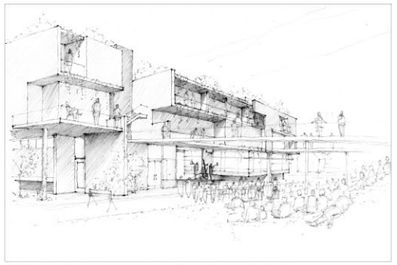
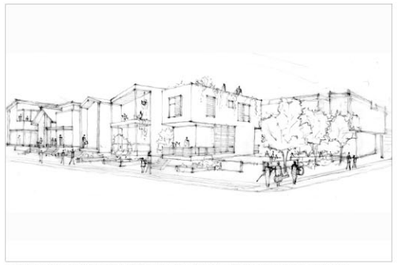
TAKING BACK THE RIVER

SUSTAINABLE STRATEGIES FOR REBUILDING NEW ORLEANS' LOWER NINTH WARD

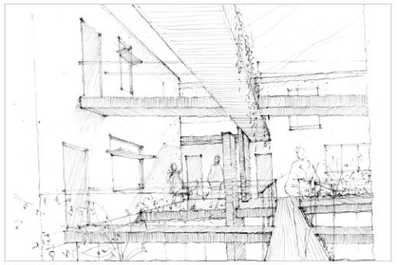


LOOKING NORTHEAST TO MIXED-USE BUILDING ALONG **RIVER BOULEVARD** FROM LEVEE



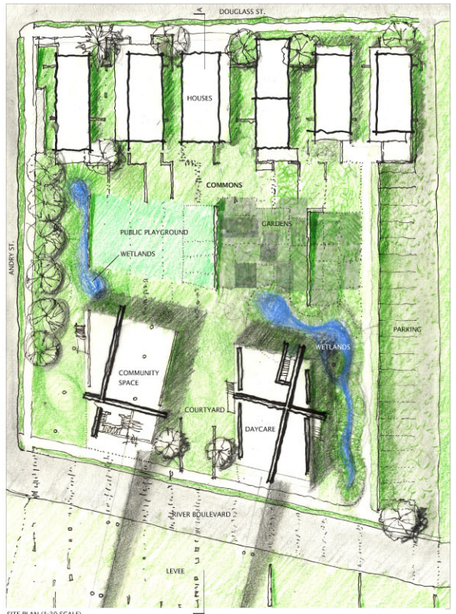
INTERSECTION OF DOUGLASS AND ANDRY LOOKING SOUTHEAST WITH SAMPLE **PALLET HOUSE** AT CORNER

VIEW FROM SECOND-STORY HOUSE PORCH TO MIXED-USE BUILDING



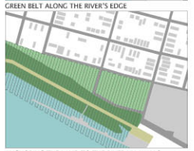
VIEW OF SECOND- AND THIRD-STORY BRIDGES IN COURTYARD OF MIXED-USE BUILDING

VIEW OF COMMONS SHOWING PLAYGROUND, GARDENS, AND HOUSES BEYOND



SITE PLAN (1:30 SCALE)

GREEN BELT ALONG THE RIVER'S EDGE



ANCHORING THE LAND TO THE RIVER VIA WALLS

DENSITY ALONG THE RIVERFRONT

PROPOSED SITE AND FUTURE DEVELOPMENT

PROPOSED SITE TODAY

LIVING LEVEES

Rivers were once the lifeblood of the communities through which they flowed, yet New Orleans seems to have turned its back on the Mississippi. Floodwalls present harsh and impenetrable faces to the river, shutting off views to and from the city; industries cluster their tremendous paved and dark-roofed areas into forbidding, anonymous, and inaccessible zones. Rather than simply keeping water out, levees can be reinvented as vibrant places where the river, its culture and ecology, permeates deep into the fabric of the city.

This competition proposes to forge new connections between the city and the river, creating a model able to be adapted to any waterfront site.

Site organization and building design
The proposal starts with a system of raised foundations to establish a virtual high ground. For the houses, two simple walls act as tracks to provide an engineered anchor while granting flexibility for the design of each home. These lines extend south, organizing the gardens of 'The Commons' and emerging as shear walls for the mixed-use building. Continuing south to buttress the levee, the walls end in the river as a cooling loop and breakwater which acts to re-establish the riverbank.

The mixed-use building uses its height to engage with the levee and look beyond to the river and city, and the houses create a modest density to strengthen the sense of community with the neighborhood. Both the building and houses create a sense of space that gives scale to the gardens and playgrounds.

The mixed-use building is designed to maximize ventilation and views, and to provide for the covered play area without having to build a separate structure susceptible to hurricane damage. While the plans of the residential units demonstrate a uniformity and economy, subtle differences are manifested in the facades to achieve variety, in the spirit of jambalaya, jazz, and New Orleans' eclectic architecural heritige itself. The houses demonstrate their potential for variety while sharing foundations, like the harmony of musical notes on a staff.

