

Rebuilding Community Block by Block

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Abstract

In 2003, Louisiana State University's (LSU's) Office of Community Design and Development was awarded a U.S. Department of Housing and Urban Development Community Outreach Partnership Center Community Futures Demonstration grant to investigate new prototypes for sustainable affordable housing. Following the devastation of New Orleans by Hurricane Katrina in August 2005, the focus of the grant was shifted to developing a homebuilding training program for New Orleans residents that resulted in the construction of the first two, new post-Hurricane Katrina houses in the Lower 9 neighborhood on the north side of the Lower 9th. A construction team of previously unskilled workers and 13 fourth-year students in the undergraduate professional degree program in architecture at LSU completed the work. This enterprise is discussed in the context of community participation, service learning, and the capital market for affordable housing in New Orleans at the time of the project. The demonstration project has not secured additional funding for continuation at this time; however, the process was deemed successful and the authors suggest six actions for replicating the program.

"It was a spiritual experience. I put myself in the shoes of the ladies who had lost their house(s). I went outside and just stared at the house(s). To lose everything then to come back to the same area, where two new houses are going up. That is miraculous. And it touched my heart, and I know the joy they felt."

Brother K., Bethel Colony South, Community Construction Team Member

Introduction

This article represents an extraordinary tale of grassroots reconstruction, collaborative learning among diverse stakeholders, the power of service learning,¹ and the capacity of partnerships to serve as a catalyst for positive change despite the overwhelming obstacles that existed in post-Hurricane Katrina New Orleans. The plan was simple: rebuild the community house by house and block by block, not unlike the manner in which the community originally developed. The project was a product of a U.S. Department of Housing and Urban Development (HUD) Community Outreach Partnerships Centers (COPCs)² Community Futures Demonstration grant awarded to Louisiana State University's (LSU's) Office of Community Design and Development (OCDD). It was conceived to demonstrate a method for rebuilding economically stable and sustainable neighborhoods through teaching unskilled residents the art and science of homebuilding. The project was a bottom-up approach to neighborhood redevelopment that acknowledged the importance of social capital and the value of community engagement, and it relied on academic theories of experiential learning and continual assessment and feedback to shape it. In its final incarnation (see exhibit 1), the project site was the classroom and the partnership a learning community very different from those typically occurring at the university.

At the conclusion of the project, the first two, new post-Hurricane Katrina houses in the Lower 9 were built and occupied (see exhibit 2); a team of unskilled residents learned homebuilding skills; and

Exhibit 1

The Project Site As the Classroom in the Lower 9 Neighborhood, New Orleans



Construction work in progress at 2310 and 2314 Delery Street in the Lower 9 neighborhood, New Orleans, Louisiana. Photo credit: Marsha Cuddeback.

¹ Alan Waterman (1997: 2) in his book, *Service-learning: Applications from the Research*, describes service-learning as "... a method (A) under which students learn and develop through active participation in thoughtfully organized service experiences that meet actual community needs and that are coordinated in collaboration with the school and community; (B) that is integrated into the students' academic curriculum or provides structured time for the student to think, talk, or write about what the student did." The pedagogical approach used to develop the academic strategies for service learning is a product of more than 20 years of research in this area. Salient works that have contributed to the development of Cuddeback and Bosworth's approach appear in the Additional Reading section at the end of this article.

² This program area is not new for HUD's Office of Policy Development and Research. For more information on an earlier work on affordable housing by COPCs, see Wiewel, Gaffikin, and Morrissey (2000).

Exhibit 2

The First Two, Newly Built Houses in the Lower 9 Neighborhood, New Orleans



A worker adds finishing touches to completed houses at 2310 and 2314 Delery Street in the Lower 9 neighborhood, New Orleans, Louisiana. Photo credit: Marsha Cuddeback.

the neighborhood was hopeful about its future. Occupied houses in the immediate neighborhood grew from 2, when the project started, to 12, when it ended, with five requests to build additional new homes nearby. Actualizing the demonstration project was far more complex and challenging than anticipated, however, and sustaining it in New Orleans at that time was not possible. For the participants, the project was more than an experimental building project; the hands-on engagement in the community was an emotional experience that required us to gauge success both qualitatively and quantitatively.

Two months after Hurricane Katrina made landfall along the Gulf Coast, thousands of New Orleansians and others residing along areas of the Gulf Coast impacted by Hurricanes Katrina and Rita were displaced and now lived as refugees in temporary Federal Emergency Management Agency (FEMA) trailer home communities (see exhibit 3). Perhaps more unsettling, 2 1/2 years later, the refugees in New Orleans are displaced yet again, having been evacuated from their temporary FEMA trailer homes because of high levels of formaldehyde resulting from the processes used in manufacturing the trailers.

Currently, 38,000 FEMA trailers are still in use along the Gulf Coast, housing approximately 100,000 people; 30,000 of the trailers are located on private property, and it is questionable whether forced evacuation, even as a last resort, is even possible. The net result is more pressure

Exhibit 3

Gulf Coast Residents Living in Temporary Trailer Communities



A FEMA trailer settlement in New Orleans, Louisiana, in 2006. Photo credit: Marsha Cuddeback.

on the already limited housing resources and higher rents (Williams, 2008). The Katrina Cottage program, funded by the FEMA alternative housing program in both Mississippi and Louisiana, is intended to relieve some of the pressure for housing, but it is only having a small effect. Although the Mississippi Katrina Cottage program has provided more than 1,600 housing units, Louisiana has yet to build one (Gautreau, 2008). Nonetheless, Donald Powell, the head of President Bush's hurricane recovery team, stepped down on March 1, 2008, saying that he had accomplished his goal to get Louisiana, Mississippi, and Alabama back on their feet (Shields, 2008).

