

The 2010 Natural Talent

Design Competition

Small, Affordable, Green
Design Build Challenge Presented by: Salvation Army's EnviRenew

Narrative

The devastation caused by Katrina calls for an opportunity and demand for innovation. Our charge as socially conscience architects, designers and place makers is to design a home that is based on New Orleans rich cultural traditions, unique geographic location and strong architectural vernacular. A typology rich in New Orleans heritage is the "shotgun" single family home. Our design aspires to be green, affordable, and durable enough to weather future storms to come. Our material choices and systems are inspired by Cradle to Cradle™ thinking an approach which seeks to maximize economic, ecological, and social value by following principles inspired by nature. And finally, we welcomed the opportunity to design a home that is aesthetically advanced within a given budget of \$100,000 dollars. However, our ultimate responsibility is to respond to the needs of the people of New Orleans.

Our site, located on a narrow suburban plot located in the middle of a block provides little area for landscaping and vegetation. This provides an opportunity for innovation and chance to reevaluate the concept of green space. A unique aspect of our design considers a vertical garden privacy wall. The green living wall and garden rails planted with indigenous plants provides much needed privacy while encouraging a pleasant experience for the participant as they move through the ramp.

Our limited budget allows us to use constraints to our advantage in terms of energy efficiency. By taking advantage of the summer breezes the design provides large openings allowing the building to passively capture the cool breezes and providing a deairstory located in the central corridor to vent the hot air thus creating a chimney effect. Our choice of geothermal heat and cooling is the most environmentally friendly way to cool and heat homes.

The house's construction methodology is designed to minimize waste. Its concept is based on a 4'x4' module. The foundation was inspired by the concept of longevity and strength to create a structure of stability and a feeling of security from mother nature's destructiveness. The five monolithic concrete forms may be better understood as a structural bridge elevating the main living space above grade.

Several sustainable features have been integrated and exposed in an effort to engage and educate the future occupants in a dual relationship between owner and structure and in principals of sustainability. The exposed gutter system provides a water feature showing how the water is taken from the roof to the cistern. The exposed material of OSB and concrete expresses the inherent beauty of natural materials. The foundation is exposed showing the structural integrity of the building. The cathedral ceiling exposes the connection of the walls and roof. The Geothermal system has exposed monitoring devices for easy viewing by the occupant.

The house is designed to provide an accessible route from the nearest bus stop providing a path of travel linking all elements and features of within the home. The layout open plan provides clear floor space and easy movement throughout the house. All fixtures in kitchens and bathrooms are accessible i.e. Roll-in shower, grab bars and bathroom fixtures are ADA compliant.

In society our elderly are one of our greatest assets. The provision of low sloped ramps, the use of natural low maintenance materials and finishes and the installation of lever handles and grab bars attempts to respond to this growing demographic.

We are projecting a LEED Platinum Certification and a budget of \$99,642.00 and a projected budget after rebates \$95,592.00.

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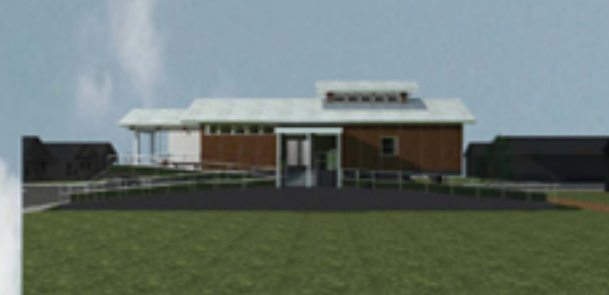
South View



