

DWELLING

Livability

Appearance The house is simple in expression and volume. The east, south and west walls are translucent screens, identical inside and out. Possessing the quality of a Japanese pagoda, they provide separation and privacy from the outside while maintaining a connection through changing light conditions.

The north wall is a monolithic gray, distinctly separating inside from the outside except for a strategic kitchen window. The interior of the wall is rich in continuous color, packed with intricate service modules.

Traffic The wrap-around deck facilitates free movement in and around the house. One can promenade or take various shortcuts between interior and exterior, thus expanding the spatial dimension of the dwelling.

The entry, approached by a ramp engages an axis of projection that extends the length of the house and out to the bedroom deck. This circulation path is shared with the activity spaces.

Space Planning The plan is a rectangle articulated in section and differentiated through material selection. Rooms are given identity and borrow volume from the generosity of the continuous ceiling.

The north wall houses active and passive services and collects the debris that piles up from daily patterns of life.

The bathroom core, a sculptural element of articulated wood, divides the space into public and private areas. It does not touch the ceiling, thus allowing the space to flow continuously.

Convenience A radiant floor offers the best quality of heat. The ambient temperature can be kept lower, saving energy, and heat on the feet accommodates the body the best.

Cross ventilation is facilitated by two fans located above the doorways on the east and west facades. They draw fresh air from vents located at the base of the south wall and are thermostatically controlled with a manual override.

Absorptive and reflective shades in the polycarbonate wall offer control of light and heat transmission. They are modified according to user preference.

Maintenance Materials are selected for durability and sustainability. The lyptus floor throughout the house is a tough surface and a renewable material. The cedar deck should age

beautifully. The Alucabond of the north wall and the polycarbonate require intermittent cleaning.

Buildability

Mass production The roof, translucent wall panels, structural floor and column and beam assemblies can be manufactured as windows are today. The expanded polystyrene panels (north wall and sub-floor) are presently manufactured.

Construction methods Components can be assembled in a factory and shipped as a finished house (including roof), or they could be transported as components and assembled in the field.

Costs The actual cost of materials for the entire project is \$303,000. Some of the components for this research project were made specifically for this application, thus the costs do not reflect economies of scale. The material cost for the aerogel filled translucent panels is approximately \$20/sq.ft. However, this is the first time GE and Cabot Industries have experimented with this potential product. When one considers that this material requires no finish work, the costs become viable.

The torque boxes that allow wheel and tow attachment cost \$30K. If made detachable for re-use, the costs of transportation would be similar to existing modular units.

Flexibility The house can be situated in most climates. The design functions around the structural module of the columns, thus the house could be shortened one or two bays to produce a studio type unit. Since the translucent panels are independent of the structural columns, the components can be reconfigured to provide alternate plans.

Marketability For those seeking traditional house imagery, initial contact with this structure should pose an intriguing curiosity. Knowledge of the rationale - that this house is designed to be sustainable and save energy - might help bridge the gap between the unfamiliar and the beautiful. The for sale ad might read: spacious living and dining room bathed in sunlight; great room for entertaining and parties; dine in or out on the patio; sparkling kitchen with energy saving appliances; hardwood radiant heated floors; natural ventilation with air conditioning back-up; intimate bedroom with deck; laundry next to bedroom; exhilarating spatial experience; instant dial-up wall colors; zero costs for heating, cooling, cooking and lighting.