Those concerned with the development of replacement housing have had some effect; however, no coordinated effort exists, nor is sufficient resource allocation available to address how to rebuild the thousands of houses and apartments destroyed by the storms. The Louisiana Recovery Authority (LRA) is still distributing funds for rebuilding, but with insufficient funding to meet the actual need, which is resulting in payouts that are less than homeowners anticipated and amounts insufficient to rebuild replacement houses. Whatever the causes, the traditional approaches to replacing housing stock are not working.

It is not surprising that these approaches are not working because rebuilding requires working directly with individual homeowners, and, as Achtenberg and Marcuse (1986) pointed out 25 years ago, "Government policies affecting housing, which supposedly serve the common good, systematically operate to reinforce the profitability of the housing sector and of the business community as a whole" (Achtenberg and Marcuse, 1986: 4).

For pre-Hurricane Katrina homeowners, the LRA's Road Home program continues to provide resources to pay off mortgages on nonexistent houses and provide seed money to start over. The intent, however, is directed toward replacing, not improving, the homes of the residents, and little, if any, consideration is given to the culture of place and the quality of life for the residents as they rebuild their neighborhoods. In fact, the Road Home program has gone to great lengths to ensure that no person receives more than is required to replace, as closely as possible, what existed prior to Hurricane Katrina. Our challenge was to use the resources of our COPC Community Futures Demonstration grant to help the residents of the neighborhoods in the Lower 9 help themselves to rebuild their homes, their neighborhoods, and their lives, knowing at the start that this would not be a typical self-help endeavor and that success would rely on the necessity to serve the interests of private capital as pointed out by Achtenberg and Marcuse, (1983). At this time, it is clear that as a result of the total destruction of physical capital in the targeted project area, any rebuilding in the Ninth Ward will need to rely heavily on neighborhood social capital to achieve long-term neighborhood objectives (see Arefi, 2004).³

Evolution

The original enterprise was conceived and implemented by the outreach office of the LSU School of Architecture, OCDD. The project began in November 2003, when LSU was awarded a COPC Community Futures Demonstration grant funded through HUD. The purpose of the initiative was to conduct research culminating in innovative strategies for strengthening the production of good-quality, affordable homes. In our case, the initial focus was in Baton Rouge, Louisiana, where we partnered with a local nonprofit to build three demonstration projects. We completed one home in Baton Rouge, partnering with Habitat for Humanity, but following the events of August 29, 2005, when Hurricane Katrina made landfall, the remaining grant funds were reallocated to refocus the goals of the project to develop a replicable, affordable homebuilding training program in the Lower 9 neighborhood in the Ninth Ward of New Orleans and build three hurricane-resistive and energy-efficient demonstration homes. The primary outcomes for the project were to train unskilled men and women in homebuilding construction work, build capacity in neighborhoods to rebuild their communities, create jobs, and reconnect the neighborhood social networks broken by the storms.

Project planning occurred in the spring and summer of 2006, culminating with the participant-training component on September 25, 2006. The construction team consisted of the trainees, a diverse group of New Orleans residents, and 13 fourth-year LSU School of Architecture students. (To see a photo of 17 members of the construction team on the first day of construction, log onto http://www.huduser.org/periodicals/cityscape/vol10num3/cs_images.html.) Construction of the houses began several days later and was completed mid-February 2007.

The tangible product of the training program was two new homes. They were the result of a partnership among OCDD; Association of Community Organizations for Reform Now (ACORN) Housing

³ Arefi does not address the condition in which a total loss of physical capital is in his analysis; however, it seemed logical to assume, based on his three categories of the nexus of needs and assets in neighborhoods, that, as physical capital diminishes, the need for social capital increases (Arefi, 2004).

Inc. (AHI), acting as developer; ACORN Services Inc. (ASI), acting as the general contractor; and Countrywide Bank, providing the project financing.⁴ After the project was under way, it became the beneficiary of many volunteers, including the Canadian Auto Workers, Unitarian Universalist Association of Congregations, Louisiana Delta Service Corps, and Pulitzer Prize-winning novelist Richard Ford, among many others. Resources for landscape materials and toolkits for each trainee were donated by the Unitarian Church of Baton Rouge. Word of the project spread among the displaced residents and, when a sermon delivered in a local church in Rochester, New York, reported the news of these first new homes, Charles Barkley, retired forward of the Houston Rockets, visited the homes during construction, raising spirits in the Lower 9 neighborhood and spreading awareness of the severe conditions in the Ninth Ward 1 year after the storm. Throughout the project, the houses attracted visitors who wanted to become actively engaged in this tangible effort. As the houses took shape, the project became a symbol of progress and attracted tourist buses that drove by frequently to show visitors that, in the midst of the rubble, positive things were happening.

