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Ecolibrium

Grand Slam

Can luxury and
sustainability coexist?





House of wellness

As health and wellbeing join energy efficiency as the key planks defining high-performance in buildings, standards like Passivhaus are gaining traction. **Sean McGowan** sits down with Passivhaus advocate and principal consultant of Grün Consulting, Clare Parry, M.AIRAH, to discuss the emergence of Australia's high-performance residential building market.

Ecolibrium: What is happening in the high-performance residential building space at the moment?

Parry: We're beginning to see a focus on occupants, in terms of health and wellbeing.

It's become apparent that our health is so intrinsically linked to our environment, and as a result we are starting to seek not just improved IEQ but indoor environments that positively impact our health, such as the WELL Building Standard for the commercial sector.

Other standards that target IEQ, such as Passivhaus, are also being rolled out

across the industry, with rapid uptake in both residential and non-residential, as well as at scale.

Ecolibrium: What is the level of market demand for high-performance housing? Does it exist across the entire residential sector or are there specific pockets where it is finding traction?

Parry: From my experience, there is intense demand for high performance. There is no one who does not want their building to perform at a high level. No one would choose a poorly performing building, but many

From my experience, there is intense demand for high performance

believe it's a matter of trading off, such as form versus function.

This is simply not true – the trick is delivering a great project with many competing drivers at a suitable budget for a given client. And there is a key component of communication and education.

It's imperative to pick your angle appropriate to the client. For example, a university wants a high-profile, leading-edge project with benefits to student engagement and productivity. But perhaps for multi-residential we need to reshape the discussion around added value to the purchaser, low common-area costs and occupant health.

AUSTRALIA'S PASSIVE HOUSES

Bellbrae Passivhaus, Victoria

Located on Victoria's renowned Surf Coast, Bellbrae Passivhaus is a single-home, certified Passivhaus retrofit in the seaside hamlet of Bellbrae.

When its owners decided to renovate the weatherboard home, they adopted a design by their son, a registered builder with a passion for Passivhaus technologies.

It has been designed and built to the Passivhaus standard, setting stringent limits on energy consumption – particularly in relation to its heating and cooling demand – yet manages to achieve optimum thermal comfort and indoor air quality.

An energy-recovery ventilation system and heat pump are used, along with external shading and triple-glazed windows, to maintain thermal performance.

It features a maximum space heating demand of 14kWh/(m²a) and a heating

load of 8W/m². The home has also been tested for airtightness, achieving a reading of 0.96 h-1@n50.

Go to www.sceg.org.au/the-passivhaus

Sweet & Roper Wings, University College – The University of Melbourne, Victoria

University College is a group of collegiate-style 20th century buildings on an island site north of the University of Melbourne's Carlton campus.

The project will see a new 200-room student accommodation building added to the site, with a 400-seat, conservatory-style dining hall – both of which are designed to the Passivhaus standard.

The building is Australia's first multi-unit residential Passivhaus development.

Read more: www.grunconsulting.com/university-college-sweet-roper-wing

Others:

93 Wattletree Road, Armadale, Victoria

A luxury, 16-unit apartment building in Melbourne's inner east, to be built to the Passivhaus standard using cross-laminated timber (CLT) construction.

The Wade Institute of Entrepreneurship, The University of Melbourne, Victoria

Australia's first Passivhaus education building has been designed to be an agile and innovative space.

The Fern, Alexandria, New South Wales

A luxury, multi-unit residential development built to Passivhaus standard and targeting net-zero energy

Kinglake Passivhaus, Kinglake, Victoria

A split-level dual occupancy dwelling built with low-embodied-energy timber construction and cellulose insulation, targeting off-grid and Passivhaus certification.

Source: Grün Consulting

Generally, high-performance buildings still attract a premium, so we need to transfer the discussion from “how much does it cost” to “where are we adding value?” From there, it's all about focusing on outcomes.

Ecolibrium: How is high-performance now being defined in the residential building sector?

Parry: To date, we've had a pervasive notion that performance focuses mainly on energy consumption (keeping it low) while delivering some peripheral benefits to comfort.

