Sustainable Housing on the Bayou: The Louisiana LiftHouse
For more information about the Louisiana LiftHouse, contact:

TRAC
Tel: 985.851.2952 / 877.TRAC4LA
www.trac4la.com
Contact: Peg Case, Director
pegcase@trac4la.com
In the months and years following 2005’s Hurricanes Katrina and Rita, New Orleans became the focus of an unprecedented array of reconstruction and recovery projects. Though many rural regions of South Louisiana were similarly devastated by the storms, substantially fewer resources were focused on the renewal and reconstruction of these areas.

In the months following the hurricanes, a collaborative effort between the Terrebonne Readiness and Assistance Coalition (TRAC), Oxfam America, and the Special Interest Group in Urban Settlement (SIGUS) at MIT, focused on creating a new model for affordable reconstruction housing for the communities in the bayou region of South Louisiana. The LiftHouse is designed to model common sense approaches to durable, environmentally sound, affordable housing for this rural region which is coping with the direct impacts of global climate change.

The first prototype LiftHouse was completed in the community of Chauvin in 2007. By 2008 the second and third houses were constructed in Dulac and Bayou Dularge respectively. The fourth house in Dulac was completed in 2009. The 5th house was completed in March 2010 (near Dulac) and the 6th house in Dularge is under construction.
PROVEN SUCCESS

In the summer of 2008, lower Terrebonne Parish was devastated by two powerful hurricanes. Though Hurricanes Gustav and Ike, both brought widespread flooding and wind damage to the area, all three of the LiftHouses built by that time weathered the Category 2 winds (96-110 mph) and deep flood waters with only minor superficial damage.

The four completed LiftHouses and the one in process provides experience in the construction and tests the design in real-time circumstances.
Construction Know-how

The first three

211 Oleander Steet
Chauvin

5832 Shrimpers Row
Dulac

3141 Dularge Hwy
Bayou Dularge

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5832 Shrimpers Row
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3141 Dularge Hwy
Bayou Dularge
The design blends into the rich culture on the bayou. It draws on the dominant motifs of the Louisiana coastal areas. The lifestyle is reflected in the plan with a generous porch and the open space underneath which offers a ‘second home’ in the outdoors.

Life on the bayou: water, Spanish moss, shrimpers and crabbers

The Louisiana LiftHouse

RESPECTS TRADITION
A small community on the bayou.

Conceptual sketch of a LiftHouse community
The LiftHouse was designed to demonstrate simple, practical, and easily-replicable building features that can dramatically improve the house’s energy and environmental performance. Through the simple steps outlined at right, the house is designed to be:

• less expensive to operate over time;
• safer, healthier, and more comfortable; and
• more durable and storm-worthy.

The houses are in the process of being LEEDs certified.
design for durability
1 - rot and termite resistance
2 - storm resistance and resilience

natural ventilation
1 - soffit and ridge venting
2 - spaces designed for natural ventilation
3 - ceiling fans in all dwelling rooms
4 - large, shaded outdoor space

energy performance
1 - high efficiency appliances
2 - tankless hot water heater
3 - air sealed and highly insulated envelope

material sustainability
1 - locally sourced timber structure
2 - design for waste minimization

further research and future applications
1 - solar energy and hot water systems
2 - rainwater harvesting
3 - communication and outreach
4 - vegetated trellis for shading
The design of the LiftHouse allows for several different configurations to suit different client and family needs using the same basic structural system and construction techniques.

The structural module is designed according to standard material dimension to reduce construction waste and facilitate volunteer buildability.

STANDARD 2-BEDROOM

1350 total living
700 square feet living
650 square feet deck
Above advisory base flood elevation
Built to Cat. 5 Coastal Zone Standards
Energy Efficient
Handicap access

ESTIMATED COSTS PER UNIT: $127,000 (2008)
Construction, elevation, concrete slab foundation for support, storm shutters, appliances, all furnishings, builders risk insurance, homeowner and flood insurance (1 year).
The LiftHouse’s innovative construction process and structural system is designed to maximize flexibility through the life of the structure. The structurally-independent piling and roof assembly creates a shaded and sheltered elevated platform on which a homeowner can build and expand to suit their changing needs over time.
stages of construction

- Deck framing built on the ground.
- Foundations and pilings added.

