the heating system breaks down) is to “winterize” your home. Winterizing a home involves pumping anti-freeze through all of the pipes and fixture traps, and disconnecting and pumping out your water heater. Call a plumber for this service because it requires special equipment and experience. When you come back home, the plumber will need to return to de-winterize your home, which involves reconnecting your water heater and flushing the system out.

Now that you know your options, here's the simple method of draining your water system. First, shut off the main valve that brings water into the house (near your water meter). If you have your own private well, the shutoff is located near the well holding tank (usually a blue tank). Then, turn on all of your water fixtures, both hot and cold lines, and leave them running. Turn off the electricity to your water heater at the electrical panel: locate a circuit breaker labeled for your water heater and switch it off. You could also use a garden hose to drain water from the tank. Hook up your garden hose at the drain located at the bottom of your water heater and run the other end to a low drain in your basement (like a floor drain or basement sink). Open all of your hot and cold water faucets to let air into your system and the tank will begin to drain. When water stops flowing, turn off the water heater drain and turn off all of the hot and cold water faucets. (You don't have to leave the faucets open, since your system will be mostly filled with air at this point.) When you come back home, turn on the main valve first, then turn on each fixture and let it run until all the air “bubbles” are out and the pipes are full of water again. Once your system is full, you can turn on the electricity to your water heater.

11. PLUG THE LEAKS: Tips on Conserving Water

Indoor Water Savings

Food Coloring in the Tank: The Leaky Toilet Test

Q: I think my toilet might be leaking, but I'm not sure. How can I tell?

A: A leaky toilet can waste about 200 gallons of water per day, and you might not know it. Water can leak from the toilet tank down into the bowl and then down the drain. Sometimes you will hear the toilet refilling even though you know no one has flushed it recently. If you suspect your toilet is leaking, here's a simple test. Remove the lid from the toilet tank, and if you have any coloring cleaning agents remove them. Flush to clear the water in the bowl, then put a few drops of food coloring *in the tank*. If the tank is leaking, color will appear in the bowl within 30 minutes, and you'll know you need to get the toilet repaired.

The Royal Flush: Saving Water With a Low-flow Toilet

Q: I have an old toilet and someone mentioned those new low-flow toilets. How much water do they actually save? Is it worth switching to a new toilet?

A: You can save a lot of water with a new low-flow toilet. Older model toilets use 3 gallons or more per flush, but since the mid-1990s, all new toilets have been designed to use 1.6 gallons of water per flush. So if your toilet is one of the older ones, you might want to consider purchasing a newer model.

You can also save water by avoiding unnecessary flushing of the toilet, and by disposing of tissues and other such waste in a trash can rather than in the toilet.

Faucet Faults: Finding and Fixing Common Faucet Problems

Q: Do some faucets waste water?

A: Yes, there are a few ways that a faucet can waste water. For example, a small faucet drip can add up to hundreds of gallons of wasted water every year. You can probably fix a drippy faucet yourself. Turn off the water to the faucet, remove the handle, and then the stem. Replace the stem or the washer and reinstall the parts.

Also, some faucets flow a lot faster than others, so the rate of flow in faucets is another factor to be aware of. For a bathroom faucet, a flow of about 1.5 gallons per minute is about right. For a kitchen faucet, you'll want 1.5 to 2.5 gallons per minute of flow. How can you tell how fast yours is flowing? Turn on your faucet and let the water flow into a container for 10 seconds. Then measure the amount of water and multiply by six to determine the flow per minute.

If your faucet flows above 2.5 gallons per minute, you can slow it down by installing an *aerator*—a circular screened disk, usually made of metal, that is screwed onto the head of the faucet. Aerators for kitchen faucets are available at hardware stores in a variety of spray patterns.

Watching the Wash: Avoiding Wasted Water in Washing Machines

Q: I know my washing machine uses a lot of water. Any ways to save water there?

A: Washing machines do use a lot of water. Here are a few tips that can help save water when doing your laundry.

- If your washer has variable settings for water volume, you can select the minimum amount required per load.
- If this is not possible, try to operate the washer only with full loads.
- Use the shortest wash cycle for lightly soiled loads. The normal and permanent press wash cycles use more water.
- Pre-treat stains to avoid rewashing.

Also, if you are replacing your washing machine, consider a water-efficient model. Some older machines can use as much as 56 gallons of water per load, but newer more efficient models use an average of 27 gallons per load.

