

# GREEN HOME

living  
informed  
today

OCT/NOV 2012 R 29,- (VAT INCL.)

## GUILT-FREE

Melbourne house in the clouds

## West Coast Vibe

*Rocher Pan Nature Reserve*

## BIODIESEL

alternatives to the  
world FUEL crisis

## Scaling up the future of our fish

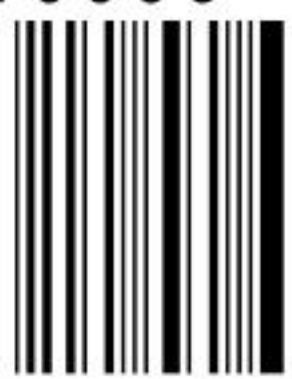
CERTIFIED  
SUSTAINABLE  
SEAFOOD  
MSC  
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## Building with Alternative Materials



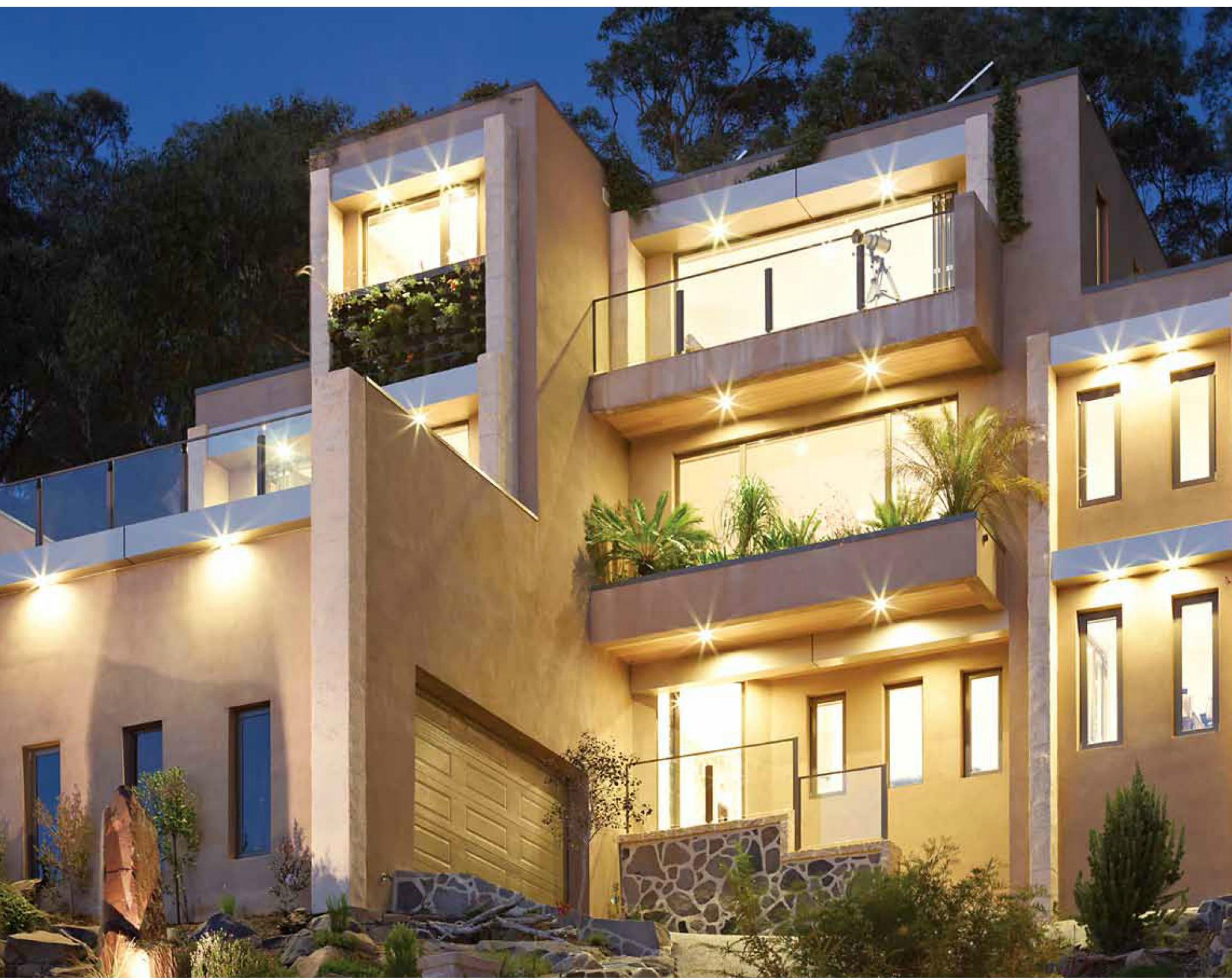
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# FUEL

