The Power of Alternative Ideas

By David Whitemyer

The last 10 years have been deemed "The Green Decade." But beyond sustainable materials, today's green-alternative practices are keeping the design industry focused on the future.

Interior Designers, along with builders and suppliers, have pushed "green design" from a fringe concept to a trend, and finally to being standard practice. This proactive effort occurred quickly, speeding through the last decade.

But with mainstream and commonplace often comes complacency, and although leaps and bounds have been made in energy-saving building design, it's too early for designers and architects to rest on their laurels.

Fortunately, innovative designers have their sights set on spawning alternative ideas to mend the planet — well beyond recycled products and energy efficient appliances. "Alternative thinking goes way past materials," says Holley Henderson, IIDA, LEED AP, Founder of H2 Ecodesign in Atlanta. She notes that a number of interior goods coming to market will certainly have positive effects on both the environment and the bottom line, such as solar-powered lighting, 100-percent recycled material walls, phase change sheetrock and non-traditional cooling equipment. But, Henderson adds, "The one thing I've learned about green is that there's a lot of grey in it," suggesting that designers need to look at eco-friendly design from a different perspective.

Starting simply, the standards that most designers are now familiar with are still evolving, and are providing the industry with alternatives. Henderson describes a new LEED credit piloting library that allows for beta testing credits in isolation versus entire rating systems. During the pilot, for projects willing to document these credits — even if the intent and requirements are not achieved — the points will be awarded. "LEED has been a market transformation tool," Henderson says, "but it's the triumph of good over perfect." She illustrates a scenario where LEED credits are given for specifying carpet or tile with a high-recycled content. "But wouldn't it make sense to get credit for *not* using carpet or tile," she proposes, "and just having sealed concrete or a multi-attribute flooring product?" Whereas carpet is easily subject to damage and staining from general use, and can cost upwards of $50 per square yard, concrete — with an array of finishing options, such as sealers and colorings — is incredibly long lasting and inexpensive.

THINK DIFFERENTLY

It's this concept of omission that Henderson finds particularly revolutionary. "Most designers take few risks, using the same materials and details they have in the past," she says, "when sometimes the best thing to do is to say 'No.'" Henderson applauds the commercial architecture and design firm, Perkins + Will, for publicizing a "Precautionary List," which identifies all of the materials and chemicals their designers will not use, rather than yet another database of green-rated goods. In addition to assessing the health and environmental effects of certain products, the list also provides cost and lifecycle information.

Henderson is optimistic that when designers see the brave stance that influential firms are taking, the whole industry will follow suit. Alternative green must find the balance between stubbornly taking a stand and moving forward with high quality, earth-friendly built design. Changing construction techniques is one alternative.

The pioneering alternative idea of Michelle Kaufmann, AIA, LEED AP, came from a strong belief that environmentally friendly homes should be within easy grasp of more people. For almost 10 years, Kaufmann, who has been called "The Henry Ford of Green Homes" by the Sierra Club, has been designing elegant, low-impact, prefabricated homes.

Preferring the term "smart construction" to prefabricated, Kaufmann explains that her factory-assembled homes generate 50 to 75 percent less construction waste than similar sized site-built houses. "Factories have precision-cutting tools and plenty of storage capacity for unused materials to be further cut down and used in the next home," she says, adding that, generally, the lumber and windows come from suppliers within 100 miles of the assembly line. On top of the environmental benefits, a prefabricated home can cost 10 to 25 percent less than a traditional site-built house. Add to that the years' worth of lower operating costs for a well-designed eco-friendly house, and it's a win for both owner and Earth.

"Good green design is about more than new materials and energy-saving systems," says Kaufmann, whose home designs feature sloped ceilings and clerestories for air circulation, and high windows to grab the sunlight. "There's so much to be learned by looking at architecture of the past," she suggests. One of Kaufmann's homes — full size and completely functional — is on display at Chicago's Museum of Science and Industry, through January 2011, as part of the exhibit, Smart Home: Green + Wired.

Holley Henderson, IIDA, LEED AP, Founder of H2 Ecodesign in Atlanta

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SAVING THE EARTH TRUMPS SAVING MONEY

Developers tend to focus on the upfront costs of building green, whereas the end users judge the success of green design by its annual operations costs. The true cost of green is the price paid for saving planet Earth, one construction or renovation project at a time. And what do you get for that price? A recent study comparing 41 high-performance Minnesota commercial buildings — including high schools, libraries, hospitals and fire stations — to traditionally constructed facilities shows how much green design can save Mother Nature from swallowing in just one year.

