

PICTURED The upper roof Succulent Garden with *Sedum spurium* Dragon's Blood and *Dudleya farinosa* (bluff lettuce) helps to cool the house in summer and control any rainfall





WORDS: Alasdair Currie **PHOTOS:** Andrea Jones

LANDSCAPE ARCHITECTURE: Susan Van Atta, Van Atta Associates Inc, Santa Barbara, CA
ARCHITECTURE: Ken Radtkey, Blackbird Architects Inc, Santa Barbara, CA

SOME LIKE IT HOT

In southern California Alasdair Currie meets a landscape architect whose aim of developing a plot to survive severe climate fluctuations, while championing sustainable practices, has come to fruition

From afar, one might view the coastal cities of southern California as having it all: climate, photogenic vistas, an embedded affluence from an energised and youthfully minded citizenry. Given all of those plus points, the city of Santa Barbara, around one hour 40 minutes northwest of Los Angeles on the crowded Highway 101, or a further half hour by the iconic Route 1, would rightfully be its apotheosis.

In the late 1800s, Italian immigrants unsurprisingly chose to live there among the coastal plains and foothills, recreating gardens and farms to echo their homeland. Later still, wealthy estates and botanic gardens sprang up, including the legendary Lotusland and Santa Barbara Botanic Garden, as the city became a magnet for magnates. A legacy of strict zoning, water and planning controls still helps to ensure a high demand for space with low availability to this day.

In an act of civic pride, the latter of those two gardens in particular was developed to specialise in the conservation of California's native plants with a wider remit to educate the public and 'serve as a role model of sustainable practices'. Look more closely though and one discovers that, even here,

residents have to contend with the vagaries of the natural world. Since 1964, there have been five noted major wildfires in the area, destroying billions of dollars' worth of property. The climate, while Mediterranean in essence, fluctuates between temperatures down around 46°F to up above a searing 100°F. Rainfall can become almost non-existent in the summer months and hardly prolific in comparison to the UK during the winter – as I write, residents are coping with the latest of many droughts. Last but not least, there is the prospect of earthquakes to add to the mix.

In November 2008, as the latest wildfire (the 'Montecito Tea Fire') drove through parts of Santa Barbara and western Montecito, husband and wife Ken Radtkey and Susan Van Atta had already felled the highly flammable non-native eucalyptus trees on their one-acre lot in the foothills of the Santa Ynez mountains in preparation for the building of their new home. Materials from the site's former 800sq foot cottage and lumber from the cut trees would be included in the new design, thereby putting recycling at the heart of the process.

This couple aren't just enthusiastic local amateurs, however. Both are respected and noted figures →



within their respective fields of landscape architecture and architecture. Van Atta is the president and founder of Van Atta Associates Inc, a firm with over 25 years' experience and responsible for a number of award-winning projects including Lagoon Park, a restoration project that turned six acres of former gravel parking lot back into pristine native Californian wetlands and grasslands for the University of California Santa Barbara campus.

