



environs



A large and complex establishment like Scotch College at its campus in Hawthorn presents many opportunities for initiatives that can reduce environmental impacts.

For example, the School has invested in significant new infrastructure in recent years to help reduce the School's risks during drought.

Recent rains might appear to have reduced the urgency of drought-mitigation work, but a prudent approach is to continue to recognise the likelihood of future water shortages and prepare for them. That is why rainwater harvesting and conservation measures feature in the extended Junior School Assembly Hall building. That project is described in this edition of Environs.

New ways of using electricity and water; more effective waste management; intelligent and thoughtful design of new buildings - all are positive elements of the School's sustainability program.

And in this edition, we look at practical opportunities students as early as Year Five are enjoying to learn some of the basics of sound environmental practice.



Quick-growing sunflower plants deliver spectacular results.



Younger students tend their own corner of the garden



Year Five teacher, Mr Ben Marr, encourages his band of enthusiastic young gardeners.

Never too young to learn sound planting practice

Year Five gardeners have incorporated biodiversity principles into a garden they have helped establish near the Junior School.

The students obtained a guide to indigenous planting to help plan the garden, which is now growing well.

The students discussed the plans for the garden in class and created a design including a path and an area for gathering and talking. The boys then designed their own gardens. These plans were presented to Bill Sciarretta, the School's Property Manager, and Michael Smith, the Curator, who refined the design, reflecting much of the boys' work.

During the Term Two holidays, Mick and his grounds staff created the four garden beds to make up the complete Year Five garden. In Term Three, Kelly Daley from the gardening staff set out two of the beds with native plants and grasses bought from the Victorian Indigenous Native Co-operative (VINC). She showed the boys how to put in and look after the plants, though she left the actual planting to the boys themselves.

Once the plants were in, the students each researched and wrote a small report about the shrub or grass that they had planted.

One bed is now filled with native shrubs and one with native grasses and ground cover similar to those originally on the site of the Scotch College campus and the surrounding area.

The students tend these and the other plots carefully, weeding, watering and feeding the plants during lunchtimes.

The boys are observing the 'native' plots regularly to see how well their indigenous plants are attracting a large variety of insects and other small creatures.

As well, the Year Five boys are planning a 'mini-rainforest' in a nearby bed.

The Year Five students and boys from other grades tend their allocated plots guided by teachers Mr Andrew Stremple and Mr Ben Marr, who say the boys have fun and get a sense of achievement from observing quick-growing plants, like sunflowers, while gaining valuable knowledge through projects such as the indigenous garden beds.

In other parts of the Junior School students' garden, which is on the eastern boundary of the Scotch College Campus, younger students, too, are learning the fundamentals by planting and tending more conventional varieties, such as cabbage and parsley.

Scotch College takes first steps into solar electricity



First solar steps – some of the panels recently installed on Scotch College roofs

Scotch College has installed 48 solar panels in its first venture into alternative forms of electricity.

Thirty of the panels have been installed on the roof of the Senior School Science Building.

The remaining 18 panels have been incorporated into the extension of the Junior School Assembly Hall, recently completed under the Federal Government's Building the Education Revolution (BER) program.

The panels have a total capacity of 13 kilowatts – 8 kw in the Senior School and 5 kw in the Junior School.

Bill Sciarretta, the School's Property Manager, supervised the program, which he says helps reduce Scotch College's electricity consumption from the State grid, especially on hot, sunny days.

The panels have been operating since September and have an educational element to them. The panels in the Senior School are connected to a display monitor in the Lithgow Centre which shows students how much electricity the panels are producing at any one time.

Funded with a grant under the National Solar Schools Initiative, the panels have an expected operational life of 25 years.

And will the School install more panels in future? Bill Sciarretta says it's likely solar will be considered as an option as existing buildings are refurbished or new ones built.

But solar will never supply all the School's electricity. Bill says panels covering an area equivalent to 360 tennis courts would be needed to do that.



