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Moving BACK HOME to NEW ORLEANS

Project Home Again is the first and the largest development of new homes in Louisiana to be Builders Challenge certified.

BY ROGER HAHN

Almost five years ago, when Hurricane Katrina went spiraling across the Gulf of Mexico heading straight for a direct hit on the city of New Orleans, kindergarten teacher Chanda Hayes and her two teenage children, Courtney, 13, and Kevin, 14, packed up the family car and left town as quickly as they could, seeking refuge with relatives in Atlanta. Like a lot New Orleanians, they expected to stay a few days, a week at the most. Instead, they wound up staying four years.

And they never stopped wanting to come home. Visiting every holiday and staying with friends or relatives, Hayes found it increasingly more difficult to return to Atlanta. “There was always a little part of me,” she says, “that just wanted to stay.”

The home she owned in New Orleans was almost completely destroyed by floodwaters—more than 10 feet deep in places—that coursed through the streets of Hayes’s Gentilly neighborhood, located several miles north of the city’s historic French Quarter. Constructed for the most part on swampland drained early in the 20th century, Gentilly developed as a thriving and diverse mix of mostly middle-income family homes, many built in the style of Arts and Crafts bungalows.

After Katrina, though, Gentilly became a haunted wasteland, a desolate landscape containing block after block of abandoned single-story homes.

Lack of Resources, Slow Repopulation

Post-Katrina recovery in Gentilly, like that in many of New Orleans’s residential neighborhoods, has proceeded at a snail’s pace. For many middle-income and lower-income residents, personal financial resources—even with insurance payments and recovery money from the federally financed, state-run Road Home program—have proved insufficient to meet the added burden of increased construction costs and a new mandate to raise homes according to a recent FEMA (Federal Emergency Management Agency) floodplain map.

In Chanda Hayes’s case, the payment she received from her homeowner’s policy was just enough to pay off her mortgage, but the amount she got from the state-run Road Home program was not enough for her to rebuild and return home.

A second deterrent to rebuilding New Orleans’s residential neighborhoods is the pioneer courage required to return to an abandoned home located on a mostly uninhabited block. The widespread destruction and the lack of a coordinated government response have meant that many of the city’s most densely populated neighborhoods are coming back in bits and pieces, leaving some so sparsely populated that residents were hard pressed to find convenient community resources, like grocery stores and banks.

Consider, for example, a recent survey that estimates there are more than 50,000 residential addresses in New Orleans where there is either no home standing or one so badly damaged that it remains uninhabitable. The same survey determined that there are another 7,500 New Orleans addresses for homes that are habitable but vacant. Assuming that some neighborhoods were untouched by flooding and others have a larger than average percentage of residents with the means to rebuild, those figures mean that a surprising number of neighborhoods remain dominated by vacant houses and empty lots.

Take the city's now-notorious Lower Ninth Ward, a working-class neighborhood built at the outskirts of an industrial zone that was decimated during Hurricane Katrina when the wall of a shipping canal burst and water cascaded through the streets of the neighborhood like a river unleashed. Nearly all the neighborhood's 4,000 homes were destroyed. Today the primary sign of rebuilding, actor Brad Pitt's Make It Right project, is zeroing in on a promise to build 150 new homes for displaced residents.

So what does it take to catalyze the rebuilding of New Orleans's celebrated residential neighborhoods? A focus on financial support for individuals, community building for neighborhoods, and project modeling that can turn 100 completed homes into 1,000 in just a couple of years.

Model Based on Swapping Properties

Which is exactly what Project Home Again is aiming for.

A nonprofit established by Leonard Riggio, the founder and chairman of the Barnes & Noble empire, Project Home Again is one of roughly a dozen organizations that set up shop in New Orleans during the first couple of years following Hurricane Katrina, when it became increasingly apparent that rebuilding the city would require more resources than the existing worlds of philanthropy, business, or government could offer.