Dishwashers, Defrosting and other Water-saving Details

Q: Any other ways to save water around the house?

A: Some of the same advice for washing machines also applies to automatic dishwashers. For example, try to operate the dishwasher only when you have a full load. And if you're replacing your dishwasher, consider a more water-efficient model.

And here are a couple of other tips for saving water in the home:

1. Defrost meat or other frozen foods overnight in the refrigerator, or by using the defrost setting on the microwave rather than running water to thaw out food.
2. Insulate your water pipes. You'll get hot water faster and avoid wasting water while it heats up.

Outdoor Water Savings

The Tuna Can Test: How to Avoid Over-watering Your Lawn

Q: How can you tell if you're over-watering your lawn?

A: Good question. Over-watering actually promotes weed growth, disease, and fungus.

How much water does your lawn need? The answer varies from region to region and can be affected by the condition of the lawn in question.

But let's take a standard amount for lawns in this area—about 2/10th of an inch per day. To determine if you are providing the right amount of water for your lawn, use the “tuna can” method. Place five to eight empty tuna cans with the tops off (or other cans of similar size) throughout the area where you are going to be watering your lawn. Water for a specific time, say 15 minutes, then measure the depth of water in each can. Average the measurements, and use this number to determine how long you need to water the area to apply 2/10ths of an inch of water.

Lawn Laws: Saving Water Through Proper Mowing and Fertilizing

Q: Any other tips on taking care of my lawn and saving water outdoors?

A: The way you mow or fertilize your lawn can also have a big impact on how much water it uses.

You should cut no more than one-third of the grass length. This encourages the grass roots to grow deeper and the grass blades to hold moisture. To accomplish this, cut your grass at the highest recommended height for your turf species or the highest setting on your lawn mower. Keep your mower blades sharp for a clean cut and leave short grass clippings where they fall. They reduce the lawn's need for water and fertilizer.

And speaking of fertilizer, use it in moderation. A 15-20 pound bag of fertilizer will usually be enough to feed a half-acre lot for an entire growing season. And lawns should only be fertilized during the growing season.

Here are a few more tips for conserving water outdoors:

- A garden hose that is left on can waste 600 gallons of water in one hour—so watch those hoses!
- Use hose washers between spigots and water hoses to eliminate leaks, and check all hoses, spigots and connectors regularly.
- Don't clean your sidewalk or driveway with a hose; that can waste hundreds of gallons of water. Use a broom instead.

12. STAY IN THE COMFORT ZONE: Tips on Maintaining Your Home Heating System

Q: What are some things I should be aware of to keep my heating system in good shape so it lasts longer and has fewer problems?

A: Manufacturers recommend that you have your heating equipment completely cleaned and tuned *every year*, and there are good reasons for this. Yearly tune-ups can reduce your fuel bill as much as 10%. They also help spot and correct problems and prevent them from causing breakdowns; and they even help extend the life of your equipment.

ClearView offers a special Service Partners maintenance plan which not only provides a complete annual Super Tune-up of your heating or air conditioning system, but also gives you special *discounted rates plus top priority service in any emergency*. Just click on [Service Partners](#) for more details.

In addition to getting annual tune-ups, here's a list of simple things you can do that will help keep your home heating system running smoothly.

- **FREQUENT FILTERS.** Check your furnace filters every month or two during the heating season, and if need be, replace them. Your service technician can show you how to do this.
- **DUST-FREE FANS.** Once a year, clean the fan blades and keep the area around the furnace free of dust, lint and litter.
- **SMOKE SIGNALS, ETC.** Be alert to trouble signals such as (a) black smoke rising from the chimney, (b) soot collecting at the burner, (c) strange odors, or (d) surging water in a boiler. These may indicate malfunction or improper adjustment, and you should get professional help.
- **OUT OF BALANCE?** If you have hot and cold spots in your home, or if one area of your home is getting more heat than it needs, your system probably needs to be balanced. A heating technician can do this for you.
- **LEAKING DUCTS?** Once a year, inspect your heating ducts to look for leaks. You can repair them with quality duct tape.
- **INSULATE DUCTS AND PIPES.** Heating ducts and water or steam pipes that pass through unheated areas, such as attics, crawl spaces and basements, should be covered with duct insulation or unfaced R-11 insulating batts or blankets. This adds up to energy saved for you.
- **BE A DUST BUSTER.** If you have radiators, convectors, or baseboard heating units, vacuum them regularly. Dust acts as insulation and wastes heat.
- **RADIATORS.** Once a year, you should bleed the air from hot-water radiators, because air in the lines inhibits circulation. Just open each radiator valve, hold a cup under it and keep it there until water begins to come out. This gets rid of the air.
- **USE THE RIGHT PAINT.** For the best performance, paint radiators with special radiator paint. Your hardware store can provide this for you.

