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Sustainability doesn't have to cost extra

Noosa Pengari Steiner School hits the trifecta: on time, under budget and cheaper to run

The Noosa Pengari Steiner School at Doonan, 13 km west of Noosa Heads in the lush green hinterland, has used its \$2 million share of the BER funds to build a school hall, adjacent Eurythmy (music/dance) room and a new library.

With a development master plan already in place, the school did not have to go with one of the government's BER templates, choosing instead to commission Andrew Webb, Director of WD Architects, to develop the design and supervise construction.

In keeping with the Steiner philosophy of environmental harmony, the school's buildings are not airconditioned, relying on airflow and wide shade verandas to deal with the warm and often humid conditions of the local microclimate. Some of the school buildings are old Queenslanders, re-sited and renovated for classroom and office use.

Working to his client's sustainability requirements, Andrew Webb developed a trapezoidal hall capable of seating 235. The colourful glass paned bi-fold doors that enclose the hall on the eastern wall fold back to open up access to a manicured lawn, enabling several hundred children, parents

Materials are for the most part locally sourced



and the local community to attend school events.

Materials are for the most part locally sourced, with termite resistant cypress pine used for the framing and fibre cement and plywood cladding. The feature wall at the stage end of the hall is rammed earth, sealed with a clear finish to show the soil bands of colour and texture. The floor is, again, sustainably sourced hardwood. Throughout, low VOC paints and finishes have been used.

Given the variety of events that the hall would be used for, creating a comfortable environment when the east wall doors are closed, and when open, cooling and ventilating was a major element of the design concept, Andrew Webb says. This was further complicated by the Steiner philosophy's preference not to amplify young children's voices.

Webb says that he arrived at the optimal balance of acoustics and ventilation needs by using perforated ceiling panels to dampen sound, extra insulation under the roof and installing a high performance yet exceptionally quiet fan to move the air.

He sought the advice of the project's mechanical engineer,



Noosa Pengari Steiner School has won two awards for environmental sustainability

Roger Briggs, on the viability of using a Big Ass fan. Briggs had seen the effectiveness of these fans at his local church, so they specified a 3.7 m Big Ass Element fan for the project. The single 10-blade fan is positioned 5.6m m above the floor where it directs air blowing in from the louvered vents on either side downwards to create a steady, gentle airflow. At the most often used rotation speed, the fan adds no more than 40 dB to the background noise level.

Leaving aside its cooling effect, Webb says that the big fan is popular with the children, who have judged it to be 'cool'.

"The fact that the building was built under budget and for less per square metre than the template buildings being built at the majority of state schools, belies the common misconception that building sustainably is expensive or difficult," Webb adds.

"It is our belief that successful initiatives like this need to be recognised so that wasteful, unsustainable and uninspiring standard practices in school buildings can be challenged and changed, thereby showing the way to improving the sustainability and beauty of the whole built environment."

Since it was completed last year, the Steiner school project has won two environmental awards: the Sunshine Coast Environment Council Froggy Award for Sustainability in the Built Environment; and Sunshine Coast Council's Glossy Award for Excellence in Sustainable Design.

