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Rebuilding New Orleans—The Green Way

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Five years ago, Hurricane Katrina wiped out the life she knew. Now Melba Leggett-Barnes has a place to call her own again—a home that's good for her and the planet.

Melba Leggett-Barnes stands in slippers on the roof of her house in the Lower Ninth Ward of New Orleans. It's a blazing August afternoon, yet this mother of five and grandmother of six is gripping an orange mop and wiping down 15 metallic solar panels,

each about the size of a picnic table. "I like to make sure all the sun gets through," she says over the clamor of nearby construction work. "Every last drop is money in my pocket."

From her roof, Leggett-Barnes can see dozens of other new homes like hers. With their sharp angles and tropical-fruit hues (mango orange, papaya pink, banana yellow), these houses suggest giant origami sculptures more than traditional New Orleans architecture, known for its deep front porches and curvaceous woodwork. In the blighted Lower Ninth, this vibrant micro-neighborhood seems surreal—an architectural mirage.

On the western border of the two-square-mile area, the levees broke on August 29, 2005, in the wake of Hurricane Katrina. The floodwaters left some 14,000 residents homeless, including Leggett-Barnes and her husband, Baxter. Yielding to the evacuation order, they had packed a few clothes and documents in their car and inched through traffic to her cousin's house in Baker, Louisiana, 100 miles north. They came home to an empty lot. "Scraps were the only thing left," she recalls. "Pieces of the fence, the porch my daddy built, the wheel of my granddaughter's bike."

Today whole city blocks of the Lower Ninth still stand vacant. The hurricane destroyed more than 4,000 homes in the area; fewer than 200 have been rebuilt. Roughly 75 percent of local families are still displaced, staying in FEMA trailers or with relatives across the southeast and beyond.

But Melba Leggett-Barnes is back. The 53-year-old school cafeteria worker, born and bred in

New Orleans, is living on the same plot of land her family has owned for generations: one-tenth of an acre just two blocks east of the collapsed floodwall. And in returning to her neighborhood, Leggett-Barnes has also become part of a radical experiment to prove that a 21st-century house can be at once affordable and sustainable.

Leggett-Barnes and her family are some of the first homeowners in what will become a 150-house community constructed by the nonprofit Make It Right foundation, established by Brad Pitt in 2007 to build environmentally sound residences for low- and middle-income families. "We're cracking the code on affordable green homes," says Pitt, who envisions the Lower Ninth neighborhood as "a 'proof-of-concept' for low-income green building nationally, maybe even worldwide."

A Make It Right house is eco-friendly from top to bottom, using at least 70 percent less energy than a conventional house of the same size. "We don't just want to make homes 'less bad' for the environment," Pitt says. "We want them instead to have an environmental benefit." Thanks to their ventilation systems and solar technology, Make It Right houses emulate trees, purifying the air rather than polluting it and harnessing the sun's rays to produce more energy than they consume. The homes are available exclusively to people who lived in the Lower Ninth before Katrina, and Make It Right guides families through the financing process.

"People assume green is only for rich folks, and we're showing that's not true," says green architect William McDonough, a founding partner in Make It Right. Yet costs do remain a challenge. The average Make It Right house currently takes more than \$200,000 to build, well over their goal of \$150,000. The foundation, not the homebuyers, covers the difference.

"With every house we build," McDonough adds, "we're finding ways to make them more affordable." Make It Right has offered contractors incentives to find cost-saving construction methods and supplies, allowing them to keep half of every dollar saved. (Thrifty innovations so far have included streamlined rigging for solar panels and modular walls that snap into place without expensive joists.) In constructing its first 50 homes, Make It Right has whittled costs from \$200 per square foot to roughly \$150 (compared with \$135 for conventional building in the Lower Ninth).

"When we put the lid on the last house, it will be dollar-for-dollar the same price as a conventional home," Pitt says. "There will be no excuse to build any other way." The cost of building a sustainable house still has a ways to fall, but living in one has already been kind to Leggett-Barnes's household budget. Compared with her home pre-Katrina, her average energy bill has shrunk more than 80 percent. "I used to break out in a sweat when that electric bill came in the mail," she says, pouring sweet iced tea in her kitchen. Now, when her solar panels produce more juice than her family consumes, the extra electricity is sold back to the power company, which then gives her a credit for the surplus.

