RISING to the CHALLENGE

A winning design from Down Under is gaining global attention for focusing on sustainability's role in the design of a shopping destination of the future. After receiving top honors in the Brickworks Living Building Challenge, the billabong-themed concept might make the leap to reality.

The Australian-born competition is the first conceptual design challenge for the Living Building program that involves a retail center, The Brickworks in suburban Melbourne. The challenge sought concepts for a prefabricated shopping center model that's "screwed, not glued" together.

The contest was organized by the Living Future Institute of Australia, a local arm of the Seattle-based International Living Future Institute, in partnership with Brickworks site owner Frasers Property Australia. More than 40 organizations and 100 people contributed submissions, vying for awards totaling over $30,000. Cash awards were given to three professional and three student entries.

Genius loci inspiration

Backers of the Brickworks Living Building Challenge are not only seeking to raise the bar on sustainability standards. They want to raise the roof, as well. "Frasers Property is aspiring not only to create the world's most sustainable retail center, but a project that actually generates a net-positive, regenerate impact on the environment," says Peri Macdonald, general manager of retail for Frasers Property Australia.

The winning entry, "The Difference is Living," is the work of a multidisciplinary team that includes architects, engineers, scientists, and food precinct planners. The concept is inspired by the genius loci of the site and its rich tapestry of indigenous, agricultural, and industrial overlays sewn together through strong topography and an innate relationship with water. Adhering to a paradigm of doing less harm, the submission's billabong idea impressed judges.

Stephen Choi, vice chair of the Living Future Institute of Australia, notes that the entry is strongly aligned with

Billabong concept tops flood of sustainable ideas for Melbourne mall

By Beth Feinstein-Bartl

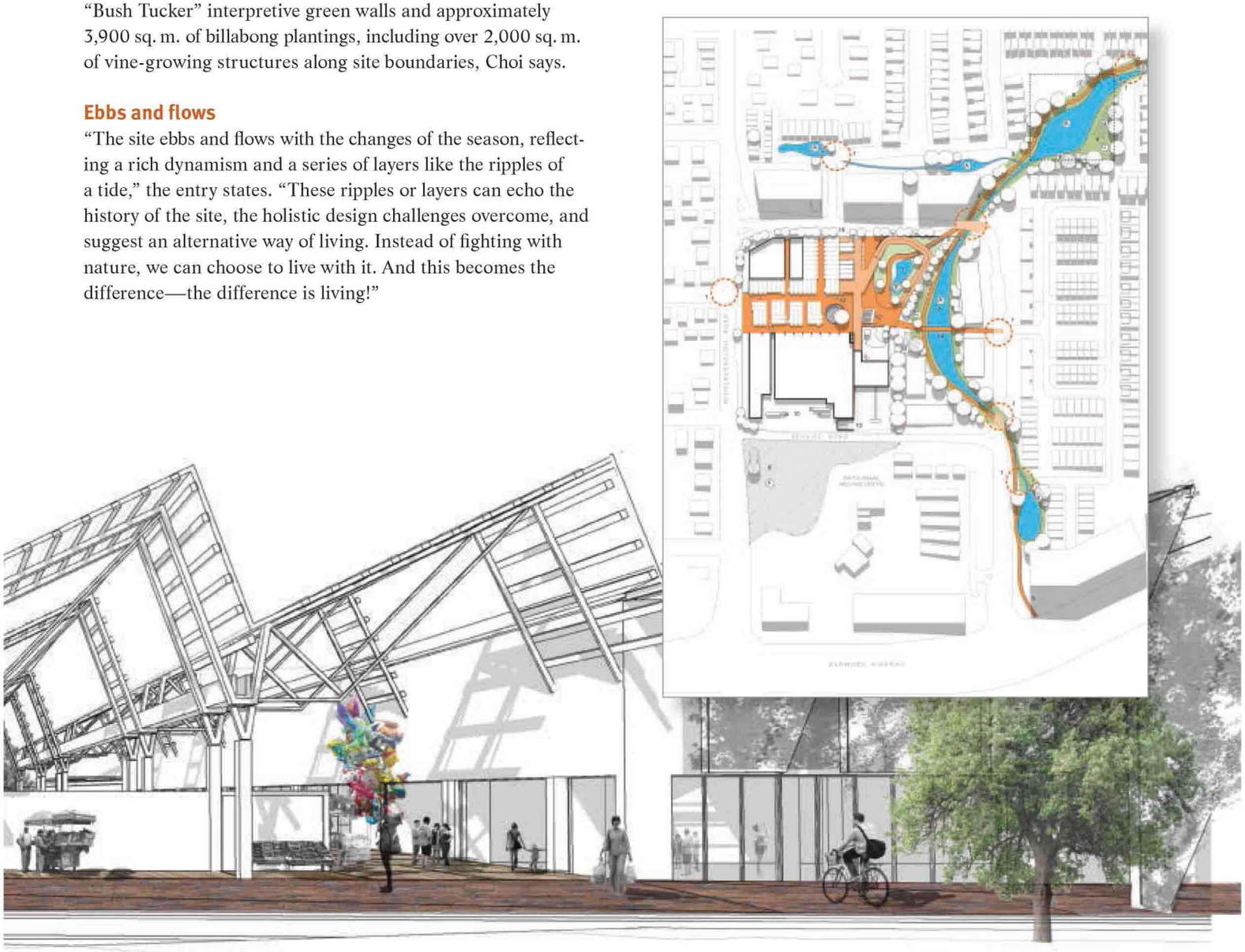
the challenge's principles within place, water, energy, health and happiness, materials, equity, and beauty.