CHANGE YOUR FUEL...CHANGE YOUR WORLD





# Guilt-free house in the clouds

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**C**REATING a work of art that will stand the test of time on a tricky site takes longer than Rome's proverbial one day, especially when you build it with your own two hands. Right from Day One Engelmayer, a builder for more than 30 years, knew it wasn't going to be easy.

Building an environmentally sustainable house 315m above sea level on the edge of the Dandenong mountain range, meant that workers had to carry every bit of the 450 tonnes of building material up a 23-degree gradient. The site was on a dead-end street causing parking nightmares for both delivery vehicles and neighbours, and to crown it all, a fifteen-year-long drought broke the very day soil was turned! This led to dangerous and slippery conditions that took its toll on man and machinery.

But Engelmayer was living his dream. He wanted to build the best possible green house on one of the most impossible sites in Melbourne. "I chose this so people would take notice and start talking and thinking green. It was extremely tough, but in the end well worth it."

Coming from a generation of builders, Engelmayer has always enjoyed the green revolution. He obtained a Certificate IV in Building and Design (Environment Management), for which he received a Five Star Sustainability Excellence Award, and started to design his house in the clouds. From 'Machu Picchu' the family has clear 220-degree, 120-km views of the Australian port city.

The 523m<sup>2</sup> house in the outer suburb Upper Ferntree Gully, is large enough for Engelmayer's four children and his and his partner's





Australian builder Anton Engelmayer christened his four-level green masterpiece 'Machu Picchu', because just as this ancient Inca city in Peru, his Melbourne home is often surrounded by clouds. As the architectural maestros of yesteryear, he also built parts of his house with granite from the original site, laying rock in a drywall using a similar free-style technique as the South American civilisation. Today the Engelmayers quench their thirst with spring water and, like the early Incas worshipped the sun, the family harvests the sun for solar energy.



businesses. The first level accommodates a drive-in garage, the second level office space, a wine cellar, plant room and guest bedroom, and the third a bathroom, laundry, dining room, entertainment space, kitchen and pantry.

On the fourth level there are the family's bedrooms and a main bathroom, and on the fifth a pasture-style roof garden with a drip irrigation system and 70% indigenous plants and grasses. The garden increases thermal insulation and acts as a natural filter for rainwater. "I wanted the home to blend in and complement the natural environment. Basically it's designed to eventually look like a big rock with plants growing over its edges."

