



Producing a

# Healthy House

A personal insight about the importance of sustainable design and environmental education

By TRUDY DUJARDIN, ASID

Since World War II, more than 70,000 new chemicals have been introduced into the environment. The combination of these chemicals, of which less than 10 percent have been tested for chronic, reproductive or mutagenic effects, may be a reason for the increase in many autoimmune diseases ranging from vitiligo to diabetes. Allergies alone have become a serious problem in both children and adults. More than one-third of the U.S. population has been diagnosed with some form of multiple chemical sensitivity (MCS) or environmental illness. One can only wonder how many more cases are undiagnosed. A variety of health disorders, including migraines and allergies, are often attributed to “sick building syndrome” (SBS). With buildings today containing hundreds of basic chemicals with literally thousands of formulations and combinations, there is no way of knowing the effect of these substances on our endocrine, reproductive and other systems.<sup>1</sup>

But there are ways to combat the effects of toxic overload of the pollutants in everyday life. At a minimum, there are key spaces in the home that should be as “environmentally friendly” as possible. Since the liver allows the body to detox during the eight hours of sleep we get each night, the sleep environment needs to be as clean and pure as possible. A simple addition of a room air-purifier can greatly improve the indoor air quality of the space. Use of non-toxic materials, including paints containing low levels of volatile organic compounds (VOCs), carpeting, wood finishes, fabrics, mattress fillers and more, need to be evaluated for their chemical content and off-gassing.

Cost is one of the first concerns people express when discussing building a “healthy” home. Some environmentally friendly products cost no more than other products. Although others may cost up to 25 percent more, I believe the additional expense is well worth it when one’s health is at stake. When clients express that costs are too high, I recommend that they at least make one room of their home free of toxic vapors: the nursery. Other than the nursery, the five most important factors to consider in creating a healthy indoor space are

1. ventilation
2. insulation
3. wall and floor coverings
4. furnishings
5. heat/air exchange systems or portable air filter systems.

By using the proper materials or systems, air quality can be improved by as much as 80 percent.

Constructing a new home or remodeling an existing one can be done with building products and finishes that are environmentally friendly and virtually non-toxic. I know, having recently completed two healthy homes on Nantucket Island and Long Island Sound. Both were built with products chosen for low toxicity and both have excellent indoor air quality.

Dujardin’s healthy house on Long Island Sound.



PHOTO BY MICK MCCONNELL FOR DUJARDIN DESIGN.

Since fiberglass particulates have been shown to be potentially carcinogenic, we used "Reflectix," a foil-faced, polyethylene bubble wrap for duct insulation instead of fiberglass, which can be drawn into the air stream and circulated throughout the house. We also used hypoallergenic paints, low-toxicity, water-based floor finishes and advanced-design heat/air exchange systems in both homes. For cabinets, we chose solid wood construction with drawer bottoms made with Medite, a low-formaldehyde, medium-density fiberboard.

It's difficult to find natural fabrics and furniture lines without formaldehyde, fire retardants and other chemicals, so furnishing the healthy homes was an additional challenge. (I believe when more requests for non-toxic goods reach manufacturers, more goods will be made available.) Carpeting in the two homes is made of pure, all-natural, chemical-free wool. The all-natural carpet pad was produced in the U.S., eliminating concerns over the possible exposure to fumigants used on imported products. The dining room furniture in the Nantucket house is built of solid walnut, using a low-toxicity water-based sealer, by an island craftsman. It has the added advantage of requiring very little maintenance. Beeswax was an alternative finish but requires more maintenance and shows watermarks.

The exterior decks and railings of both homes are constructed of a non-endangered, reforested wood. Ipé, or Pau lope, as it is called, has the properties of teak and is durable and handsome. This type of wood contains no chemicals that will seep into the surrounding soil or nearby wetlands and water, and is safe for children and pets.

The heat/air exchange ventilator system is at the heart of purifying the indoor air. Not only does this system exhaust stale air and bring in fresh outdoor air, but it also prevents the buildup of indoor pollutants such as VOCs and radon.

My motivation to undertake the research, additional effort and expense to create these healthy homes was twofold: my own allergies and MCS, and my concern for the fragile ecosystem. I learned a great deal from these projects, especially that making a home a haven from toxicity is a very rewarding endeavor. For more information on both of these projects, please go to [www.dujardindesign.com](http://www.dujardindesign.com). ○

<sup>1</sup>For good information regarding this topic, read *Our Stolen Future* by Dr. Theo Colborn, Diane Dumanoski and Dr. John Peterson, or visit the Web site by the same name at [www.ourstolenfuture.org](http://www.ourstolenfuture.org).



**Trudy Dujardin, ASID**

**Trudy Dujardin, ASID**, president of Dujardin Design Associates in Greenwich, Conn. and Nantucket, Mass., is an award-winning designer and national expert on non-toxic building materials and sustainable design. She is on the board of the Joslyn Castle Institute for Sustainable Communities, one of the country's preeminent foundations dedicated to promoting sustainable development. Dujardin and her firm have been widely recognized for the past 20 years in national publications and television programs and have also been honored with public and peer design awards.



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