

TERRA

Technologically + Environmentally
Responsive Residential Architecture

Uptown, Memphis

A High Performance, Healthy and
Sustainable Home

TERRA Webcam:
<http://204.181.0.90:84/>

TERRA Promotional Video:
<http://www.memphis.edu/house.htm>

USGBC Memphis Website:
<http://chapters.usgbc.org/memphis/>



CENTER FOR
SUSTAINABLE DESIGN

Goals & Objectives

To PRODUCE a healthy, high performance house that embodies the principles of sustainable design and is complimentary to the neighborhood context

To EDUCATE students, design and construction professionals, homeowners, and the general public about the value of sustainable design

To become a RESOURCE to those in the community who would like information on sustainable materials and practices



Design Criteria

USGBC LEED for Homes
U.S. Green Building Council

MLGW EcoBuild Program
Memphis Light Gas & Water

ALA Health House
American Lung Association

FIRST FLOOR



SECOND FLOOR



Energy

- Optimize daylighting
- Use of CFL and LED lighting and motion sensors
- Energy Star appliances
- Energy Star indoor air package
- High efficiency mechanical unit
- HVAC unit outside of building envelope
- Reduced air-leakage
- Low-E glazing in windows

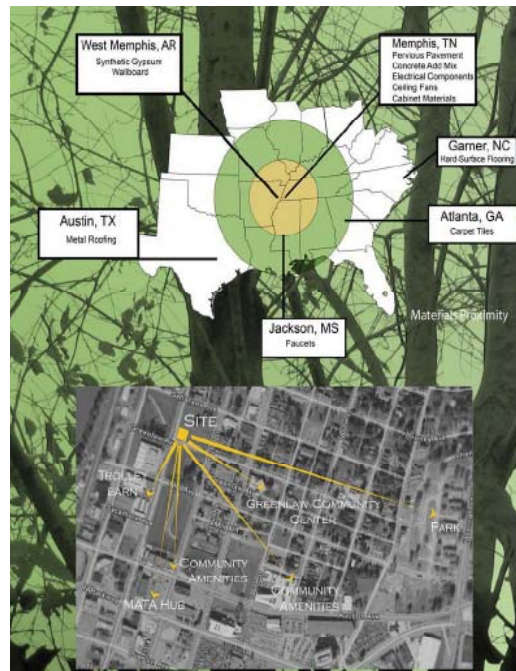


Water

- Greywater recovery system
- High efficiency dual-flush toilets
- High efficiency shower heads
- High efficiency lavatory faucets
- Rainwater harvesting and redistribution
- Minimal Irrigation

Land Resources

- Erosion control during construction
- Smart Tree Planting to provide shading
- Use of Permeable Paving materials
- Non-toxic Pest Control
- Drought-tolerant landscaping



Building Resources

- ICF - Insulated Concrete Forms
- Use of locally originating building materials
- Use of durable materials
- Use of ecologically preferable products
- Reduce job-site waste
- High-performance perimeter walls and roof
- Use of fly-ash in concrete + cellulose-fiber reinforcing
- Use of soy-based spray foam insulation
- Use of engineered lumber
- Cool metal roofing

Indoor Air Quality

- Permanent walk-off mats
- Low VOC paints, sealants, and adhesives
- Use of formaldehyde-free materials



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