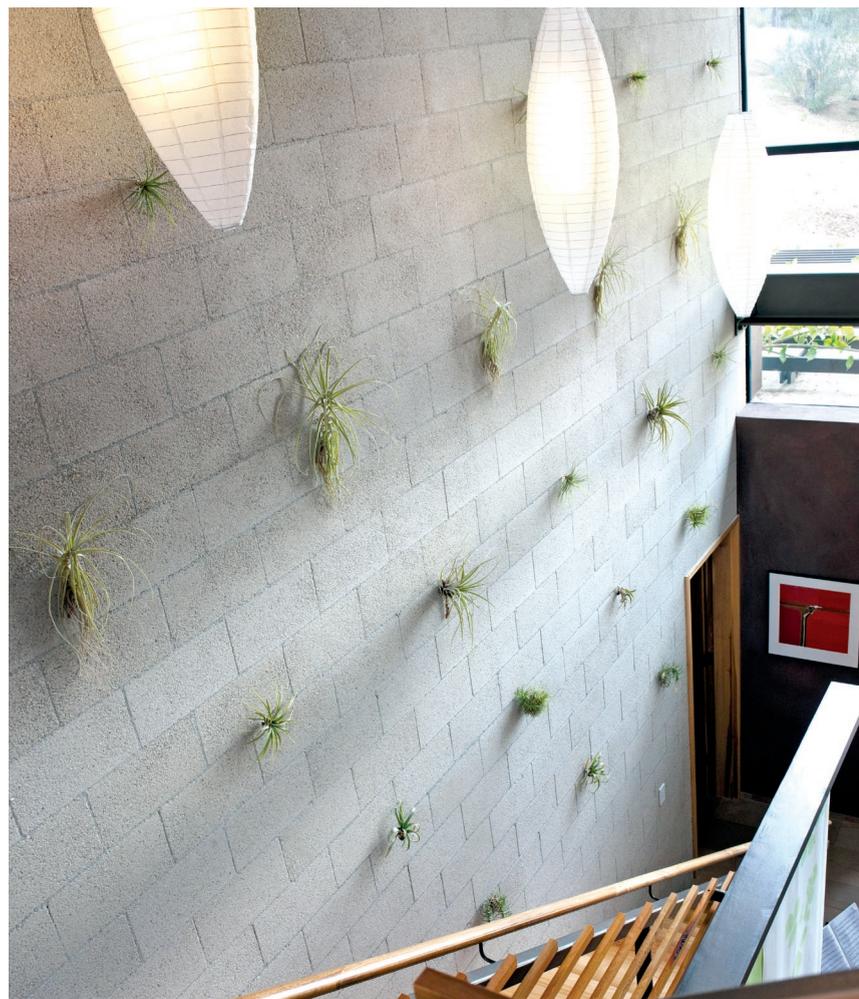
Environmental concerns

Having a long-held interest and knowledge of native Californian plants, she obtained a degree in Environmental Studies with work experience in habitat restoration, Californian coastal planning and environmental impact assessment.

She says, "I think my environmentally aware approach to landscape architecture has attracted clients since I founded my firm in 1985, which at that time helped me to occupy a unique niche."

Radtkey is the Principal and founder of Blackbird Architects Inc. A graduate of both UCSB (University of California Santa Barbara) and MIT (Massachusetts Institute of Technology), he has practised both in the US and Europe. Naturally drawn to collaboration, his ethos is one of sensitivity to site and a commitment to elegant design solutions and site relationships.

The Coyote House residence was therefore never going to be any ordinary project. Through expedience, though, Van Atta and Radtkey were to wait around 10 years before completing the



CLOCKWISE FROM FAR LEFT The bocce ball court lies between the main lawn and the fruit tree orchard

The eco-friendly house includes green roofs, solar panels and rainwater harvesting.

Non-native eucalyptus lumber was harvested from the site and used for the garage doors, stairs and furniture

The house interior stairway is made from the recycled eucalyptus lumber. *Tillandsia* grow happily on the unpainted wall surface

View from the upper roof Succulent Garden towards the Pacific. A trellis of supporting bi-facial solar panels doubles up to also give shade from the sun

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house rebuild and restoration of its grounds. This enforced time in their ‘laboratory’ was in fact just what they needed to understand the hidden systems and natural processes at work, allowing space to devise an unhurried, appropriate and sustainable response. From the outset, the desire of both parties was to create a beautiful ‘living environment in harmony with nature’.

Built into the natural slopes of the plot for insulation and aesthetics, Coyote House is 2,600sq feet in size, three times that of the original cottage yet plainly much more in harmony with its environment. With a due south orientation and views to the Channel Islands and Pacific Ocean, its angled windows and overhangs act as their own natural energy systems by shading harsh light in the summer but allowing the

much lower sunlight of wintertime to penetrate within.

Planting with purpose

The main arced ‘green roof’, planted with native succulents such as *Sedum spurium* Dragon’s Blood (‘Schorbuser Blut’) and *Dudleya farinosa*, also helps to both cool or insulate the house depending on the season. When rainfall or a cloudburst does occur, it is channelled firstly through gutters and rain chains to a ‘catch basin’, then safely onwards into a 10,000 gallon underground cistern. Around the house, a detention basin acts to capture any ‘run on’ storm water from the hills above, maximising water collection for future irrigation of the gardens. Lastly, grey water from the household is filtered before helping to bolster any stored water supplies, which gravity-feed the →



citrus orchard, fruit bushes and vegetable beds below the building.