- **DON'T BLOCK THE FLOW.** Don't block air inlets and outlets, including radiators, with furniture, drapes or clothing.

13. KEEP HEATING COSTS DOWN: Tips on Conserving Heating Fuel

Q: My heating costs are going through the roof, literally. What can I do to reduce my heating bill?

A: The costs of heating your home can be reduced by up to 20% simply by combining the right amount and type of insulation, using effective air sealing techniques, and installing windows that are appropriate for your climate. As a result, you'll have a more energy efficient home, and there are many benefits you'll gain from this:

- You'll save on heating bills, of course.
- You'll reduce drafts and maintain more even room temperatures, instead of having hot and cold spots in your house.
- You'll also control the moisture in the home, and reduce mold and mildew, which will extend the life of your home's building materials and possibly help reduce allergic problems.
- And you'll reduce noise transmission into your home.

The Insulation Equation

The best starting point is to check and make sure your home is well insulated, and that all gaps and holes where air can leak through are sealed. You may need to hire a professional contractor who will use a blower door test and other tools to determine where air may be leaking. If you have a crawl space, make sure that the insulation inside it is dry. When insulation gets wet, this reduces its effectiveness significantly.

Windows and Warmth

A lot of heat is lost through windows. You can help prevent some of this by installing weather stripping for moveable joints and caulk for non-moving parts, to stop or reduce air leakage. You can also install a window kit to the inside of your windows, which will help keep cold air out and warm air in. Ask your hardware store about window kits.

Check Your Ductwork

Check out your ductwork to see if you can detect any leakage. If you do feel air leaking at the joints, you can use silver metal duct tape to seal them. This alone could save up to 10% off your heating costs.

Save Money With Your Thermostat

You can save as much as 10% or more by simply turning down your thermostat a few degrees during the day when no one is in the home. Every degree you lower your thermostat could save you about 3% on your heating bill.

Saving Energy All Around the House

Remember, using a microwave to cook meals uses about half the energy of a conventional oven.

Vacuum the coils on the back of your refrigerator at least every three months. When dirt builds up on these coils, the refrigerator has to work harder to keep contents cool, so it uses more energy.

Of course, washing clothes in cold water can also save on energy. And here's another laundry tip: put a dry towel in the dryer with each load of wet clothes. The towel will absorb dampness and reduce drying time, saving energy and money.

Water Heater Conservation

Q: Is there anything I can do with my water heater to cut energy costs?

A: Yes, there are several ways to save on energy with your water heater.

Lower the Water Temperature

If you are going to be away from home for more than three days, turn your water heater thermostat down to the lowest setting to save money. Just remember to turn it back up when you return home.

You might consider lowering the temperature setting on your water heater. Some manufacturers set water heaters at 140 degrees F, but 120 to 130 degrees is sufficient for most household needs. The one exception to this is the automatic dishwasher. Many dishwasher detergents are formulated to clean effectively at 140 degrees F and may not perform adequately at lower temperatures. However, some dishwashers have a booster heater, and if yours does, then you could go ahead and lower the water heater below 140 degrees to save some money.

Wait Less for Hot Water

Do you have to wait for the water to heat up when you turn on a hot water faucet? That's because the water travels through cold pipes to get to the faucet. You can reduce this heat loss by insulating your hot water pipes, especially those that are in unheated areas of the house. You can also insulate your water heater. Use a pre-cut blanket or jacket for your pipes and water heater; they are inexpensive and easy to install. Or you can ask your heating contractor to do it for you.

14. STAY IN CONDITION: Tips on Maintaining Your Air Conditioning System

Q: In the past, I've had lots of problems with my air conditioning system. Are there some things I can do to avoid these problems?

A: Yes! Manufacturers highly recommend that you service your air conditioning system every year, to keep it running smoothly, to spot small problems and correct them before they cause big breakdowns, and to extend the life of your equipment.

ClearView offers a special Service Partners maintenance plan which not only provides a complete annual Super Tune-up of your heating or air conditioning system, but also gives you special *discounted rates* plus *top priority service in any emergency*. Just click on [Service Partners](#) for more details.