Location and Homeowners

The project site is located in the Lower 9 neighborhood, one of three sections of the Ninth Ward. The Ninth Ward is the largest and one of the most recognized by name of the 17 wards of New Orleans. The Lower 9th is separated from the rest of New Orleans by the Industrial Canal, with East New Orleans and the Upper 9th on the west side and the Lower 9th to the east of the Canal. (To see a pre-Hurricane Katrina aerial photograph [from Google Earth, <http://earth.google.com/>] showing the project location in the upper right area of the image, the Mississippi River at the bottom of the image with the Holy Cross neighborhood immediately adjacent, the Industrial Canal on the left, and Jackson Barracks to the right, log onto http://www.huduser.org/periodicals/cityscpe/vol10num3/cs_images.html.)

Geographically, the Lower 9th extends to the Mississippi River Gulf Outlet Canal on the north, the Mississippi River on the south, and the Industrial Canal on the west, where two floodwall sections toppled in the early morning hours of August 29, 2005, resulting in catastrophic flooding. Along its eastern edge, the Ninth Ward is separated from St. Bernard Parish by Jackson Barracks, the headquarters for the Louisiana National Guard and another casualty of Hurricane Katrina (WPA, 1940). (To see a photo of Work Projects Administration workmen in 1940 constructing gutters near the entrance on Delery Street (looking north) with Jackson Barracks on the right, log onto http://www.huduser.org/periodicals/cityscpe/vol10num3/cs_images.html.)

The Lower 9th consists of two neighborhoods on the north and south sides of St. Claude Avenue. The Holy Cross neighborhood on the south side is the oldest settlement in the Lower 9th and is home to the famous steamboat houses and Fats Domino's residence. On the north side is the second neighborhood, commonly referred to as the Lower 9, where the project site is located.

⁴ The financing for the project was a collaborative effort between AHI and Countrywide Bank (and subsidiaries). AHI provided construction loans based on promised LRA funds or insurance payouts pledged to repay the loans, and Countrywide provided the mortgage financing.

Before Hurricane Katrina came ashore, the Lower 9th was a predominantly African-American, working-class community with owner-occupied housing exceeding 59 percent. As described by the Greater New Orleans Community Data Center, “The neighborhood is rich with small businesses, barber and beauty shops, corner stores, eateries, day care centers, as well as public schools and some say, far too many churches. It has a resilient history of survival and activism” (Greater New Orleans Community Data Center, 2002). As a result of the massive damage caused by Hurricane Katrina, the Lower 9 neighborhood was one of the most severely depopulated areas of New Orleans (see exhibit 4). (To see images [aerial photographs acquired from Google Earth, <http://earth.google.com/>] indicating the project site showing the damage to the project area after the storm, log onto http://www.huduser.org/periodicals/cityscape/vol10num3/cs_images.html.)

Most homes in the Lower 9 neighborhood were built between 1949 and 1980, and much of the area was platted with 26-foot-wide wide lots (New Orleans Public Library, 1949). Many of the houses were located on double and, sometimes, triple lots. The area had a true mix of housing—shotguns, side-by-sides, bungalows, and newer, single-story, slab-on-grade homes built in the 1970s and 1980s. Before Hurricane Katrina destroyed the neighborhood, some of the houses were in poor repair, some were well maintained, but, nonetheless, this neighborhood was active, safe, stable, friendly, and home to intricate social networks of friends and families.

The pre-Hurricane Katrina population of the Lower 9th was estimated to be slightly more than 14,000. No firm post-Hurricane Katrina population estimates exist; however, according to postal delivery statistics, in March 2007, the U.S. Postal Service made 0 to 500 active residential deliveries per square mile in the Lower 9th (approximately 1.4 square miles). Since the hurricane

Exhibit 4

Hurricane Katrina’s Damage to Houses in the Lower 9 Neighborhood in New Orleans



The remains of the home at 2310 Delery Street, Lower 9 neighborhood, New Orleans, Louisiana, following Hurricane Katrina. Mr. and Mrs. Butler built the house in 1949. Photo credit: Marsha Cuddeback.

occurred, the city of New Orleans has issued more than 1,110 building permits in the Lower 9th, broken down as follows: 7 percent for new construction, 2.5 percent for additions, 4 percent for nonstructural renovations, 1.5 percent for structural renovations, and 85 percent for repairs. Although the news reports often characterize the situation in the Lower 9th as grim, in fact, people are slowly returning and rebuilding their homes and lives. Of the 6,802 pre-Hurricane Katrina housing units, more than 5,700 (82 percent) incurred damage from the storm, of which 4,679 (69 percent) suffered severe damage or were destroyed. Houses that were destroyed by the storm are slow to be replaced, with only 83 new-construction building permits issued since August 29, 2005—less than 2 percent of the total number of housing units that suffered severe damage or were destroyed.

The pace of reconstruction is further complicated by the conflicting points of view regarding re-settlement. Early on, the mayor of New Orleans suggested the area should not be reused for housing, based on a planning document prepared by the Urban Institute, calling for the city to reduce its footprint, make the Lower 9 neighborhood a wetlands for stormwater control, and implement a federally funded forced buyout for homes in neighborhoods determined to be unlivable. Other contingents supported depopulating the area north of Claiborne Avenue and providing land on the south side (Holy Cross neighborhood in the Lower 9th) for those to be displaced. In addition, long-time residents such as project homeowners Mrs. Geraldine Butler and Ms. Gwendolyn Guice wanted to come home and rebuild; they consider themselves pioneers in the rebirth of their neighborhood (see exhibit 5). Mrs. Butler's original house, which her late husband built in 1949 when the area was mostly woods, was on the same lots where she is rebuilding. As Mrs. Butler said, "I was here the first time this neighborhood grew up and I'm back to watch it come back."

