

Earth-Wiser Remodeling

“I’ll have cork floors!” my friend effused about her new “green” remodel. *And where does cork grow in Southern California?* I wondered.

Watch any construction site. Building and remodeling is highly materials-intensive, from the materials which are stripped out of the old structure and carted to the landfill, to the inbound materials and packaging. All of these materials come to your site by way of fossil fuels (with accompanying greenhouse gas emissions, and the human cost of oil wars). When the Union of Concerned Scientists lists home building and remodeling as one of the 10 most environmentally detrimental human activities, it is important for us to plan our building activities wisely.

1) Do you really need to remodel? Most remodels in my neighborhood are done for fashion, pure and simply. The home’s finishes are considered “dated” and the owners want to show off their wealth. Portions of the home which still functioned just fine are torn out and thrown “away.” Remember, there is no magic place called “away.” Stovetops, cabinets, bathtubs, every one of these items (very heavy items, I might add) require significant earth’s resources to manufacture, transport and install. A remodel done for fashion is pure consumerism and waste.

Many of my neighbors’ lots are being built out, creating an oversize mansion that stretches lotline to lotline. 4,000+ square foot city houses, all for one family. In addition to the materials to create these monsters, and to fill them with furniture and decor, all of this space needs to be heated each winter, and cooled each summer. The footprint of the house leaves no exterior space on the property – no place for a garden, no place to sit outdoors, no place to meet and visit with the neighbors. We joked that the house across the street hadn’t enough yard to allow their dog to poop; they’d have to take the dog to neighbors’ lawns. These houses are entirely designed to jump in automobile and drive *away*. Mansionizing is blatant excess.

There are valid reasons to remodel. As you read the suggestions below, you’ll realize that most of our current homes are in desperate need of an environmental upgrade. If you’re going to remodel now, as an aware person, double-up on your remodel dollars. Invest once and gain twice. Gain the fresh appearance of “new,” and gain an earth-wiser home for the future, all for the same investment of time, materials, energy consumption, and cash.

2) Passive solar attributes. *Active solar* means that photovoltaic panels create your electricity. *Passive solar* means designing the new structure so that the sun’s natural path works to your advantage in heating and cooling. While Southern California hillside or waterfront homes focus on the view, most of our structures are designed for street frontage, with sole focus to maximize the tiny lot the developer sliced out of the land. Little consideration is given for the path of the sun. Which windows will bake in the summer? Where you will lose heat in the winter? How does the natural breeze flow? Passive solar elements include eaves calculated to shade summer sun but admit winter warmth; deciduous trees to shade roofs; high levels of insulation; insulated-pane and functional (opening) windows, exterior shades, and much more. These features do more than just keep you comfortable. They can significantly reduce the energy requirements your home will demand for the duration of its useful life (potentially 50+ years). If you are going through the highly energy-intensive and material-intensive process of a remodel, include the sun as a partner in your design.

3) Energy efficiency. We are, quite frankly, at the end of an era. The era of cheap fossil fuels is coming to a close, and global warming issues demand that we substantially reduce our carbon emissions. Most of our electricity is produced using filthy coal – filthy in its particulate pollution (visible air pollution), filthy in its production (the lives of the coal miners), filthy in its greenhouse gas emissions (it’s one of the worst). Any new construction at this point in time really must maximize energy efficiency.

I recently had to replace my refrigerator. The Energy Star ratings on appliances give some help, but a conscientious consumer must dig deeper. While the EPA grants Energy Star ratings to the best models in each category, a side-by-side refrigerator or an icemaker feature will demand far more energy each year than a simple top-and-bottom model. As you buy furnaces and washing machines, you have to do your homework.

