

NYIT Brief Contest Report: DWELLING

HOUSING

The intention of Green Machine/Blue Space is to house peoples of all cultures, locations, and incomes. It demonstrates a global design approach as well as the comfort and ownership of a locally designed home. In tandem, Blue Space and Green Machine work as one complete, self-sustaining unit.

Green Machine is a modified, used shipping container that houses the elements of a regenerative cycle of life. This makes it self-sufficient as long as it's connected to a Blue Space that gathers power from our natural world while sustaining life. The Green Machine supports that which is necessary for survival: food, water, power storage and transformation.

The Green Machine is built to be deployed anywhere in the world. We consider the container a universal building material since they are found in every port on every continent. We modified the container slightly, then insulated it for protection from cold weather. The roof garden will cool the house in hot, arid climates.

Blue Space can therefore be indigenous to its locale. Its size, construction, and architecture can change according to the climate and conditions of its site. Our Blue Space is designed for Northeastern American climate.

MATERIALS

Product innovation has encouraged a noticeable shift in aesthetics with regard to finishes. Following concepts advanced in McDonough's Cradle to Cradle, "green" may not always mean "natural" and, indeed, accepts the intervention of technology if energy is conserved. Architects and interior designers have discovered a multitude of new "green" and recycled products that use technological advances to transform discarded materials into seamless construction elements. Recycled telephone books are reconstituted as sleek countertops. Recycled resins encapsulate grasses and flowers and are suitable for doors, floors or even stair treads. Ground wheat or compressed wheat straw become homogenous, machined building materials.

The walls of Blue Space are covered in an environmentally safe, synthetic, translucent fabric. The fabric is durable enough to be used as a floor covering also without the use of carpet padding.

The products used in Green Machine/Blue Space celebrate technology and demonstrate a new aesthetic.

LIVING

The interior of the container is designed to be a livable, efficient space. The appliances, bathroom fixtures and storage possibilities were chosen with efficiency, sustainability and delightfulness in mind. The transient activities that take place in the container allow the inhabitants to be inside the small spaces for short amounts of time;

most of one's time is spent in the large Blue Space. The juxtaposition of a big, open, noble space and the smaller, condensed space creates an interesting architectural experience.

FURNISHINGS

It is possible for furniture to help balance one's thermal comfort. For instance, a microclimate can be created with small solar powered fans that blow air through the fibers of a couch cushion to cool the user. Integrated lighting components create a piece of furniture that performs multiple tasks, maximizing the efficiency of the space.

Another means of designing efficiently is providing a work-station set under a staircase. The station can be designed not with solid furniture elements, but with suspended, movable parts that swing out or tuck away. In order to insure airflow, natural lighting, and comfortable spacing, the stair can be partially open and transparent.

CONNECTION TO NATURE

The link between Green Machine and Blue Space is transparent and allows for a view straight through the house visually connecting the front yard to the backyard. The entry and exit are within one line of sight. Strategic placement of windows provide vistas and natural ventilation across and through the house in multiple directions.

Our second-story loft connects the inhabitants to a lush roof garden via a bridge across the breezeway below. The garden grows herbs, vegetables, flowers and grasses and provides a tranquil place to enjoy nature.

CONSTRUCTION

The Blue Space is constructed out of Agriboard panels that were pre-cut in a factory like a kit of parts. Agriboard is a structurally insulated panel made of compressed wheat straw between two pieces of oriented-strand board. The straw is an agricultural by-product that is heated and compressed which releases a natural adhesive that binds itself together to create a biodegradable mass without the use of chemical binders or adhesives. Agriboard provides exceptional insulation, fire resistance, insect control, mold resistance and sound control. The panels are used for the walls, roof and floor and are set in a steel frame foundation. They are assembled into five modular parts that can be disassembled and transported.

The walls of the Green Machine's shipping container were first cut for double-pane windows to be installed. Walls were framed using two-by-fours and then soybean-based insulation was sprayed between the studs, ceiling and floor joists. The walls are closed with a machined wheat-board product. This process of modifying the steel container creates a tightly insulated envelope with the option of natural ventilation.