The approach we take now is that the outcome absolutely must be quality, comfort, health and wellbeing. Energy is the added benefit, and part of a package – but not the sole driver.

An approach such as Passivhaus, combined with healthy and low-embodied energy materials, is our best bet at getting this right. There is simply no comparable standard, internationally, that competes with Passivhaus on getting this package right. The added bonus is



Clare Parry, M.AIRAH

that Passivhaus combines so well with other tools, and we can use it in a multi-pronged approach.

Ecolibrium: Can you explain how energy efficiency ties in with health and wellbeing in a Passivhaus setting?

Parry: The two are absolutely and fundamentally tied together.

A building that imposes systems to deliver good IEQ is very rarely efficient; on the other hand, many projects that

have targeted pure energy efficiency have delivered poor environments.

The very basis of the Passivhaus standard is IEQ, and all elements of the approach consider health and wellbeing, which it delivers with a guarantee of ultra-low energy use. While some facets of IEQ are not directly included in Passivhaus (e.g., requirements for low-VOC materials, low embodied energy, etc.), this holistic approach is always recommended.

There is also the opportunity to use Passivhaus to improve ratings in other tools, such as Green Star and WELL, where we can bring in these other factors with greater clarity.

Ecolibrium: What is the state of Passivhaus in Australia currently? Is it finding traction, and are many projects adopting the standard?

Parry: I am personally working on around 25–30 Passivhaus projects, and the interest is increasing at a rapid rate.

I love talking to other Passivhaus professionals because there are so many projects happening, so many more



Dwellings that have a high NatHERS rating will attract a certain buyer.

than we are aware of at the Australian Passive House Association (APHA). Only a fraction (maybe 10–15 per cent) of Passivhaus projects seek official certification.

Excitingly, while the early projects in Australia were single residential dwellings, the recent activity has seen a shift towards multi-residential, including social housing, and education. These projects are where it makes most sense. I'd love to see Passivhaus as the minimum standard for aged-care, schools and social housing – these environments should be our absolute best and we would also see so much benefit as a community.

Ecolibrium: Are there any local obstacles holding Passivhaus back?

Parry: Largely, I think the main issue is education. This covers everyone from consumers through to designers, builders, developers, real estate agents and suppliers. With so many stakeholders and so much history of greenwashing or poor delivery in the building sector, it is almost impossible to break through with a “new” tool. This is despite almost 100,000 buildings worldwide, a science-backed approach and so much evidence.

Thankfully, there are many willing to adopt the standard, so we will be fighting the misconceptions with real-world proof.

Ecolibrium: Is there growing awareness and demand in the residential s very price sensitive.

The developer-led market is delivering profit over quality, and no innovation. We need education to change the game and get the consumer to demand a better outcome.

There is some great data, as well as anecdotal evidence, to demonstrate fantastic health benefits of high-performance residential buildings, but the market is relatively slow to realise changes.

Ecolibrium: So who is leading the way?

Parry: A select few building owners are targeting health and wellbeing, and they are doing a great job. I have also worked with leading developers to demonstrate how we can improve building quality, but trying to shoehorn a new idea into an old model is difficult.

Developers will find it tough to fit these concepts into traditional, profit-driven models – this needs fundamental redress. Few are targeting high performance, but a couple are moving in the right direction. Again, we need to shift the discussion from cost to value, but also educate the market to recognise that value.

Ecolibrium: And when it comes to the buyers in this market, do they possess the knowledge or awareness to recognise the value of a high-performance dwelling?

Parry: The market is well versed in energy efficiency and performance in this area, and so when we communicate with consumers there is a larger part of the market receptive to that message.

Dwellings that have high NatHERS ratings, for example, will attract a certain buyer, perhaps someone who will spend more on that home. How we demonstrate and communicate health and wellbeing is critical. As alluded to earlier, many potentially have the impression that it's an either/or argument, and that they won't find both in the same project. We need to first change that reality, but also set about shifting awareness. ■