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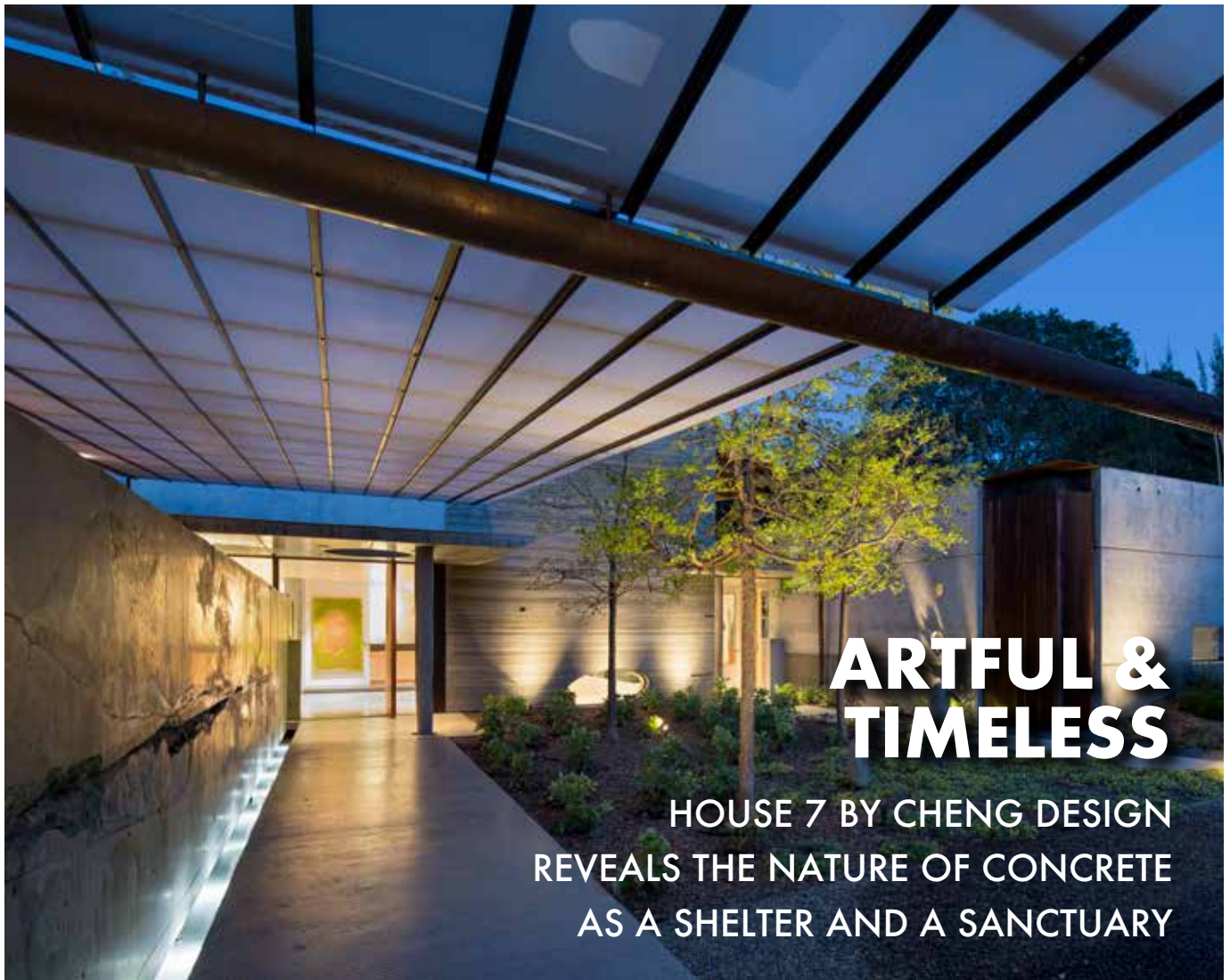
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ARTFUL & TIMELESS