And thus far, Project Home Again has made the most progress in developing a scalable model that incorporates energy-efficient home building, support for returning homeowners, and a community-based rebuilding strategy.

Riggio says he began thinking about Project Home Again on Labor Day weekend five years ago, when, watching TV at his Palm Beach vacation home, he first saw the troubling post-Katrina images of residents displaced by flooding. "It didn't take me long," he says, "to realize that what would be needed was a family-to-family, heart-to-heart gift to families in need of help." At the



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The modest exteriors of Project Home Again houses conceal thoughtfully designed, energy-efficient infrastructure qualifying for 66-69 HERS ratings. All houses after Phase I are one-story; so far, 50 houses have been built, and 50 more are on the way.

same time, he called on decades of experience as a New York City philanthropist to design an operational blueprint that would ensure that every dollar invested yielded maximum return.

To kick the project off, he donated \$20 million from his family foundation, easily the largest post-Katrina gift from a single individual. Next he purchased a 3½-acre parcel of land. He then hired Green Coast Enterprises, a local real-estate management and development firm, to help manage the design-and-building process. Founded in Katrina's wake, Green Coast Enterprises is dedicated to finding profitable ways to do high-quality work while promoting overall social improvement.

Green Coast Enterprises, in turn, led a series of community meetings to discuss design and consulted with Byron Mouton, an architect and professor at Tulane University's School of Architecture, where students were engaged in designing and building an energy-efficient, environmentally appropriate home as part of their course work. Green Coast Enterprises also helped develop an integrated, design team approach, bringing in local design firm Sustainable Architecture, LLC; the National Laboratory for Renewable Energy; and Building Science Corporation, research partners in the U.S. Department of Energy's Building America program, which aims to integrate better building practices in new and existing residential construction.

Around the same time, Riggio hired a full-time program manager, Carey Shea, a program officer with the Rockefeller Foundation who is an experienced nonprofit administrator well versed in community development projects and formally trained in construction management.

The fundamental economics of the project rest on a property swap that gives each family selected a new house in return for

the home or lot they already own. Project Home Again then extends to each family a mortgage equal to the difference between the appraised value of their old house and the appraised value of their new home. The Project Home Again mortgage is reduced by 20% for each year the family remains in the house, and is forgiven entirely after five years.

To qualify, applicants must, obviously, already own a damaged home or empty lot they cannot afford to restore. Applicants must also be employed within the New Orleans metro area and agree to maintain liability and flood insurance for as long as they live in the new home. In addition, applicant family income has to be enough to ensure maintenance of the new home (paying taxes, insurance, and utility bills) without exceeding 80% of the area median income. For a family of three, for example, this translates to an annual income of between \$29,136 and \$43,050.

For applicants who were renters before the storm, Project Home Again requires that they take financial literacy classes, clear up any outstanding debt, and agree to purchase no other homes until the mortgage on the new one is paid off.

Louisiana's First Builders Challenge Housing

The basic design concept underlying Project Home Again's low-cost, high-efficiency approach is the construction of a well-built and well-protected building envelope containing high-performance mechanical systems, including a dehumidification function, especially suited to the region's hot-humid climate (see "It's Not the Heat," p.36). Project Home Again designs also incorporate passive features that complement natural ventilation whenever possible, with strategically placed shading, ceiling fans in every room, and double-hung, double-glazed, low-e windows.

The primary alteration in this equation has been the transition from two-story structures in Phase 1 to one-story structures in Phase 2, intended to more accurately reflect the scale of surrounding homes, many of which were built on site level, concrete slabs. The first round of houses ranged in size from slightly more than 1,000 square feet to 1,550 square feet of floor space. Subsequent designs are more compact and comprise a narrower range of sizes—from slightly more than 1,100 square feet to just over 1,300 square feet. Design options include both three-bedroom/two-bath and two-bedroom/one-bath configurations.

