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CASE STUDY:

Alila Villas Uluwatu

Bali, Indonesia

Sustainable Luxuriance: An eco-resort in Bali, Indonesia, sets a new standard for green vacation destinations without sacrificing comfort

By Cody Adams

The Alila Villas Uluwatu doesn't match the breezy tropical stereotype one might expect from a Balinese resort. Eschewing Bali's lush northern locales, WOHA Design of Singapore built the villas in the Uluwatu region on the Southern Bukit Peninsula, a dry and stony savannah region. Following the construction of a nearby international airport and calls from the local government to develop the area for tourism, the peninsula has seen rapid development. Intent on creating a luxury resort without disturbing the local ecology, WOHA and Alila Hotels and Resorts chose a striking site perched on the top of dramatic limestone cliffs overlooking the Indian Ocean.

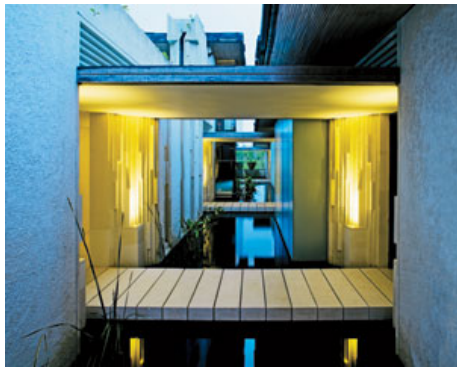


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Alila Villas Uluwatu, Bali, Indonesia

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With 56 one-bedroom hotel villas and 26 three- or four-bedroom residential villas, the Alila complex is built on a gradual slope that allows each unit an unobstructed view of the cliffs and ocean. Nestled against the edge of a steep limestone drop-off, the largest four-bedroom villas support full-time occupation, while the hotel units lay in a sloped cluster higher up the hill. The three-bedroom villa units are scattered on the highest part of the hillside property. The site plan shows a strong rectilinear design, adjusted for natural site contours to create interesting spaces between villas. WOHA's lead designer Richard Hassell states that they set out to "play with repetition and difference," so although the villas are all the same, their differing relations to each other create architectural interest.

As part of its commitment to sustainability, WOHA preserved the hilly site as much as possible, letting the sometimes steep and rocky terrain guide the overall plan. The landscapers and design team worked extensively with local farmers and botanists at London's Kew Gardens to identify the names and characteristics of indigenous plants, exclusively using these species for resort landscaping. The resort also maintains an on-site nursery of native trees and plants to replenish the landscape and gardens. The drought-resistant plants not only keep the existing ecology intact, but require minimal care during the long dry season.

WOHA approached the overall water needs with a comprehensive graywater recycling system that provides irrigation and toilet flushing, helping Alila exceed Green Globe 21 standards, which are promulgated by the Australia-based consultancy EC3 Global. The main water source is an extensive rainwater collection system placed underneath swales that allow water to infiltrate the ground. Soakway reservoirs and rain gardens allow for natural water storage and filtration, ensuring that only heavy rainfall makes it back to the storage tanks underneath each villa. Sewage is also treated onsite, and then combined with rainwater to fully fuel the graywater system.

The villas differ in size and scope but all embody the overall design approach of fusing Indonesian vernacular architecture with modernist design. Richard Hassell explained that the team "took elements from Balinese architecture and interpreted them in a way that worked with an open kind of

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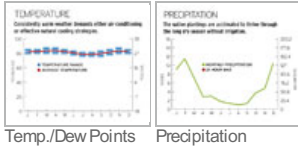
KEY PARAMETERS

LOCATION: Uluwatu, Bali, Indonesia (Bukit Peninsula in the Indian Ocean)

GROSS SQUARE FOOTAGE: 917,000 ft² (85,230 m²)

COST: (Not Provided)

COMPLETED: March 2009
ANNUAL PURCHASED ENERGY USE: (Not Available)
ANNUAL CARBON FOOTPRINT: (Not Available)
PROGRAM: Hotels, Villas, Restaurant, SPA, Fitness Center



TEAM
OWNER: Alila Hotels and Resorts Group
ARCHITECT/INTERIOR DESIGNER: WOHA Designs
LANDSCAPE: Cicada
ENGINEERS: Makeshi Enggal Engineering (MEP); Worley Parsons, Atelier Enam Struktur (Civil and Structural)
COMMISSIONING AGENT: Lighting Planners Associates
ENVIRONMENTAL CONSULTANT: Sustainable Built Environments
GENERAL CONTRACTOR: Hutama Karya

SOURCES
GLAZING: Recycled glass blocks, Deddy Shop
PAINTS AND STAINS: Low-VOC paint, Nippon Paint
PLUMBING: Energy saving heat pumps for water heating, Rheem-Vulcan
EXTERIOR: locally sourced limestone rubble cladding, crushed limestone render, white sandstone (batu putih pogya), recycled ulin timber, unpolished terrazzo, porous lava rocks, oxidised brass, tempered glass
INTERIOR: cement tiles, polished terrazzo, bamboo ceiling, bamboo weave (rattan), coconut, leather, oxidised brass, ceramic tiles

architecture.” The design team studied the structures inhabited by local farmers, drawing inspiration from their low-pitch terraces made of loose limestone boulders. Large roof overhangs provide extra cooling, and promote seamless circulation between indoors and out by creating open, covered areas.

When approaching the design of the individual villas, Hassell explained that the team “talked about ‘authenticity’ and what that might mean: Architecturally, to us it means not applying a style, but working out solutions specific to the project.” This discussion led to villas that harmonize with the peninsula’s landscape. The walls of the villas double as garden walls, and retractable blackout panels and glass doors create an open-air feel. Though the villas do have air conditioning, WOHA designed all areas of the resort to function passively, expecting most occupants to choose the cooling provided by the roof overhangs, ocean breezes, and natural ventilation. The pools and water courtyards also provide evaporative cooling benefits, and the courtyard walls, built from locally sourced volcanic rock, keep the cool air from blowing away too quickly.

One of the primary sustainable strategies applied to the Alila Villas concerned the sourcing of construction materials. Exterior cladding was reclaimed from limestone gathered from site excavations, and local recycled ironwood was used inside and out for cladding, doors, and paneling. Cabinets and other custom woodwork were similarly crafted from reclaimed ironwood and sustainably harvested plantation teak. No less important was the participation of artisans both in Bali and neighboring

Java. Villas feature polished cement tiles made in nearby workshops. All furniture, inspired by traditional bronze drums and utensils, is custom built in Java using local timber and copper. WOHA’s attention to green detail also extends to the energy systems, which use biodiesel generators powered by organic waste from the resort, and will eventually rely heavily on electricity generated from wind farms on the peninsula.

The Alila Villas Uluwatu won’t be fully operational until June 2009, but the design team already takes pride in preserving the natural ecosystem of the Bukit Peninsula and providing lucrative employment to the impoverished Balinese of the region. Speaking of the inherently sustainable lifestyle of the native population, Richard Hassell says, “I don’t think we exceeded [the sustainability of] a traditional Balinese house, lived in the traditional way, but for a highly serviced top-tier resort, we have set a new standard in Bali.”

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