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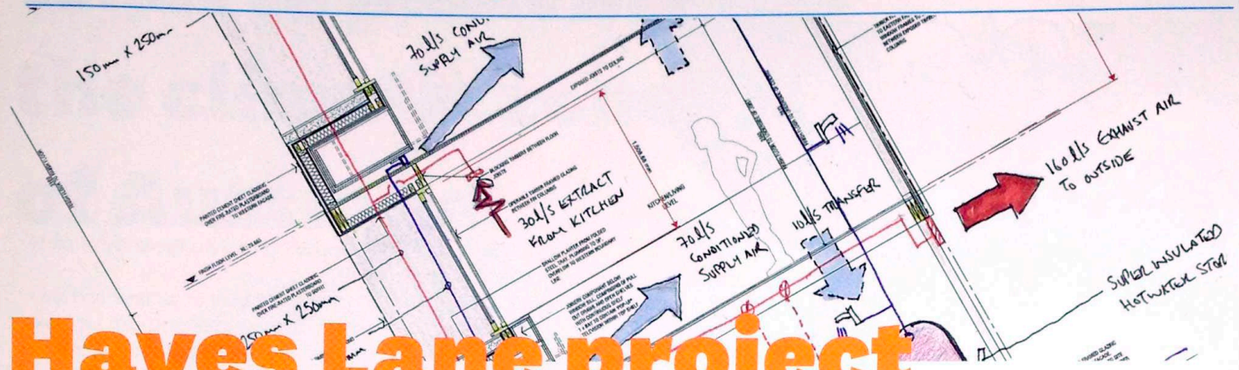
David vs Goliath
When good guys win

GreenHome



Hayes Lane project

Sarah Day

Ralph Alphonso has a big dream of small dimensions.

Melbourne is a national hot spot for sustainable architecture. The CBD's CH2 council house catches the eye with recycled wooden shutters and bright yellow wind cowls. ACF's 60L Green Building hides state of the art energy efficiency behind a heritage façade.

Now there's a new kid on the block with green ambitions far beyond its size — which is five metres by four metres to be exact. These are the dimensions in which Ralph Alphonso plans to build Australia's most sustainable dwelling.

As project manager and client of the 5x4 Hayes Lane Project in East Melbourne, Ralph is addressing its impact from every possible angle using the principles of embodied energy and full life cycle assessment.

In practical terms this means measuring the carbon emitted during the extraction, processing, manufacturing, transport, operational lifespan and end-use of all building materials. And that's just the bricks and mortar (or bamboo and cork). Then there are the emissions that come from using the house and Ralph's own lifestyle.

The level of research required uncovering the secret carbon life of support beams sounds like a doctoral thesis in itself. Luckily Dr Robert Crawford from Melbourne University is helping with the calculations, and they're turning up some interesting results. For example, you'd think that using recycled materials is a no-brainer for reducing embodied energy. Ralph discovered that it's more complicated.

"There's some recycled materials that are sent to China and back to be processed, so recycled isn't necessarily the best choice. But it might turn out that, because they're transported by ship, they are the most energy efficient."

Along with choosing the right materials comes designing a house that uses energy as efficiently as possible. "We're trying to use all LED lights, triple glazing for windows, geothermal heating. We're looking at a passive house standard."

This is where the sceptics jump in and say, it all sounds great, if you have bottomless pockets to buy into cutting edge technologies. But the cost problem is a major driver for Ralph who aims to encourage those who do have the funds to support the growth of sustainable technologies. he says.

Manufacturers are only going to change their production patterns if there's a demand for it

Transparency is a major aspect in promoting the project. Energy use in the house will be reported online through an automation system that can control and track usage down to individual switches.

As the future tenant of the 5x4 property, Ralph has no qualms about putting himself under surveillance. "We're spoilt for space in Australia. Looking at my consumption will be a major part of reducing my carbon footprint."

The big question is, will Ralph's grand designs end up on reality TV with him doing his block? "I'm not fighting with the architects. It would be the first odd reality TV show where everyone agrees with each other, so it might be a new concept."

Building will begin on the 5x4 house in August of this year. ACF, Beyond Zero Emissions and City of Melbourne support the project.

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