Regardless of their size or height, all Project Home Again houses have been raised above FEMA-designated flood levels, sitting on piers built with southern pine locally sourced and pressure-treated with inorganic borates. In traditional, pre-WWII Louisiana home building, raised structures with open crawl spaces like these were more the rule than the exception, responding to the possibility of flooding and designed to promote the flow of natural ventilation.

"One basic strategy for all these houses is to promote cross-ventilation and passive heat reduction features wherever possible," says John Schackai of Sustainable Architecture, LLC, architects for Project Home Again. "In New Orleans, the use

of sleeping porches is a long-standing tradition. Being a native, I've come to realize that's an important feature of traditional Louisiana houses, so all the houses have good-sized, screened-in porches that can be used for sleeping."

Locally sourced southern pine is also used for framing. All wood used in the homes is borate-pressure-treated lumber. The building envelope is supported by 2 x 6 elements, installed 24 inches on center. Local building codes prohibited the use of fully advanced framing techniques such as two-stud corners and single top plates. Walls contain 3 inches of R-13 insulation, and a drainage plane of high-density polyethylene house wrap is installed behind fiber cement clapboard siding. The floor is insulated with 2 inches of R-13 foam, and the unvented attic space is insulated with 4½ inches of R-20 foam installed on the underside of the roof deck and treated with an ignition barrier to comply with the fire code.

At the heart of the Project Home Again's low-cost, high-efficiency building strategy is a 14 SEER heat pump installed in the unvented, insulated attic and augmented by an Aprilaire 1750 whole-house dehumidifier. The dehumidifier includes a fan-cycling function and controls the central-fan, integrated-supply ventilation system. Configured to draw humid air from the main living space, the dehumidifier releases treated air to the home's supply plenum. The result is full distribution of dehumidified air when occupants want to operate the dehumidifier separately, running it only as needed.

Energy Star appliances, CFLs, and LED (light-emitting diode) lighting technology complete the energy-efficient treatment of the interior.

With HERS index scores of 65 to 67, the initial set of Project Home Again structures, 20 in all, have already been certified to meet the requirements of the U.S. Department of Energy's Builders Challenge program. Green Coast Enterprises President Will Bradshaw estimates that the efficiency enhancements will save occupants an average of \$750–\$1,000 in annual energy costs. In keeping with the project's close attention to detail, however, project managers are currently determining actual costs and actual savings for the majority of Project Home Again residents, a process that should produce results shortly.

Regardless of specific savings, Project Home Again has already won the honor of being Louisiana's first, and largest, Builders Challenge-certified housing development.

Rebuilding Neighborhoods, Satisfying Customers

Project Home Again has so far progressed through three distinct phases of development, and with each phase have come alterations to the fundamental operating model—changes that point to a whole-systems approach, where components are adjusted or added to enhance the overall impact of the project. Throughout, Executive Director Carey Shea credits Leonard Riggio with keeping the program team narrowly focused on fine-tuning an affordable and scalable production process.

In keeping with the search for whole-systems synergy, the operating model for Project Home Again has also developed a strategy that targets specific neighborhoods, requiring at least 60% occupancy on those streets where it plans to build. “As a New Yorker,” Riggio says, “I’ve seen whole neighborhoods written off for 20 years, only to become vibrant areas again. We think we can do the same for New Orleans. What we really wanted was for people who’ve been displaced to have a home and be part of a community, something similar to what they had before it was wiped out by the storm.”

More specifically, Shea explains that Project Home Again gives returning New Orleanians “the opportunity to move to an area that is actively being rehabbed, where there are neighbors; where, when the sun sets, lights go on in surrounding houses.”

Project Home Again also had to battle the tradition-bound nature of New Orleans’s native population, many of whom had lived in the same houses their parents and grandparents grew up in. “Initially, it was more difficult,” Shea says. “Right after the storm, a lot of people hoped simply to return to their own homes. But then reality set in: The neighborhood is in bad shape, the houses are dark at night, and the houses haven’t been elevated to safe flood levels. When folks saw the houses we were building, they weighed what we were offering against their ongoing struggle to return home.

