SUSTAINABLE HOUSING

PROJECT 1

GREEN HOUSING

New Orleans, Louisiana

2007

Frederic Schwartz architects, NY

economical, flexible, sustainable new typology for New Orleans: the shotgunLOFT.

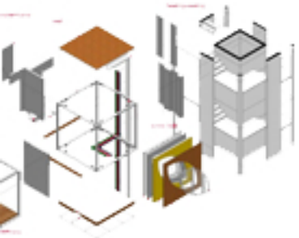
The shotgunLOFT studios and 1, 2 and 3 bedroom units combine open loft living space with pre-fabricated bathroom and kitchen cores.
They use regional, renewable and recycled materials (telephone poles, southern pine, bamboo screens and floors, recycled wood wall panels) and passive design (through-unit and chimney-effect cooling, deep porch shading, PV-panel shaded roofs) to reduce energy demand for heating and cooling (which helps preserve natural resources and reduce greenhouse gas emissions).

Windows, waterproofing, insulation, air barriers and finishes are prefabricated off-site to insure a tight, efficient building envelope. Green-roof water collection feeds a community garden that includes a bio-retention pond for treatment of grey water.

Maximum density is achieved with a 12-unit shotgunLOFT typology. The building is lifted four feet off the ground for ventilation and positive airflow. In contrast to the riverfront elevation, the northeast garden-facing elevation is a vertical stacking of porches with shared stairways covered by lush vines that utilize storm water runoff. The porches are outfitted with a dual-protection shuttering system for the hurricane season and southern shading.

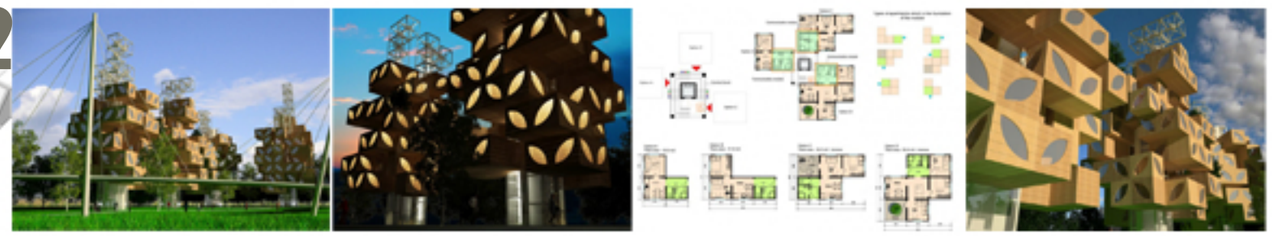
http://www.schwartzarch.com/projects/global_green_housing.html

PROJECT 2



T-TREE: A TOWERING COMMUNITY OF SUSTAINABLE RESIDENCES

Designed By: Adil Azhiyev, Ivan Kudryavtsev



The whole visual image of this building is constructed with two interwoven design principles. The first is supporting a core – the central block that contains the elevator and the stairs. The second is the communication module. As the trunk of the tree.

The basis of the apartment is a cubic shaped living module with 3m sides.
At the request of the opportunities and possible variations of easy assembling, replacing, or adding extra module depenidng of a family needs, made in recycled materials (wood, plastic, glass, aluminium), each prefabricated module consist in build-in facilities, furniture, toilets, shower, kitchen etc. depending on function of each cell, also wind mills are additional modules on the top, produce energy which cover 25% of required energy.

The module remains unchanged, which makes assembling easier. For people with disabilities, entrance in each floor will be aligned with elevator entrance.

http://www.re-burbia.com/2009/08/05/t-trees-social-housing/

"The construction, design, location and mix of tenure and type of housing can all be critical to the long term quality of life for the communities who will live there, including energy use and
environmental impact"

Sustainable housing: principles & practice, Brian Edwards,D. Turrent

Learning Activity: Reflections on Housing, Task: Identifying critical concepts, Student: Annelore Meynen, School: Arquitectura La Salle

COMFORT
Open loft living space and efficient floor plans.
Multiple outdoor spaces (private & semi-private) as well as a communal areas.

HEALTH
Regional, renewable and recycled materials.
Green environment, community garden.

ENERGY EFFICIENCY
Passive design (through-unit and chimney-effect cooling, deep porch shading, PV-panel shaded roofs) to reduce energy demand for heating and cooling.
Efficient building envelope in order to achieve a low-energy consumption construction.
Ventilation and positive airflow.

DURABILITY
Dual-protection shuttering system for the hurricane season and southern shading.

AFFORDABILITY
Low construction costs

COMFORT
For people with disabilities, entrance in each floor will be aligned with elevator entrance and the size of the modules remains unchanged.

Living modules with 3 m sides could be too small for people to live in.

HEALTH
Green environment.
They use recycled materials.

ENERGY EFFICIENCY
Wind mills on the top of the building who produce 25% of the required energy.

DURABILITY
Adding extra modules is possible. the modules are prefabricated out of recycled materials such as wood, plastic, glass and aluminium.