
96
HOUSE
COMPETITION

To create an innovative design
for a small house that is affordable,
sustainable, and energy efficient.

Sponsored by : Rice Design Alliance and American Institute of Architects, Houston Chapter

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DESIGN : CORE Design Studio


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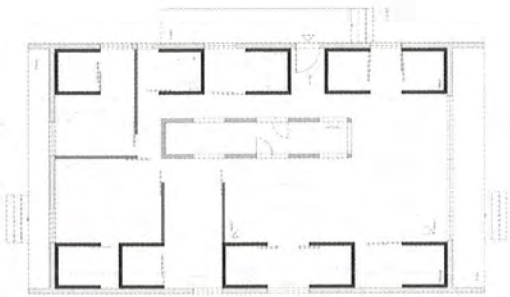

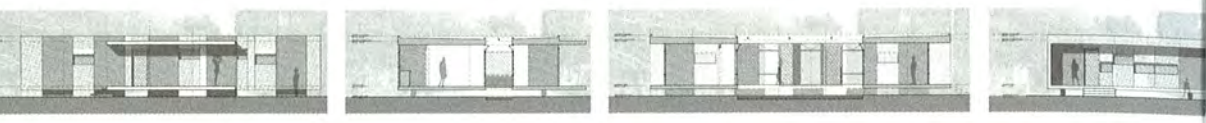

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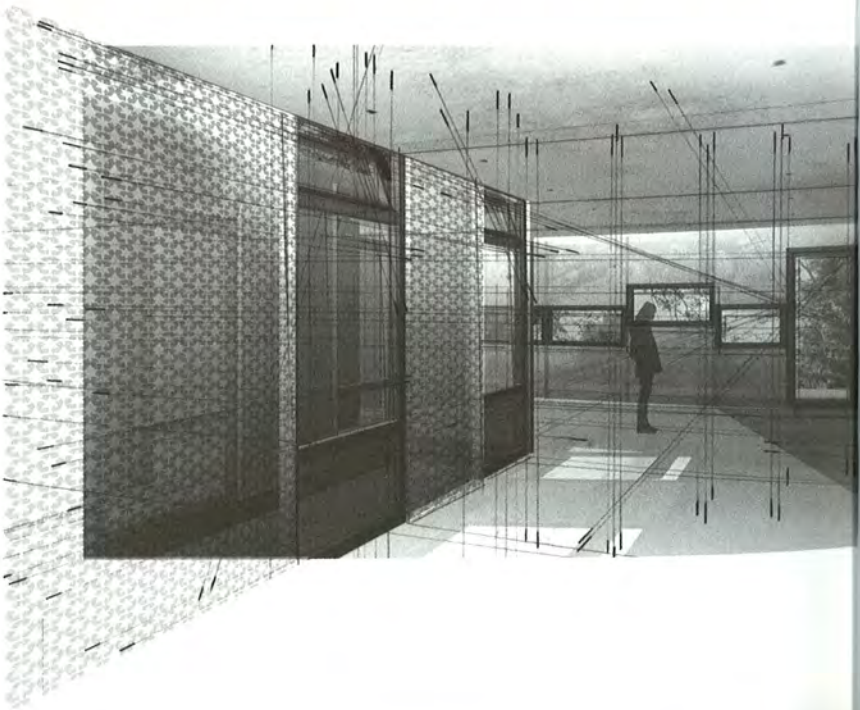

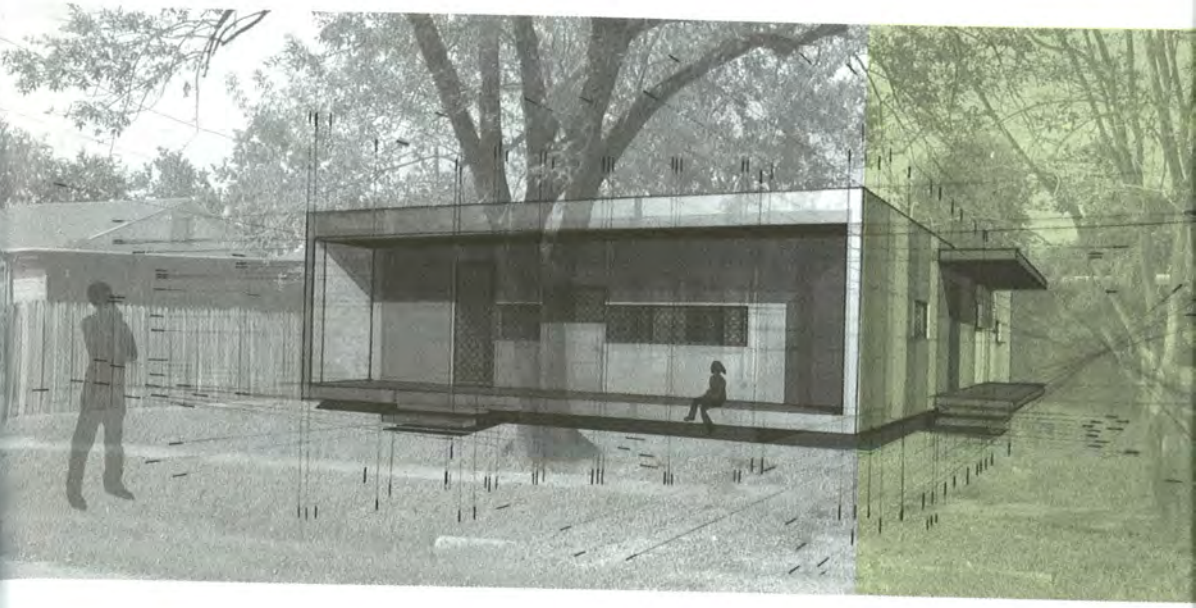

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Aptum Architecture

Zurich, Switzerland

A sustainable lifestyle is achieved by reducing one's ecological footprint through more efficient living. The *UP[LIFT] house* addresses a house's environmental impact with three solutions: condensed living, flexibility, and unconventional reuse of standard elements to passively heat and cool the house. The house is a prefabricated modular system that maximizes five components to produce a cost- and energy-efficient building: (1) prefabricated precast elevator shafts, (2) precast hollow-core concrete slabs, (3) a courtyard for ventilation, (4) modular wall systems, and (5) reflective roofing with solar collectors. The *UP[LIFT] house* is highly flexible due to its use of modular elements. The elevator shafts and hollow-core slabs adapt to various site constraints and user needs. The house is built on standard 8' slab modules, and shafts are reduced to the minimum necessary to distribute load. Potentially the system can be stacked vertically due to the load-bearing capacity of the shafts, which creates a denser and more ecological living environment. The *UP[LIFT] house* maximizes the use of a courtyard for the hot Houston climate. The main floor slab is raised 2' above ground so air is able to circulate under the house and through the courtyard, creating a "Venturi effect" by forming a funnel for hot air to pass through and keep the building cool. The interior is naturally ventilated, allowing warm air to escape through upper windows facing the courtyard. Lastly, a reflective roof is applied to reduce heat gain.