Arch 464
ECS
Spring 2012

Name_____

Quiz #3

"Corbu or not Corbu?"

Read and look at everything before you write!

All photos: Leonardo Finotti, *Architectural Record*, April 2012.

East facade of Twin Houses Kastanienbaum reveals the deeply recessed interior spaces and the dividing concrete wall.

ARCHITECTS UNDERSTANDABLY yearn to be their own clients, especially when it comes to their homes. But Remo Halter of the Luzern, Switzerland, firm, Lussi + Halter, couldn't afford to build his ideal house—a cubic volume of poured-in-place concrete. Yet he had found a tranquil setting—over a third of an acre in the wooded residential district of Kastanienbaum, not far from downtown Luzern. So he and his Brazilian wife, Cristina Casagrande, a psychoanalyst, looked for a "roommate"—that is, someone to share his design for a 6,652-square-foot two-family house divided vertically down the middle.

Halter found adventurous partners for his project: a physician-and-artist couple. "The doctor wanted something new and quite brave," says Halter about his plan to create an anthracite-hued concrete house. A far cry from the gemütlich gabled houses of the neighborhood, the three-level structure's poured-concrete walls, floors, and piers form a crisp, brooding mass floating above the voids for open-air carports, terraces, and walkways.

The house's impeccable detailing and clarity of form also reveal an affinity to Le Corbusier that both Halter and his partner, Thomas Lussi, acquired during their architectural training at the Eidgenössische Technische Hochschule (ETH) in Zürich. Since 1999, the two have practiced together in Luzern,

Southeast corner with roll-down, louvred pine blinds deployed.

where they have been winning competitions for schools, housing, and hotels. The firm's Dreilinden School Propsteimatte in Luzern (2005), in which concrete, oak, and daylight animate interior spaces, demonstrates the architects' knowing manipulation of plan and section.

Halter's use of Corbusian language at the Twin Houses brings to mind the master's Museum of Ahmedabad in India (1957) or the Shodan House (1956), also in Ahmedabad, in the way the stalwart block seems to defy gravity. Even the double carports at the front of the Luzern house recall Le Corbusier's vehicular approach to Villa Savoye at Poissy in France (1929).

As you proceed into the vestibule and walk past Casagrande's office, you are pulled toward the forest at the rear of the property, visible through an expansive glass wall. But wait: As you arrive at the kitchen/living/dining area, you behold a Corbusian coup de théâtre. Rather than stairs, attenuated ramps stretch to the lower level and to the second floor along the concrete party wall separating the two residences. The ramps have a gradient similar to the exterior ramp to the roof at Villa Savoye, Halter points out. But unlike Le Corbusier's, Halter's ramps don't have pipe rails—nor a parapet, nor balustrade. No nothing.

When asked about Swiss building codes that allow you to leave out handrails (a sin of omission that American architects may not easily forgive, even for private houses abroad), Halter explains that the municipality only requires the homeowner to sign off on liability claims. Nevertheless, the architect did not inflict his architectural obsessions completely on his neighbor: The doctor opted for wood stairways. Crafted of the same Jatobá (a Brazilian cherry) as Halter's ramps, the stairs next door are quite handsome. But we must confess that the sculptural interplay of the ramps is breathtaking to look at,

Stairs to the shared roof deck and pool.

and literally so to walk up or down.

The ramps underscore the strong processional experience Halter introduced into his house. The one leading upstairs terminates in an enclosed court open to the sky. From there, a concrete stair (no handrails again), like the one Le Corbusier designed for Charles de Bestegui's penthouse garden in Paris (1931), takes the intrepid to a rooftop pool and deck shared by both families. The second interior ramp leads from the main floor down to the basement, which contains additional living and service spaces, not to mention a room for a geothermal pump. "We have no need for oil or gas," says Halter, who notes that all hot water and heating, including that for the pool, are provided by the geothermal system.

