



WEAVING SUSTAINABLE

The GreenSmart Home of the Year is one of Australia's highest performing homes.

[story](#) > Gabrielle Chariton

So, how challenging is it to build a 10-star, carbon-positive home; a home that stays cool in summer and warm in winter, and is estimated to cost just \$3 per year to run? According to Dave Martin, director of The Sociable Weaver, 'there's no need to try and reinvent the wheel'. It's simply a matter of adapting existing building practices and making considered choices.

Dave, together with social entrepreneur and sustainability advocate Danny Almagor, founded The Sociable Weaver, a home design and construction company, about three years ago. Their mission: to bring beautiful, sustainable, healthy homes to the masses.

'We started The Sociable Weaver as a means of applying our skills to create positive change in the built environment,' Dave says. 'We specialise in affordable homes that are beautifully designed, timeless, and healthy to live in, with minimal energy requirements.'

'We want this type of home to be the norm and to be accessible to any owner and any builder – these are the homes that should be built in every suburb across the country.'

The company has already started a quiet revolution with its range of economically priced, highly liveable, architect-designed homes, attracting plenty of media coverage and substantial



MAGIC

IDEAS ANYONE CAN USE

Timber provides many benefits to homeowners since it's a material that breathes and offers a sense of wellbeing by just being around it. It's a common misconception that timber bought off the rack is not a renewable source however lots of timber is sourced from sustainable plantations. A sustainably-focused builder will be able to tell you where it came from.



consumer interest. In September, The Sociable Weaver took out top honours at the 2017 HIA Australian GreenSmart Awards for one of its most ambitious projects to date: a 10-star display home built at The Cape, a sustainable housing development located two hours southeast of Melbourne.

Designed by Clare Cousins Architects, Dave claims the project – simply known as the 10 Star Home – is Victoria's first-ever house to achieve this NatHERS rating. It's carbon positive (meaning it produces more energy than it uses), and was built to zero waste and building biology philosophies. In short, it's one of Australia's highest-

performing homes, and it encapsulates everything that The Sociable Weaver stands for.

With its restrained, uncluttered styling and a pared-back interior palette of natural, tactile finishes, the timber-clad, four-bedroom home offers a raw appeal. 'I think aesthetically we were looking for a reasonably simple form, without trying to be too complicated,' Dave explains. The distinctive V-shaped butterfly roofline underpins the linear styling and also plays a functional role: it optimises solar access for the 5kW PV system, allows northern sunlight to saturate the living areas and delivers a soaring raked roofline to the interiors.

THE STRATEGIES USED TO ACHIEVE THIS ARE TRIED-AND-TRUE...WITHIN THE SKILLSET OF ANY QUALIFIED BUILDER





Dave Martin

'THESE ARE THE HOMES THAT SHOULD BE BUILT IN EVERY SUBURB ACROSS THE COUNTRY'

As a display home, the 10 Star Home showcases the absolute upper limits of environmentally conscious housing. 'Every single component of the house was selected to provide the ideal balance between design intent, health, environment, community and sustainability,' Dave says.

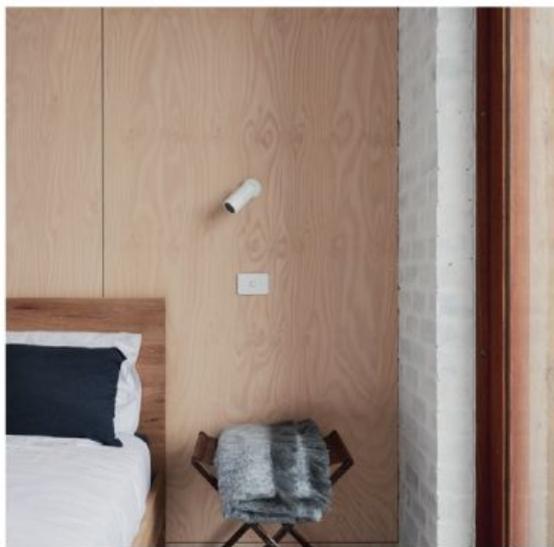
Priority was given to using sustainably grown, locally sourced, recycled or recyclable materials wherever possible, with the internal brickwork walls built entirely from recycled brick. The roof is clad in new and recycled Colorbond sheeting, fixed with a combination of new and recycled screws.

'Building biology' refers to indoor air pollutants: volatile organic compounds (VOCs) that off-gas from paint, sealants, carpeting and furniture; allergens such as dust and mold; and electromagnetic fields. The 10 Star Home addresses each of these issues

by optimising natural ventilation and airflow and the sparing use of VOC-free paints and oils. The interior brickwork is bagged with a natural, breathable clay-based product and the bathroom walls are finished with a naturally water-resistant Marrakesh render. A master 'green' switch that shuts down all power apart from the fridge can be used to reduce overnight exposure to electromagnetic radiation (and further reduce incidental energy consumption).

