

## Health & Fitness

### A radical British architect's green grand plans

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Fresh from building the world's first carbon-free community, a radical British architect has grand plans to get you off the grid, and, consequently, change the way we think about energy



**MASTER PLANNER**  
Architect Bill Dunster  
builds for low-impact,  
high-style living.

One hundred years ago, a New Jersey businessman, entrepreneur, and inventor became one of the world's first recognized green pioneers. Concerned about the escalating cost of oil, and eager to look elsewhere for a source of energy, he slowly began to transform his New Jersey home, later dubbed a Twentieth-Century Suburban Residence, into what would become a model for green living. After some 500 experiments, he created alkaline batteries that could store energy to power the home's modern electric amenities—air conditioner, washing machine, stove, and light—with a few gallons of oil a week. The inventor had plans to eventually power the abode with energy generated from wind, and talks began in earnest with the Ford Motor Company about developing a version of his battery to power automobiles.

That New Jersey home was the birthplace of about 1,000 patents, two of which you've probably heard about: the phonograph and the lightbulb. That's right, Thomas Edison, the world's first recognized green pioneer. His progressive inventions didn't take hold with his peers (the Model T, and its countless successors, ran on gas, not electric), and his neighbors resisted any temptation to give up on utility companies and experiment with alternative energies. And thus his ecological urgings went largely unheeded. Nevertheless, certain wheels had been set in inexorable, albeit slow, motion. As the man known as the Genius of Menlo Park approached death, he exclaimed to his longtime friend and confidant Henry Ford, "I'd put my money on the sun and solar energy. What a source of power!" • Such wisdom, as we all now know, wasn't heeded quite as early as it should have been. And according to Bill Dunster, as of 2007, it still isn't.

When he was 12 years old, Bill Dunster saw his favorite apple tree razed to the ground in the name, he was told, of progress. The event left a profound and lasting wound.

"I grew up in Molesey [southwest of London]," he says, "and suburbia was then growing at an unprecedented rate. When they got rid of the orchard, they replaced it with 50 executive homes, with double garages and tarmac driveways. It wasn't just a matter of them robbing me of one of my favorite playing spaces. No, deep down, I felt that something very bad had happened. It was such a terrible waste of natural environment, and it unsettled me."

That he would go on to become an architect, a profession that he readily admits is all about "destroying the natural world to build something for man," seems ironic, but Dunster would turn out to be no ordinary architect. "Because the entire concept was something I always objected to," he explains, "I felt I needed to show how it could be done in less harmful ways."

With an almost grim determination that would come to define him, the man has proceeded, over a period of almost 25 frequently frustrating years, to build things in a way that is not only less harmful but also completely harmless. He is the mastermind behind London's new movement in zero-energy living: urban apartment complexes, based on the design of his own suburban house, powered exclusively by the sun and wind.

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China, India, and parts of South America, meanwhile, are much more proactive in their efforts than Americans are. Despite the word-of-mouth success of Al Gore's *An Inconvenient Truth*, the United States is still, according to Dunster, "in the grip of a Bush inertia." And although New York was recently proclaimed one of the most energy-efficient cities in the country, it nevertheless has a dangerously high level of gasoline consumption. One need only glance at the skylines of Phoenix and Los Angeles to see similar problems in need of swift remedy.

"Much of America is very industrial," says Dunster, "and therefore must implement these changes very quickly, unless we want our children's children to suffer. Believe me, if we don't do something about it now, then in 20, 30, 50 years' time, America and beyond will be in a terrible, potentially irrevocable state." His call to arms may sound extreme, but his words are echoed by the world's top scientists and researchers. Peter Smith, professor of sustainable energy at the University of Nottingham, believes that the world has less than 10 years to develop and implement new technologies to generate clean electricity before climate change reaches the point of no return. Meanwhile, Rajendra Pachauri, PhD, appointed by George W. Bush to be the chairman of the Intergovernmental Panel on Climate Change, thinks we're already there. In a recent speech before 114 governments at a conference in Mauritius, Pachauri said he believes we have already surpassed dangerous concentrations of carbon dioxide in the atmosphere.

