Moving Beyond Green Hype

by Paul Eldrenkamp

I am by no means alone in believing that the term "green remodeling" has lost all meaning (if it ever had any). For many in the field, the phrase has rung hollow for years. What sealed the deal for me was a recent article in a leading trade publication about a residential renovation project — a 2,600-square-foot addition — that had just won a major "green" remodeling award.

Come on. If you can define "green" to include adding 2,600 square feet to a single-family home, you are clearly thinking of it as a sales and marketing tool and not as an environmental strategy. You're more concerned about making your clients feel good about doing what they want to do than you are about making any meaningful reductions in resource consumption.

Feel-Good Marketing

To the extent that it denotes anything tangible, "green remodeling" appears to refer mostly to product choices: bamboo flooring, recycled glass tiles, foam insulation, ground-source heat pumps, FSC-certified decking. Use some or all of these products, sit back, and wait for the good feelings — maybe even some industry accolades — to wash over you and the homeowners. Every now and then, while reading through a contractor's marketing materials, I'll come across some variation of the promise "We can be as green as you want us to be" — reinforcing my notion that the concept is mostly about feel-good measures.

These days, to qualify as "green," a project doesn't actually need to have any measurable positive impact on the environment. I come to that conclusion because I almost never see any attempt to document such an impact in any article about a "green" project. It would be nice, for example, to see some sort of quantifiable comparison between the amount of energy, or water, or any resource a house used before the renovation, and the amount used after it. Something along the lines of, "This house used 150 million Btu per year on average before the renovation, but only 30 million Btu per year after the renovation." I've scanned many an article for such information and am invariably disappointed.

For that reason, I suggest that those who are trying to do bona fide "green" renovations disown the term altogether. Let others continue to use the phrase to mean whatever they want it to, for whatever purpose they need. That's not our concern.

A Performance-Based Plan

Instead of "green remodeling," let's talk about stewardship — taking good care of what we already have. In the United States — certainly in the Northeast, where I work — our existing housing stock represents an invaluable resource. Our responsibility as remodelers should be to tend to that resource in a thoughtful, sustainable, and long-lasting way. More specifically, our goal should be to prepare a home for 50, or 100, or 200 more years of service, while also bringing it into the 21st century — equipping it to meet future needs and challenges — in ways that are sensitive to its history.

As I see it, good stewardship requires that you do the following:

1) Develop meaningful standards and a mechanism that lets you know how close you're getting to those standards.

In other words, the standards you establish need to be standards you can measure. For instance, here's a sampling of the goals we've come up with for our projects:

- Once all recommended work is completed, a house should use about 20 to 21 million Btu per person (about 6,000 kwh) per year of primary energy for all uses (heating, cooling, ventilation, lights, appliances, and so on).
- Water usage should be about 35 gallons per person per day. (This is indoor usage; we're still working on an outdoor-usage standard.)
- A house should be tight enough and have reliable enough ventilation systems for indoor carbon-dioxide levels to average about 1,100 parts per million.
- Exterior paint jobs on wood siding and trim should last 20 years before needing to be redone.

Note that each of these standards can be measured in an unambiguous way (see "A Simple Approach to Home Energy Rating," 2/10). This is something I learned from the Passive House movement, which defines quality in terms of how much energy a building uses. If a house uses 38,000 Btu or less per square foot per year (primary energy, not

site energy), then it's a good building. You can argue about that number, and you can argue about whether energy usage is the best single criterion to focus on, but you can't really argue about the importance of a measurable standard of success when you're trying to build in an environmentally sustainable way.

Also note that the numbers in the four examples above are more hypotheses than conclusions. I don't know if our standards are perfect, but I am pretty sure they're useful in terms of moving us in the right direction. We'll test them over time, and change them as warranted.

Some houses lend themselves to these goals far more readily than others. For that reason, I think it also may be useful to look at your projects as a "portfolio" of projects, and track them in the aggregate. For some of the homes you work on, getting down to 40 million Btu per person may be an extraordinary achievement. With others, you maybe shouldn't settle for anything more than 15 million. Your ultimate goal, though, should be to get the average for all your projects down to about 20 million Btu per person.

2) Develop a master plan for each house that, over time, brings the building as close to your standards as it reasonably can get.

I try to envision what a house will look like in the year 2050 if it's going to be part of the solution to the serious energy and environmental issues we're likely to be facing in the decades ahead (rather than an ongoing part of the problem). I choose that time frame partly because most of a house's systems and components — roofs, kitchens and bathrooms, mechanical systems, windows, exterior cladding, and so on — will need major repair or replacement during those four decades. Each upgrade or replacement gives us an opportunity to move the house closer to our ultimate performance goals.

For instance, it's typically really expensive to get the energy usage of a house down to less than 20 million Btu per person if you try to do it all at once. In my region, it often means bringing the house up to Building Science Corporation's deep-energy retrofit standards: R-10 basement floor, R-20 basement walls, R-40 above-grade walls, R-60 roof, R-5 windows, and 0.1 cfm50 per square foot of total shell area (basement floor included). We have managed to reach all of these standards over the course of a single project, but it can make for a very expensive renovation. Doing everything at once can also mean replacing components that don't really need replacement yet.

However, if we do our best to bring the components that we *do* need to work on up to those standards in stages — as siding and windows are replaced, as the house is reroofed, as the basement and attic are renovated — we stand a chance of meeting our goals for the whole house in a financially manageable way.

3) Make sure that all the work you do on a house fits into its master plan.

It's not unusual for me to do an evaluation of a house at the start of the planning process for a proposed renovation only to find that we need to begin by undoing a fair amount of past work: correcting major thermal bypasses in finished attics and basements; addressing water management issues that stem from fundamentally flawed design concepts like ill-placed dormers or valleys; reworking overglazed and under-designed family rooms hastily added to accommodate the needs once met by now-abandoned formal spaces like dining rooms and living rooms. It's particularly galling when the work that has to be undone is, in fact, work that my own company did several years earlier.

A master plan allows us to bring parts of the house up to our standards without getting in the way of our ability to bring other parts up to those standards later. For instance, if we're rebuilding a deck or a porch, we'll support it independently of the house and leave sufficient space between the new deck framing and the house to allow for the installation of exterior rigid foam insulation when we eventually re-side.

Fewer Resources, Greater Value

American houses waste a lot of resources. We all know that. So the best service we can provide our clients is to maintain, repair, and remodel their homes in such a way that they provide higher levels of comfort and security while using far fewer resources. (I'm confident that higher levels of comfort and security and lower resource usage will, over time, prove to be closely correlated.)

The form of stewardship I advocate has little to do with green remodeling as currently practiced, primarily because it actually has some measurable value. Moreover, I have no doubt that remodelers who start thinking of their role in terms of stewardship, and who start moving their businesses toward fulfilling that vision, will find, as I have, that they begin getting a lot of work — and that the work they get is a lot more interesting, challenging (in a good way), and meaningful than anything they'd done previously.

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