



Bali's Green School uses sustainable energy and building materials, and takes a green approach to teaching.



GREEN SCHOOLS

ENCOURAGING A GREENER AND MORE CONSCIENTIOUS NEXT GENERATION, SCHOOLS AROUND AUSTRALIA – AND THE WORLD – ARE INCREASINGLY STEPPING UP THE GREEN ANTE.

WORDS BY *Linda Vergnani*

In Ubud, Bali, students at a school with spiralling, handcrafted, bamboo classrooms learn green leadership skills, grow rice and assist in breeding critically endangered Bali Starlings. Across the Indian Ocean at a high-tech school in Canberra, the students monitor solar energy use and study rare Superb Parrots. While the two campuses look radically different, both are green schools, with sustainable buildings designed to cut costs and improve the academic performance, health and wellbeing of students.

Children from 30 countries attend Green School in Ubud. Here, electricity is generated from the sun and a gravitational water vortex system that uses the natural energy of moving water from a nearby river. In 2012, Green School was rated the greenest school in the world by the United States Center for Green Schools.

Harrison School, in the Canberra suburb of Harrison, is one of about 20 Australian schools and early learning centres that have been given Green Star certification by the Australian Green Building Council. Its classrooms are cooled by thermal stacks that vent hot air at the top of the buildings. Most of the water used is rainwater, and most of the electricity is derived from solar power.

Both schools integrate sustainability education and experiences into the lives of pupils. Dennis Yarrington, Principal of Harrison School, explains: "If we get kids to reuse, recycle, close a door, put a jumper on, use water sensibly, all those types of habits are the key things that will make a sustainable school retain its value to society. You might have a five Green Star building and all those heat-saving and cooling measures, but if you leave doors open it defeats the purpose. So changing habits is a really important aspect of environmental sustainability."

Pupils are taught environmental science from year three, while the high school's environmental research centre focuses on food sustainability and horticulture. From an intake of 300 primary and kindergarten students in 2007, the school has grown to accommodate 1,248 junior and high school students. >>



Smart building design and sustainable use of resources are just the beginning for Harrison School who ensure they teach children environmentally mindful habits.

GREEN SCHOOL, JAMIE WOODALL; HARRISON SCHOOL, BEN WRIGLEY FROM PHOTOHUB



Left top & bottom: Vents beneath the windows and external chimney stacks ensure internal conditions at Harrison School are naturally healthy and conducive to learning.

"On a global scale, having a healthy, high-performing child is a universal value," Gutter said during a visit to Sydney to speak at the Green Cities 2013 conference. "So really what we've tried to do is de-politicise the issue."

Her organisation uses figures from the 2006 report 'Greening America's Schools: costs and benefits' by Gregory Kats to back its green schools agenda. It includes a study of 30 United States green schools, showing that while they cost two per cent more to build, they provided 20 per cent greater financial benefits. Around 14 million US students study in sub-standard or dangerous schools, where poor internal environment and air quality can cause asthma and other health problems. The report cites numerous studies showing how better design, airflow and lighting can improve health, productivity and academic results.

"The typical green school saves US\$100,000 a year on direct operating expenses, which is enough to hire two teachers, purchase 200 computers or buy 5,000 textbooks," Gutter points out. "Putting these compelling metaphors into people's hands helps them to articulate the case in a way that the typical school board member, or parent or taxpayer can understand."

The centre has trained thousands of volunteers, including parents, how to advocate effectively for sustainable schools. Last year it launched a Green Apple Day of Service that involved 168,000 volunteers in 50 countries, from India to Columbia, doing everything from planting saplings or creating edible gardens in schools to installing rainwater cisterns.

Robin Mellon, Executive Director, Advocacy and Business Services, of the Green Building Council of Australia, says: "What we need to do here in Australia is take the politics out of education. We need to invest in brighter, healthier, more productive, more efficient and certainly more resilient education facilities."

He and Gutter had a "constructive, productive meeting" with federal education minister Peter Garrett to discuss ways to create more green schools in Australia.

Mellon is excited that more than 120 Australian schools, tertiary institutions and adult education facilities have had either plans registered or buildings certified with Green Star education ratings. "There are some extraordinary examples which are literally leading the world," he says.

Among these eco-friendly educational institutions are the five Green Star-rated Williamstown and Wangaratta High Schools in Victoria, various six Green Star-rated university facilities across the country and the Ausgrid Learning Centre in New South Wales.

Yarrington gave advice to the school's architects, who oriented the senior school campus eastward to avoid Canberra's hot northwest winds and cold southerly busters. On summer nights, vents beneath the classroom windows open to purge stale, hot air through thermal chimneys, so by morning classrooms are filled with cool, fresh air. Double doors help maintain the classroom temperature.

Rain and stormwater are collected in underground tanks and used for flushing toilets and irrigating playing fields. The senior school buildings are sited around a grove of heritage-listed trees where endangered Superb Parrots breed. A special window allows students to observe the birds.

Yarrington says the thousands of dollars saved on energy and water are ploughed back into things such as building a central vegetable garden and environmental programs.

A green school, as defined by the United States Center for Green Schools, is one that "creates a healthy environment that is conducive to learning while saving energy, resources and money". Rachel Gutter, the organisation's dynamic young director, says this definition sidesteps the political divisiveness surrounding climate change, with everyone seeing the benefit of saving money and creating healthy, safe and efficient schools. For this reason such educational facilities are now supported across political party lines in the US, from the Tea Party to the Democrats.



Top & inset: Passive design, natural lighting and recycling of rainwater are just three of the features of Peregian Springs State School that afford it a four Green Star rating.

A school's sustainability can be a huge drawcard for parents and kids, yet not all Australian Green Star-rated schools market their sustainability credentials. Peregian Springs State School on the Sunshine Coast is one such school. Built alongside a wetland that's home to three vulnerable species of Wallum frog, it has a passive design, is naturally lit, uses rainwater for toilet flushing and has a four Green Star education rating. "We don't advertise it as a green school as such," says Peregian's deputy principal Sandra Cathcart, adding only those living in the school catchment area can enrol their children. "We teach conservation and have native gardens and grow vegetables."

In Bali, around 20 per cent of the 300 pupils at Green School are Australian, with many families relocating from abroad. Byron Bay sex educator Laura-Doe Harris intends on moving to Ubud next semester to be closer to her 16-year-old son Avalon, who started at Green School two years ago. He asked to move to the school after attending a Green Super Camp there. Harris says: "He was so enraptured that he came back saying 'Mum, I've found my place. This is my tribe.'"

Roger Hamilton, Chairperson of the Board of Green School, moved all three of his teenage children to the school where they are flourishing. He says the school teaches academic and leadership skills and ensures each student participates in projects that contribute to the community and environment. "Every single student is involved in a real-life program of some sort where they bring all their learning together."

For example, the Begawan Foundation moved 100 Bali Starlings – among the most endangered birds in the world – to aviaries on the campus where students help hatch chicks in incubators and rear them. Recently, four pairs of these birds were released in the school grounds. Australian grade eight student Toby King made a video about the Bali Starlings and "how you go about bringing back a species from extinction". Hamilton says that with the freed birds flying around the campus, pupils know they've made a real difference in the world.

FOR MORE INFORMATION:

➤ Australian Green Star education rating tool - www.gbca.org.au/green-star/rating-tools/green-star-education-v1/1762.htm

➤ Green School and Green Super Camp, Bali - www.greenschool.org

➤ US Center for Green Schools - www.centerforgreenschools.org