With lack of rain clearly at the forefront of their thoughts, the couple has planted the gardens with only two types of plants. Those that can be eaten, such as persimmon, fig, tomato, blueberry and strawberry, and those that are either native or native and fire-resistant Californians, including *Verbena lilacina* 'De La Mina' (Cedros Island verbena), *Salvia elegans* (pineapple sage), *Heteromeles salicifolia* (toyon) and *Monardella odoratissima* (Coyote mint). The original fire-resistant and native coast live oaks (*Quercus agrifolia*) and sycamores (*Platanus racemosa*) were left in place to give both shade and continuity of age to the site. Van Atta explains, "As our

landscape becomes established, the water use is minimised."

Electrical power is another obvious requirement and here the southern Californian sunshine comes into its own. At the top of the building, the mirador viewing tower pergola doubles as a shade structure for seating beneath and as a frame to hold photovoltaic panels. These, combined with a solar collector for hot water to the rear of the property, mean that, "Our electric bills are less than \$4 per month," according to Van Atta.

But Coyote House is also very much a family home and the design remembers this in a number of ways. The lawn for outdoor games is laid on a bed of irrigated sand, thereby minimising water loss during irrigation. Paving before the

CLOCKWISE FROM TOP LEFT The house was built into the existing hillside for further insulation and aesthetic reasons

The rainwater harvesting detention basin uses existing natural channels in the site to gather any water into the main irrigation storage

Ken Radtkey and Susan Van Atta discussing the site plan





CLOCKWISE FROM LEFT Van Atta deliberately chose native drought-tolerant plants for her garden including this *Verbena lilacina* 'De La Mina' (Cedros Island verbena); the mirador view tower with trellis incorporating bi-facial shade panels and looking to the hills behind Montecito; a rain chain helps channel downpours but adds a sculptural element too; native *Salvia elegans* (pineapple sage) with *Verbena lilacina* 'De La Mina'





Susan Van Atta

www.va-la.com

- Board Member of the Cultural Landscape Foundation tclf.org
- FASLA (Fellow of American Society of Landscape Architects) www.asla.org
- Board Member of the Sustainability Project www.sustainabilityproject.org
- October 2008, National Honor Award from ASLA for Lagoon Park, University of California at Santa Barbara www.ia.ucsb.edu

Ken Radtkey

www.bbird.com

- AIA www.aia.org
- LEED Accredited Professional www.gbci.org

Further information

- The Sustainable Sites Initiative www.sustainablesites.org
- US Green Building Council www.usgbc.org
- Santa Barbara Botanic Garden www.sbbg.org
- Ganna Walska Lotusland www.lotusland.org
- Water advice from The Metropolitan Water District of Southern California www.bewaterwise.com

CLOCKWISE FROM ABOVE

Van Atta chose edible plants to complement natives including *Citrus x sinensis* (orange) and *Ficus carica* (fig); the secluded indoors/outdoors fireplace and balcony; lighting illuminates lavender bushes at the entrance to Coyote House



garage doubles as a basketball court, while on the property's eastern slope, a recycled plastic turf slide has been included.

The property became the first in the Santa Barbara area to be certified as LEED Platinum by the US Green Building Council's Leadership in Energy and Environmental Design in 2009, and the landscape was a pilot for the Sustainable Sites Initiative (www.sustainablesites.org) up until 2012.

Ultimately, 'deep collaboration' between both parties was the backbone to the project's success. Desirable and necessary as that is, how a model could be translated and promulgated to the 'outside world' remains to be seen. Susan Van Atta says, "We (Van Atta Associates) are just now starting to 'gain the trust' of civil engineers. We have had past success with suggesting

overall approaches to site watershed management that are more aesthetically appealing and support environmental goals. We now team up with the civil engineers throughout the design process to take best advantage of rainfall by using it as a resource to support plantings, while creating attractive landscape solutions with techniques that include bio-swales, rainwater gardens and cisterns. These can take the place of engineering solutions such as concrete swales, pipes, big detention basins, and so on." ○

"WE TEAM UP WITH THE CIVIL ENGINEERS THROUGHOUT THE DESIGN PROCESS TO TAKE BEST ADVANTAGE OF RAINFALL"