The design recognizes and celebrates the innate connection between human beings and natural elements through its "Bush Tucker" interpretive green walls and approximately 3,900 sq. m. of billabong plantings, including over 2,000 sq. m. of vine-growing structures along site boundaries, Choi says.

Ebbs and flows

"The site ebbs and flows with the changes of the season, reflecting a rich dynamism and a series of layers like the ripples of a tide," the entry states. "These ripples or layers can echo the history of the site, the holistic design challenges overcome, and suggest an alternative way of living. Instead of fighting with nature, we can choose to live with it. And this becomes the difference—the difference is living!"

Winner: THE DIFFERENCE IS LIVING



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Design features include:

- LED lighting throughout for night lighting and where daylighting is not appropriate.
- Automatic lighting controls to reduce LED lighting as required.
- Solar-powered electric vehicle charging points throughout the above-ground carpark.
- Solar hot-water units on the roof.
- Daylight harvesting from a tensile roof structure to reduce artificial light usage by up to 75%.
- Insulated panels, internal and external, for walls and roofs.
- High-performance glazing and thermally broken frames.
- Orientation-specific shading.
- Prismatic skylighting to diffuse light and eliminate glare.
- Exposed roofing painted with reflective ceramic paint.

Well-conceived functionality

Modules and paving sections are designed based on a 4m-by-4m grid. Each pod is three grids for 48 sq. m. and can be combined with others to create mid-sized and large tenancies of 96 sq. m. and 144 sq. m. Paving modules can include planters and seating. The modular construction also allows for greater flexibility and a reduction of waste, should there be a wish for reconfiguration of the small-box retail. It also allows for future larger retail to replace modules with ease again, allowing for greater flexibility.

The retail is relocatable, too. For example, if a remote community suffers from a natural disaster, some units can provide relief. Similarly, if the market dictates or if another development is in need of temporary retail, units can be rapidly repositioned.

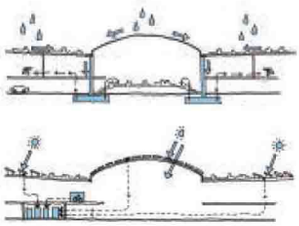
"The way the modular design came together in a functional, well-conceived way, to potentially be repurposed elsewhere at the end of the center's life cycle, significantly reduces construction waste compared to a standard retail center and is not an approach normally considered to this extent," Choi says.

People's Choice and Runner-up: FOR THE COMMON GOOD: A RESTART TO RETAILING

Revolving around revitalization, this entry encompasses the creation of a vibrant residential community based around an economically and sustainably, viable passive house center offering retail, food, beverage, and community services. Fish tank farms supply on-site eateries. There's also CO_2 absorption cement in the carpark structure. A pyrolysis machine producing oil fuel from recycled plastic serves as a source of income for the center.

Third Place: THE GATHERING RETAIL CENTRE

This project sets a shining example of sustainability with its solar chimney and its natural daylighting of the concourse through skylights. There's also a community rooftop garden, prefabricated popup shops of recycled timber, rainwater storage tanks, and electric car charging bays.



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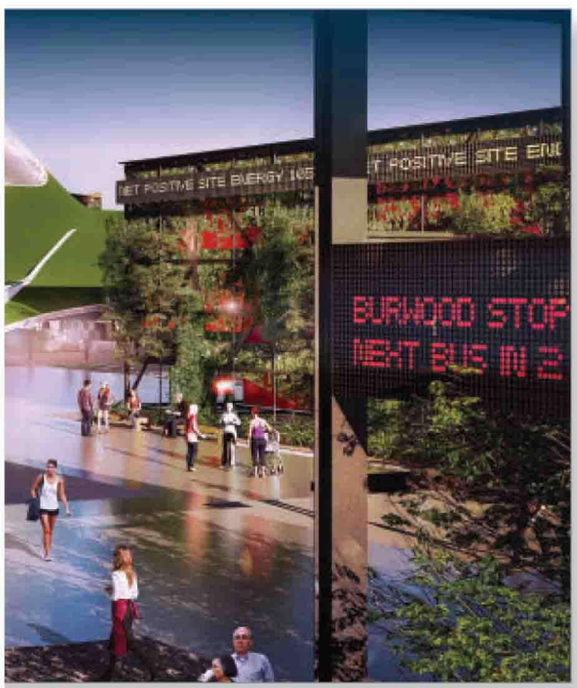

Student Design Winner: BURWOOD LIFE CENTRE

Features include a local natural habitat promoting the growth of indigenous flora and fauna within an urban fabric; a pear orchard forming the major source of visual biophilic stimuli; and the enrichment of pollinating insect life such as bees. A living laboratory creates a forum for research and education.

Student Design Commendation: FARMULOUS

Referred to as an "urban agriculture education center," the entry includes a wetland with timber decking, an education hub telling the living building's story, and a water and food closed-loop recycle system. A supermarket, greenhouse, veggie farm, and restaurant are among the tenants.

Student Design Commendation: BRICKWORKS GREEN

Locally sourced, energy-efficient, and renewable materials are designed to reduce the overall carbon footprint of the building, both during the construction process and post-occupation. Other features are natural ventilation using a stack effect through louvers at the top of the marketplace; Earth tubes for passive heating and cooling; rain gardens for roof water biofiltration; and rooftop organics.