Exhibit 5

Long-Time Residents Rebuild Their Lower 9 Neighborhood



Mrs. Geraldine Butler (left) and Ms. Gwendolyn Guice stand in front of the new, post-Hurricane Katrina house at 2314 Delery Street, Lower 9 neighborhood, New Orleans, Louisiana. Photo credit: Marsha Cuddeback.

Regardless of the controversy, it is a monumental task to rebuild thousands of houses and the infrastructure to support them, and in the Lower 9 neighborhood it is unlikely to happen any way other than house by house as residents decide to return home or sell their lots. Assembling large parcels for redevelopment is difficult because people are reluctant to sell their land and it is difficult to attain clear title for adjudicated properties. The result is that neighborhood-planning studies are difficult if not impossible to implement when any acquisition or change of use of private property is involved. To further compound the problem, as a country, we have great experience with urban infill housing, redevelopment of large urban tracts, and development of raw land in the suburbs, but we know little about large-scale building endeavors to repopulate a city where multiple owners hold land privately as individual lots and small parcels. The resulting overall lack of development control creates an undesirable risk for any homeowner or speculator because there is no knowledge of how adjacent land will be developed and the impact it may have on the homeowner. In this situation, funding sources for development are more difficult to find and cost more, and homeowners and developers are reluctant to proceed. In a housing market where there is a high demand for production, the tolerance for risk is low, resulting in resources shifting to housing “only when it is profitable for developers, land speculators, materials producers and mortgage lenders to do so.”⁵

Methodology

The methodology employed for actualizing this demonstration project was based on the assumption that the process can, and would, be replicated if the process methodology were considered a true economic development engine, as well as a training program, and if it met the following criteria:

First, that it would support residents by creating job opportunities and by providing skill development that would assist with the reconstruction of the Lower 9 neighborhood for at least one generation (the time we estimate it will take to stabilize and make the neighborhood sustainable).

Second, that it would create economic growth in the immediate community by increasing population, which would result in the creation of new businesses and new jobs.

Third, that it would support the local economy through circulating capital generated by wages and expended for materials and services in New Orleans or Orleans Parish, rather than out of the city or parish. This criterion will minimize hiring out-of-state contractors and suppliers and reduce capital flow out of the state.

To implement this enterprise, the project was divided into four distinct phases:

1. Design.
2. Preconstruction preparation.
3. Experiential construction training.
4. Postconstruction evaluation.

⁵ Achtenberg and Marcuse (1986: 5) point out that housing as commodity is tethered to the capital markets. The rebuilding effort in New Orleans is not a “public” effort, because the decision was to provide capital for rebuilding to homeowners to use in the homebuilding marketplace. Clearly, without broad incentives that lower risk for developers and homeowners and that rebuild social capital to create stable neighborhoods, the redevelopment problem will remain intractable.

Phase 1 began with community-driven planning and design (discussed later in this article), followed by what we discovered to be one of the most significant components to the success of the project—the preconstruction preparation. This phase included training materials preparation, quantity take-offs and cost estimating, site acquisition, tool acquisition, and material deliveries organization and onsite storage. It also included finding subcontractors interested in participating in the training program, assembling the training team, and selecting the participants for the community construction team. Thorough preconstruction planning ultimately proved to be crucial to meeting the construction schedule. The OCDD consultant, who completed the initial scheduling and estimating, established a work plan to build three homes in 30 working days by applying a heretofore untested, incremental building system. Our first setback occurred the day the surveyor finished staking out the piles. Without warning, the owner of the third house pulled out of the project, leaving only two houses to build, and requiring the consultant to redraft the work plan. Other setbacks were the result of working in a very challenging environment, where there were many material shortages and fluctuations in material prices as a result of the high demand and limited number of suppliers.

As the project progressed, it became clear that the incremental building system was not working and that the construction time would extend past the original 30-day estimate. The project team was composed of a training team, project supervision and coordination, community construction team, and fourth-year architecture students.

The training team was composed of four consultants: a project manager, a licensed contractor/training instructor, and two community construction team tracking coordinators.

The principle investigators (authors) and representatives from AHI were responsible for overall project supervision and coordination, the project manager was responsible for all work directly related to construction, and ASI managed the payroll for the community construction team. The principle investigators completed the evaluation and assessment of all participant teams involved with the project.

The community construction team was composed of displaced, in-place New Orleans residents (their homes and/or family were gone, but they remained in New Orleans): young people from Covenant House New Orleans, a safe-haven for at-risk homeless youth, ages 16 to 21; men from Bethel Colony South (see exhibit 6), a faith-based substance abuse recovery program, who had remained in New Orleans during the storm organizing and facilitating rescue services for residents trapped in their homes; and West Bank Vietnamese residents, who had lost their fishing/shrimp boats and homes to the hurricane, had relocated to New Orleans, and were now employed by ASI gutting and cleaning damaged properties. The community construction team totaled 30 members: 12 young men and women from Covenant House, 10 employees from ASI, and 8 Brothers from Bethel Colony South. (The term “Brother” is used to address both program members and nonmembers of the community.)

