New Book Offers Honest Insight On Building A Healthy, Sustainable Home

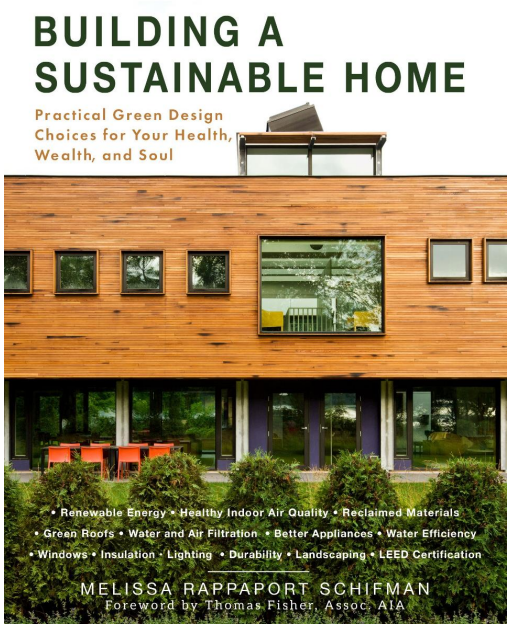
Stacey Freed Contributor
Real Estate
I write about homes and wellness.

Schifman's office above the garage has a wall of windows overlooking the green roof. The garden keeps her office cooler in summer, absorbs water and helps insulate the roof -- and is much more attractive looking than the standard dark membrane. PAUL CROSBY

In 2006, Melissa Rappaport Schifman and her husband Jim and their two young daughters had outgrown their Minneapolis condo and were ready to purchase a house. They found one in the same city in a great neighborhood near a park, lake and bike trails, only to realize that the home's basement was so full of mold that

Melissa, who is highly allergic to mold and mildew — it gives her respiratory problems — couldn't stand to be inside.

The couple decided to raze the house and build a healthy home to LEED (Leadership in Energy and Environmental Design) standards. Melissa has a background in government and in finance – with degrees from Georgetown University and the University of Chicago – and knew her way around research and financial analysis. She figured she was going to kill it in figuring out how to build this home, but there weren't any real, practical resources at the time that would help her do that.



Schifman's modern house is clad in reclaimed cedar cypress. The rooftop clerestory brings in light and has an operable skylight that helps ventilate and cool the home. COURTESY MELISSA RAPPAPORT SCHIFMAN

The couple embarked on a journey that she says took almost three years and more of their time, energy and money than either of them imagined. In the end, they got the healthy home they desired, and Melissa wrote Building a Sustainable Home: Practical Green Design Choices for Your Health, Wealth, and Soul (Skyhorse Publishing, 2018) to help others find their way. Here's what she told me about the process of creating the book and the house:

What's different about your book?

Melissa Rappaport Schifman: When I got our house LEED certified I was really the only person who cared about it. I started a blog and wrote about every single LEED credit in order to get through it and document it. Over the years, as I learned a lot more about the certification and in living in the home (which was completed in 2009), I came back to my level of frustration with all the guidebooks out there. They really throw everything at you, but I felt like they were missing the true story, the honest part of it that not everything is worth it. Not everything is great.

I really thought a lot about the why. And I came up with three reasons to do this: to be healthier, to save money and to do a little bit better for our planet. That's the health wealth and soul piece [in the book title]. I thought that framework was a helpful framework for people to say, “Okay, now I can better prioritize what I can do because it matches with my values.” The other piece is that I wanted to translate the LEED rating system and make it more accessible to homeowners.

We've lived in the house ten years now, and in the book, I discuss what I would have done differently, what I'm really happy about and what we invested in or what's not worth it. There's no guidebook out there that will be honest with you about it.

What went into your thinking on LEED?

Melissa Rappaport Schifman, author of Building a Sustainable Home: Practical Design Choices for your Health, Wealth, and Soul BELÉN FLEMING-BELU PHOTOGRAPHY

Schifman: There were three things: After undergrad, I worked on Capitol Hill in environment and energy and I learned a lot about the Clean Air Act, the Clean Water Act, conservation recovery, so from an academic standpoint I was interested.

Then, I moved to Phoenix. I like to hike. There were so many days with outdoor air quality alerts that said it was too unhealthy to go outside. And you'd see a layer of smog and think, “This is us doing this to our environment. And why are we doing this to ourselves and our future? Air pollution really impacts our health and quality of life.”

The third piece is my Jewish upbringing and having tikkun olam (repair of the world) instilled in me. All these things came together so when I left my last corporate job in 2003, I committed myself to figuring out how to work in sustainability in whatever way I could use my experience.

How did you get started on the house itself?

