Aline Architecture

By Joyce Finn

When founder and owner Joy Cuming renamed her company Aline Architecture in 2007, she named it after the architectural premise that everything starts with a simple line. The sustainable design-build firm specializes in landscape, interior, and urban design, and its four employees typically complete about 25 projects per year. "Our focus has always been toward passive solar and reorienting buildings to respond with the site's environment," Cuming says.

Cuming has a National Council of Architectural Registration Board Certificate to work anywhere in the United States and in Australia, where she lived for many years. But most of her custom-built homes are on Cape Cod, Massachussets, and building there has its own unique issues. "Because of its exposure to the ocean, the coastline is fragile," Cuming says. "It's a moving landform. Recently there was a house, not one of our projects, which slid down the bank. When we design and build in this area, there are sensitive ways to encourage dune grasses to grow, which allow for a certain amount of flow. It's amazing to see dunes become rebuilt."

1. The Round House
2. The Turtle Hill House

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The Round House

Wellfleet, MA

Started:
2007

Completed
2009

Size:
2,500 square feet

Building Type:
Residential

In 2009, Aline Architecture completed renovations to a small, round house on the dunes of Cape Cod. The original modern-style house, designed and built in 1975 by Charles Zehnder for a young couple, had no windows—only a pair of sliding doors set deep in the house's façade.

The firm kept the original circular motif but opened up the home's southern exposure to take advantage of passive-solar heat and lighting, as well as offshore breezes. "The house is not traditional in form, and it floats over the landscape," Cuming explains. "We were very responsive to orientation. It's on a series of big concrete piers, so it touches down very lightly so that all the native grasses and flora can grow under and around it. Even the sand is allowed to move freely underneath it."

Aline Architecture reused whatever it could from the original structure, including many of the original fir beams. The firm also installed a high-efficiency furnace and insulated the structure with open-cell spray-foam insulation. To seal the roof deck flooring, the firm used Line-X, the material used for pickup-truck liners. Not only did this product cut down on the use of wood, but it created a nonskid-membrane roof impervious to moisture. And, the home is now specially protected from the harsh wind and rain of Cape Cod.

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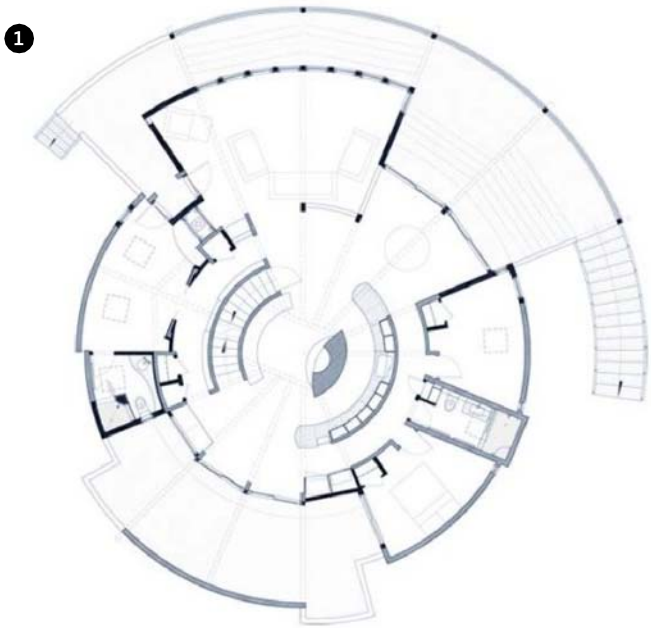
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The Turtle Hill House

Wellfleet, MA

Started:
2005

Completed:
2007

Size:
2,800 square feet

Building Type:
Residential

Aline Architecture faced an unusual design problem when renovating this experimental geometric home built in the 1960s by the New York-based architect Giovanni Pasanella. Issues arose around the house's complicated geometry, as well as its sensitive dune site. The original structure comprised two small cubes that were rotated 45 degrees from each other. "The client originally just wanted a garage with a master bedroom over the garage, but it was a tricky geometry to add onto," Cuming says. "I first modeled it in cardboard to see how I was going to respond to it. In the end, their functional request turned into a piece of sculpture."

To deal with the geometric issues of the structure, Aline Architecture used a series of squares and circles that were extended out along different axis. The firm also added a roof deck to take advantage of the spectacular ocean views, and Cuming experimented with a Dex-o-Tex, an epoxy-based decking material (also used on The Round House) that makes an impregnable nonskid membrane.

The home is festooned with a number of unique products, including an outdoor shower that folds up when not in use. Meanwhile, the home's stair tower, a passive-solar chimney, is made of a double-layer plexiglass material called Duo-gard, and cork floors, in intersecting geometric forms, make an interesting interior space.

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JOY CUMING, FOUNDER & OWNER

In response to the dune environment, the firm's environmental consultant, Safe Harbor, of Wellfleet, Massachusetts, carefully installed jute netting with ground staples over indigenous seeding to stabilize the dune-like hill. This canceled the need for retaining walls, and ensured a stable location for the home for years to come.

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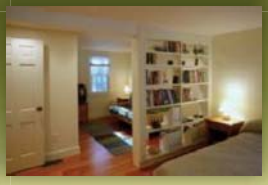

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