

Smart House So Energy Efficient It's Carbon-Negative

CHALLENGE

Design a solar system that complements the home's modern design while providing energy independence for the owner.

SOLUTION

Leverage modularity of Enphase technology to install along the building's facade, overcoming the issue of limited roof space.

RESULT

A stunning installation that produces at least 120% of Five x Four's daytime energy requirements - free from the sun!



“Do it once and do it right. I wanted a complete home energy system that will adapt with technology over 25 years. Enphase was the obvious choice.”

— Ralph Alphonso
Owner-builder
Five X Four Hayes Lane Project

In 2011, eco-entrepreneur Ralph Alphonso began a collaboration with world-leading engineers and renewable energy firms to set a precedent in sustainable urban living. They called it the Five x Four Hayes Lane Project.

Building an Australian Sustainability Icon

Ralph had a vision for his small alleyway space in inner city Melbourne. A building of merely 20 square meters to be built completely around sustainability principles from construction to disposal – all without sacrificing an ounce of liveability or functionality. Naturally, the idea instantly attracted the world's sustainability thought leaders when it was presented at the United Nations Conference in Rio in 2012. Taking on the challenge with a dream team of renewable energy providers, eco-friendly construction groups and architects, Enphase proudly helped turn Five x Four into a reality.

The first to ever apply One Planet Living sustainability framework in detail to all aspects of the building's lifecycle, Five x Four is built from the ground up on clean and green principles. The home's timber and walls are almost all made from recycled wood scraps, sourced from sustainably managed hardwood forests. Energy efficient appliances, rainwater collection for a sustainable water source and 11m² of green space filled with





Architects love Enphase because the technology is discretely hidden behind the solar modules.

herbs, strawberries and veggies ensure that Ralph barely notices his new carbon-restricted lifestyle.

“It is not some hippy house that no one wants to live in. It’s an amazing house that I hope everyone will want to live in,” says Ralph, having moved into the newly constructed dwelling in June 2015.

Staying Cool

With its ventilated yet airtight structure and geothermal temperature control system, Five x Four kept Ralph comfortable at 21 – 23° at all times throughout the blazing heat of Summer 2016. The best part? To stay cool on a 40° day AND power the rest of the home’s functions, Five x Four only has a peak energy load of 3kW, well shy of the 4kW output of the solar installation. That’s right, even during peak consumption the house still gives the earth more than it takes. See for yourself - Enphase’s Enlighten platform provides real-time evidence of Ralph’s carbon victory at fivexfour.com/solar/.

This impressive solar output, despite limited roof space, required a creative installation of solar panels that was possible thanks to the flexibility of Enphase’s microinverters. Visually pleasing yet performing brilliantly, the installation’s 15 panels and microinverters are integrated along the facade of the building’s peak and on the roof itself.

With plans to integrate the new Enphase AC Battery to store its excess generation during the day, Five x Four will lead the storage movement by being one of the first to intelligently generate, monitor and store its energy on a whole new level through the Enphase Home Energy Solution.

INSTALLATION SUMMARY

Client **Five x Four Hayes Lane Project**

Location **East Melbourne, Victoria**

Completion Date **05/05/2015**

System Size **4.05 kW**

Microinverters **15 x Enphase M250 Microinverters**

Modules **15 x Yingli PANDA 270W**

About Enphase Energy

Enphase is innovating connected, intelligent solar energy systems that make mainstream access to clean, affordable energy a reality. Our Enphase Home Energy Solution lets you generate, store and manage your home’s energy so that you can save money, decrease your impact on the earth, and become more energy independent.

Visit Enphase.com/au or to find out more about Five x Four and its amazing solar installation, visit fivexfour.com/solar/.