Here are some other simple things you can do to prevent problems.

Let Your Condenser Coils Breathe

If the condenser coils on your outdoor AC unit become dirty or blocked by leaves or other debris, this makes your unit work harder and increases your cooling bill. So clean the area around the condenser coil, removing any debris, and trimming back foliage if necessary, to allow for adequate air flow to your unit.

Keep Air Filters Clean

Keeping the air filter clean can lower your AC system's energy consumption by 5% to 15%! So check your unit's air filter once a month and clean or replace filters as needed. Your service contractor can show you how to do this.

Keep Condensation Lines Unplugged

Condensation lines drain away the moisture your air conditioner unit creates, so it's important to keep these lines clear. A plugged condensation drain can cause water damage in the house and affect indoor humidity levels. To keep the condensation line clear of mold and mildew, pour a small amount of household bleach into the line. Ask your service contractor to show you how to do this.

Keep Cool with Coolant

Make sure your system is not leaking coolant. If necessary, have a professional check this.

16. KEEP AIR CONDITIONING COSTS DOWN: Tips on Conserving Energy

Q: The cost of running my air conditioner keeps going up. Anything I can do about this?

A: Yes, there are several things you can do.

Increase the Thermostat Setting

Raise the thermostat if you're going to be out of the house during the day. Every degree you raise the thermostat can result in a 5%-8% savings on the cost of cooling your home. And when you are at home, try setting the thermostat a degree or two higher and see if you're still comfortable.

When you first turn on your air conditioner, don't set your thermostat at a colder than normal setting, thinking this will cool the house off faster. It won't. In fact, it could result in excessive cooling and unnecessary expense.

You might consider installing a programmable thermostat which will automatically raise or lower temperatures at preset times, to allow for times when you won't be at home. These items are inexpensive and they can save you about \$100 every year in energy costs.

Be a Fan of Fans

You can actually use a ceiling fan together with a central air conditioning system. The ceiling fan creates enough air movement in a room to make it feel about four degrees cooler, which allows you to set the thermostat a little higher than you normally would. And since the average ceiling fan uses about the same electricity as a 100-watt light bulb, you can run one for pennies a day.

Just make sure your ceiling fan is set for summertime operation: the high edge of the blade should go forward first, to force the air downward. You should feel the air blowing down on you when you stand beneath the fan when it's on. And only run the fan when you're in the room! It doesn't actually make the room cooler; it just *feels* cooler when you're in the breeze.

Having it Made...in the Shade

Another tip is to shade your outside air conditioner unit. A unit operating in the shade uses as much as 10% less electricity than the same one operating in the sun. So consider planting trees or shrubs nearby to shade the unit.

By the same token, you should look for ways to shade sun-exposed windows and exterior walls of your house. Direct sunlight streaming through windows during cooling season

can significantly increase your air conditioning costs. Consider using exterior window coverings or awnings, or planting trees or bushes wherever possible.

Keeping Cool—and Saving Money—All Around the House

Naturally, be sure that all windows are shut and outside doors are close when the AC is on. After all, you don't want to "cool the whole neighborhood."

Beware of having lamps, televisions or other heat sources near the air conditioner thermostat. Heat from these items might cause the air conditioner unit to run longer than it should.

And, of course, make sure that no furniture or other obstacles are blocking ducts or fans. You want the cool air to be able to circulate freely, to keep your home more comfortable.

Another common sense tip is, on the hottest days, to delay heat-generating activities such as cooking, laundry, and dishwashing, until later in the evening when it is cooler.

For further savings, you can seal off and turn off the cooling in unused areas such as storage rooms.

Appendix A

GETTING WARMER: 6 Things You Should Know *Before* You Buy a New Home Heating System

Buying a new home heating system is an important investment. The right system for your home will not only keep you and your family warm and safe, it will also run smoothly with minimal problems. It may significantly lower your monthly heating costs, and it can even enhance the value of your home. And, since this is an investment you'll probably live with for years to come, you'll want to invest wisely. So here are the 6 *Things You Should Know Before You Buy a New Home Heating System*.

1. BIGGER IS *NOT* BETTER!

One of the most common and most costly mistakes customers make when buying a new heating system is getting one that is *too big* for their home.

