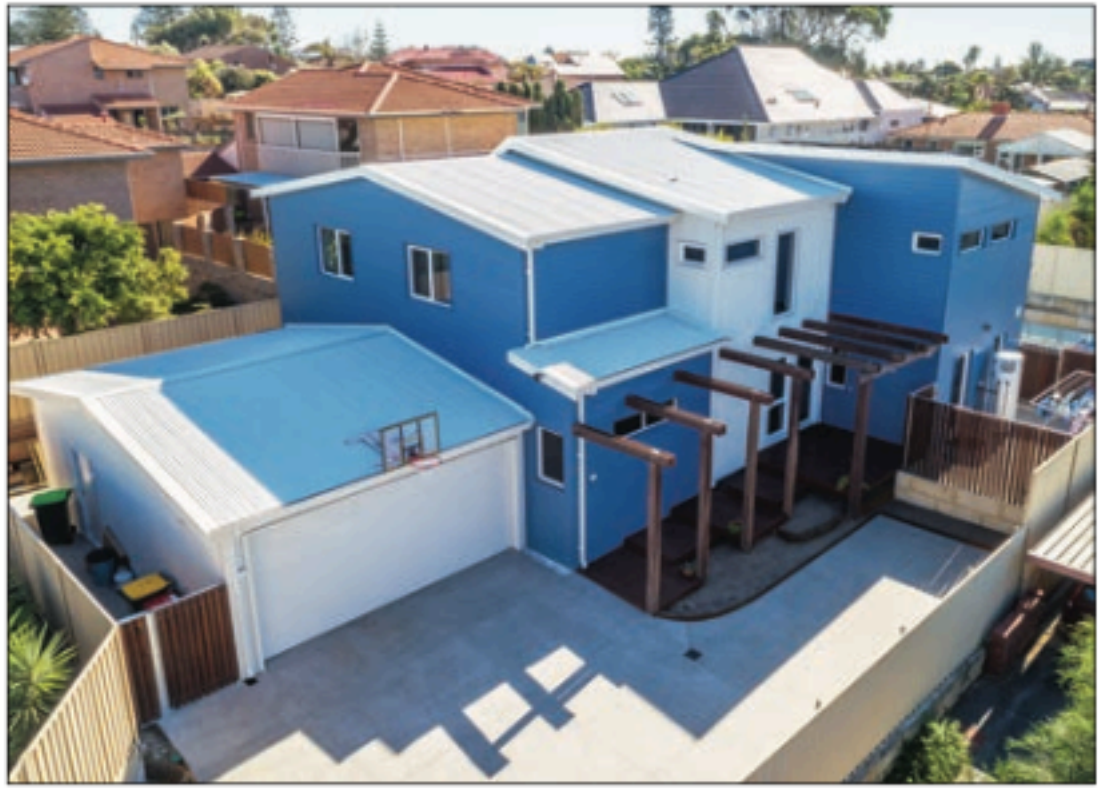

Bills slashed

AN AMERICAN couple have reduced their heating and cooling bills to just $400 a year by building the first 'passive house plus' in WA.

Situated in North Beach, the property dispels the myth that building an energy efficient home is super expensive – it cost $2200 per sqm, just $200 more than the average sqm build cost in Perth, according to the Rawlinson Construction Cost Guide.

Featuring state-of-the-art insulation, thermally broken windows and door frames, and double glazing, Carlos and Gloria Acuna's nearly air-tight house never gets below 20 degrees in the winter and above 25 degrees in the summer.

"The key feature of these modern homes is that they are built with high performing building envelopes," Mr Acuna says.

Originally from Seattle, Mr Acuna says that most modern homes in the US are comfortable temperature-wise all-year around, so after six years of living in poorly-insulated rentals in Perth he had had enough.

"The common theme in all the houses was that they were very draughty, hot in summer and freezing in the winter, despite Perth boasting a Mediterranean climate," he says.

"The newer homes we had lived in performed no better than the older ones. We paid astronomical electric bills, particularly in the summer.

"We knew we wanted to build a home that was comfortable year-round, 24/7, energy-efficient and cheap to operate.

Prioritising energy efficiency and thermal comfort, the couple's 300sqm new build cost them $660,000.

"To date, this is the lowest cost per square meter build of a passive house that I am aware of," he says. "I personally believe that living in a thermally comfortable home that is cheap to operate is something we all deserve, whether in a project home or a high-end luxury home.

"Sustainable housing should not be something that is limited to the wealthy."

Australia is making small inroads towards improving energy efficiency and thermal comfort – in 2019 the National Construction Code increased the airtight standards and in 2022 new thermal requirements will be added – but Mr Acuna says the regulations need to be enforced.

"A CSIRO study published a few years ago found that homes recently built in WA had an average airtightness level of 25 air exchanges per hour, well above the 10 air exchange limit," he says.

"The challenge at the moment is that the NCC does not enforce air tightness verification, so as a consumer, we are still relying on builders goodwill and capability to deliver an airtight structure.

"Back home in the US, Canada and many European countries, builders are required to perform a blower door test which assists the builder in finding leaks in the building envelope and gives the consumer transparency and assurance that they are getting what they paid for.

"The average builder in Seattle is building a home with three air exchanges per hour."

The Acuna's passive house is being featured as part of Sustainable House Day on October 17, with four weeks of events leading up to it.

For more details go to *sustainablehouseday.com*

• The first 'passive house plus' in WA (above) .The owners spent the energy bill savings on wine (left).