

# Kingswood College's new science centre

*Education Today visits a showpiece science facility in Victoria*



*A wind generator and room mounted solar panels feed surplus energy back to the grid*



Annette Bennet, principal of Kingswood College in Box Hill, Melbourne, says that having a resources committee of four science teachers while plans for the school's science centre were developed, was central to what she describes as a "wonderfully successful" outcome.

Costing \$3.2 million, the two-level, six-classroom building is consistent with one of this interesting school's objectives of having a strong science focus, Bennet says.

The building was handed over to the school in March last year. And, after a little over 12 months teaching and learning in the centre, staff and students are as enthusiastic now as they were on the first day.

"We think that it proves you don't have to spend a fortune to create a very stimulating environment," Bennet says.

During the planning process, the resources committee visited several schools that emphasise science subjects, including the Australian Science and Mathematics School in Adelaide, taking away insights and ideas that helped shape the final design brief to Smith & Tracey Architects.

The science centre completes the enclosure of the school's main central courtyard. In keeping with the school's environmental and sustainability principles, Smith & Tracey has designed a structure that significantly reduces energy consumption and increases sustainability, while providing an effective and inviting learning environment.

All windows are double-glazed and the west wall is constructed of 300 mm thick insulated precast concrete panels to protect the building from western sun and southern winter winds.

A perforated metal outer skin filters the effects of the eastern and northern sunlight onto the two-storey glazed wall. The design references the periodic table, providing a graphical science reference. The inclusion of an electronic message board in the screen provides an environmentally friendly method of conveying information to students.



*Kingswood College Science Centre*

Automated solar chimneys are strategically positioned on the roof to purge excess heat from the building at night.

Adding a useful element of renewable energy generation, a 2 kW wind generator is mounted on a slender tower adjacent to the building, and roof-mounted solar panels are capable of generating a further 2 kW of power to reduce the school's electricity bill. Excess power is fed back to the grid.

Water collected from the roof is used to flush the toilets in the building and to water the surrounding plantings.

The focus on sustainability and environmentally sound principles continues inside the building. Low VOC paints have been used throughout; the floor finishes are marmoluem (manufactured from Jute); and

display boards are cork-based.

The classrooms have differentiated wiring so that the lights on the window side are on a different circuit to the lights on the other side of the room. The lights near the window do not automatically come on when someone enters the room but can be switched on as required. Strategic placement of control points and switches away from the doors makes turning lights on something that must be first considered by users.

The six classrooms, three on the ground and three on the second floor are on either side of an airy central lobby. The ground floor classroom walls facing into the lobby are panelled and slide to the side, creating an extensive and visually interesting open space for functions and special events.



## Kingswood College keeps on growing and building

The school moved to its Box Hill campus and was renamed Box Hill Grammar in 1929 when the Methodist Church assumed responsibility for New College, which had been established in 1890 as a boys' school by Arthur Stephenson. It was renamed again in 1965 as Kingswood College. Current co-ed enrolment from early learning to Year 12 is 650.

While the majority of students come from the immediate area, the school has up to 40 international students undertaking the two-year VCE course in preparation for university studies. While at the school, the students live with local families.

Kingswood students wear uniform from prep to Year 10 while Years 11 and 12 are free to choose what they wear to school. Dress code is neat casual.

"Students in their final two years are young adults and we treat them as such. It's part of the process of preparing them for the adult environment of tertiary education."

The sprawling eight-hectare campus is on a hillcrest site above the busy Box Hill shopping and business precinct, with views to the beautiful Dandenongs Ranges.

The school's low-rise buildings sit, village like, on both sides of the driveway that curves from the Piedmont Street gate around an oval and down a gentle slope to the Station Street gate. Reflecting the evolution of architectural fashions over the decades, clinker brick contrasts with 1960s structures, and the uncluttered lines of recent additions.

To one side of the new science centre, \$850,000 of BER funds has been used to refurbish the school hall, extending seating capacity to 600 and adding spaces for drama and music. A further \$200,000 of BER funding has been used to resurface paths and steps and to landscape the central courtyard.

The old science centre has been refurbished as a new centre for Year 10.

Cato, the school's oldest classroom building, is next on the redevelopment list. Smith & Tracey Architects is developing plans to convert it into a trade training centre equipped with a large commercial kitchen and adjacent dining room seating up to 100 for lunches, dinners and functions. When the building works and fit-out are complete, William Angliss College, Melbourne's leading hospitality industry training institution, will assist in running an out of hours VET hospitality course.



*Interior walls are white and there are vibrant yellow orange and green highlights on walls, doors and ceilings; Mark Grigsby architect and Annette Bennet Principal of Kingswood College; the central courtyard*

Reflecting the combined practical experience of the four science teachers on the resources committee, the workbenches and desks in the classrooms are on casters, allowing easy rearrangement to accommodate different lesson topics. An equipment store and lesson preparation room between the classrooms on both floors facilitates the preparation of lesson materials and equipment by the centre's two full-time lab support staff. Each classroom has been designed for easy use of technology including the ultra short throw data projectors.

### **Everything about the building supports the school's sustainability goals**

Mark Grigsby, one of Smith & Tracey's four directors, says: "the Kingswood science centre is a prototype building – everything about it supports the school's sustainability goals... all of the materials used in its construction and fit-out are 100 per cent recyclable."