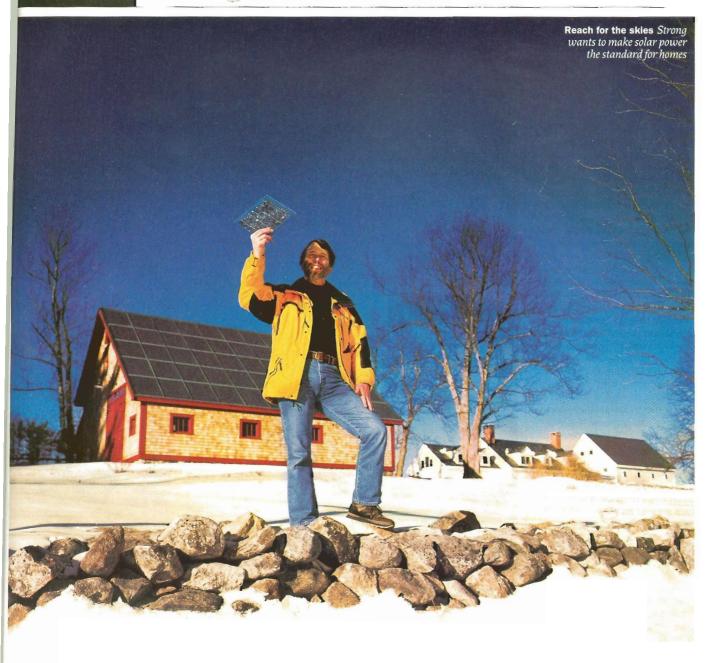
nnovators Building a Greener World



A New Plan for the Planet. Protecting the earth means rethinking how we build, one solar panel at a time

BY RICHARD LACAYO

FOR A LONG TIME, WHEN PEOPLE THOUGHT ABOUT the environment they thought mostly about things they wanted to conserve: forests, species, oceans. But now we know that environmentalism is also about things we produce: houses, offices, factories. The Innovators we bring you here are all involved with what has come to be known as "green building." They include a Massachusetts "solar zealot" making sun power more affordable for homeowners, a couple in India developing eco-friendly communities, an Italian promoting concrete that "eats" air pollution and a Texas crusader for greener hospitals. They all want a world where concern for the earth is "built in" from the start.

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Steven Strong

He's working to bring power for homes, households can afford it

ENGINEER He used to be a "solar zealot." Those are Steven Strong's words, "Even back in the solar-crazy '70s," he says, "it was an open question if anyone could survive trying to sell houses that produce all the

power they need through renew-

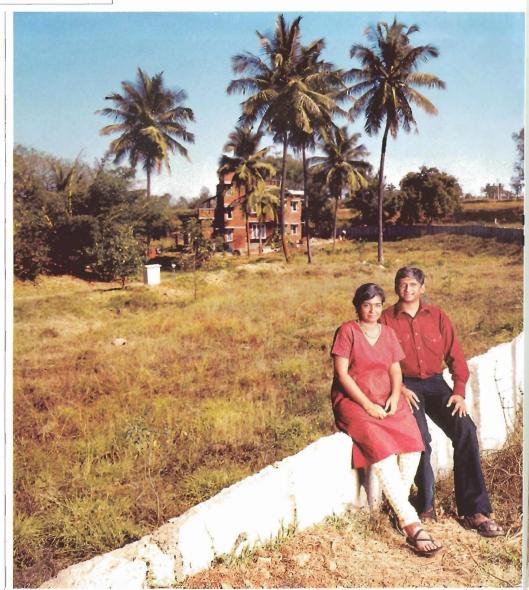
able energy sources."

It wasn't exactly a smooth ride, but survive he did. Along the way, Strong, 56, whose firm, Solar Design Associates, is based in Harvard, Mass., turned himself into one of the nation's foremost experts on solar buildings. His initial breakthrough came in 1980, when he found a manufacturer to build his "integrated" solar roof. The first of its kind, it provided an alternative to the costlier—and clunkier—solar panels that are just slapped onto rooftops.

Strong is very aware that solar can increase the cost of a house about 15%. One way to push down cost is through economies of scale, which is why he's serving as consultant for the Sonoma Mountain Village Project, planned by California developer Codding Enterprises and scheduled for groundbreaking late next year. "For the first time," explains Strong, "a developer has set course to create an entire town built according to principles of sustainability while keeping it competitively priced." Located 45 minutes north of San Francisco, the project is an entire community of environmentally conscious-and solar poweredapartments, houses and stores. "This," says Strong, "is solar for the people." -BY STEFANIE FRIEDHOFF/HARVARD



Future farmers of America A solarpowered barn in New Hampshire



Natasha lype and Jeeth lype

can mean promoting a

ARCHITECTS Bangalore may be India's high-tech heart, but in one part of its leafy suburbs, there's a group of environmentalists trying to get back to the garden. In 2003, husband-and-wife architects Jeeth and Natasha lype, working with Stanley George, a civil engineer, designed the Good Earth Orchard homes. Each of the 60 projected houses, now in various stages of construction, will feature slate and wood left in a natural state, without toxic waxes and finishes. Sewage will be treated in tanks that process waste without harmful chemicals. Household water will be heated

by solar panels, which is expected to reduce electricity use-and electricity bills-30%. And whenever possible, local building materials are used, which reduces the need for gas-guzzling trucks

to transport things from far away. But the subtlest eco-friendly feature may be the verandas that open from each house onto a large, grassy courtyard shared by the entire community. The hope is are simply trying to re-create that the shared space will encour- what we had." -BY SHOBA age shared environmental awareness. "Building green homes is easy," says Jeeth, "Building green communities is impredibly difficult. You have to convince a group of individuals to buy into the same ideologies."