Though bona fide zero-energy houses are still a rarity in the U.S., there are such projects afoot in Utah, Washington, and New Mexico, and many houses across the country have cut fossil-fuel dependence by, in some cases, as much as 50 to 80 percent. Dunster himself has yet to branch out to America, but the fact that his ideas are beginning to take root cannot help but satisfy. You sense, however, that he won't rest until everyone finally sees sense.

"Look, I don't like preachy green people, and I am not one myself," he claims. "But we are at a genuine crossroads here. Climate change is a reality, and if we don't act now, then I fear for the future of the planet. It's not for me to tell people what to do or how to live; that's not my job. All I'm trying to do is give people a choice to do something about it if they so choose. That's all."

He falls silent now, and his silence is deafening.

**Photo Gallery: Click Thumbnail to View Full Size**



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“People in London, and in so many big cities, rarely have anything to do with their neighbors anymore, and that, I feel, is a shame,” says Dunster. “One of the many things we’ve attempted to create here is a sense of togetherness, and it seems to be working.”

Downstairs from his office, Dunster shows me his Climate-Change Shop, which offers a slew of affordable renewable-energy technologies that are sourced directly from China and sold at a fraction of the cost you would find elsewhere. “The more we sell,” he explains, “the more they will come down in price everywhere so that everyone can afford them, especially the Chinese.” (See [5 Best Ways to Go Zero-Energy at Home](#) for affordable U.S. alternatives to Dunster’s technologies.)

“And that’s the beauty of all this,” he says. “Anyone can easily make his home greener. You can get solar panels for as little as \$2,000 in the U.K., so I don’t want to hear that you can’t afford it, because, quite frankly, you can.” Dunster also sells zero-carbon starter kits, which include solar electricity and hot-water panels, for about \$10,000.

On this side of the ocean, you can hire a contractor to install a home wind turbine for as little as \$10,000, which will produce up to 100 percent of your home’s power needs (see page 135 for details). It looks complicated, but the technology is an ode to simplicity. Like a fan in reverse, its blades convert the wind’s kinetic energy into an AC current that is fed directly into your wiring. Any excess energy is diverted back into the grid and earns you credit.

Perhaps the greatest source of renewable energy, however, lies underground. Just a few yards beneath the average family’s lawn, the earth maintains a constant temperature of 55°F year-round. You can hire a contractor to install a simple loop of piping called a “geothermal well” to tap the heat and use it to heat and cool your house all year. It’s essentially a furnace and air conditioner in one, but 70 percent more effective than either.

“Once you are up and running,” says Dunster, “you will not only start saving money within a year, but you’ll also be saving the planet, which can’t be bad, can it?”

Dunster commends the British prime minister for ordering more ecovillages, but he worries that it may be merely a token gesture, an attempted vote-winner rather than proof of a major shift in environmental emphasis. However, he is far more heartened by the fact that the wealthy are now showing interest in implementing such changes, signaling a potential tide change in our collective attitudes. In addition to working on several millionaire mansions within London’s greenbelt, he is helping design the world’s first zero-fossil solar-energy farm in Hampshire. The farm’s produce (shipped in reusable packaging) will be delivered to the city by electric vehicles charged on-site. “It will be spectacular,” he says. “This will be one of the first hydrogen farms anywhere, which everyone will have to take an interest in when the oil runs out, which it soon will.” How soon? Contrary to British Petroleum’s most recent claim that the world still has enough “proven” reserves to provide 40 years of consumption at current rates, scientists led by the London-based Oil Depletion Analysis Centre recently released a shocking new report that predicts the global production of oil will peak in the next four years. Either way, in a generation or two, we’ll no longer be a world powered by fossil fuels.

