

ARCHITECTURE

Firmness The house is comprised of a simple geometric volume wrapped on three sides with a translucent skin and covered with a hovering curved roof inflected toward the sun. A thick linear core defines a massive north wall and houses technical equipment (batteries, electrical, mechanical) and service functions (kitchen, laundry, storage, closets). A second core (bathroom) divides the space lengthwise into the public and private sectors. The structure is composed of five-paired columns in series that set the initial spatial limits of the house. They are anchored to a heavy steel floor system and support the folded plate stressed-skin roof assembly. The columns are freestanding across the living, dining, and sleeping areas allowing a translucent wall to run the length and sides of the house unimpeded. On the north facade, the columns engage the core wall, dividing it into various service sectors.

Expanded polystyrene panels that are lightweight, easily assembled, and yield a high insulation value comprise the north wall. The particular shape of the roof, a lightweight folded-plate filled with foam insulation, is designed to set the solar panels at an optimum angle for energy collection and modulate the interior space against the regular cadence of the columns. The east south and west walls are a 2x6 construction with two layers of aerogel filled polycarbonate panels that set both the interior and exterior finish. This wall section gives up to R-22 insulation value while transmitting a beautiful translucent light.

A large cedar deck surrounding the house has three purposes; to expand the activities of the interior volume; to set a formal presence for the structure on its site; and to aid in the transportation of the unit. In order to keep the height of the house as low as possible on the highway, a lowboy chassis serving as the floor and foundation structure was designed to receive a detachable gooseneck and rear axels for transport. A truss on each side of the 48' span resists deflection while in transit. Upon site arrival, the trusses rotate down 90 degrees to create a deck surround for the house. This transforming technique facilitates the moving of the house as an educational exhibition piece after the competition and also serves as a model for the potential shipment of units with the roof in place.

Commodity The house is approached from the west along a gentle ramp. A six-foot roof cantilever provides an initial change of scale and protection from the weather. One is first presented with the continuity of the translucent skin and an intimation of what lies behind. Just

before entering, the donor wall (mailbox, doorbell and house number in normative use) comes into view. A collar beam contiguous with heads of doors marks a second scale change and sets a datum line for the entire house. Circulation is along the north core wall and projects directly out to the east door in the bedroom. The activity spaces of the living, dining, and bedroom borrow from the circulation, maintaining a positive ambiguity of use with the strong entry axis of projection. The bedroom is the most closed sharing part of the core that contains closets and the laundry. The dining room is defined by the axis of the table that links the horizontal window in the kitchen and the large patio doors opening to the deck. It shares space with the living room whose domain is nestled into the adjoining column bay and the corner of the translucent panels.

The 2002 house glorified the technology of the solar array by exposing it as a benevolent umbrella. This house integrates the panels into an integral form linked directly to their function. The technology, often laden with negative perceptions, is subsumed by a roofline of intuitive lightness. In addition, to accommodate heating during the coldest months, a set of solar panels is placed on the bathroom section of the south wall. The pure black beauty of the Sun Power panels becomes an accessible and decorative fenestration detail that does considerable work.

Delight The section of the roof, the delicate translucency of the enclosure panels and its corresponding mass of the north wall largely determine the identity of the house. Initial perceptions reveal something unexpected – an upside down roof. Closer inspection unfolds a rationale that links form with function, interior and exterior, and technical performance with spatial dimension. As the top of the roof responds to the demands of harvesting sunlight, the corresponding underside creates rooms that provide intimacy yet appear much larger than the modest square footage. Low in the center, the space releases towards the periphery resulting in a tension that activates sensations of closure and expanse. The clearstory carries a reading of the volume past the line of conditioned interior air. The roof seems to float, particularly at night. The interior light radiating through the dematerialized translucent walls delivers a strong nighttime identity. LED lights in the base of the cavity wall allow color alternatives providing a changing and memorable impression against the constancy of the roof structure.