In addition, 13 fourth-year architecture students, under the supervision of the authors, traveled 65 miles from Baton Rouge to the project site every Monday, Wednesday, and Friday to work side by side with the community construction team, earning 6 credit hours for the semester. Before the construction start date, the training team conducted a comprehensive interview with each team

Exhibit 6

Displaced, In-Place New Orleans Residents Become Part of the Construction Team



Pastor Melvin Jones, founder of Bethel Colony South, oversees the roof framing of the House at 2310 Delery Street, Lower 9 neighborhood, New Orleans. Photo credit: Marsha Cuddeback.

member to ensure compatibility with the program. Through self-attrition, 25 participants remained and completed the preconstruction training.

Community Engagement

In the spring of 2005, under the supervision of the OCDD, students in the School of Architecture fourth-year design studio undertook the preliminary research and design of the prototype houses. The students commenced the design phase by inviting the community members to actively participate in the design of the prototype houses (see exhibit 7). The purpose of the community events was to empower the community members to participate in, and make decisions about, the rebuilding of their community. During the semester, ACORN members, who organized and hosted several community meetings for residents of the project area, assisted students, enabling them to reach a large number of displaced residents. Based on the data and design preferences gathered from the residents, the students' design of the prototype houses reflected the priorities established by community input.

Before the storm, most affordable housing in the New Orleans area had been constructed without sufficient attention to design,⁶ because the primary objective was to create simple, expedient, and low-initial-cost houses. This predominant model is not driven by expectations of end users but by

⁶ We use *design* in its most broad context to include building systems, construction materials, sustainability, and so forth, as well as appearance, in order to conceive of the house holistically.

Exhibit 7

Community Members Participate With Students in the Design Process



Engaging the community in design decisions was part of the community participation phase of the house design. Community participants were present from across the United States as a result of being displaced. Louisiana State University architecture students facilitated the event as part of their service-learning course requirements. Photo credit: Marsha Cuddeback.

the most expedient fit with the prevailing market conditions. The fundamental expectations for the project described in this article emerged from a different paradigm because of the critical nature of community participation in both the design of the houses and community redevelopment. These expectations yielded an important design objective to enable the purchaser to have some voice in the final product, with the understanding that the overarching priorities for an affordable house required a reasonable initial cost (final purchase price), low life-cycle costs, and high owner satisfaction. Following these priorities resulted in quality houses that remained viable in the real estate marketplace.

The methods and procedures the students used to gather data were based on the work of Henry Sanoff (1999).⁷ Because Sanoff's work is written from a designer's point of view, it is the most accessible for undergraduate architectural students. The basic procedure consisted of asking the residents an open-ended question such as, "What features would you like to have added to a standard three-bedroom, one-bathroom home?" To assist them with their responses, the students also showed the residents several floor plans of affordable housing from the New Orleans region. The students then ranked the responses, which indicated that the most frequently requested feature was a second bathroom, followed by a utility room and "lots of" closet space. Using an analysis of 30 affordable houses completed earlier by the authors as a comparison, it was apparent that these were features commonly eliminated in an effort to build the "cost-effective" solution.⁸ Using the data from the community participation activities, the students developed the designs for the houses

⁷ Although Sanoff (1999) was the primary methodological influence for the community events because of its direct applicability and accessibility to undergraduate students, others formed the underpinnings for the participatory action research: Greenwood, Whyte, and Harkavy (1993) for the commentary on human interaction; Glass (1979) for the fundamentals; Eade (1997) for capacity building in emergency situations; Fainstein (2000) for the commentary on the "Just City model"; and Innes (1995), Day (1997), and Kumar (2002) for insight on citizen participation. Because community design decisions are primarily qualitative and cannot be generalized beyond the participating population, we relied on the community to validate decisions based on the data collected. A recent addition to the literature for architects and designers by Barbara Fagan (2006) with a foreword by Alexander Garvin would have been very useful for the students.

⁸ The number of bathrooms varied among the houses analyzed, but there was no consistency about the addition of a second bathroom until a fourth bedroom was added. The prototype houses contained three bedrooms that most frequently were organized in a single-bathroom configuration. At the time of the study, no new-construction, single-bath, single-family homes were in the marketplace for comparison.

in response to the residents' preferences. The most favored design solutions were those that embraced traditional and recognizable forms,⁹ while accommodating space planning that supported a contemporary lifestyle.

After the students completed the initial design alternatives, they took the floor plans and façade studies to another community forum for feedback regarding their interpretation of the data gathered earlier. After considering the community feedback, the students made final adjustments to the design and completed the construction drawings. Features included in the designs were mold-, insect-, and water-resistant exterior materials; a raised pile and girder structural foundation; high-wind framing connections; solar-activated attic ventilation; roof-mounted condensing units accessible through the attic; a PEX (cross-linked polyethylene) water distribution system; low E II insulating windows with exterior screens; and outswinging exterior doors (for hurricane protection). Through a donation from Sharp Electronics Corporation, manufacturer of residential solar systems, one of the homes was equipped with roof-mounted solar panels. It is estimated that the panels will reduce the owner's energy costs by 10 to 15 percent annually.

After the lots and owners of the homes were confirmed, the students made additional design changes at the request of the owners, including relocating the kitchen in one house and adding a bedroom and bath in the other. Using a process similar to market-rate home construction, the owners also selected light fixtures, paint colors, cabinet finishes, countertop colors, hardware, carpet, and laminate floor color. By the time the houses were finished, the owners were fully invested in their properties and had already established a personal identity with their new home.

