



## ***The Quantum Quote***

Issue 8, April 2012

About five months ago we were told that our website platform, which had faithfully served for many years, was passing from the mortal plane. I'm pleased to announce that our new website is up and running. Check it out ([www.quantumci.com](http://www.quantumci.com)) and let us know what you think!

Are you a leader (or do you want to be one)? Leadership Skagit is taking applications for the Class of 2013. I can say from personal experience that Leadership Skagit is one of the absolute best ways to learn about Skagit County and the challenges it presents to us as business and organization leaders. If you apply by May 14th you qualify for a \$100 early bird discount. Email or call me if you have any specific questions about the program as I'm knee deep getting ready to graduate with the Class of 2012! We'll also have a booth at the [EDASC SchmoozeFair](#) tonight. You can stop by and see me there between 4pm and 5:30.

I'd like to include a nod to Roland Reetz, one of our four superintendents. Two days ago he celebrated 22 years with Quantum (and still going strong)!

Finally, if you missed the SICBA Home and Garden Show, here's a picture of our completed Pirate Ship with an award winning landscape! Yes, I added koi to the pond, I admit it!



*Quantum's Pirate Ship Playhouse, benefiting Sea Venture Scouts Crew 4081 with*

landscaping by [Hillman's Tranquil Hardscapes](#).

Until June!

Josh  
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## **Safety Corner**

### ***Sharp for Safety***

There are two types of people in life- those with sharp knives and those with dull ones. If you ask someone in the latter category why, the answer is usually something like "I don't sharpen them because I don't want to cut myself." Truth be told, you're most likely to cut yourself with a dull knife. Here's why.

Sharp knives cut more easily. That means that you have more control with a sharp knife. Dull knives, on the other hand, require much more force for the same cutting, which translates to less control. Less control and more force means you're much more likely to slip and cut yourself. Would you want a surgeon operating on you to use a dull scalpel, or stitch you up with a dull needle?

The benefit of sharp blades extends from construction to crafts to kitchen (to surgery table). If you're hanging out in the "dull knife" camp, do yourself a favor and invest in some good quality knives and a good sharpener. Your epidermis will thank you!

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## **Charity Choice & Last Month's Winner**

If you recall, we mixed up the Charity Choice for February. All of us know someone who has been affected by cancer. February's Charity Choice went towards those who have no choice, sponsoring the American Cancer Society through the Anacortes Relay for Life and the Anacortes Rotary Club. Please keep cancer victims and survivors in your thoughts and prayers. If you'd like to contribute to the Anacortes Relay for Life, you can do so [here](#).

Please send in your votes for April's Charity Choice!

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## **Sustainable and Efficient**

### ***Passive Solar***

What's the first thing that pops into your mind when you read the word "solar?" Dark panels covering the top of a modern building? Acres of mirrors in the middle of a desert that concentrate all that sunlight on an energy-generating tower? High tech cars made by colleges for competitions? Me too. Those refer to what are known as active solar systems, designed to harness solar energy. They're great systems, a clean, free source of green power. But there's another kind of solar power that each of us experiences each day: passive solar.

Think of passive solar as raw energy, which we experience as heat. A cat napping in front of a window on a sunny day is taking advantage of it, as are agricultural greenhouses. When your home overheats and cooks you in the hottest days of July and August, you're experiencing passive solar!

Most homes (and businesses) are not designed with passive solar in mind. Perhaps the most important factor in passive solar is the location and size of glazing (windows). In the Northwest, with our beautiful mountains, bays, fields and forests, much more thought is put into panoramic views than where the sun will hit. Properly designed, however, passive solar can significantly lower your heating bill in the winter *AND* keep your living space cooler on hot summer days. The key is to

control how much sun comes in, when, and where it hits.

The first design step to collecting solar energy is to designate a collector, typically a bank of south facing windows in the U.S. There are all kinds of fancy calculations and models that will help you figure out how much is enough, depending on factors such as home size and insulation values. The next step is to designate an absorber with thermal mass. A dark tile floor is a good example; the color aids in absorption of solar heat while the mass of the tile warms up and continues to radiate it back after the sun goes down. Next, there needs to be a method to distribute the solar heat throughout the building, which can range from a forced air system to properly locating your thermal mass.

The final step to passive solar energy collection is control. After all, you want to heat up your house in the winter, but keep it cool in the summer. Since you can't just turn off the Sun, you need to limit how much solar energy comes in. The most common way to do this is by properly sizing and placing window overhangs. In the northern hemisphere, the sun is nearly overhead in the summer, so an overhang blocks much of the solar energy (light). By the same token, the sun is lower in the winter, beaming in under those overhangs and warming the building.

Another fun approach for controlling solar gain in honor of [Earth Day](#)? Plant deciduous trees near the windows, which will offer shade in the summer and shed their leaves for more light in the fall.