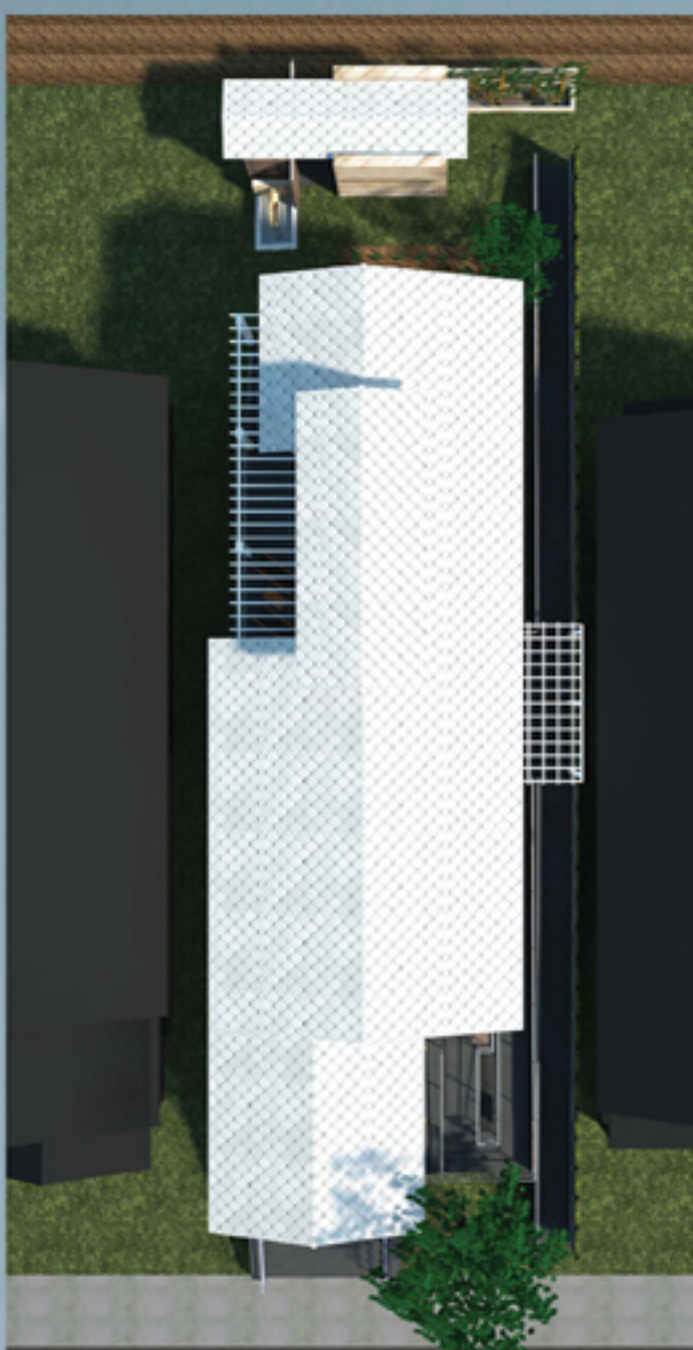
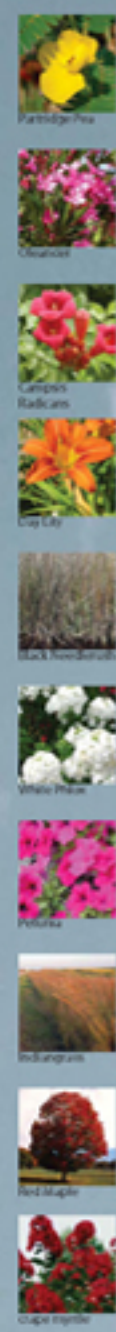
North View