Terraces and covered balconies connect spaces within the self-contained platonic volume to the outdoors. A covered balcony off the master bedroom provides framed views of the forest. In addition, a rear terrace adjoining the living area links to the lawn and woods by a wide cascade of stairs. Covered walkways edge the long elevations and afford protection from the sun via roll-down louvered pine blinds supported on elegantly thin steel columns. To reduce heat loss in the winter months, Halter specified triple-glazing for the inner walls that enclose the house proper.

If Le Corbusier were alive, he might envy the high level of craft now so evident in Swiss construction, particularly that executed in concrete: Le Corbusier's iconic landmarks usually had to be realized with plastered masonry or concrete that spalled. Here Halter can pay homage to the pioneer architect while advancing and refining his vocabulary in new ways and with better technology.

The architect, along with his wife (and visiting children from his first marriage), has found the house to be very comfortable. And, fortunately, his neighbors seem happy with their Modernist home. The mystical color may help. As Halter says, "The black box is powerful. You feel a certain energy emanating from it." ■

Southwest corner showing glazed enclosure of ground floor and concrete enclosure of second floor poised on slender steel pilotis.

Analysis

1. Luzern is located at 47° NL, about the same as Moscow, ID. Given the building siting and orientation point out two features of the design and site that have potential to highlight sustainable design and two features that are detrimental to sustainable design. Fully explain your nominations of these four features.