The EPA (Environmental Protection Agency) estimates that *nearly half of all existing heating equipment is over-sized, and that this results in 20% wasted energy each year!*

How does this happen? Many contractors simply replace an old system with the same size system or larger. Or they'll make a rough, ballpark guess on how large the system should be based on the square footage of your house. Or, homeowners who want to make sure their home is warm may ask for a bigger system, thinking that "bigger is better."

But, in the case of your home heating system, bigger is NOT better. If your heating system is over-sized, it will overheat quickly, cool down, then overheat again. Your house will cycle between feeling too warm and feeling too cool. This not only wastes energy, it also results in a home that is less comfortable, and it increases the wear and tear on your heating equipment and shortens its life.

Rule #1 is, don't buy an oversized system just because you want to make sure your home is warm. At ClearView, we help you determine the heating system that fits your size and style of house to keep the home at a nice even, comfortable temperature, with the most efficient effort, the least waste of energy, and the least wear and tear on equipment.

2. SMALLER AND CHEAPER IS ALSO NOT BETTER

Another common mistake is buying a new heating system that is too small to keep your home warm and comfortable.

There are two reasons why this happens. First, a contractor may recommend a smaller, less expensive heating system so that he can underbid everyone and get the job. He'll

look like the hero, because his price will be so much lower. But then, your system will struggle to keep your house warm on the coldest winter days.

Second, in the case of forced-air systems, the National Comfort Institute says, “Many air duct systems are improperly sized and installed. **It’s not unusual to see return air systems undersized by 30-50%! “**

If you’re air ducts are too small, your furnace will have to work harder to push the air through them and this results in equipment problems. **Many equipment problems and failures are often a result of improperly sized and installed air duct systems.**

So Rule #2 is to make sure you buy a big enough system to keep your home warm and comfortable without straining your equipment. How can you make sure you get the heating system that is *just right* for your size and style of home?

3. THE CONTRACTOR YOU WORK WITH SHOULD REALLY DO HIS OR HER HOMEWORK

The EPA states that you should “only hire a contractor who asks questions, measures windows, doors, floors, ceilings, checks insulation, calculates a cooling load, and fixes system problems that may compromise comfort and cost you money.”

At ClearView, we never recommend a heating system without first doing a complete analysis of your home and checking a list of factors that include:

- The size and style of your house
- How well insulated or airtight it is
- How much useful solar energy comes in through the windows
- How much heat the lights and appliances give off
- The condition of ducts and pipes
- Your typical thermostat settings
- The number of occupants in the home

We take all of these factors into account by doing a computer load calculation. We measure all rooms, check insulation, check windows and doors, and input all data into special industry software to calculate heat loss/gain. Then we also ask you a lot of questions, such as:

- Are there any drafty areas in the home?
- Do you have moisture problems?
- Do you have hot or cold rooms?
- Are you about to make any changes to your home?
- How have your heating bills been running (he or she should ask to review past bills).

All of this information helps us determine how much heat the heating system must generate on the coldest days in order to keep you comfortable.

We also do *infiltrometer blower door tests* as well as *duct leakage tests*. These tests help determine exactly where and how your house might be leaking air, and what you can do about it. These tests will show you ways to make your home more comfortable while lowering your monthly utility bills. They may also suggest ways to reduce respiratory allergy suffering by keeping outdoor dust and pollen out of your house.

4. HOW WELL YOUR SYSTEM IS INSTALLED IS AS IMPORTANT AS THE SYSTEM ITSELF

On average, about 65% of how well a piece of equipment performs is directly related to how well the “complete system” is designed, installed, and calibrated. So even with the right equipment, if your heating system is not *installed* properly, you could end up with higher energy costs and a less comfortable home—not a comforting thought!

Bad installation accounts for the loss of 30% to 50% of the heat in many homes. And Service Thrust (a national industry best practices group) found that **over 66% of equipment failure is a result of poor installation and lack of proper maintenance.**

At ClearView, we make sure all the elements of your heating system are tuned and adjusted to work together properly. For example, we will *balance the air flow*” by making sure that the setting on the furnace fan is matched to the size and characteristics of your ductwork and also to the characteristics of your furnace. This will help ensure that the air flows smoothly through your home, so that you get a consistently warm and comfortable home without annoying hot and cold spots.

We also customize and tweak the setup and operation of your new equipment and entire new system so that it operates at peak performance and efficiency *within the unique conditions of your home*.

For example, our installations always include *tuning your furnace or boiler and testing them for efficiency*. This is important because heating equipment which was tuned and adjusted at the factory is probably not tuned and adjusted to work in your home, since your home does not mirror the factory’s environment.