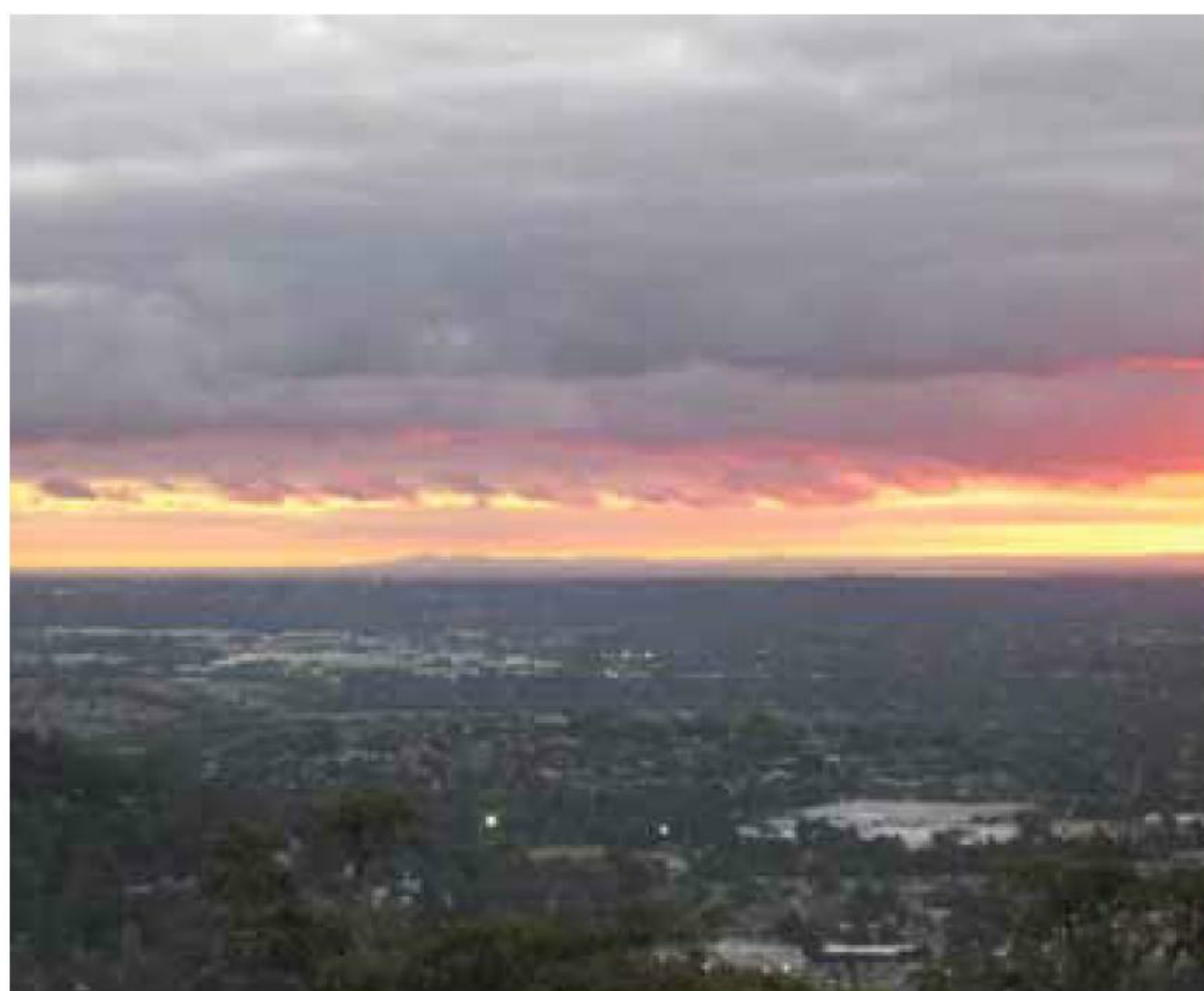
The other landscaped gardens are completely water-wise, containing

85% indigenous species. Inside the house a vertical wall garden acts as a natural bio-filter converting toxic gasses into valuable oxygen, and creating a pleasant calming effect in the home.

"Green building is such a passion because I enjoy the challenges of finding positive, innovative solutions for negative, wasteful situations. It helps me not to feel the guilt associated with mindless waste, and that I can make a difference to my world if I try."

Other sustainable features are a passive solar design which, by positioning the living areas to the northern winter sun, allows the charging of an internal thermal mass wall in the middle of the home. This wall acts as a heat sink, warming the house in winter and cooling it in summer.





A networking smart C Bus wiring system monitors and reduces the home's energy use, while low-flow taps and showerheads cut water consumption, and low-energy appliances and LED lighting minimise electricity use. A grey water system brings grey water back to Class A water with ultraviolet light technology, while two 12 000-litre rainwater tanks harvest up to 95% of the roof's captured rainwater.

Built on an existing site to reduce the home's environmental footprint, Engelmayer used only sustainably certified timbers. A five-stage storm water management system rids storm water of sediments, nitrogen or nutrients, returning the water back to the natural environment in a clean state.

The cost of 'Machu Picchu' was R2.8m for the land and R10.4m for building and landscaping, which he describes as "fairly cheap" considering its green features and complicated building site. Engelmayer and four builder colleagues worked full-time for 20 months before his family moved in in December 2011.

His advice is to visualise your home's details before you turn soil. "Basically you need to see your home finished before you start, so while you're building you can focus all your energy on the task at hand and not be distracted when making important in-concrete decisions." Finish sections in stages so you feel a sense of accomplishment and do comprehensive green product research.

As it was for the age-old Incas, Engelmayer's 'Machu Picchu' is almost sacred. "My results are far beyond my expectations as the home has taken on a life, an identity of its own, a kind of natural beauty. I know it'll still be here long after I've left this earth. That makes me proud of what I've created. I hope to inspire others to build houses that'll stand the test of time."