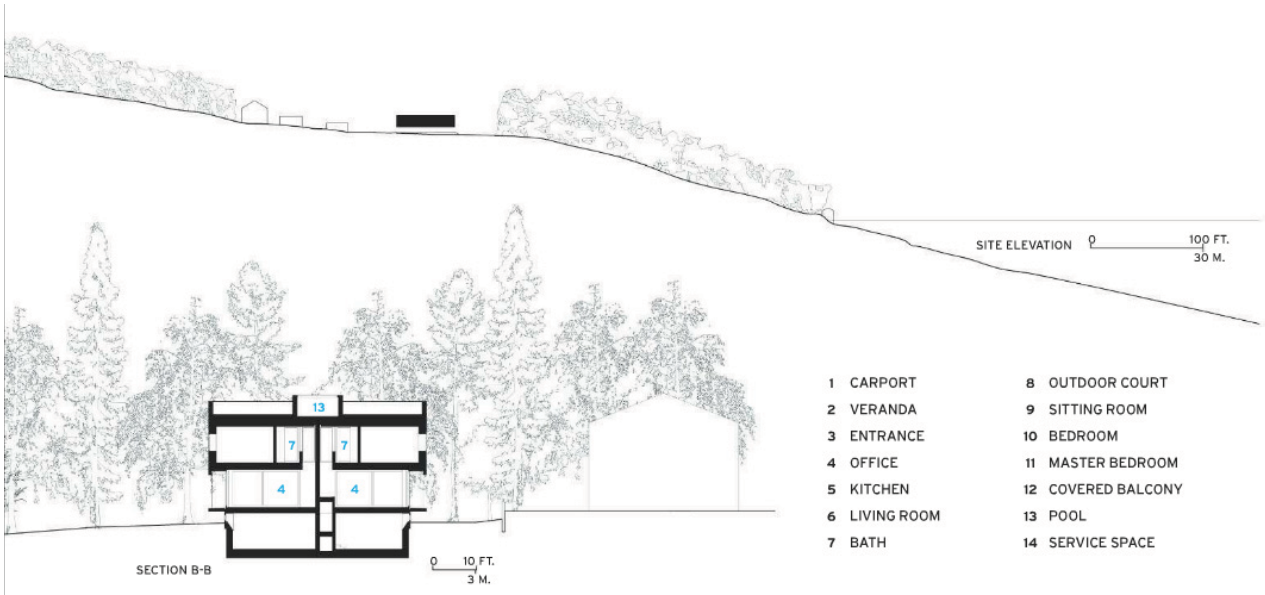
4 points

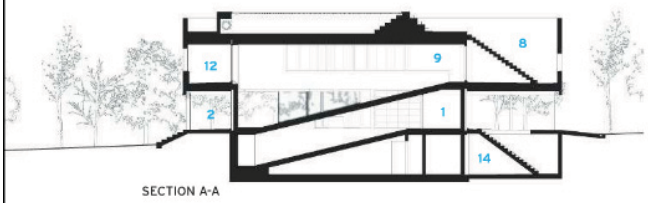
1

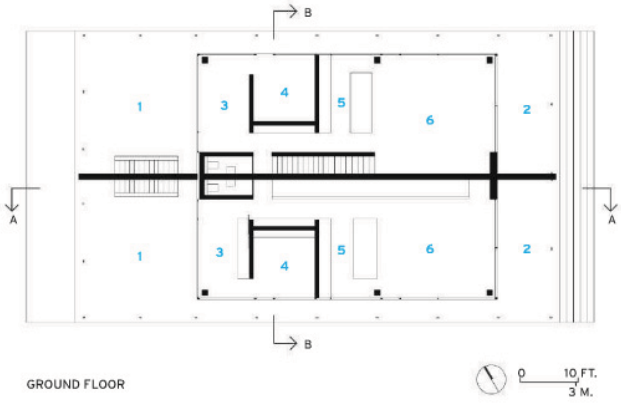
2

1

2







CREDITS

ARCHITECT: Lussi + Halter – Remo Halter, principal in charge; Corina Kriener, coordinating architect

ENGINEERS: Gmeiner (structural); Markus Stolz (hydraulic); Jules Häfliger (electrical)

CONSULTANTS: Koeplfli (landscape); iGuzzini Illuminazione Schweiz (lighting)

CONTRACTOR: Schmid Bauunternehmung

CLIENT: Remo Halter

SIZE: 6,652 square feet

COMPLETION DATE: August 2011

SOURCES

GLASS: Biene

JATOBÁ WOOD: Schnyder Parkett

View from the living room through the kitchen. The railingless ramps are to the right.

Source: Architectural Record, April 2012.

Site Energy

3 points

2. The architect opted for using a geothermal pump (aka ground-source heat pump) to heat the houses as well as the pool and domestic hot water. (1) Discuss the merits and drawbacks of this choice. (2) & (3) Discuss the possibility of using two other site energy sources for this building and speculate why the architect rejected them.