Teaching and Learning Objectives

Teaching and learning form the foundation for this project. The project's success depended on both the community construction team and the architecture students performing to their capacity. Because the project was focused on training, the teams needed to learn the skills necessary to become a home builder or become part of a homebuilding crew (see exhibit 8). To reach this objective, the project consultant developed learning objectives for the team and the authors developed learning objectives for the students participating in the service-learning class. The construction team's learning objectives consisted of (1) learning about what is required to get and keep a job; (2) learning a new skill set; (3) building a new career; (4) developing life skills (such as how to manage time, earn a wage, stabilize themselves); (5) having a hands-on, active, building experience; and (6) working in collaboration with others to achieve a common goal.

The students' learning objectives consisted of (1) understanding the implications of their design decisions during construction; (2) having a hands-on, active, building experience; (3) learning a new skill set; and (4) working in collaboration with others to achieve a common goal (see exhibit 9).

During the construction period, the houses became nontraditional classrooms used for on-the-job training. Each workday consisted of an early morning team meeting to outline activities, objectives, and participants' roles. On the days when the students were on site, in addition to attending team

⁹ Residents expressed a preference for exterior design solutions that were consistent with traditional New Orleans styles and compatible with neighborhood context.

Exhibit 8

Skill Building Helps Teams Perform to Their Capacity



Various training sessions prepared team members to become part of a homebuilding crew. Photo credit: Marsha Cuddeback.

Exhibit 9

Collaboration Achieves a Common Goal



The construction team raises the first wall at 2310 Delery Street, Lower 9 neighborhood, New Orleans. Photo credit: Marsha Cuddeback.

meetings and assisting with the construction, the students were required to document the process through photographs, video, and preconstruction and postconstruction interviews among themselves and with members of the construction team and to write a daily reflection of their experience.

It was important for the project that, as faculty, the authors had flexible schedules that enabled them to respond to problems quickly and to be on site frequently. In addition, to keep the project moving, the authors frequently picked up needed materials at the local supplier to avoid any loss of workers' time on the job. Although it was not anticipated, the onsite participation of the principal investigators was extensive, and it was not unusual for them to be on the project site in the morning and then travel from New Orleans to Baton Rouge to fulfill their instructional obligations, returning to New Orleans at the end of the day to prepare for the jobsite activities the following morning.¹⁰

Assessment

Assessment, which was an integral component of the demonstration project, began early in the design phase and continued through postconstruction evaluation. February 2008 marked the 1-year anniversary of project completion, at which time the authors conducted a postoccupancy assessment. This was the last remaining piece for inclusion in the authors' forthcoming publication, *Communities Building Community, Recipe for Success*, scheduled for publication in 2009. The sequence of assessments conducted during the project is as follows:

- During the design phase, community members were continuously involved in the design of the houses, and the principal investigators were continuously involved to ensure that codes, standards, and other design issues were carried out properly.
- During the preconstruction period, the project manager administered interviews and assessments to potential community team members.
- During construction training, the construction trainer conducted weekly progress evaluations for each trainee, as well as periodic evaluations for progress on life skills. During this phase of the project, it was apparent that the young men and women from Covenant House were the most vulnerable and unpredictable members of the team. They had the least stable living environment of all the participants and found it challenging to obtain transportation to the site, have access to lunch, and get a good night's sleep. Consequently, after 5 weeks, all trainees from Covenant House had dropped out of the program.
- After the teams completed the construction, students held postconstruction interviews with the Brothers from Bethel Colony South. The Brothers used this work as a starting point for their own construction business, which now produces revenue that participants use for savings and that the ministry uses to assist with financial support.

¹⁰ One of the most difficult barriers to sustaining this service-learning approach is the ongoing and intensive time requirement for the involved faculty. Wiewel, Gaffikin, and Morrissey (2000: 40–41) point out that, in most cases, “the partnership programs of universities appear to be driven mainly by the interests of faculty in research projects or service learning opportunities for their students.” They continue: “Housing development like regeneration in general, demands long term intervention. Universities must decide...whether to make a long term commitment,” so early and complete buy-in, including necessary resources, is required from the university partner.

The evaluation of the students differed from the evaluation of the construction team. The authors regularly evaluated the students' collaborative working skills and time management skills and issued grades according to the university's schedule. In addition, the students prepared daily reflections on their work, often guided by prompts that the instructor provided to ensure the service-learning aspects of the course were covered. Several quotes from the students' journals are included later in this article. This project had no conflict between its goals and the course outcomes, and, after the students had worked on the site a couple of times, they became fully integrated with the construction team. The student team and construction team worked and learned from each other, exemplifying a true collaboration and the essence of high-quality service learning. The students graduated in May 2008, but it will be several years before they can measure the effect of this experience on their professional lives.

The principal investigators assessed the training team weekly, and they were required to submit weekly progress reports.

Participants' Reflections

Service learning requires that the participants reflect upon their experience as a method for gauging whether the project was successfully implemented.¹¹ During postconstruction interviews, the Bethel Colony Brothers discussed their expectations for the project and described skills learned, their greatest challenges, and memorable experiences. Many of them were not certain what to expect but were excited to be part of something that was "going to make history." Reflecting on the success of training, Brother James remarked, "I never knew how to read a tape measure but always wanted to learn. Don't know if you believe that or not. And now I know." Brother Kenny, an emerging leader among the team, was initially concerned with the collaborative nature of the project, stating, "(I) always worked and hung by myself. It was a challenge to learn to work with other people, (but) I learned that you can work and learn to respect the other people you work with. I learned people skills in general."