As well as padding her wallet, Leggett-Barnes's house has also improved her health. She has struggled with asthma for most of her life; these days, her symptoms have all but vanished. "This is my fresh air machine," she says, pointing out the ventilation system in the hallway closet that keeps fresh air cycling through and prevents mold growth—a plague of substandard homes in hot, humid climates. Down the street, the parents of two asthmatic children who live

in Make It Right homes attest that their kids have been able to stop taking their asthma medications.

"What makes my house green and biodegradable and efficient—what makes it good for the Earth—is also good for me," Leggett-Barnes says. "I sometimes feel like it's alive and thinking, always one step ahead." The insulated exterior walls are "like a thermos," she says, keeping heated air warm in winter and conditioned air cool in summer. Her energy-efficient windows "bring you the light but not the heat." To block the scorching Louisiana sun, jasmine and honeysuckle are starting to grow over a wooden trellis that spans her southern exterior wall. "It will give me shade and plenty of fresh oxygen," she explains. "Plus, it will look so pretty to have the leaves and flowers climbing around my windows."

The kitchen, she says, is her favorite room in the house, "because what I love doing the most is satisfying people's taste buds." Her signature dishes are a spicy creamed-corn casserole she calls Corn Porn and her gumbo—the latter is a favorite of Brad Pitt's, who often stops in for supper when he's visiting the Make It Right sites. "Melba never fails to make me smile," Pitt says. "I feel that kind of buoyancy from all the families in the neighborhood."

Leggett-Barnes moves to the living room, where family photographs crowd the wood bookshelves, and settles into a plush brown armchair. The burnt-orange walls glow with afternoon light. Through picture windows that reach from floor to ceiling, she can watch her granddaughters, Cheyenne and Yurriane, skipping rope in the front yard. She might spot her neighbor Gertrude pruning her rose bush, or Mr. Green playing dominoes with a friend. "You can see the hummingbirds. You can see the butterflies," she says. "It is just so peaceful."

For Leggett-Barnes, it's about time. "The year of Katrina was the hardest of my life," she says. "My mother died, then my father died, then the hurricane wiped us out. Life was taking everything away from me. Now it's giving back. I have a house that gives back, making energy from the sun, cleaning the air, giving me light, making me healthy. This is relief after a long time hurting."

Home Eco-Nomics: 6 building blocks of an ultra-sustainable Make It Right residence



Home Eco-Nomics

Six building blocks of an ultra-sustainable Make It Right residence.

1. Solar Power Sunshine provides about 70 percent of energy use in a typical Make It Right house over the course of a year.

2. "Igloo" Walls The homes are built with panels of steel encasing a core of rigid foam. Just three inches in diameter, they offer 40 percent better energy efficiency than thicker wood walls.

3. Sustainable Materials Make It Right uses paints, adhesives, and varnishes that are low in

volatile organic compounds, which can damage the liver, kidneys, and central nervous system. The carpets are recycled nylon 6 rather than the potentially toxic plastic PVC. The porch and beams are TimberSIL, a fusion of wood and glass that resists water rot and insects better than lumber.

4. Lighting and Appliances The windows in a Make It Right home are made with insulating glass that lets in maximum light but deflects unwelcome heat and ultraviolet rays. The lightbulbs are CFLs, which consume 75 percent less energy than incandescents; the dishwashers, fridges, and washing machines are Energy Star–certified.

5. Rain Capture In a downpour, rain slides off the roof into a series of pipes and gutters to collect in two 300-gallon cement cisterns, reducing runoff. Residents can use the water to irrigate their property with a remote pressure pump.

6. Geothermal Heating and Cooling About 20 feet below residents' backyards, a system of pipes absorbs the ambient heat of the Earth—which stays between 45 and 70 degrees year-round—and pumps it into their houses, taking pressure off boilers in winter and air-conditioning units in summer.

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