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Green homes: a low-tech solution to high-energy bills

In the midst of a widespread housing downturn, green home building is gaining traction. By 2010, green building features will be incorporated in up to 10 percent of new homes, according to estimates from the National Association of Homebuilders and McGraw-Hill Construction. That's up to five times the level of 2005.

But many buyers are put off by the sticker price of photovoltaic energy, geothermal heating and cooling systems, or other high-cost green home technologies. David Wax, MBA '04, CEO and cofounder of [Independence Energy Homes](#), understands this problem and has a solution for it: Whenever possible, avoid the technological bells and whistles in favor of more prosaic solutions.



David Wax, MBA '04

"In the world of energy efficiency, the sexier stuff is not the most cost-effective," says Wax, who teamed up with a group of Cornell graduates to form the Boston-based company. "If your goal is to reduce energy use, you look first at passive solar, insulation, and overhangs to block the summer sun and let in the winter sun. After you get every possible therm out of the house by doing the cheap things, then you look at high-technology renewable energy.

"The point is that better design and better materials are always cheaper than better technology. There are homes where you can save 30 to 50 percent of the utility bill just by doing passive things like installing better insulation. Then you don't have to buy as big of a technology package."

Wax and his business partners first worked together at Cornell when they teamed up for a U.S. Department of Energy Competition to design a fully-functional solar home. Eighteen schools competed. Cornell placed second. "The second-place finish was the platform from which we launched the company," says Wax.

Independence Energy Homes doesn't actually build homes. Rather, it offers energy-efficiency design services to contractors. Its current projects included a development of 150 homes in Texas, and another of 364 homes in California.

To come up with a design, the firm's architects, engineers, and financial experts work together in one big room, which helps to insure that technology and architecture mesh. The financial experts then crunch the numbers to make sure the plans make fiscal sense when all the variables, including federal, state, and local tax incentives, are included.

In Independence Energy's custom design work, one size doesn't fit all. "An overhang in Wyoming and an overhang in Texas won't be the same because the sun changes its position with changes in latitude," says architect Stephanie T. Horowitz '05 (BArch), the company's design principal and cofounder.

In a typical, mass-production home, the heating and air-conditioning contractor will recommend a utility system based on the home's square footage. "We use a much more calculated approach," says Horowitz. "A 100-square-foot room that has no windows is very different from a 100-square-foot room that has a whole wall of south-facing windows that get a lot of sun."

In making such calculations, "We all work together," she says. "And we think about heating and cooling and passive solar from the beginning. It's not an afterthought."