From the teaching and learning perspective, the outcome of this project supports a pedagogical approach that believes students learn best that which they directly experience, critically examine in the context of diverse perspectives, and use in meaningful applications. We believe we achieved this during the fall semester. Postconstruction interviews conducted by our students revealed the following:

"Coming into the project, the idea of building two houses with a team of unskilled workers seemed very daunting. So much goes into constructing a house that it becomes overwhelming. But as we went along, we only focused on one component of the house at a time. First, we concentrated on the beams, then subfloor, decking, walls, sheathing, ceiling joists, and rafters. We always focused on manageable tasks and completed them. Before I knew it, the houses were completed. This made me realize that I could handle

¹¹ Although multiple points of view abound concerning reflection in service-learning, it remains a fundamental marker in successful service-learning activities. See Eylar and Giles (1996), Kahne and Westheimer (1996), and Waterman (1997).

the biggest and most overwhelming of projects. So, on completing this project and this semester, I feel more confident in my abilities and more ambitious to take on anything.”¹²

“The greatest learning experience occurred when the first wall was erected. I was able to view a true-to-life, three-dimensional wall section. This specific incident reflected the knowledge of internal structure that I gained throughout the remainder of the time we spent there.”¹³

“I learned a lot from this project. I had never used most of the power tools before, and now I can say I know how to use all of them. I also learned about the progression of construction. I realized the general sequence before—floor, walls, roof—but now I know the joints, and I’ve seen the joints. I can now apply this knowledge to the projects I design. I now know how things are built not just how I want them to look when finished. I would like to learn more ways to prevent hurricane damage. What else can be done to housing/buildings in order for them to withstand catastrophic weather?”¹⁴

Our students were immersed in the challenges of a post-Hurricane Katrina environment and had untold opportunities to reflect on their professional responsibility to civic engagement. One student summarized her reaction to the physical environment, saying, “I am very sensitive to the aura of a place, so being on Delery Street was overwhelming. The desolation was real and in your face, the isolation was tangible, and the solution so vague and hard to grasp.”¹⁵ The students experienced delays in construction, controversy among partners, the effects of consultants unable to perform their contracted work, and the challenges of working with city agencies on the rebound. Running parallel to these challenges, they also experienced the successes of collaboration, the power of perseverance, and the value of diversity, and they witnessed first hand the effect that two small houses had on the psyche of the neighborhood and the effect these houses has in influencing a renewed commitment of neighbors to rebuild and return. One student said, “I think we set the groundwork that they (the community) can continue to build on in the future years. I learned that they are so grateful for even the smallest things. Also, I learned they must have given up hope, because we were the only ones working in the whole area for a long time. I think the fact that we made sacrifices to help them will show them that people do care, and there is a lot of good in this world.”¹⁶ To see a photograph of LSU students and Louisiana Delta Corps volunteers posing with Ms. Guice in a nearby lot adjacent to her new home on Delery Street, Lower 9 neighborhood, New Orleans, Louisiana, log onto http://www.huduser.org/periodicals/cityscape/voll10num3/cs_images.html.

Active participation in this project broadened our students’ learning in dimensions we are not aware of and typically do not consider in the classroom. Through civic engagement and an active learning environment, the authors believe that students are more likely to have a meaningful learning experience. This belief is borne out in a wider educational context, because postsecondary

¹² Strain, Erik. Postconstruction interview, Louisiana State University, December 14, 2006.

¹³ Westcott, Lacey. Postconstruction interview, Louisiana State University, December 15, 2006.

¹⁴ Wotring, Lacey. Postconstruction interview, Louisiana State University, December 15, 2006.

¹⁵ Kennedy, Krista. Postconstruction interview, Louisiana State University, December 15, 2006.

¹⁶ Johnston, Katherine. Postconstruction interview, Louisiana State University, December 15, 2006.

education, as a whole, continues rethinking strategies for student learning. In particular, when considering those learning environments and educational experiences that help students achieve their educational goals, educators are recognizing that transmission of knowledge and skills alone are no longer sufficient to prepare students to effectively respond to the complex challenges they will face at work, in the community, and in their personal lives. The decisions educators make profoundly influence graduates' expectations of the workplace and their ability to understand and connect with real-world issues. American educator Ernest Boyer and his co-author Lee Mitgang (1996) suggest the following in their comprehensive study of architecture education and practice:

“The essential purpose of architecture education, then, is not only basic training of beginning practitioners, but also the initiation of students into this [the architect’s] common legacy of knowledge, skills and language, while instilling a sense of connectedness to the human needs that architecture, as a profession, must continually address. Architecture education, if it is to fulfill those ends, must celebrate and support, and also challenge, the profession and society as a whole” (Boyer and Mitgang, 1996: 4).