Schifman: We interviewed several different architects, and [at the time] there weren't that many LEED-accredited professionals around. We found David Salmela, an architect out of Duluth, who had a pragmatic, practical approach to materials that we really liked. We liked his style; he could do contemporary architecture that was warm and had nice scale and proportion. These were the design things I didn't have the skill set to do. I could, however, do the financial analysis. The design took about a year.

What were some of the features you chose for the home?

Schifman: The house is 4,800 square feet with four bedrooms, four-and-a-half bathrooms, a basement, a home office, a garage. We wanted a ground source heat pump, triple pane windows, LED lighting, energy efficient appliances, spray foam insulation, solar panels. We have mostly flooring, which is much healthier than carpeting. Where we did use carpet, in the bedrooms, we chose carpet that is CRI (Carpet and Rug Institute) labeled for low emissions. That goes for the rug as well as for the pad underneath. All the paints are low- or no-VOCs.

One thing that did cost more and was a bigger problem at the time was finding cabinetry that was made with non-urea formaldehyde (an adhesive). (Urea formaldehyde is toxic.) We found a local cabinet maker — the only guy who didn't look at me like a deer in the headlights when I said I wanted non added urea formaldehyde cabinets. It was more expensive at the time, but now it's closer to being on par with cabinets made with formaldehyde adhesives.

We live in a climate where we don't open the windows for half a year and there's only so much you can do in terms of ventilation to keep the air quality good. By the time we moved in, my kids were three and five and it was important to me to make sure this was a healthy home. That was my number one goal.

Reclaimed fir is used throughout the home. Translucent panels, the rooftop clerestory and lots of windows flood the home with natural light. PAUL CROSBY

How did the cost-benefit analysis go into your thinking right up front?

Schifman: When you're building new you have to look at the incremental costs, not so much the idea of "payback." [This would be the difference in costs for your

must-have products. For example, you need a heating and cooling system.] One of our bigger costs was the ground source heat pump (also called geothermal heat pump) – with an incremental cost of 20% or 30% more than a standard non-ground source heat pump. Then there was the incremental cost of going from a double pane window to a triple pane window and from fiberglass insulation to spray-foam insulation. The only thing we didn't look at that way was solar. The solar panel analysis can stand on its own, as the entire system is an incremental cost.

Energy Dollars and Sense

GREENER CHOICE	DOLLARS	SENSE
Triple pane, low-E windows	5–15 percent more (ours was 8 percent more) HIGH COST	Wonderful for very cold climates CONSIDER IT!
Closed-cell spray foam insulation	At least two to three times more expensive than conventional pink fiberglass HIGH COST	Worth every penny in reduced energy costs and improved comfort FOR COLD CLIMATES: DO IT!
Ground-source heat pump	About 30 percent more HIGH COST	Most efficient system; better for new homes than remodels; pays for itself in about seven years FOR NEW CONSTRUCTION: DO IT!
Tankless water heater	Varies; about $1,000–$2,500 MEDIUM COST	NO SENSE
Solar water heater	Varies; $8,000–$12,000 HIGH COST	Currently does not make economic sense when compared to natural gas, but it does make sense from an efficiency standpoint CONSIDER IT
Energy Star appliances	NO INCREMENTAL COST	DO IT!
LED lighting	More expensive; depends on comparison and size of project LOW-MEDIUM COST	Best return on investment DO IT!
Photovoltaic panels	$1,000–$25,000, or $0 if financed through solar company HIGH COST	If home is already efficient and there is space with no shade CONSIDER IT

Schifman's practical decision-making chart for choosing sustainable building products. EXCERPTED BY PERMISSION FROM BUILDING A SUSTAINABLE HOME

Then we spoke with a HERS (Home Energy Rating System) professional. That person creates an energy model on which to have a comparison for new construction. With a retrofit you have an existing home to compare against. The HERS rating said the home would use only 35% of the energy that the same home

built to code would use. That's how I figured out the cost analysis. So altogether the things we chose would save 65% of our energy bills going forward every year.

How much more did your home cost than a similar, traditionally-built home would?

Schifman: First, this house is significantly better than code. We paid about $35,000 [more] in incremental costs for all of the energy efficiency pieces that are in there. I estimated that we'd save about $4,200 in annual utility bill savings, altogether, about an eight-year payback, but the internal rate of return is about 11.2%.

What are your favorite things about the house?

Schifman: The screen porch is probably my favorite. And I love my office; I can see the green roof. I love the amount of daylight that comes into the house, and you really feel connected to the outdoors and in our four-season room.

How's your health?

Schifman: Our indoor air and drinking water are clean and healthy, so that helps our family remain healthy. And there's no mold or mildew, thankfully.

Follow me on Twitter.

Stacey Freed Contributor

I write about all things house related with a particular interest in how our homes should adapt to us. As much as I like imagining I'll be the same me for 40 more years... **Read More**