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## Building, Start to Finish: Part 4

In our last issue, we left readers with a building that was starting to take shape. Today we'll start to add electrical, mechanical, siding and our roof. In truth, our electrical and mechanical contractors have been working on the project since the beginning, installing temporary utilities, trenching and conduits in the foundation. Mechanical includes plumbing and heating, ventilation, and air conditioning (HVAC). The lines begin trades tend to get a little fuzzy here. On some projects, you'll have three subcontractors for HVAC, plumbing and electrical. On others, the electrician might provide heating or a single company handle mechanical. We'll tackle all three together, breaking out specifics as necessary.

### Roofing and Siding

Roofing and siding share many common characteristics. They both protect your home from the elements, affect heating and cooling, and even share many common materials. The most common roofing materials in the Northwest and their projected life spans are composition shingle (20 years to lifetime), wood shakes (20 to 25 years), and metal (20 years to lifetime). Other roofing materials can include tile, rubber tile, concrete tile, and torch-down or membrane roofs. Common siding materials include wood (shake, plank, board and batten), fiber cement (JamesHardie or LP products which mimic wood), metal, stucco or plaster, and brick. When choosing siding and roofing, visual design is often the first factor to consider. A house in plaster and tile may remind people of an Italian villa, while the same house in cedar shake roofing and horizontal plank siding would look right at home on a farm, so appearance usually take precedence. Price is the other big factor, and can vary not only by material but by the structure's design as well. For example, metal roofing is fairly easy to install on a single peak rambler. On a house with a large number of peaks, however, the price begins to jump quickly as full metal sheets are cut to accommodate the various angles. Composition shingles and shakes don't face that challenge.

While the different materials boast different strengths, the common factor is installation. Poor installation is simply begging for water damage, mold, rot, and warping. Part of this stretches back to the design phase. A large roof should shed water at evenly spaced points. If angles, peaks and valleys force all that water into one or two spots, it's much harder to control. Another key to installation is proper flashing. Flashing is typically metal (if exposed) or a synthetic (if hidden), and has the simple purpose of keeping water out of your house. When a window is installed, proper flashing is what keeps water from seeping into the house and behind the siding. It's also used where roofing meets siding and around roofing protrusions

such as vent pipes and chimneys. Lastly, it's important to note that what's under the siding and roofing is as important as what's on top. For example, many builders are now looking at draining house wraps and techniques, which allow water to exit when it does get under the siding.

#### Tips to Savings

Compare reputable manufacturers and installers, but the short answer is that you shouldn't try to save a bundle on roofing and siding. Let's put it this way: if you were planning to spend 30 years exposed to the elements, you'd probably invest in some decent rain gear!

#### Tips to Success

If they haven't already, ask your architect or designer to overlay your desired siding and roofing onto the plans so that you can better visualize the finished product. Look up pictures of similar houses to see what you like or don't like. If you have concern about the quality of installation, an easy trick is to ask a company how they prevent water from getting in. The correct answer is "proper flashing," not "caulk." Caulk products, while useful, especially for visual appeal, typically offer only a few years of protection depending on product, exposure to sunlight and installation. It's a good practice to use caulk, but only in addition to adequate flashing.

### **Electrical and Mechanical**

With our roof and siding offering good weather protection, we're at a stage called "rough-in." Our subcontractors (electrical, plumbing, HVAC) will be installing pipes, conduits, outlet boxes, and ducts, and will come back later in the project to install our fixtures, such as toilets and lights. The plumber should install first, followed by HVAC and then the electrician. Often there may be some overlap while they work simultaneously.

#### Tips for Savings

Your contractor should "right size" the appropriate electrician, plumber and HVAC contractor. A large commercial HVAC company can work on a house, but the cost may be higher. Likewise, a small company may hold up the schedule on a large project, and time *is* money.

Feel free to shop around, but don't plan to order all of your fixtures online. If your master bathroom toilet breaks or arrives without all the bits and pieces, you want to be able to walk into a supplier and get a replacement, not wait for a return email. Additionally, your installer is unlikely to provide a warranty on items that you purchase separately.

#### Tips for Success

Make sure your electrician, plumber and HVAC contractors coordinate with each other and with your general contractor as to who is planning to run what and where, preferably before framing. Conflicts can sometimes occur in tight quarters such as small mechanical rooms. And again, pick companies with the right skill set for what you're building.

Envision how you will use the space and plan accordingly to ensure that outlets, sinks, light switches and appliances are in just the right space. Finally, listen to subcontractors if they voice concerns. They've probably seen the same situation a dozen times prior.

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[Quantum Construction, Inc.](#) is a family-owned general contractor based in Anacortes, WA. Quantum has been building high quality commercial, custom residential and industrial projects since 1984. For information on how we can give you the best building experience, please contact us by [email](#) or by phone at (360) 293-0656.





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