5. THE ONGOING COSTS OF OPERATION ARE AS IMPORTANT AS THE UPFRONT COSTS OF PURCHASE AND INSTALLATION

To determine which model is the best buy for your needs, you need to compare not only the initial cost to buy and install the system, but also how much it will cost you, on average, to operate your system.

Make sure you know the energy efficiency of the system you are getting. Older, conventional furnaces or boilers can often have an energy efficiency lower than 65%. Today’s more efficient heating systems have efficiency ratings that range from 78% to 97% for forced air systems and 80% to 95% for hot water systems. That’s why

upgrading to a new, more efficient system has the potential for reducing your monthly heating bills by 20-40%.

The extra money you spend for a high-efficiency model will pay you back in energy savings in a relatively short time. For example, suppose you are choosing between a unit with an efficiency rating of 78% and one with a rating of 93%. The higher-efficiency system will cost \$500 more, but will probably save you, on average, about \$137 each year in operating costs. So you will recover the \$500 additional upfront cost in less than five years.

If you are not planning to stay in the home long enough to reach the payback point, you may wish to choose a lower-priced model. But remember, a high-efficiency heating system can be a good selling point when it comes time to sell your home.

Request a **Free, No-obligation Home Heating Survey** from ClearView, and one of our heating technicians will come out and assist you in determining how much you can actually expect to save in monthly heating costs by upgrading to a more efficient system.

6. IT'S IMPORTANT TO THINK "OUTSIDE THE BOX"

Many contractors focus on getting the sale by pricing "boxes" (equipment only) instead of offering total solutions. But to get the heating system that is just right for your home, you have to "think outside the box" and realize that there is a lot more to your heating system than just a "box in the basement."

So when you are getting bids from companies, don't just get a bid for installing a new furnace or boiler. You should also get bids on the cost of buying and installing *a complete new system*, including any fittings and adjustments required and any changes to the ductwork and piping, plus balancing and adjusting the whole system to work together.

It may cost more to have everything done right, but the benefits and the payback are almost always well worth it. Remember: you are investing for the long term. The system you finally get will affect your comfort and your heating bills every month of every winter. Keep in mind that the contractor who offers the lowest bid may not spend the time to do a good job.

Appendix B

COOL FACTS: 5 Things You Should Know *Before* You Buy a New Home Air Conditioning System

Buying a new central air conditioning system is an important investment. The right system for your home will not only keep you and your family cool and comfortable, it will also run smoothly with minimal problems. It will also run efficiently to keep energy costs down and protect the environment, and it can even enhance the value of your home. And since this is an investment you'll probably live with for years to come, you'll want to invest wisely. So here are the *5 Things You Should Know Before You Buy a New Home Air Conditioning System*.

1. DON'T GET A SYSTEM THAT IS TOO BIG OR TOO SMALL.

You'll want to avoid the two most common mistakes people make when buying an air conditioning system: they get a system that is either too big or too small for their home.

The EPA (Environmental Protection Agency) estimates that nearly half of all existing air conditioning equipment is over-sized! They estimate that this costs 20% each year in wasted energy!

An oversized central AC system will turn on and off too frequently, which will wear down your equipment as well as waste electricity. This frequent cycling will also make your indoor temperatures fluctuate up and down more, resulting in a less comfortable environment. Plus, the larger system will cost you more upfront!

Also an oversize unit will lower temperature too quickly and then turn off *before removing the appropriate amount of humidity*. That's why homes with oversize units feel cold and clammy, or chilled, because the air is cold and damp.

Likewise, a system that is too small for your home will also overwork the air conditioner and it may fail to keep your home adequately cool. Such a unit will lower humidity, but will not lower the temperature enough, so the air will feel dry but warm—and the system will run all the time.

Also, if you are installing an air duct system, beware of undersized air ducts that can lead to equipment failure. The National Comfort Institute states, **“It's not unusual to see return air systems undersized by 30-50%. In fact, equipment problems including compressor burnout, frozen indoor air conditioning coils...are often a result of improperly placed and installed air distribution systems.”**

At ClearView, we'll make sure you get the system that is just right for your home and your needs (see #3 below).