Over a final cup of coffee, which he drinks in his usual distracted manner, Dunster casts an eye over the wider world. True, he acknowledges, many of us are now doing our part by recycling garbage, buying organic fruit and vegetables from farmers’ markets, and driving sensible Toyota Priuses, but this is still not affirmative enough and barely scratches the surface. Not enough of us, he points out, even bother to buy energy-efficient lightbulbs—an energy problem we could all solve, if you will, at the flick of a switch. If every American replaced just one standard bulb with a compact fluorescent light, it would be the equivalent of taking 800,000 cars off the road and save enough energy to turn off nearly three entire power plants.

subject at hand, he quickly grows frustrated. Yes, he wants us to take his concepts to heart, but he'd prefer we leave him out of the picture altogether.

But how could we possibly do that? Dunster, a practitioner of self-sustaining living, is a modern-day pioneer and a man leading by example. BedZED, the zero-carbon apartment complex that he built in South London back in 2001 (which we will come to in a moment) is a success largely because Dunster tested out most of its features on his home first.

"I never would have implemented any of the methods without having tried them out personally first," he states. "If anyone was going to be a guinea pig, it was me." His two teenage daughters weren't necessarily thrilled with the idea, he concedes. "No, they probably consider me a complete fool, utterly crazy, but I needed to show the cynics out there that zero-carbon living isn't just a fantasy. It can be done by anyone and everyone with very little effort."

Zero-carbon living now has many new admirers. Gordon Brown, the new British prime minister, just announced plans for the construction of five more ecovillages in the United Kingdom, and Dunster has recently taken commissions from wealthy individuals to build zero-carbon mansions and estates, suggesting that the idea of a fossil-fuel-free lifestyle is finally taking firm hold across the spectrum

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It is late May, in what meteorologists have recorded as Britain's warmest spring in 100 years, in the suburb of Hampton, a 30-minute train ride from downtown London. The directions to Bill Dunster's home, provided by his wife, Sue, are proving easy to follow.

"When you get off the train, cross the road, pass the gas station, and you'll see us on the right," she had said. "Don't worry, you can't miss us."

She was right. The Dunster residence sits at the end of a schizophrenic cul-de-sac, which is typical of the area. Each house is different from the one alongside it, and each appears to emanate from a different period, be it Tudor, Victorian, or 1930s semidetached. The Dunsters' home is entirely different again—a part wood, part glass construction that sits on a small patch of green land flanked by a canal. Sprouting from its roof is a wind turbine, which spins lustily in the morning breeze.

Once you've walked through the front door, however, it quickly reverts into an average suburban home that, to the naked eye, doesn't particularly resemble a model of green economy, even though that's precisely what it is. The main room is an open plan—kitchen, dining room, and living room combined. The stove looks as if it could have cooked dinner a hundred years ago. The stereo and TV-video ensemble are also relics from a bygone era, the antenna clinging to a shelf above as if for dear life. The family dog, an aging chocolate-brown Labrador, is sprawled heavily on the floor beneath.

"We've been tidying up since six o'clock this morning," says Sue, who is sprightly and superslim, her blue eyes burning with purpose. Long affiliated with Greenpeace, she now works alongside her husband at his architectural company, Zed Factory, on the business side. "The place was a mess," she continues of the house. "But then we do have two teenage daughters. There is *always* a mess."

Dunster drinks coffee in the middle of the bright living room; floor-to-ceiling windows overlook the lush garden below. A big, solid bear of a man with short hair and a beard that doesn't quite take at the sides, the 47-year-old has the look of someone who is perennially preoccupied. He became an architect mostly to bring people's attention to the damage we are doing to the world, particularly regarding home-energy use, which accounts for double the annual pollution of your automobile.

Levity isn't something Dunster readily indulges in, at least not with members of the press, for whom he has considerable disdain. In fact, he seems averse to any kind of publicity, which is strange, given his unambiguously philanthropic aims. For example, his architecture firm is selling solar tiles and wind turbines (see [5 Best Ways to Go Zero-Energy at Home](#) for information on ordering U.S. versions), but Dunster refuses to hire a PR team to publicize the fact, and he has only agreed to this interview under what appears to be duress. He talks with great enthusiasm about his subject, but he rarely makes eye contact, and if you attempt to interrupt him or steer him back to the