GREEN DESIGN

Sustainability depends upon the commitment of an entire society to be truly effective and socially equitable. This scheme demonstrates realisitic strategies for both the homeowner and the community, as well as various levels of government

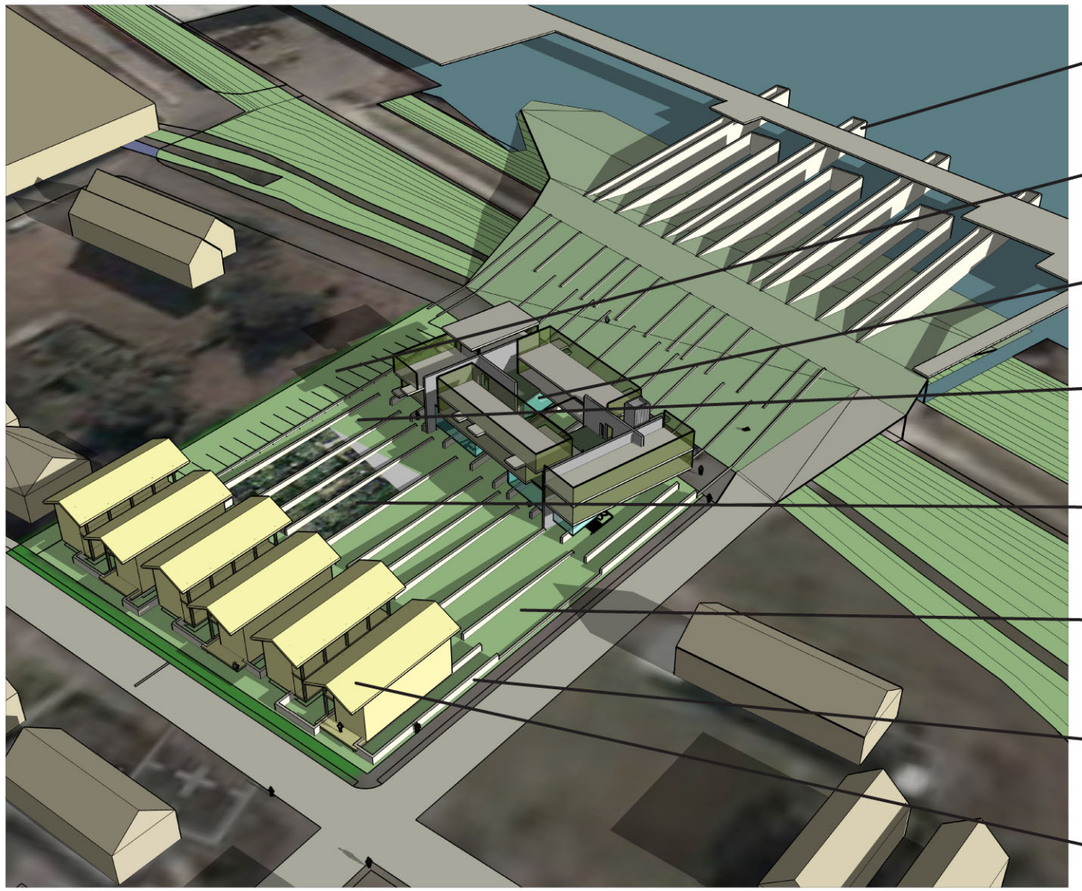
Economies of scale
Rather than expecting residents to bear the burden of implementing high first-cost green practices, the houses focus on passive strategies learned from older houses to control light and ventilation: tall rooms, ample windows and doors with shutters, shaded spaces. Newer approaches are kept simple and low-cost: raised foundations for in-floor ventilation from a source of shaded air, diverting downspouts for irrigation, highly efficient water- and power-saving appliances, and better insulation. Houses are wired with inverters and shutoffs for wind and photovoltaics, giving the owner the flexibility to add them when they are affordable.

House construction strategies include reusing found materials (see Pallet House below) and re-using construction 'waste' itself for interior finishes and accents. Budget green roofs, walls, and shading can be achieved by allowing trailing plants to grow and spread with minimal soil and maintenance.

To the south, the mixed-use building acts as a Green Billboard for the Lower Ninth Ward, employing sustainable strategies on a more active and visible scale – balconies, overhangs, and sunshades to control light, heat, and ventilation; a three-story open-air courtyard with roof gardens for views, water collection, and evaporative cooling; photovoltaics and wind-catching devices; zoned mechanical and radiant ceiling-slab cooling.

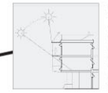
Common ground
Green spaces filter through the site from north to south, taking on an increasingly active environmental role. Between the houses to the north, gardens edged by double-height porches introduce a shady, cool microclimate rarely reached by the sun in summer. 'The Commons' contains community gardens, a public playground, and permeable parking with water collection/retention below.

Social equity at the river's edge
Further south toward the levees, sustainable strategies approach the level of urban and social infrastructure improvement. City, state, and federal funding (or lack thereof) have influenced the shaping of the river for generations, often to the benefit of special interests far removed from the water's edge.
Deserving the highest level of funding, attention, and dedication, the Mississippi now becomes reimagined as a River Boulevard, a 'water-street' whose levee sides (accessible to all) teem with life, serving as a fitting analogy for the flow of the city's commerce, culture, and history.