“Gradually, more and more folks decided they would rather move into a beautiful and well-built home where they knew their family would be safe.”

This focus on homeowner satisfaction has been a principal objective of the Project Home Again management team, ex-

It's Not the Heat...

Plagued by unusually high levels of humidity roughly six months of the year, New Orleans also has a higher average annual precipitation—60 inches plus—than most other cities in the Southeast. The combination makes it a perfect testing ground for air-conditioning and dehumidification strategies. And it probably comes as no surprise that not all building scientists agree on a uniform approach.

John Schackai of Sustainable Architecture, LLC, architects for Project Home Again, explains his rationale this way: “One basic strategy for all these houses is to promote cross-ventilation and passive heat reduction features wherever possible. But you might have 80% humidity outside, which is not uncommon in New Orleans. When you turn the thermostat down to 72°F in those conditions, you feel cool.

“But you also feel sticky. So you’re tempted to turn the thermostat down even farther. You really don’t need to cool the air in order to feel comfortable at 72°F; you just need to remove the humidity.”

In its case study of Project Home Again structures, the Building Science Corporation offers another consideration: “The very efficient building enclosure doesn’t reduce the latent load as much as it does the sensible load, because much of the latent load is generated by the occupants. Therefore, supplemental dehumidification is necessary to control humidity levels year-round and has

a positive impact on occupant comfort and building durability.”

But adding a dehumidifier to Project Home Again’s A/C system increases costs by \$2,000 per house. And the jury’s still out when it comes to universally recommending a dehumidifier be used in hot-humid climates.

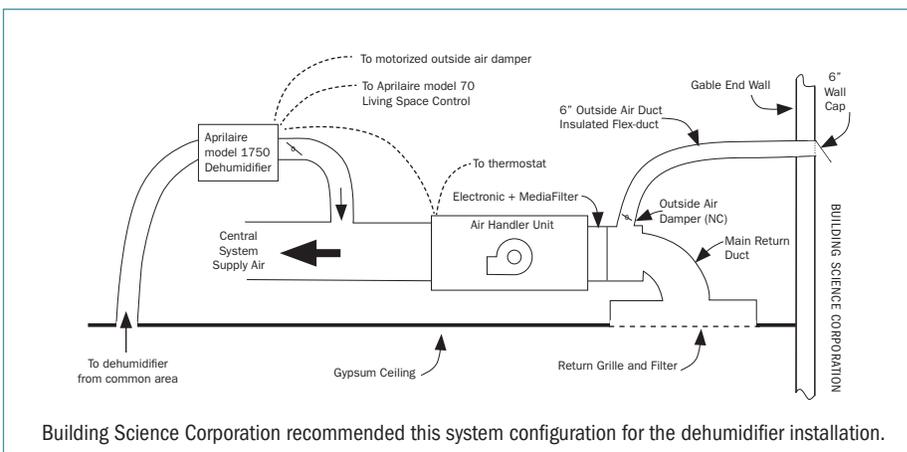
Phil Voss, senior project manager for the National Renewable Energy Laboratory in Golden, Colorado, spent a year and a half stationed in post-Katrina New Orleans, consulting on a number of home-building projects, including Project Home Again. His response suggests that more data may be required to reach a hard-and-fast conclusion.

“There has been a fair amount of research by Building America teams working in hot-humid climates, and nearly all researchers seem to agree that dehumidification is beneficial and important.

But not all teams recommend it for all homes. One tentative conclusion still worth considering is that appropriate sizing may be more important than adding a dehumidifier to address humidity.

“Clearly, if the A/C unit has been oversized by using rule-of-thumb rather than *Manual J* calculations, then it will short-cycle, providing inadequate dehumidification. But one way to address that is to calculate the capacity required more precisely for super-efficient cooling in that particular house. Also, in order to ensure consistently appropriate settings on a whole-house system, resident education really is required to operate the system year-round with maximum efficiency.