- Deck raised to final position.
- Ring beam ties top of piling together and serves as base for roof framing.
- Allows for structural and design flexibility for future expansion.

- Pre-manufactured truss roof constructed over entire deck.
- Direct and continuous structural connection between roof and piling structures

- Space enclosed under some portion of roof structure.
- Future expansion facilitated by preexisting roof.
The Louisiana LiftHouse

COMPLEMENTS COMMUNITIES

Grouping capitalizes on the elevation of houses and the rich outdoor lifestyle on the ground. LiftHouses are sufficiently elevated to nurture activities underneath. Community active outdoor activities are embraced: BBQs, children’s play areas, sitting areas sheltered from the sun and gardens and planting – all uses that would not be disastrously affected if flooded. The elevated areas provide safety and are wonderful in catching cooling breezes.

In construction there are cost and time savings
- Bulk material buying;
- Contractor negotiation and scheduling;
- Shared facilities, infrastructure, and services (eg wastewater treatment, laundry facilities, renewable energy generation equipment, driveways, stairs, elevators, etc).

Private developments, public housing, and innovative cohousing are all feasible.
Stores provide daily items and cross-subsidize development.
The Louisiana LiftHouse

TESTED PLANS

Each prototype built has increased confidence in the design. Small adjustments in the plan and in the construction are being made continuously with the growing experience. The design has shown to be a good fit in meeting the challenges of living in the bayou.
sections
MEET THE OWNERS

Five LiftHouses have been built as part of the pilot program. The program consists of designing and building houses that can withstand Category 5 hurricane force winds. There are constructed in five different bayou communities, and with multi-faceted goals:

1. Replacement of destroyed homes for low-to-moderate income families that could not afford to rebuild without financial assistance.
2. Homes are designed and built to comply with International Building Code requirements for Coastal Zone Construction which includes elevations of an average of 10 – 14ft above sea level.
3. Homes are energy efficient to help reduce energy consumption and lower monthly utility expenses.
4. Homes will serve as a model of affordable sustainable construction.
LiftHouse Number 1
Ms. Betty Jane Adams – Chauvin

Ms. Betty has a standard 2-bedroom LiftHouse, the first to be built.
LiftHouse Number 2
Gloria Scott – Dulac

Ms. Scott is proudly showing her Certificate of hurricane endurance. She has a standard 2-bedroom LiftHouse.
LiftHouse Number 3
Sterling & Geraldine Liner – Dularge, Theriot

The Liners have a modified 3-bedroom LiftHouse, which is wider, and longer to accommodate special handicapped needs.

The Liner family and Certificate of Hurricane Endurance. Photo top right - the previous house and Hurricane Rita
Ms. Mary Verret and her son Kenneth have a modified 2-bedroom LiftHouse. The kitchen is shifted opposite the bathroom and utility closet to improve the use of the space.
LiftHouse Numbers 5 and 6 are now completed, and more are on the way!

#5  Candace Fitch – 3bed/2bath  
    3826 Grand Caillou Rd (near Dulac)  
    Houma, LA

#6  Gladys & Millard Molitor - 2bed/1bath  
    313 Hidalgo Dr  
    Houma, LA (Dularge Bayou)
The LiftHouse Family

- Concept and Design
  - TRAC
  - SIGUS
  - Oxfam

- Technical Support:
  - EA Angelloz, Inc.
  - Architecture
  - CASE, Inc.
  - Engineering

- Pilot Project Contributors
  - Church World Service
  - TRAC
  - Catholic Charities
    - Houma-Thibodaux
  - Presbyterian Disaster Assistance
  - Louisiana Disaster Recovery Foundation
  - Square Dancers for Katrina
  - American Red Cross
  - St. Vincent De Paul
  - United Way

- Project Manager
  - 985-851-2952
  - TRAC
  - www.trac4la.com