

STOP THE DEBATE ON GREEN PRODUCTS

by Bob Alf Construction

Do I say this just to “catch your eye”? Yes... and.... No. Green home improvement products are everywhere! And for some us, debating which ones are slightly more sustainable consumes a surprising amount of time. These products are helpful in a sustainable home remodeling project, but not at the expense of the big-picture. For example, how sustainable is it to pay a premium for recycled wall tiles for your new kitchen when your home is leaking lots of warm air in the Winter? The following is just one of many strategies ... as opposed to specific products ... that can lead to savings and sustainability.

THE SEQUENCING STRATEGY that Provides you Secret Savings:

We all enjoy newly remodeled spaces (FUN). But sometimes we have to spend money to repair/replace items already in our home (YUCK)! Secret savings are awaiting those are willing to proactively **sequence** the YUCK with all of the FUN.

Let’s consider an example:

FUN: Kitchen- full remodel

YUCK:

- Water Heater 13 yrs old ... (12-15 avg life)
- Furnace 20 yrs old (22-30 avg life)
- Chimney Crumbling..... need re-build in approx 5 yrs
- Roof 5 yrs old..... (13-20 avg life)
- Insulation & Air Barriers..... Attic: cellulose but air-gaps
Walls: no insul.

Sequence A is the most common approach that contractors and homeowners take: Do the fun remodel soon as you have the cash and then react to broken systems when you “have to”. In the example above, this meant spending \$30k on a kitchen remodel which included beautiful new cabinets, new flooring, new appliances, repainting and a new location for the sink. Ahh... but a few years later the water heater gives out and soaks the basement. In panic mode, Pat (our homeowner) calls Ms. Plumber who charges extra for same day service. Ms. Plumber installs the same kind of (low efficiency) tank-type water heater which still exhausts through the chimney. This reminds Pat that the furnace is old and the chimney needs to be rebuilt. So Pat now decides to fix these before serious operational or safety issues happen. Finally, about 10 years after the remodel, Pat has the roof replaced before it starts leaking. Here is the summary:

		Sequence A	
		Costs	Savings
2008	Kitchen Remodel	\$30k	
2013	Water heater gives out... damage to personal items	1k	
	Water heater replace (tank-type .60 efficiency factor (EF))	1k	

		Sequence A	
	Furnace replace (93% efficient & sidewall vented)	4k	
	Chimney Replace	5k	
2018	Energy Savings from new furnace (last 5 years) *		1.7k
	Roof replaced	9k	
TOTALS		50k	1.7k
NET COSTS		48.3K	



When old water heaters give out, they often spill lots of water. This makes them one of those exceptions to the environmental rule: “use it as long as possible”.

Sequence B takes a bit of planning, strategizing and a little patience, but the savings and added sustainability are significant. Before the Kitchen remodel, Pat carefully reviewed the assessment of the home and saw opportunities to reduce future costs by proactively **sequencing** all of her home improvements. This meant replacing her water heater plus doing some insulating/air sealing at the same time as the kitchen remodel. Since the remodel + water heater + insulation/air sealing would far exceed her budget of \$30k, Pat chose to delay purchasing the new refrigerator for a few years. Plus she decided it was no big deal to keep the kitchen sink in the same location to save on plumbing costs. Now her first year costs were now down to \$32k... close enough to her budget. Ahh, but many savings now flow from here. First is the Energy Savings from both the water heater and insulation/air sealing that accumulate year by year. Second is that the old water heater does give out and damage personal items in the basement. Then, because the tankless water heat exhausts through the sidewall (same as the new furnace), the chimney can actually be removed at a much lower cost than being rebuilt. And finally, replacing the roof costs less since there is no need to meticulously flash around the chimney. Here is the summary:

		Sequence B	
		Costs	Savings
2008	Kitchen Remodel	\$24k	
	Water heater replaced (tankless .98 EF, sidewall vent)	3k	
	Insulation added to sidewalls & air seal entire house	5k	
2013	Energy savings from last 5 years *		3k
	Refrigerator replaced (energy star model)	1k	
	Furnace replace (93% efficient & sidewall vented)	4k	
	Chimney removed and roof patched	2.5k	
2018	Energy Savings from last 5 years *		4.2k
	Roof replaced but zero chimney flashing	8k	
TOTALS		47.5k	7.2k
NET COSTS		40.3	

Summary:

Wow... this is \$8,000 in lower Net Costs!!! And dropping every year from continued energy savings!!! In addition, Sequence B resulted in a cascade of other benefits including reduced frustrations from no flooding in the basement, much longer expected life span on the water heater (20-25 yrs), endless hot water, faster hot water to a far-away sink, much lower risk of water damage from failed chimney flashing, much lower CO2 (global warming) and NOx (pollution) emissions, and reduced radon and cold-air infiltration in the basement. It is clear that environmental as well as Pat's financial sustainability were the clear winners from this sequencing strategy.

Even if you are drawn to green products (like I am), do yourself and the environment a favor ... find out what your sequencing opportunities are.

* Energy Savings Assumed: (1) natural gas price increase 35% in '08 (July '08 prediction by major gas suppliers) and 8%/yr thereafter, (2) Savings will vary dramatically by home as these calculations were simply for illustration purposes.

Resources		
Bob Alf Construction 1657 Marshall Ave. St. Paul, MN 55104 651-206-1937 // www.bobalfconstruction.com <i>(for remodeling and/or construction coaching)</i>	www.retrofoam.com <i>spray foam into existing wall cavities; likely better performance than cellulose</i>	Natural Capitalism by Hawken, Lovins, Hunter Lovins pub: Little, Brown and Company 1999
Blaylock Plumbing (Nate) 7731 Fourth Ave South Richfield, MN 55423 612-869-7531 // www.blaylockplumbing.com <i>(for energy efficient water heaters)</i>	www.navienamerica.com <i>newer generation of tankless water heater</i>	Cradle to Cradle by McDonough & Braungart pub: North Point Press 2002