Conclusion

Much attention has been focused on the prototype houses and, although the houses are important, they are a desirable byproduct of the project’s central goal to train community members to build houses. The project was truly about demonstrating that training people from the community to build houses could promote sustainable neighborhoods and, by using a service-learning approach, the project would simultaneously broaden the learning experience of our students. The authors doubt that there will be a massive external effort to rebuild houses on Delery Street. No continuing funding exists to support the training program, and political support for continuing the project was missing, as frequently happens with grassroots efforts. Regardless of what the future holds for Delery Street, the demonstration project leaves lasting learning points, including the following:

1. The prototype strategy will work, given adequate funding for training and tools.
2. Everyone involved with the production of affordable housing must understand that the market for affordable housing in New Orleans differs fundamentally from “standard practice.” Homeowners have money to rebuild, so providing mortgage financing at the time the project is complete is less risky and consequently the pool is larger. Faced with severe financial difficulties from the ongoing subprime mortgage situation, however, the current availability of permanent financing for affordable housing will be even more difficult to procure unless appropriate steps are taken to maintain an available pool of mortgage funds from outside the capital markets.
3. Construction financing must take into account the processes and procedures for receiving funding from the Louisiana Recovery Authority and FEMA, and lenders must be willing to work with guarantees and potential delays.
4. The houses constructed as a result of the training must include only a fair cost for labor. Training funds must cover the difference between actual cost for training wages and the ultimate return for wages from the sale of the home.

5. The training program must be self-sustaining. In other words, it must produce trainers so the program can be expanded and free up graduates to enter the marketplace in suitable construction positions.
6. The rebuilding effort will be lengthy and require constant community involvement to be successful.

The common goal is to see the neighborhoods in the Lower 9th reconstructed, block by block, with the revenue generated from the process returned to the community. As the houses are built, so is the community, and with resources flowing back into the local economy rather than out of state, the community becomes self-sufficient, men and women are trained in the construction trades, and the neighborhoods are rebuilt.

In their reflections on the project, the students phrased it differently, but in the same spirit:

“...new housing needs to develop in order for people to return and businesses need to return in order to provide jobs for the residents. It’s a chain effect, and both these problems need to be addressed in order for change to occur. By building these houses, we have started the ‘chain,’ and that is a huge accomplishment. If the chain continues, the Lower 9 will become a thriving community.”¹⁷

Next Steps

Although this project was filled with challenges for all the partners, it was completed and we learned how to make the process work successfully. A manual for replicating the process will be published in 2008. Our greatest disappointment was the lack of resources to continue with the next two construction cycles so that the trainees would be ready to work independently. The funds were not available, however, it is here that the universities can lend support by working closely and over the long term with communities to develop and augment the necessary resources to ensure that community members receive the appropriate training to develop the capacity to rebuild their communities.

Afterword

On September 25, 2007—13 months after Hurricane Katrina made landfall and forced people out of the neighborhood—construction began on the first two new homes in the Lower 9 neighborhood of the Ninth Ward. Five months after construction commenced, as a crowd gathered for the grand opening of the homes, the sounds and sights of demolition continued in the neighborhood. The demolition crews were hard at work removing the remaining destroyed houses and carting away the debris. Seen first hand, this work is quite a feat of choreography: workers and machines systematically crushing the damaged houses and removing the debris bucket by bucket. Unfortunately, crushed building material is not all they take with them. The memories of the place are attached to the debris and, as each lot is swept clean, the remembrances of the neighborhood fade farther into the distance. As the demolition crews pack up and move to another house to be razed, they do so with seemingly no reason to their pattern of destruction. Adjacent houses were left

¹⁷ Johnston, Katherine. Postconstruction interview, Louisiana State University, December 15, 2006.

standing only to be removed 2 or 3 weeks later, and as the houses disappeared, so did the memories of place, leaving only an overwhelming sense of desolation. That was the reality of the Lower 9 neighborhood. But things have changed since then. The neighborhood is awakening among the empty lots and broken houses: a harsh reminder of the extraordinary losses that occurred. Hope continues. In addition to the two pioneer homeowners who own the new houses, others are renovating, repairing, and planning to return.

The Office of Community Design and Development

The Office of Community Design and Development (OCDD) is a university-based interdisciplinary community outreach center that connects students with Louisiana's communities to help improve the quality of our built environment and the lives of citizens across our state, and beyond. Collaboration, active learning, and civic engagement are central to the working philosophy of OCDD. All project work relies on teams composed of clients, community stakeholders, students, and faculty to ensure successful outcomes for the community while meeting educational goals. OCDD operates a permanent teaching and learning laboratory throughout the year in Atkinson Hall on Louisiana State University's campus. Here, students are presented with the social, economic, and political realities of practicing architecture in the public realm; given opportunities to apply their learning to real-life problems; and develop collaboration skills that meet the demands of contemporary practice in an increasingly global environment. OCDD is fully integrated in the curriculum and provides the structure for service-learning projects introduced in the fourth year design studio. As a result, OCDD has contributed to the educational experience of every student in the School of Architecture's undergraduate professional degree program since academic year 2000–01.

OCDD offers employment opportunities, graduate assistantships, and internships for students majoring in architecture, interior design, landscape architecture, graphic design, disaster management, business, and other related disciplines engaged in community design and development; supervises students completing a minor in community design; provides professional practice resources and technical assistance; maintains a Sustainable Materials Library; and offers grant-writing assistance for student-initiated service-learning activities and projects.

Established in 1999, OCDD is the outreach arm of the School of Architecture, bridging the academy with practice, and is funded through grants and sponsored research. Since opening, OCDD has served more than 50 communities and organizations in Louisiana and Mississippi, employed more than 200 students and interns, developed more than \$1.7 million in sponsored research, and authored numerous publications and technical reports.

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