Cheng Design reveals the nature of
concrete as shelter and sanctuary

INSIDE: 2016 DECORATIVE CONCRETE SHOW HIGHLIGHTS

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ARTFUL & TIMELESS

HOUSE 7 BY CHENG DESIGN
REVEALS THE NATURE OF CONCRETE
AS A SHELTER AND A SANCTUARY

PROJECT TEAM **FU-TUNG CHENG, ANNA KIM, JOHN CHAN** • PHOTOGRAPHY **Matthew Millman Photography**

THE INTERCONNECTEDNESS AND THE LIVELY RELATIONSHIP WITH THE ELEMENTS GIVES A SENSE OF WARMTH, CONNECTIVITY, AND HUMAN SCALE TO A DIVERSE CLUSTER OF STRUCTURES THAT PROVIDE BOTH A SANCTUARY AND A SHELTER FOR THE FAMILY.

House 7 is spread over five structures comprising 6,000 square feet. Conceptualized as a small village, the ambitious project includes the two-story main house, office, guest house, meditation center, and garage—that work together to create an aesthetic and kinetic experience.

When it rains, the variety of roof angles, pitches, and folds, were designed to collectively orchestrate the sight and sound of water flow as an art installation, and allow for potential cistern water conservation. The butterfly roof is folded at the front of the house so that 50 percent of the rainwater flows onto the lower roof deck of the separate office structure. There, the water percolates through a 6-inch layer of gravel stone and emerges at the corner of the building to cascade down thick, rusted steel plate rain leaders.

The other half of the roof water is directed to a string of rain chains suspended over an “erosion wall” toward the rear of the house. Moss has already appeared on the wall, encouraged by the porous, sand, dirt and concrete mix design.

While most of the water features described are passive, at the main house the wall weeps like a natural rockface weeps underground spring water. This water is directed to the middle of the celadon-colored, sculpted geological wall via small pumps and drip irrigation tubes located in the entry trough along the walkway. The second active water piece is the copper gutter that extends across the entry walkway. This gutter doubles as the leader for all rainwater coming off the garage and entry roofs. During dry season, a pump recirculates water from the trough into the gutter and it becomes an inviting, refreshing water feature.



The erosion wall is a living piece of art. Objects embedded in the cast-in-place-concrete by the homeowner will be exposed over time through the effects of time and water.

Energy efficiency was built into the 12-foot high, 15-inch thick concrete walls. They contain 4-inch thick, foam-sheet, vapor barrier insulation. This reduces the need for artificial heating and cooling. From the top of the concrete to the roof, walls are conventionally framed and clad with a rain-screen of reclaimed lumber from redwood logs felled over 100 years ago. Deep, overhanging eaves are angled to guide the rays of winter sun to the stair atrium's passive solar concrete wall. The butterfly roof configuration conceals the south-facing wing of the photovoltaic roof panels, which cover 60 percent of the roof area.

The second floor hall/atrium forms a peaked roof where the two wings of the roof meet, serving three functions. First, it is angled for maximum solar gain to feed the hydronic heating system collectors. Second, the roof provides a continuous skylight that illuminates the length of the top floor hallway. Third, three structural "tendons" holding the entire roof together are exposed to express the embodied tension and the spacious vault of the peaked roof.

All the concrete work crafted throughout House 7 (including walls, geo-forms, front entry fabric-formed column, cantilevered treads, and all inlays) were fabricated and detailed by the designer. Always mindful of the inherent tension between the deliberate, disciplined planning in architecture, the potential extemporaneous expression of the moment during construction, and the relentless force of nature – House 7 tries to strike an artful, hopefully, timeless balance. [ch+](#)

Read more: www.chengdesign.com/design-portfolio

Fu-Tung Cheng will be the keynote speaker at the Concrete Decor Show in September 2016.

PROJECT INFORMATION

SUMMER 2014
INTERNATIONAL DESIGN AWARDS
GOLD - FIRST PLACE:
NEW RESIDENTIAL BUILDING

DESIGNER
CHENG DESIGN

CONTRACTOR
R.J. DAILEY CONSTRUCTION

STRUCTURAL ENGINEER
ENTRESTUDIO

CIVIL ENGINEER
LEA & BRAZE ENGINEERING INC.

LANDSCAPE ARCHITECT
LUTSKO ASSOCIATES

ENERGY CONSULTANT
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