205,900 lbs.
LESS SULFUR DIOXIDE

229,300 lbs.
LESS NITROUS OXIDE

880 grams
LESS MERCURY

59,900 tons
LESS CARBON DIOXIDE

UN-DESIGN

Kaufmann predicts that a popular alternative green concept of the near future will be to design spaces for deconstruction and reuse — meaning that planning for disassembly will be just as important as construction. "Cradle-to-Cradle is going to become mainstream, if not a requirement," she says. A research paper titled "Design for Reuse Primer," funded by the U.S. Green Building Council, indicates that between 80 and 90 percent of the waste that comes from demolition is capable of being reused. In the U.S., almost 1.75 billion square feet of buildings are torn down each year, and about 5 billion square feet are renovated. Buildings are a mass of potentially reusable components, such as doors and windows, mechanical apparatus, framing and built-in furnishings.

"When people remodel their kitchens, almost everything gets chucked," says Kaufmann, citing kitchens and bathrooms as the most obvious spaces that should be designed with deconstruction in mind. These rooms are primarily made of integrated components — appliances, cabinetry, plumbing and electrical — all prime candidates for modularity and reuse. And because these spaces are typically the most costly in home design, there's opportunity for payback.

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It's not unusual to see a price tag of more than $80,000 for a kitchen remodel. But companies such as Green Demolitions, a non-profit organization based in Greenwich, Conn., work with contractors to carefully deconstruct kitchens so that others can reuse the cabinets, countertops, hardware, and appliances. Buyers get good quality products at a discounted rate, and the donors receive a tax deduction. But most importantly, the reusable kitchen parts are kept out of the landfill.

On a smaller scale of recycling and reuse, Jack Elliott, LEED AP, Associate Professor of Design and Environmental Analysis at Cornell University in Ithaca,

N.Y., created an award-winning light fixture that is not only 100-percent recyclable, but is also designed as a zero-waste product. Starting with a small billet of aluminum, Elliott lathes the cylinder to create the ceiling mount. The removed waste, or swarf, is then formed into a sphere to create the diffuser. He even considered the cord, made with a non-PVC coating.

Some manufacturers of large appliances are now designing for disassembly, encouraging users to return items for dissection and refurbishing. The life expectancy of major appliances isn't long — about 13 years for a refrigerator and nine years for a dishwasher — so the industry is creating incentives and systems to keep all of this equipment from ending up in a junkyard. As the cost of raw goods and equipment disposal continues to rise, this will benefit both consumer and supplier. "There needs to be a shift from product to service," Elliott says. Interface, the world's largest carpet manufacturer, made headlines a decade ago when CEO Ray Anderson introduced the idea of leasing carpet rather than selling it, flipping a product industry into a service industry. Appliance manufacturers are now seeing how this alternative idea might work for their products. In Sweden, Electrolux has experimented with renting washing machines to homeowners.

A HEALTHY AMOUNT OF SKEPTICISM

Elliott teaches a course at Cornell called Ecological Literacy and Design, which falls into the college's Interior Design program. The goal of this course is to teach students one of the most alternative green ideas of all: critical thinking. "We want them to understand media and advertising, and to analyze whether something is truly green," Elliott says. There are always going to be new products and processes in place, making new assertions about being sustainable or renewable or low energy, and Interior Designers must learn to assess those claims. "A lot of things claiming to be 'green' are just doing less harm than they were before," he says, "I'm trying to promote a healthy amount of skepticism."

More than anything, Elliott simply hopes that he's encouraging his students to become not just green designers, but activists. Interior Designers need to remember the grand picture, he says, adding that we should be trying to improve the natural conditions on Earth, including clean air, safe water and healthy soil. "This isn't just about indoor air quality and recycled materials."

Elliott tries to get his students to see buildings as organisms, with the Earth being a super organism, and he envisions a time, soon, when buildings will be designed for disassembly, to allow them to change, adapt or disappear, returning to their natural sources. Kaufmann believes that the next big idea that will go mainstream is biomimicry, where principles found in nature are incorporated into built design. Imagine a lotus-inspired paint that cleans itself, a cooling system based on termite mounds, or water-collection devices using leaf vein concepts. These interiors products are already in development — 3.8 billion years of research and development is quite the track record.

Although the last 10 years has sometimes been referred to as "The Green Decade," with the introduction of standardized green ratings, mainstream movements, and a focus toward the future, the next 10 years will see innovations like no other. Interior Designers must continue dreaming up alternatives to the pool of current sustainable products and methods if design is to be kept fresh, costs under control and the Earth healed. And these alternatives, Elliott says, "have got to be good — not just new."

THE PRICE AND PAYBACK OF LEED CERTIFICATION

The cost of the LEED AP exam: $400 for USGBC members ($550 for non members), plus $50 per year.

The cost of the LEED AP Interior Design Study Guide: $70 for USGBC members ($85 for non members).

The LEED certification process can cost anywhere between $20,000 and $60,000, just in paperwork and administration, depending on the size and complexity of the project.

Initial capital costs have to be compared to annual operating costs (over the course of five to 10 years) to assess the real payback from constructing environmentally friendly buildings. Life-cycle assessments are becoming increasingly standard in the LEED-certification process.

As a high-performance product, a LEED-certified building can generate a seven to 12 percent increase in net operating income by reducing operating costs.

Also, an initial investment of two percent in green design can benefit the owner tenfold in savings.