While visitors to the home are amazed by its beauty, light and spaciousness, Dave says his favourite aspect of the house is its ability to self-heat and cool. 'It heats and cools naturally from the environment and the sun,' he says. 'Right now I'm sitting on the couch, it's warm and comfortable inside and freezing cold outside.'

Indeed the 10-star rating is a substantial achievement, given the



CONSTRUCTION DETAILS

BUILDER The Sociable Weaver
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PRACTICE PROFILE

The Sociable Weaver is a design and building company based in Victoria that creates healthy, sustainable and inspiring homes that are functional and affordable, while encouraging connection to nature, to community and to ourselves.

PROJECT

10 Star Home, winner of the 2017 HIA GreenSmart Home of the Year and Display Home

PRODUCTS

- > Wall and roof framing: FSC sourced timber
- > Windows: recycled with timber reveals, low-E argon filled double glazing
- > Roof: Colorbond sheeting (new and recycled)
- > Cladding: radial sawn Silvertop Ash & Yellow Stringybark
- > Wall insulation: R6 batts, 10mm foil board, Sisalation, BioPCM from PhaseChange Energy
- > Ceiling insulation: R8 batts, Sisalation, BioPCM
- > Internal walls and ceiling: recycled bricks from Beaver Bricks, FSC E-zero hoop pine ply from Boral and Laminex
- > Sealers and paints: Livos Paints and Livos Oil, VOC-free
- > Kitchen benchtops: Corian
- > Kitchen joinery: FSC E-zero hoop pine ply
- > Kitchen hinges and drawers: Blum Softclose
- > Floor: locally sourced green concrete with recycled content and Livos VOC-free sealer
- > Hot water: Sanden Heat Pump
- > Bathroom walls: Rockcote Marrakesh render
- > Bathroom fittings: Reece Plumbing

PROJECT COST \$495,000

TIME TAKEN TO CONSTRUCT undisclosed

ENERGY EFFICIENCY RATING 10 stars

house's chilly southern location. Astonishingly, modelling has shown that it will cost an almost negligible \$3 per year to run.

In this instance two methodologies work in synchrony. Solar passive principles – incorporating north-facing glazing, strategic shading, high thermal mass to the walls and floors, and crossflow ventilation – keep the home warm in winter and cool in summer. The effectiveness of this design strategy is then amplified by the high performance 'sealed envelope' exterior, based on Passivhaus design principles, which prevents unwanted air exchanges between the indoors and outside.

Here insulation plays a key role: all windows are double-glazed and the external walls – at a hefty 450mm thick – were constructed using an insulated cavity system, incorporating a series of air cavities and layers of insulation

sandwiched between the interior brickwork and exterior timber cladding. Probably the most high-tech inclusion in this house is the layer of BioPCM (phase change material) which was incorporated into the walls and ceilings to stabilise the internal temperatures.

'The BioPCM is made of cells filled with compounds that liquefy and solidify at specific temperatures,' Dave explains. 'As the air temperature rises, the phase change material absorbs the heat, becomes a liquid, and holds the heat. When the internal temperature drops, it releases that heat slowly as it changes back into a solid. They call it a smart mass; it reduces temperature fluctuations.'

The Sociable Weaver created this home to show how a few simple tweaks to how we design, build and live in our homes can dramatically reduce our impact on the environment.





WHAT IS THE SOCIABLE WEAVER?

The Sociable Weaver is named after a small Southern African bird known for its amazing community nest-building skills. Carefully woven atop trees or poles from twigs and grasses, the Sociable Weaver's intricate and beautiful nests rise up to four metres in height, and will house hundreds of birds at one time. The interconnected chambers within support the family and social structure of the flock. In founding their home building company, Dave Martin and Danny Almagor have drawn inspiration from this bird's sense of community and connectedness, and from its ability to build beautiful, natural structures that harmonise with the surrounding environment.



'WE'RE MORE THAN ONE, WE'RE ALL CONNECTED AND WE'RE ALL COMMUNITY OUT THERE'

The home's energy and water harvesting systems tie back into the notions of connectedness and being part of a larger community that underpin The Sociable Weaver's business ethos. While the roof-mounted solar PV system easily generates more electricity than the house requires, Dave and Danny made the conscious decision to connect to the grid.

'The house doesn't exist in isolation, it's part of a wider neighbourhood and community. So it's really important that when solar power is harvested, any excess goes back into the grid to offset your neighbour's electricity use and reduce the overall reliance on coal-generated electricity,' Dave explains. 'We're more than one, we're all connected and we're all community out there.'

In a similar fashion, excess water from the home's 10,000-litre tank goes into the housing development's community tanks, which are used to water the common gardens and surrounding vegetation.

The display home heralds what Dave and Danny hope is a new future for housing – and in particular, volume housing.

'We have demonstrated how a 10-star energy rating and carbon positive result can be achieved using conventional construction methods,' Dave says. 'While it would be great for this to become the new normal, anything that's above 7.5 or 8 stars is a fantastic performing house that will have a dramatically reduced impact on the environment.' **gs**