We are, temporarily, in an electronic-gadget age. Many things which weren’t run on electricity (or batteries) in our grandparents’ day carry computer chips today. Look around your existing home, and count the number of gadgets which are plugged in (or even hard-wired). How many have little clocks? Extra battery chargers? How

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many have standby modes, waiting for a signal from a remote? These gadgets suck low levels of electricity 24-7. Called “phantom drain,” it’s estimated that 5% of each U.S. home’s electricity goes to power these items, which are waiting in readiness when we’re not even home. Wire your new home with a master switch at the door of each room, so that you can turn everything completely OFF when you leave. And as you design your new home, plan for the future – figure out which things don’t really *need* to have electricity and select mechanical power-free models instead.

4) Water efficiency. In a “normal” year, our Southern California area doesn’t get measurable precipitation from March to November, and in an age of climate change, our rainfall is proving to be even less reliable. The water that flows from your tap comes from Colorado or Northern California. The pumps that bring your water account for more than 6.5% of California’s total electricity consumption. In other words, saving water around here isn’t just about water – it’s also an energy savings issue (and thus a fossil fuel consumption issue, a particulate pollution issue, and a greenhouse gas emissions issue).

Conventional “water efficient” design often stops at selecting a low-flow toilet and washing machine. But water-wisdom can include so much more. Toilets can flush using reused water from the sink. Rinse water from the washer can irrigate your trees. Gutters can capture and save rainwater. Outdoor grading can encourage water to soak into the land, reducing irrigation requirements. Porous outdoor surfaces (patios, paths, driveways) allow water to replenish the massive groundwater caches beneath us. Irrigation systems should be drip, to reduce runoff and evaporation by allowing water to seep into the soil at a rate at which the soil can absorb it. Popular Southern California landscaping plants are typically high-water tropicals; wiser plant selections would include low-water needs xeriscape plants and California natives which are already accustomed to less water. Gotta have a lush green aesthetic? Invest your landscape water in obtaining a yield – plant edibles!

5) Materials. This is where “green” remodeling usually begins (but it’s also where “green” remodeling often stops). Any construction is a materials-intense process. First, consider the quantity. What can I reuse? How much old stuff do I really need to replace? Where can I reduce? It behooves us to pay attention to what the new materials are. Are they chemical-laden, which will off-gas for years and make us sick? Are they quickly renewable (like bamboo) or not (like teak)? Does their manufacture demand reasonable – or extraordinary – amounts of the earth’s resources? Thinking of my friend with the cork floor, how far around the world are these materials transported? Perhaps a more local material instead? Overall, what does it cost the earth to get your materials to your building site? Green builders, green building catalogs and resource centers are popping up all around us. Conventional manufacturers are eager to jump onto this new avenue for profits. Be an aware consumer. Do your homework. Read product reviews, and think of the big picture. In the long run, is this material, which is marketed as “green,” really more Sustainable, more in keeping with the cycles of the earth?

6) Location-Location-Location. It’s the punchline in jokes about realtors, but it’s a very real consideration as we move into a future with less energy resources. In my ReLocalization handout I discuss reducing our circles of commute. How far is it to your job? How close are you to vendors and suppliers you use frequently? Can you bicycle there? How close are you to mass-transit? How is the community, the sense of neighborhood? At times we own a piece of real estate but we know we’ll be moving on in 3 or 5 years; we’re short-term tenants. Is it really worth it, to remodel this property? Before you embark on a full-scale construction process, with all of the waste and consumption that entails, take some time to consider whether the property you hold is really the right property for you.

7) Love-of-home. In the “power-down” world of coming decades (that’s the term for using less energy and carbon emissions), we’ll be reducing our commute circles. We’ll be traveling far less (yay, no sitting in freeway traffic!). We’ll be staying much closer to the place we sleep at night. What power-free activities do you and your family enjoy? Gardening? How can you include water-wise food production on your property? Handcrafts? Perhaps your remodel needs a place for woodworking or for your knitting stash. Cooking? Create that counter space and pantry storage now. Do you need comfortable well-lit passive solar nooks to read or write? This place will be your home for a long time. Plan for the long-term future. Plan to love it.

Resources about the above topics are available through <http://www.legacyla.net/transformation/?p=242>

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