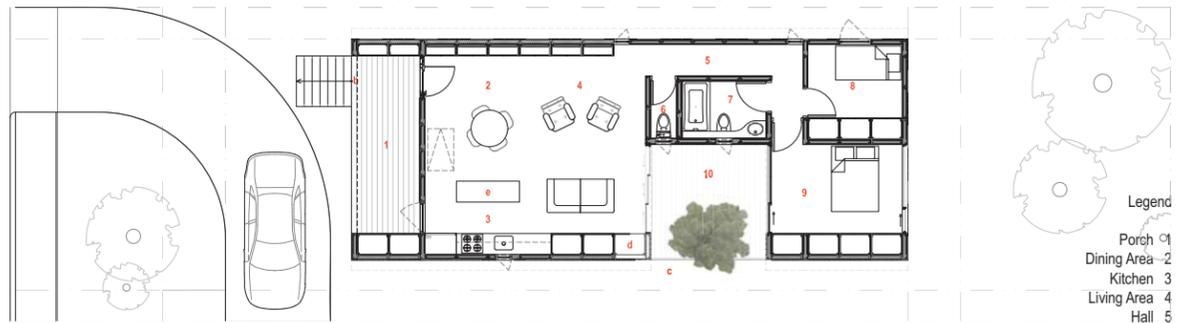
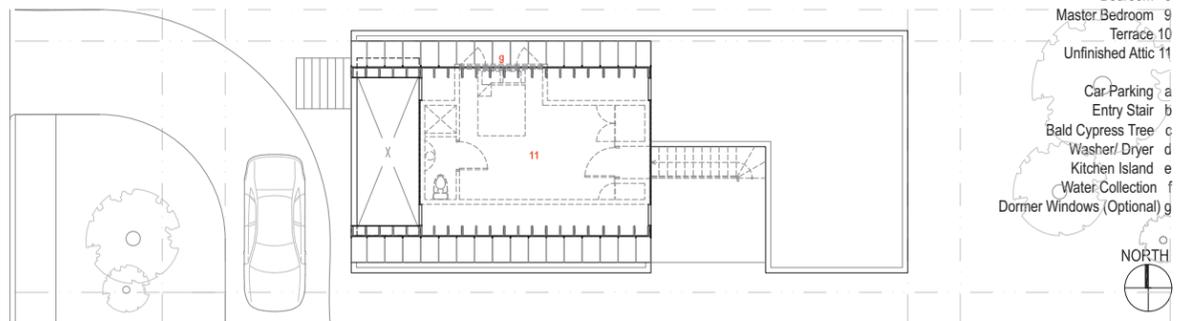


Ground Floor Plan 1/8" = 1'-0"



Main Floor Plan 1/8" = 1'-0"



Attic Floor Plan (with Optional Roof Expansion) 1/8" = 1'-0"

- Legend
- Porch a
 - Dining Area 2
 - Kitchen 3
 - Living Area 4
 - Hall 5
 - Powder Room 6
 - Bathroom 7
 - Bedroom 8
 - Master Bedroom 9
 - Terrace 10
 - Unfinished Attic 11
 - Car Parking a
 - Entry Stair b
 - Bald Cypress Tree c
 - Washer/Dryer d
 - Kitchen Island e
 - Water Collection f
 - Dormer Windows (Optional) g
- NORTH



Longitudinal Section 1/8" = 1'-0"

PHILOSOPHY

Through his research and construction of buildings, Shigeru Ban has continuously approached his work as a direct response to the built environment. This approach has yielded numerous buildings that exhibit a structural rationality, environmental awareness and spatial purity that has been synonymous with his work.

Shigeru Ban's work, particularly his residential projects, is inspired by its ability to connect to the natural environment while integrating structure into the overall design. Interior spaces are transformed to be an extension of the outside by sliding glass panels while material and structure are merged to become the sole adornment of a building.

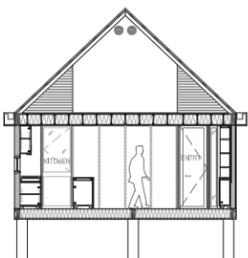
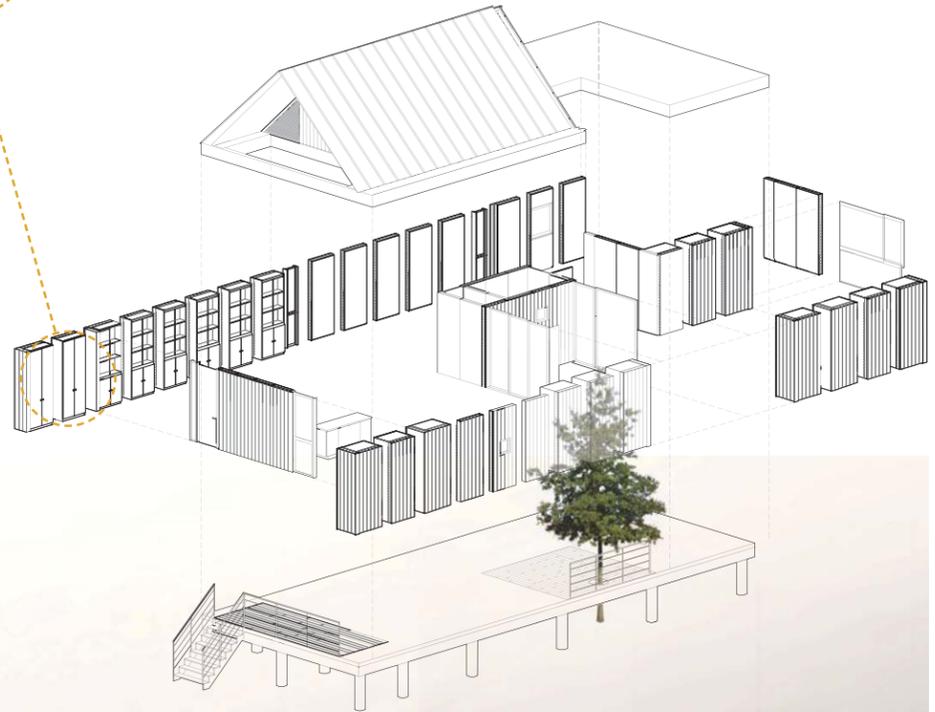
The **Structural Furniture Unit (SFU)** is a concept used previously in the work of Shigeru Ban Architects that integrates structure while providing the universal floor plan which opens to the