2. SEE THE “SEER” RATING OF YOUR AC SYSTEM.

To keep monthly utility costs down—and to protect the environment—you also want to make sure you get an AC system that is energy efficient. Today’s best air conditioners use 30% to 50% less energy than air conditioners made in the mid 1970s. **Even if your air conditioner is only 10 years old, you may be able to save 20% to 40% of your monthly energy costs by upgrading to a newer, more efficient model.**

Central air conditioners are rated according to their Seasonal Energy Efficiency Ratio (SEER). The higher the SEER value, the more efficient the air conditioner. These ratings are posted on an Energy Guide Label, which must be attached to all new air conditioners.

Many older central ACs achieve SEER ratings of only 6 or 7. But in 1992, the national efficiency standard for central ACs took effect requiring a minimum SEER of 10. However, in 2006, new standards are set to take effect which will raise the minimum SEER requirement to 13.

When you are purchasing a new system, you should check with your contractor to see the specific SEER value for the system you are considering. For the most efficient system, a SEER of at least 14.5 is recommended by the American Council for an Energy-Efficient Economy (ACEEE).

Also, for efficiency when it is needed most (on the hottest days), be sure that your unit has a TXV (thermal expansion valve) plus an EER (high temperature rating) greater than 11.6.

Buy the most efficient air conditioner you can afford, especially if you think you will use it a lot and/or if your electricity rates are high.

3. THE CONTRACTOR YOU WORK WITH SHOULD REALLY DO HIS OR HER HOMEWORK.

The EPA states that you should “only hire a contractor who asks questions, measures windows, doors, floors, ceilings, checks insulation, calculates a cooling load, and fixes system problems that may compromise comfort and cost you money.”

At ClearView, we never recommend a central AC system without first doing a complete analysis of your home and checking a list of factors that include:

- The size and style of your house and how many windows it has
- How well insulated or airtight it is
- How much solar energy comes in through the windows
- How much shade is on your home’s windows, walls, and roof
- How much heat the lights and appliances give off
- Your typical thermostat settings
- The number of occupants in the home

- How much air leaks into your home from the outside

We take all of these factors into account by doing a computer load calculation. We measure all rooms, check insulation, check windows and doors, and input all data into special industry software to calculate cooling load.

Then we also ask you a lot of questions, such as:

- Do you have moisture problems?
- Do you have hot or cold rooms?
- Are you about to make any changes to your home?
- How have your energy bills been running (a contractor should ask to review past bills).

All of this information helps us determine how much cool air the system must generate on the hottest days in order to keep you comfortable.

4. ALL THE ELEMENTS OF YOUR AC SYSTEM SHOULD BE DESIGNED, INSTALLED, AND TUNED TO WORK TOGETHER.

About 65% of how well a piece of air conditioning equipment performs is directly related to how well the “complete system” is designed, installed and calibrated. (Which is why Consumer Reports does not rate the overall performance of central AC equipment.)

Service Thrust (a national industry best practices group) found that **over 66% of equipment failure is a result of poor installation and lack of proper tuning and maintenance.**

Here’s an example. Our systems are designed to remove heat and humidity from your house and then bring cool, comfortable “conditioned” air into your house. As we do this, it’s very important that the air be *distributed evenly, room by room*, based on each room’s requirements. If the system is not designed and installed properly, it will lack **EVEN** and **PROPER** air circulation throughout the home, and the result will be uneven temperature and humidity control—uneven comfort levels.

This kind of improper airflow is not uncommon! It results from poor ductwork design and is the leading cause of discomfort and dissatisfaction with AC systems! It can also reduce efficiency of the equipment by as much as 60%! So it is critical that you work with someone who knows how to evaluate the complete air distribution system during the design and proposal process.

At ClearView, we make sure that all the components of your new system are matched, tuned and designed to work together. We will customize and tweak the setup and operation of your new equipment so that it operates at peak performance and efficiency within the unique conditions of your home.

5. IT'S IMPORTANT TO THINK "OUTSIDE THE BOX"

Many contractors focus on getting the sale by pricing "boxes" (equipment only) instead of offering total solutions. But to get the air conditioning system that is just right for your home, you have to think "outside the box."

So when you are getting bids from companies for installing a new air conditioner, don't just get bids for the equipment only. You should also get bids on the cost of buying and installing *a complete new system*, including any changes to the ductwork, plus balancing and adjusting the whole system to work together.

It may cost more to have everything done right, but the benefits and the payback are almost always well worth it. Remember: you are investing in the long term. The system you finally get will affect your comfort and your energy bills every month of every summer. Keep in mind that the contractor who offers the lowest bid may not spend the time to do a good job.