America is washing away
Millions of tons of valuable soil travels down the Mississippi into the Gulf, scouring banks, increasing water velocity, and affecting the biodiversity of the Delta, thus reducing its capacity to buffer against hurricanes. As the site walls extend south into the river, they stabilize the levees and banks and act as gills, forming chambers to trap and filter sediment.

Permeable surfaces
To increase the absorptive capacity of the site, permeable surfaces are used in the parking lot and paths with loose stone or shell fill below for underground water storage. This allows the site to treat its own water without using city stormwater systems. Added benefits are better drainage and local water quality.



Light and air without heat or moisture
The most critical factors affecting human comfort are temperature and humidity – both of which present a challenge in New Orleans without air conditioning. Courtyards, overhangs, porches, sunshades and proper ventilation with operable louvers and shutters helps control sun but admits light, while keeping air moving.

Water + 'waste' = food
Water collected from non-permeable surfaces (74,000 gallons per month) not used for irrigation flows into constructed wetlands. This mini-ecosystem of algaes, aquatic plants, catfish, and other fish filters water used on-site, ultimately giving residents the choice of a secure and reliable food source.

Community gardens
Organic material from houses and landscape waste is composted to fertilize crops. Using 40% of this 1.25 acre site has the capacity to produce 5 tons of vegetables for fresh consumption, processing, sale. The gardens could also be used as a hands-on educational tool for sustainable principles.

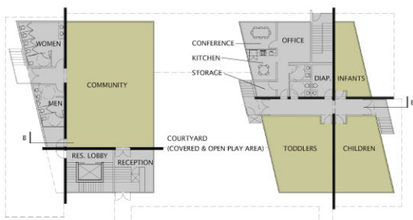
Edible shade
Shade is concentrated at the west and south edges as well as equally dispersed across the site by fruit-and nut-bearing trees. Additional shade is provided in the slot gardens and porches, balconies, and roofs of the houses and mixed-use by fruit-bearing vines such as blackberry, strawberry, and sweet potato.

Economy of materials
The site walls provide a set of pre-engineered, pre-approved foundations. By having a contractor use fly-ash concrete in bulk, reusing forms, and pouring the repetitive geometries quickly in a matter of hours, the homeowner is saved this expense and is assured a safe, solid foundation.

Upgradable green
Lower-cost solutions such as solar shingles and rain barrels in lieu of expensive photovoltaics and full-on green roofs help homeowners start off 'light green' without breaking the bank. Wiring is in place to be able to upgrade to better, more efficient systems in the future.

THIRD FLOOR - MIXED-USE

SECOND FLOOR - MIXED-USE

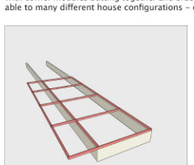


GROUND FLOOR - MIXED-USE (1/16"=1'-0")

Pallet House

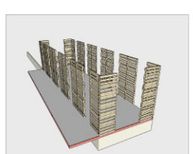
Reusing what is often perceived as 'waste' brings new design challenges and opportunities to build simply and quickly in emergencies.

Wood pallets used in shipping are sturdy and able to withstand considerable impact (worth considering when loose objects become hurled with great force during hurricanes), as well as being cheap or even free.
The standard size (40" x 48" x 4-3/4") approximates the thickness of a stud wall and the width of most door and window rough openings. Weighing 40-50 lbs. each, three pallets could be laid end-to-end on the ground, two sets fastened together with typical wood studs, and raised into vertical position by two people. These 12'-0" tall x 6'-8" wide sections could alternate solid-void to form openings for doors, windows, screens and secured together at the top with tie beams. With corner modules butting together and braced, the system would be simple and easily adaptable to many different house configurations – one-story, two-story, shotgun, and camelback.

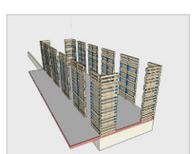


TREATED BEAMS ON PRE-ENGINEERED CONC. FOUNDATION

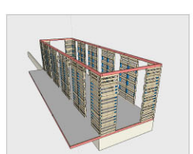
PLYWOOD SUBFLOORING, CONDUIT, AND INSULATION



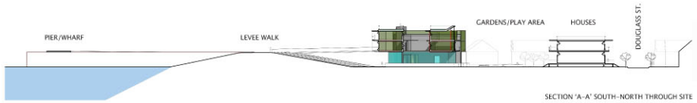
PIERS OF 3 PALLETS HIGH BY 2 WIDE



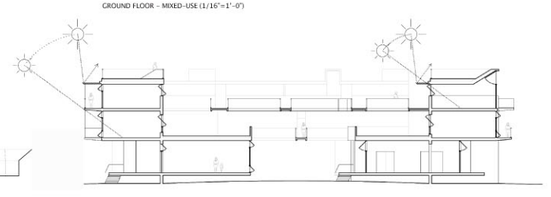
WOOD STUD FASTENERS JOIN 2 SETS OF 'PALLET-PIERS'



TIE BEAM AND BRACES LOCKS SYSTEM TOGETHER



SECTION 'A-A' SOUTH-NORTH THROUGH SITE



SECTION 'B-B' WEST-EAST THROUGH MIXED-USE BUILDING (1/16"=1'-0")