



ERIC ROTH

Living Green

Lisa Kauffman Tharp's house changed her life, but not in any usual way. "I was a healthy, active adult until my early thirties when I was exposed to mold and toxic building materials," said Kauffman Tharp. "Toxins in our environment affect all of us, but some more than others. I was one of those." A lifelong athlete, she became easily fatigued with increasing respiratory problems, needing an inhaler every day. It took 11 years to figure out the problem.

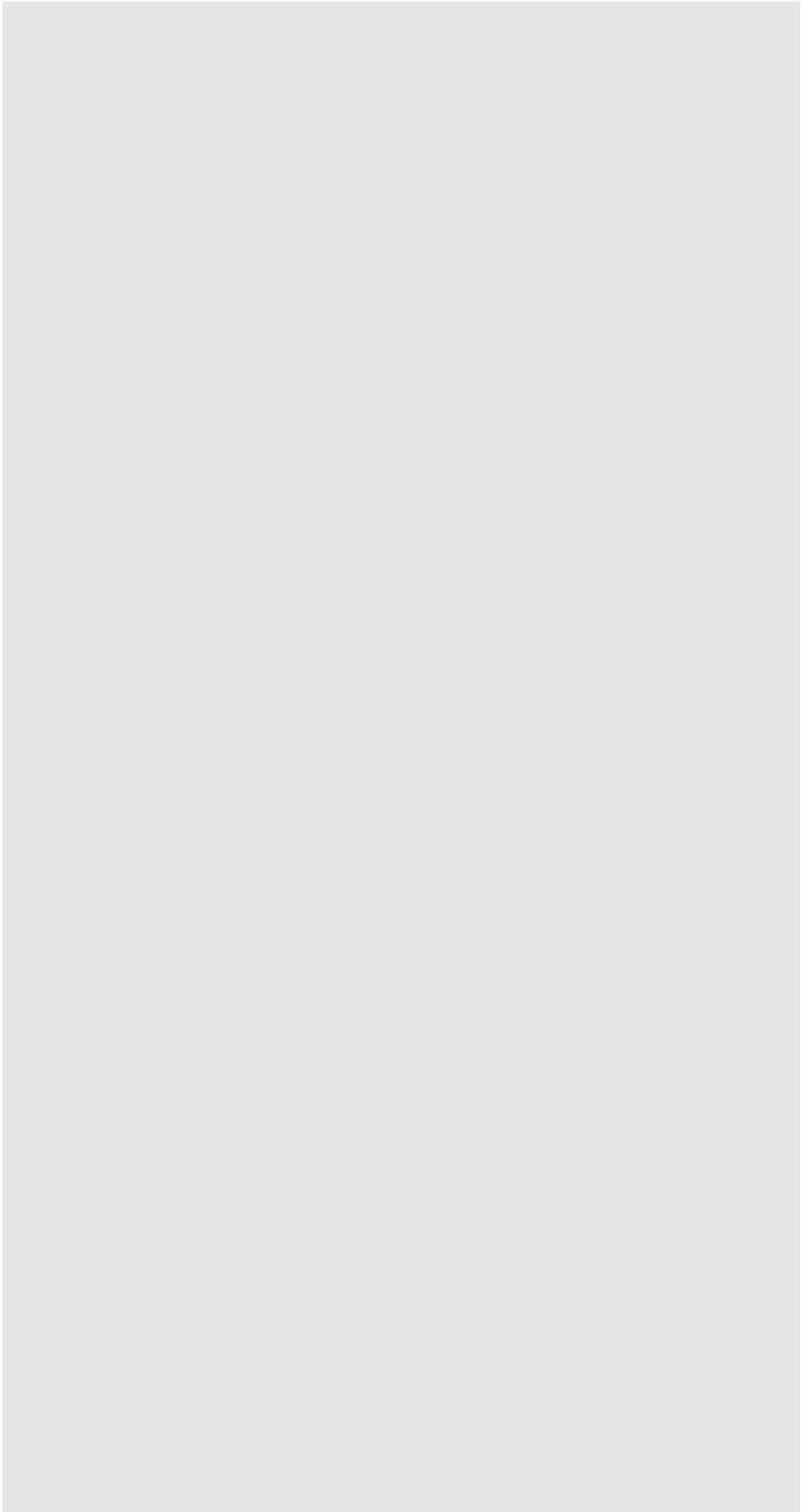
Ultimately, Kauffman Tharp put her career as an interior designer on hold. For two years, she researched "sick buildings," defined by the EPA (Environmental Protection Agency) as those in which occupants experience acute health and comfort effects and "building-related illnesses," which are directly attributable to airborne building contaminants. She compiled lists of alternative building materials and techniques. Then she sought experts to build her family a new kind of home in Concord.