“For both these reasons, some feel that a properly sized, highly efficient system may be more effective than simply adding supplemental dehumidification to the building specs.”



tending the team approach to design into all phases of project activity, including the smallest details of daily living. This focus on simply making things work helps to explain the approach that Project Home Again has taken in architectural design. Potentially appropriate in dozens of other cities, the houses instead take their architectural cues from early-1950s suburbs that extended inner-city living in scores of cities around the United States.

Blending seamlessly into the mix of smaller communities that together form the larger Gentilly neighborhood, these are homes that essentially disappear in context, representing a dimension of design efficiency where architecture becomes less a distraction for designers, builders, homeowners, and neighbors.

They also come fully landscaped and fully furnished, with details like back-porch floodlights already installed. These finishing touches make them not just well-made houses, but well-made houses specifically designed for occupants who have, in recent years, faced innumerable challenges and now want nothing more than simply to come home. “They thought of everything,” says Chanda Hayes. “All I brought with me from Georgia were my dishes and utensils, so all I had to buy when I moved in was a broom and some toiletries. It’s a dream come true for me. I feel safe in this house. My kids are really happy to have their own rooms. I’m just really excited to be home.”

And the customer satisfaction process doesn’t end on move-in day, either. Some of the newer Project Home Again houses, for example, were constructed on streets that still had a “clustered” mailbox arrangement, a post-Katrina innovation designed to make mail delivery more efficient by consolidating half a block’s worth of mailboxes in one freestanding unit. When returning residents began to inhabit their new houses, however, the inefficiency of that arrangement for individual residents who had to walk down the block and back just to get their mail soon became obvious. Once it did, Project Home Again managers began installing individual mailboxes on houses under construction as well as on those already built.

Reducing Costs, Reducing Blight

With the primary objectives of building houses and bringing people home clearly under control, the Project Home Again team began focusing on two other goals: reducing costs and integrating related components.

Phase I of Project Home Again’s effort produced a compact development of 20 new homes lining a central thoroughfare and adjoining streets. It required the purchase of land and included costs for both installation of infrastructure and landscaping of shared open space behind the houses. From the very beginning, an integrated-management approach proved helpful. Green Coast Enterprises, acting as project manager and construction supervisor, hired TKTMJ, Incorporated, a family-run Louisiana construction firm, to be Project Home Again’s builder.

Project Home Again Home Features



Roof Assembly The attic is unvented with high-density spray foam installed under the roof deck. The unvented attic foam will be treated with an intumescent ignition barrier to meet the code fire protection requirement for an intermittently occupied space.

Window Specifications The windows are vinyl with LoE3 spectrally selective glass that has a very low SHGC of 0.23. Glazing is the most important enclosure element in a hot-humid climate, and this next generation glazing technology is an impressive efficiency and durability upgrade.

Wall Assembly The framing is 2x6 at 24" o.c. Full advanced framing could not be achieved because of prescriptive guidelines set by the 130 MPH Wood Frame Construction Manual that was adopted by the city of New Orleans. Therefore, the houses are framed with a double top plate and 3-4 stud corners.

Foundation Assembly The homes will be fully framed and will be constructed on pressure-treated wooden piles. Wooden piles were chosen for Phase II due to the different soil geography in the neighborhood. All wood is borate-pressure-treated for resistance to termites and mold.

Despite having to respond to change orders—including a midproject recommendation to reconfigure the installation of the supplemental dehumidification system—the builders finished Phase I of Project Home Again’s building effort in just 150 days, bringing it in under budget and ahead of schedule. Green Coast Enterprises President Will Bradshaw attributes much of the building efficiency and ability to work through change orders to a team approach made possible through engaged project management.

“This project has been, and may forever be, one of the most remarkable things I’ve ever been a part of,” he says. “The success of this effort really begins with our program manager, Carey

Shea, who was always clear in communicating the expectations of the project funders. It also includes local builders TKTMJ, Incorporated, who were willing to work with us and invest in their own learning curve. Not only have we all been engaged in a necessary and inspiring project, we also managed to create the kind of genuine real team spirit where the whole becomes greater than the sum of its parts.”