1

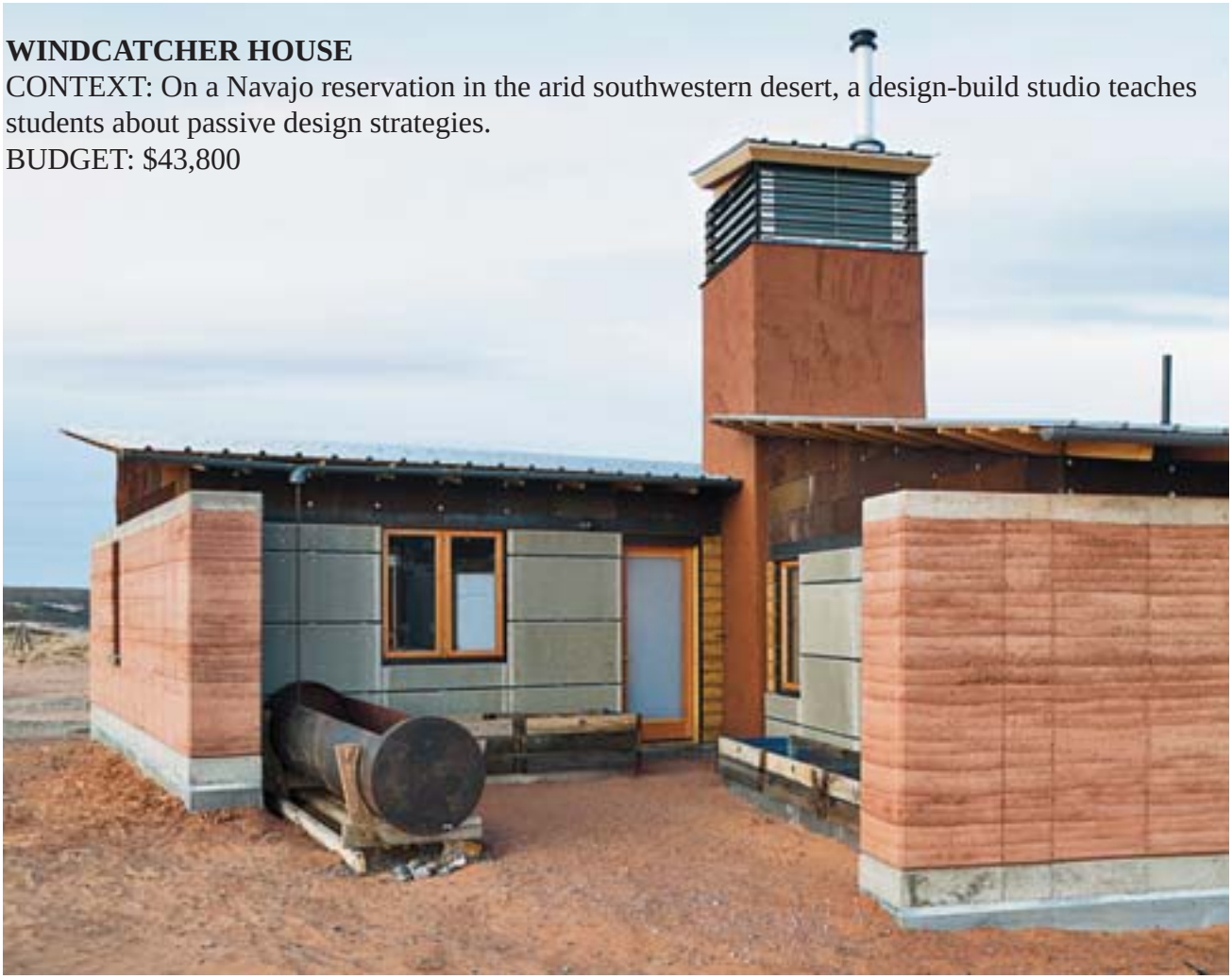
2

3

WINDCATCHER HOUSE

CONTEXT: On a Navajo reservation in the arid southwestern desert, a design-build studio teaches students about passive design strategies.

BUDGET: $43,800



A "windcatcher" is a centuries-old Persian technology featuring a tower that takes advantage of natural ventilation by capturing and cooling air. Hank Louis, founder of DesignBuildBLUFF, the University of Utah/University of Colorado, Denver design-build studio, recognized the merits of this simple solution for a recently completed Navajo family home. The house features a tower made of compressed earth bricks with four openings around the top. As the wind blows through the slits, wet blankets (moistened by a drip line) chill the air that then circulates around the home. The National Renewable Energy Laboratory (NREL) helped the students engineer the tower, which works in concert with a ceiling fan to cool the space. A combination of grants, donations, portions of participating students' tuition, and support from the Utah Navajo Trust Fund financed the modest house. Students chose simple, locally available materials like rammed earth, cement board, salvaged rusted steel, and drywall for the construction. "It was the first time we'd ever used rigid insulation in the middle of the rammed-earth wall," says Louis of the experimental 24-inch-thick walls. "It was difficult because we had to carefully build up each side simultaneously." Many materials—such as the aluminum ceiling panels—were donated, and students got creative with other fixtures. The front entrance, for example, is a pivoting door on a ball bearing that the students devised from car parts. "We're trying to teach these kids common-sense building strategies, says Louis. "Sustainability folds in nicely with the curriculum of students learning about this culture and having compassion for people without housing."

DESIGNERS: DesignBuildBLUFF/University of Colorado, Denver

Source: Architectural Record, March 2012.

Green Comparisons

3. Contrast three green elements that the Windcatcher House (p. 6) employs that are superior to similar elements of the Twin Houses.

3 points

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3