HOUSES

ARCHITECTURAL CHALLENGES AND SOLUTIONS

BY DESIGN

CURATED BY KILEY JACQUES

LOCK, LIFT, AND LOAD

The construction of this 1500-sq.-ft. net-zero-energy home by Red House Design included a number of logistical challenges posed by the 60-ft. by 75-ft. lakefront lot. The site had a tangled web of setback incursions, lakefront/shoreline restoration requirements, surface/runoff water and silt mitigations, and maximum site-disturbance restrictions. Their first step was to retain a grandfathered existing structure through the entitlement process. With it, the house could be rebuilt with a vertical design on the same 25-ft. by 25-ft. footprint on the nonconforming lot. This enabled the inclusion of an advanced septic system and a combination geothermal/domestic water well.

Then came the challenge of how to get a custom-fabricated steel spiral stair with integrated lighting into the 6-ft. by 6-ft. vertical shaft connecting the three floors. The solution was to build a removable section of roof over the shaft. Come time, the build team was able to hoist the stair over the trees, through the roof, and into place without damaging any interior surfaces.

Designer Red House Design, redhousedesign.com
Project location Egremont, Mass.
Photos Aaron Thompson

"The site restrictions demanded surgically sequenced, trade-by-trade coordination."

—Bruce Moore, Red House Design

BARN BUILT ANEW

Originally, the homeowners wanted to transform their antique barn into a home. Because it proved structurally unsound, they hired Haver & Skolnick Architects to build a new house in its image. Working within the parameters of a historic district meant the exterior needed to closely resemble the original building. The primary design challenge was to create interior spaces within a vast space that allowed the salvaged hand-hewn timber frame to stand exposed. The solution was to create a central kitchen defined by freestanding cabinetry centered around a circular chestnut island. The cabinetry also delineates the living and dining areas while maintaining the integrity of the original barn's interior. Another piece of the puzzle was to find a worthy use for the iconic and prominent silo. At ground level, it serves as a dramatic entry hall with a soaring 30-ft. ceiling. Suspended above, a floating stair climbs to the top, where the architects used a continuous glass perimeter to transform the space into an observation tower. The iron-banded form is visible throughout the house.

Designer Haver & Skolnick Architects, haverskolnickarchitects.com
Builder Davenport Contracting, davenportcontracting.com
Project location Litchfield County, Conn.
Photos Robert Benson Photography, robertbensonphoto.com

FIT FOR FLOODS

The main challenge posed by this site had to do with its proximity to Long Island Sound. Recently amended FEMA regulations specify new builds be 13 ft. above mean tide. Because the grade here is at 6 ft., Fairfax & Sammons had to raise the finished floor by 7 ft. The difficulty was trying to make a Cape-style house—which would normally sit right on the ground—look natural when elevated. The treatment of the exposed foundation wall was paramount. They took advantage of the required mounded septic system by bringing it up to one corner of the house and surrounding it with retaining walls. This provided visual continuity to the exposed foundation wall, which was faced with handmade brick in Flemish bond. Openings to let the storm surge flow under the house were mandated and located below the windows to emphasize the vertical line of the fenestration. The height of the house allowed for a platform deck on the rear with views across the water. The elevation also disguises a raised pool.

Designer Fairfax & Sammons, farirfaxandsammons.com
Builder Morton Buildings, mortonbuildings.com; Coastline Building Contractors
Project location West Neck, N.Y.
Photos Durston Saylor, durstonsaylor.com

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