outdoors. Furniture House 1 in Yamahashi, Japan, was the first project realized using the prefabricated furniture cabinet as integrated structure, wall and storage. A series of Furniture Houses have been erected employing similar strategies, most recently for the Sagaponac House in Long Island, New York.

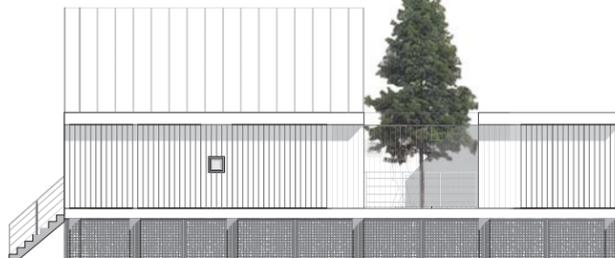
Shigeru Ban believes architecture should be made available to every person. His work and relief efforts all over the world, including the reconstruction of the village of Kiranda, Sri Lanka, after the 2004 tsunami, exemplify his passion to this endeavor. He has demonstrated the physical and emotional reconstructive potential of architecture in these efforts and hopes to bring this experience, as well as his diverse and inventive approach to architecture, to the rebuilding of the Lower Ninth Ward in New Orleans.

FURNITURE HOUSE 6

LOWER NINTH WARD
NEW ORLEANS



Transverse Section 1/8" = 1'-0"



Side Elevation 1/8" = 1'-0"



Front Elevation 1/8" = 1'-0"

CONCEPT

The **Structural Furniture Unit (SFU)** is the foundation of our approach to the housing proposal for the Lower Ninth Ward. In this integrated structural component, storage, insulation and materiality are already defined and provided. The most significant advantages of incorporating the SFUs are lower costs and increased safety. Constructed off-site, the pre-fabricated SFUs ensure high quality while driving down costs. During the aftermath of an earthquake in Japan, Shigeru observed that the safest places within the house were under furniture or door frames because of the stability they provided. The SFUs are able to withstand hurricane winds while providing structural bracing to support the roof allowing for an open floor plan and walls of glass that open to the outside. The repetition of these elements will enable residents to have a pre-established place to house clothes and personal objects alike.

The house itself takes on an appearance and proportion similar to the prolific "shotgun" style of New Orleans and keeps intact the important connection to the outside and surrounding community via both front porch and terrace. At the terrace, located at the center of the house, resides a Bald Cypress tree (native to and state tree of Louisiana) to provide not only a natural shading/cooling device for the residence, but to restore a part of the New Orleans landscape that was once taken away.

Additional components include a standing seam metal roof defining an attic space that provides a safe haven in the event of future floods and as an area for future expansion of the house. Passive environmental strategies have been incorporated through floor-to-ceiling operable walls and windows allowing cross ventilation, reduced sun exposure and sustainable material selection.

STRUCTURAL FURNITURE UNIT

Shelving and storage are necessary for any dwelling and in this innovative architectural system, furniture units are also primary structural elements. The **Structural Furniture Units (SFUs)** are constructed in a factory environment which allows for greater precision than field construction techniques. The modular nature of the structural system provides a method to rapidly erect the structure while greatly diminishing construction costs and because the units are easily moved and installed by a single individual, the construction process relies less on highly skilled labor.

Vertical framing is eliminated and the sideboards are constructed with backboards to create a wooden structure in the shape of a C-channel. Due to its shape, the structure can bear the lateral forces parallel to the backboard, and although its efficiency decreases, it is also able to bear lateral forces in the perpendicular orthogonal direction.

The 8'-0" tall SFUs are constructed primarily from 1 inch thick American birch plywood and are designed to reduce waste material during fabrication. The back corners of the SFUs have 2 inch finger joints to form the connection of the back and sides of the cabinet. Two inch by two inch hardwood cleats are attached to the inside of the back corners providing additional strength and rigidity. The cleats are also attached where the top intersects the sides and back.

When tested previously, the SFUs exceeded expectations. They are very strong and very stiff. The cabinets were designed to carry 2,100 lbs. Each cabinet was tested to 25,000 lbs without any evidence of failure. The testing was limited to 25,000 lbs due to a propensity of "tipping" above this load. The instability of an individual SFU is not an issue in situ due to attachment of the cabinets to the floor and joists being placed across the top of the cabinets.

ENVIRONMENTAL STRATEGIES

Limited south-facing windows prevent heat build-up at interior spaces while the terrace permits direct and indirect lighting. The Bald Cypress (deciduous tree) located at the center of the terrace shades the house and living spaces in the summer and permits low-lying sun to infiltrate the house throughout the winter. The attic space acts as a buffer from the heat of the sun to block additional heat gain to the interior spaces below.

Operable windows/vents are available on two surfaces of every room to encourage cross-ventilation. The exterior soffits and roof cavity are vented to release heat build-up while vents in the end walls of the attic space create a wind tunnel effect, dissipating the warmth gained from the sun.