Most fludians still live with several generations in a single home. But as the country grows richer, a burgeoning middle class You think cement



Tidy whitey TX Active kept the cement of Meier's church bright

Enrico Borgarello

is just a building who says it can be a smog buster too

here who wents to say one word to you. Just one word. Are you listening? Cement. As head of research and development for Italicementi, Enrica Bargarella knows gement isn't considered the most high-tech-or environmentally friendly of products. But under his direction, the Bergamb-based Italian company has developed a substance that could turn an ordinary building into ลิ weaggn against air pollution.

CHEMIST There's a man

It's gailed TX Active, and it's an additive for sement that Interally eats suffounding smog. "When light shines on TX, the material becomes active and neutralizes suffounding pollutants like nitrous exide and suffur dioxide," says Bergaretto. According to tools conducted by Italcementi, which spent more than a decade and \$10 million developing the product, TX can reduce local air pollutants from 20% to 70%, depending on sunnight levels and wind. (It also adds as musin as 20% to the cost of the cement.) Cover 15% of the exposed surfaces of a city like Milan. Borgarello estimates, and you could out portution in half. And as a bonus, TX helps build ings stay white than white by resisting the pullutants that scar and stain coment over time. It's a benefit that's visible in the

first structure to use TX cement. the 2003 Dives in Misericordia church in Rome by the architect Richard Meier, who is famous for his white buildings and who likes to see them stay that way.

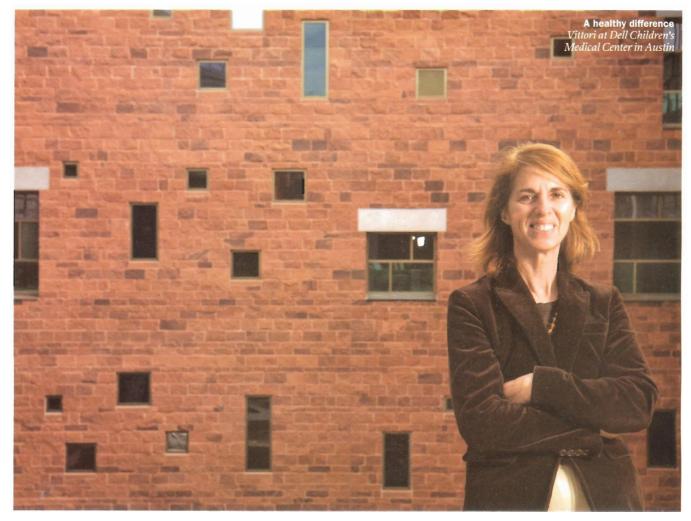
More study will be needed

to determine just how effective TX Active is over the long term. So-called catalytic agents can lose their power over time. But Italcementi is already marketing it in the U.S. and Europe. The biggest potential, however, could be in rapidly growing countries like India and China. With annual cement demand expected to exceed 1 billion tons in China alone by 2008. building materials will have an enormous effect on changing urban environments. "We want to show that cement can contribute to the reduction of pollution," says Borgarello. "We can deal with problems that every city faces." As he said there's a great future in cement. -BY BRYAN WALSH





BHARAT SIKHA FOR TIME



Gail Vittori

She's showing health care providers the many ways they can enter the age of sustainable design

DIRECTOR With an estimated

\$200 billion in U.S. health-care construction planned for the next decade, how hospitals are built and operated will have a huge impact on the environment. And Gail Vittori means to have an impact on those hospitals. With her husband Pliny Fisk III. Vittori is co-director of the Center for Maximum Potential Building Systems, a nonprofit design center in Austin, Texas. MaxPot, as it's known, advises institutions of all kinds-from a homeless shelter in Austin to the Pentagon as it rebuilt after Sept. 11-on how to adopt environmentally sound materials and practices. But Vittori and Fisk have a special focus on health care. Two years ago, Vittori led a committee that devised the Green Guide for Health Care,

a 360-page "design tool kit" that suggests steps that hospitals and other facilities can take to reduce hazardous chemicals and adopt green practices everywhere from the cafeteria to the housekeeping department.

"We have a long way to go to clean up what's really an unhealthy set of materials," she says. The guide, which can be downloaded at www.gghc.org, is currently the basis for more than 100 pilot projects at health-care facilities across the U.S. The California health-care giant Kaiser-Permanente has just decided to adopt Green Guide principles at its new Modesto medical center.

The latest showcase for the MaxPot approach is the new 500,000-sq.-ft. Dell Children's Medical Center of Central Texas, set to open this June, which aims to be the first hospital in the world to attain platinum status in Leadership in Energy and Environmental Design (LEED). Its green features include heavy use of

local and renewable materials, on-site wastewater facilities and windows that open, allowing fresh air to become an alternative to energy-consuming air conditioning. Vittori's vision of hospital design also extends to the mental well-being of the patients and staff. The Dell Center's low-rise buildings, linked by courtyards and quiet spaces, are designed to be child-friendly and unintimidating. The gardens will reflect the plant life of the surrounding area, giving the children the comfort of familiar sights. And as everybody knows, there's no color more comforting than green, -BY HILARY HYLTON/ AUSTIN