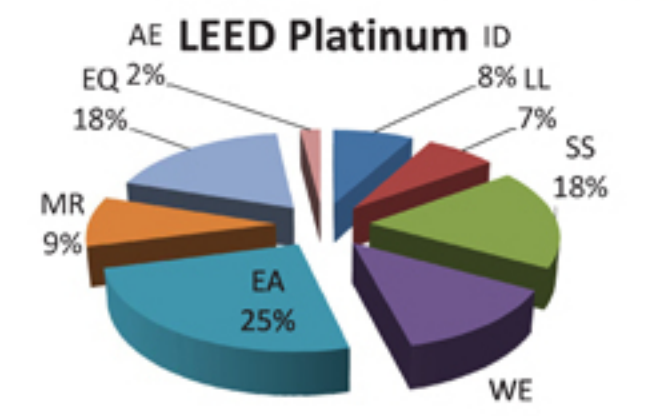
West View



East View



SITE PLAN



LEED for Homes Platinum Certification 100 Points

- Innovation and design process (8)**
1. integrated project team 3
 2. durability management process 3
 3. innovative or regional design 2
- location and linkages (7)**
3. preferred locations 3
 4. infrastructure 1
 5. community resources/transit 2
 6. access to open spaces 1
- sustainable sites (18)**
1. site stewardship 1
 2. landscaping 6
 3. local heat island effects 1
 4. surface water management 5
 5. nontoxic pest control 2
 6. compact development 3
- water efficiency (13)**
1. water reuse 5
 2. irrigation system 4
 3. indoor water use 4
- energy and atmosphere (25)**
2. insulation 2
 3. air filtration 3
 4. windows 2
 5. heating and cooling distribution system 3
 6. space heating and cooling equipment 2
 7. water heating 6
 8. lighting 3
 9. appliances 3
 10. residential refrigerant management 1
- materials and resources (9)**
1. material-efficient framing 3
 2. environmentally preferable products 4
 3. waste management 2
- indoor environmental quality (18)**
1. energy star with IAP 11
 4. outdoor air ventilation 2
 7. air filtering 2
 8. contaminant control 2
- awareness and education (2)**
1. education of the homeowner or tenant 2

Cost Estimate

01 General Conditions	\$13,490
02 Site Work N/A	
03 Concrete	\$27,040
04 Masonry	\$0
05 Metals	\$852
06 Woods and Plastics	\$15,298
07 Thermal & Moisture	\$23,124
08 Doors and Windows	\$15,875
09 Finishes	\$3,930
10 Specialties	\$2,100
11 Equipment	\$2,400
12 Furnishings	\$0
13 Special Construction	\$0
14 Conveyance System	\$0
15 Mechanical	\$15,000
16 Electrical	\$6,000
TOTAL PROJECT COST	\$99,642
TOTAL PROJECT COST AFTER TAX REBATES	\$95,592