Four months after the Tharps moved in, the change in her health was dramatic. "After years of not feeling well, I began to return to my old self. I weaned myself off medications. Now I roller-blade an hour a day."

She named it The Concord Green Healthy Home, and it is a model of environmentally smart construction. The house combines traditional New England architecture with the latest technology for green building, from energy efficient passive solar heating to locally sourced materials and products that are non-toxic or have low or no VOCs (Volatile Organic Compounds).

"We [all] spend most of our time in our homes, offices, and schools," said Kauffman Tharp. "We don't realize how our bodies are affected by ongoing exposure to finishes, paints, forced air heat, cleaning products, and other materials. Studies show that poor indoor air causes allergies, asthma, chemical sensitivities, fatigue issues, and more, especially in the bodies of our kids."

The team Kauffman Tharp put together included Zero Energy Design, a green architecture and mechanical design firm in Boston; Connor Homes, Vermont builders of panelized, historic reproduction homes; and Aedi Construction, a Waltham-based company that specializes in building healthy environments.



“The overarching goal of this project was to protect the health of the home’s occupants and the planet,” said Kauffman Tharp. The team used old-fashioned building principles that are all about working with nature, she said. “I searched for over a year to find a [building] lot with great sun at the rear, large trees for summer shade, and open-field breezes to ventilate the house. Then, we made sure not to challenge Mother Earth by building a basement below the water table.” Unlike most New England homes, hers has no basement. To prevent mold contamination, there is no air exchange between the sealed crawl space foundation and the interiors. A metal roof and panelized frame further prevent moisture damage. Formaldehyde-free plywood and cabinetry were used throughout the interior, along with Mythic and ECOS



brands non-toxic paints, low-VOC hardwood floor finishes, and non-toxic grout. During construction, dust-intensive work spaces were sealed off to prevent the airborne spread of particulates.

Even landscaping plays a role: Allergy-free, native plantings were selected using the Ogren Plant Allergy Scale (OPALS™).

For those with similar concerns, incremental changes may help when starting from scratch isn't an option. As sales manager at Terrene of Acton, Tom Coulter sells sustainable building supplies to homeowners and contractors who have a mix of energy-efficiency, health, and socially responsible concerns. "There's a growing awareness that a lot of people have chemical sensitivities," said Coulter. "Health abnormalities that weren't identified in the past potentially are related to our environment."



PHOTOS BY ERIC ROTH

Two years ago, Kauffman Tharp ordered paint from Great Britain but now the Mythic brand is available at Terrene, among others. Coulter said it is “the only zero toxic, no VOC product on the market. The industry isn’t regulated, although that’s coming, so you can’t trust all lines.” He recommends alternative all-purpose cleaners; soy-based paint removers strong enough to work on lead-based paint, eliminating the need for scraping; and natural sealants that can block out-gassing. Floor and furniture finishes from Vermont Natural Coatings are

made from whey, a byproduct of cheese-making. The coatings can be tinted and used as a stain and finish all in one.