To maximize the reduction in costs, which have continued to drop as the project has proceeded, Shea also concentrated on cutting overhead by recycling architectural plans and relying on just herself and two other staffers to manage the entire project.

Even with those economies of scale, Project Home Again costs include approximately \$180,000 per house for building and landscaping, \$6,000 for furnishing, and \$4,000 for construction management and supervision. While that may be well above the local median price of \$140,000, it's not that far from the national median for housing construction of \$165,000. And Project Home Again's final cost at this point doesn't take into account the potential value of an extended lifetime of occupancy due to high-quality construction or, more significantly, reduced energy costs.

In its most recent incarnation, Project Home Again has begun focusing on smaller-scale neighborhoods to maximize the effect of community building; and project managers have altered slightly the basic land swap arrangement on which the program is based, both to lower costs and to target one of the city's most pressing post-Katrina problems: those 50,000 uninhabited and blighted properties.

Project Home Again built 12 more homes in Phase II. In Phase III, Project Home Again forged an agreement with the city of New Orleans to swap empty lots deemed unsuitable for building (frequently because they are too narrow) for lots ceded to the city under the state's Road Home program. Those lots, either purchased from homeowners or seized as abandoned property, are then sold at a significant discount. The lots deemed unsuitable for building that Project Home Again has traded in are then

offered, under the same program, to adjoining homeowners as expansions for building or for use as open space.

Under this new arrangement, Project Home Again eliminates two blighted lots for every home it builds—the lot traded to the city and the lot used for building.

Plugging In Components, New Funding

Working with the city of New Orleans on blight reduction is only one of a number of partnerships Project Home Again has encouraged, adding discrete components to its basic operating model. The organization is already working with a local nonprofit and volunteers from Barnes & Noble to plant trees on homeowners' properties. A logical next step would entail a partnership with one of several organizations in New Orleans that have sprung up in the wake of Hurricane Katrina dedicated to deconstructing, rather than demolishing, houses with recyclable materials.

Some organizations involved in deconstruction/recycling activities have also added job-training programs for at-risk inner-city youths to their operating model, and in time, Project Home Again may be able to support apprenticeships of its own.

But the most immediate focus for Project Home Again's management team is fairly simple: finding partners who can contribute a significant amount of funding to increase the number of houses being built.

Having successfully “perfected” what she believes is a “tight, streamlined model,” Executive Director Carey Shea has now embarked on a quest for funding partners, with two new sources already recruited. Having already completed 45 homes, the organization now has plans to construct 55 more at a cost of \$11 million.

Funding for this new round of construction will include \$7,425,000 from the Riggio Foundation, \$1,875,000 from the Salvation Army, and \$1,700,000 from the 2009 American Recovery and Reinvestment Act (ARRA). The Salvation Army funding is part of its \$12 million EnviRenew program, a low-cost, energy-efficient housing initiative with plans to build 125 new, energy-efficient homes and carry out 375 retrofits, repairs, and weatherizations in five New Orleans neighborhoods. The ARRA funding is Project Home Again's portion of \$30 million awarded a New Orleans consortium of 14 neighborhood housing organizations.

Having successfully pursued the creation of integrated, whole-systems models for both home building and project management, Project Home Again is now poised to answer what is perhaps New Orleans's most critical rebuilding question: How quickly can the city produce low-cost, energy-efficient housing that will significantly reduce an epidemic of blight and bring large numbers of exiled residents home?

Or to put it another way: How long will it take before the residential neighborhoods of post-Katrina New Orleans are once again made whole? 

>> For more information:

Building America Case Study: Project Home Again, Phase I (2009)
www.buildingscience.com/documents/case-studies/cs-la-new-orleans-pha/view

Building America Case Study: Project Home Again, Phase II (2010)
www.buildingscience.com/documents/case-studies/cs-la-new-orleans-pha-ii

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