View of spatial layout_1

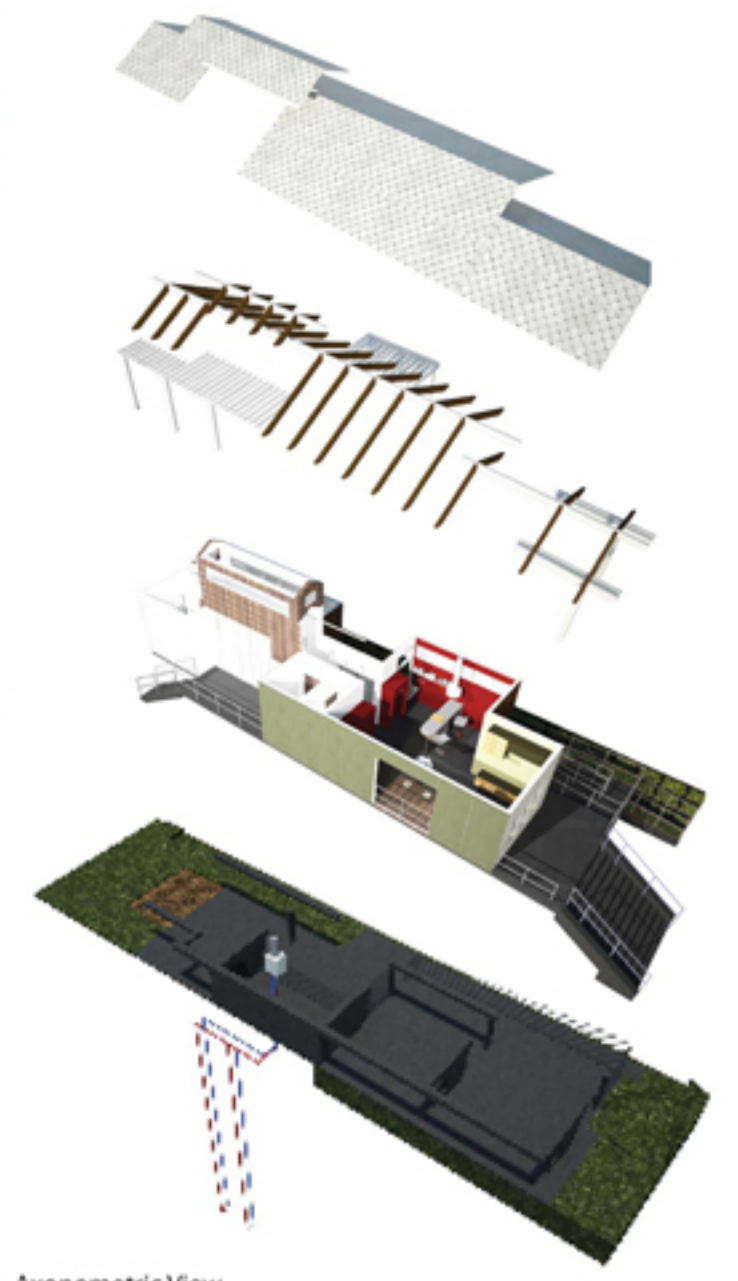


View of spatial layout_2

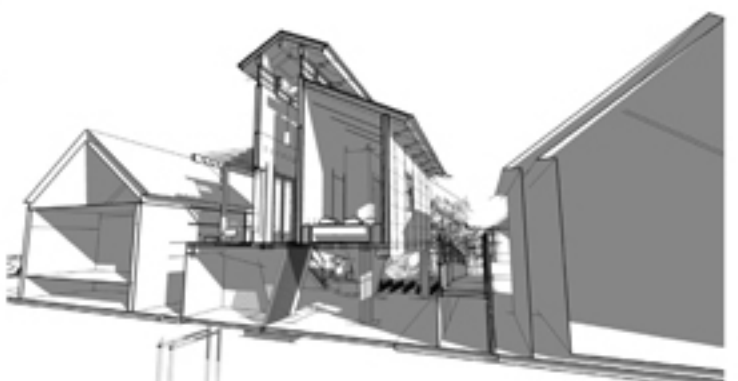


Foundation Plan

Floor Plan 880 sq. ft.



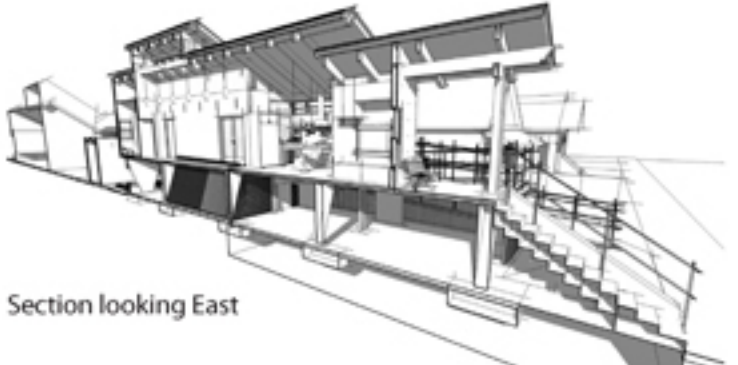
Axonometric View



Section thru clearstory



Section looking West



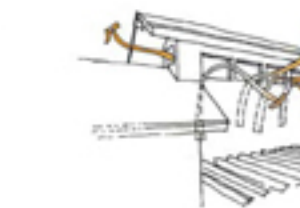
Section looking East



Living Wall

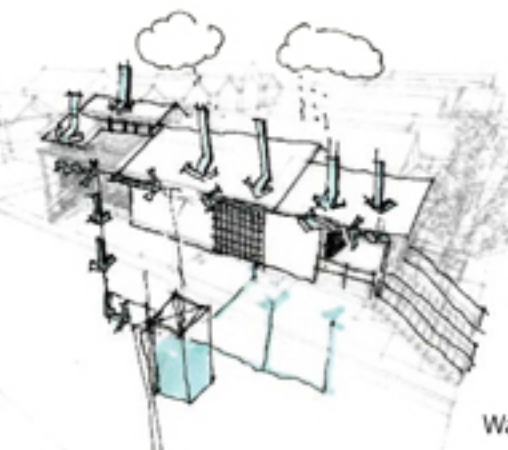


Modular Foundation



SIP Connection / Tight Envelope

4'x4' modular grid



Water Collection



Passive Ventilation



2010 casabella



Living Room



West Terrace



Front Entrance



Foundation Level



Food Garden