In addition to products that don’t emit formaldehyde, wood cabinetry can be environmentally responsible, sourced from “friendly timber harvesting.” This includes cork or bamboo, which is strong, durable, and easier on the feet than traditional hardwoods, said Coulter. Countertops for kitchens, baths, and desks are now made of recycled bottles, windshields, or concrete as well as natural stone. You can even buy carpets made from recycled Coke and water bottles.

Thomas Buckborough, an Acton architect whose firm specializes in green renovations, says energy efficiency is essential to

For more information:

★ **US Environmental Protection Agency:**

www.epa.gov/iaq/pubs/insidestory.html

★ **Lisa Kauffman Tharp’s blog** offers many

resources for building healthier:

www.ktharpdesign.com

the task. “Green construction is good construction because it will last and not have to be redone,” he said. “We do lots of problem-solving, like fixing ice dams so roofs are less prone to mold and heat loss.” In addition to recycled glass countertops, he favors New England-sourced materials, like New Hampshire granite and Massachusetts pine. “They are more eco-friendly than other quarried materials. Stone from China

or Brazil is widely sold, but the farther a shipment travels, the bigger the carbon footprint it leaves.”

Buckborough loves cork flooring in kitchens. “Although all cork comes from Spain or Portugal, it’s a sustainable product. Because it is bark, peeled off trees, that grows back within ten years, cork is renewable as well as soft on feet. And it’s priced comparably to

Longfellow Sports Clubs

The Longfellow Sports Clubs are taking the lead to reduce our carbon footprint by making every effort to be energy efficient.

“In the US, most people use more energy and leave a bigger carbon footprint than anywhere else in the world,” said Longfellow President Laury Hammel. “We are energy hogs as a nation and as health clubs. Unless we do something about it, there won’t be a healthy world for our children and their children.”

In 2009, The Longfellow Club in Wayland constructed one of the largest solar hot water heating systems in New England, providing free hot water for the pool and showers. Hammel said that with utility rebates, the system paid for itself in seven years. At their Natick club, a new onsite co-generation plant supplies sufficient electricity to heat all the pool water and much of the heat for the showers.

“We’ve been recycling for more than 20 years,” said Hammel. “Two years ago, we became the first club in New England that we know of to install two-gallon-per-minute showers—standard is four to five gallons. All our pools are purified by salt water filtration, which is better for our bodies and the environment than a dangerous chemical [chlorine] generally used. And in Wayland, we’ve redone all HVAC systems to reduce energy consumption by 20 percent and changed all cleaning supplies to non-toxic products.”

Longfellow was the first business in New England certified as a Sustainable Business Leader. Now, as executive director of the Sustainable Business Network of Greater Boston, Hammel works with more than 1,000 regional businesses to help them become more green. For additional information: www.sustainablebusinessleader.org

wood.” But he warned that natural fiber carpets can harbor mites, mold, and dust.

Kauffman Tharp now offers healthy and green strategies to her interior design clients. When budget prohibits new construction, she offers these “ low-hanging fruit options” for retrofitting:

- ★ Fix problem areas, like basement mold, but be careful not to trade a moisture problem for a chemical problem. Healthier sealant and waterproofing alternatives are now available locally and online.
- ★ Avoid ducted forced air and AC. Duct work can harbor dust, contaminants, and mold that get airborne and distributed to rooms where they are inhaled. Efficient and attractive hydronic radiators (forced hot water), radiant heaters, and mini-split ductless AC are healthier options.
- ★ Remove wall-to-wall carpeting.
- ★ Avoid toxic synthetic fragrances found in most laundry and cleaning products, room fresheners, and candles.
- ★ Buy only solid-wood furniture with safe finishes. Avoid adhesive-containing particle board or laminates which off-gas.

“I love repurposing old furniture as long as it is mold- and lead-free,” she said. “Building healthy can also be aesthetically beautiful.” ★

Freelance writer JANET MENDELSON is the author of *Maine’s Museums: Art, Oddities & Artifacts* (Countryman Press, 2011).