Automatic 'lights out' helps reduce electricity use

While the solar panels work on the supply side to replace the School's consumption of some fossil-fuelled electricity, a technological solution on the demand side is helping to do the same.

The School has begun to install infra-red sensors in class rooms to control lights and switch them off automatically if the rooms are unoccupied.

So far, fluorescent lights in rooms around the quadrangle, and some around the Glenn Centre, have been replaced with more efficient, lower-consumption, higher output lighting units attached to the motion sensors.

The sensors detect heat and switch lights off after rooms have been empty of students or staff for 10 minutes.

The sensors potentially reduce power consumption in lighting by 15 per cent.

Bill Sciarretta says installing the sensors is a continuing program which will involve retro-fitting classrooms as funding becomes available, and incorporating the sensors in new buildings.



The Junior School Assembly Hall extension under construction (right) and in use today



Sustainability features in extended Junior School Assembly Hall

Scotch College incorporated a number of environmentally beneficial features in its redeveloped Junior School Assembly Hall, recently completed.

First, the School took the opportunity presented by the redevelopment project to install solar electricity panels to reduce the Junior School's consumption of conventional, fossil-fuelled electricity. (See earlier story)

The School also extended its comprehensive water saving program by installing rainwater storage within the new parts of the building.

A void in the basement of the new extension has been used to locate large, collapsible rainwater storage tanks capable of holding 16,000 litres.

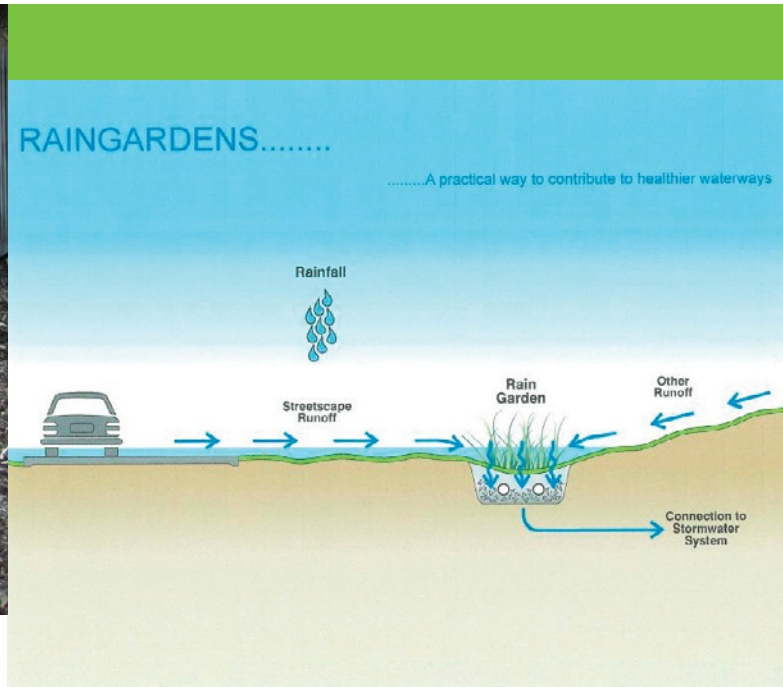
The water is used for flushing toilets in one of the Junior School's toilet blocks.

Recent substantial rains have filled the storage. Excess flows from the Junior School roof are discharged as storm water.

The extension also incorporated new 'smart' lighting fittings, helping to reduce the building's electricity consumption.



Scotch College Land near the Yarra River will be the site of a new Rain Garden



Council-supplied diagram

Scotch College land will be site for pollution-reducing ‘Rain Garden’

Scotch College land in Hambleton Road is to be used in an innovative project to help clean the water that flows into the area's stormwater drains.

In a partnership with the School, the City of Boroondara is planning to establish a ‘rain garden’ to filter pollutants from storm water which is discharged into the Yarra River at the end of Hambleton Road.

The project is part of a wider program designed to clean up creeks and waterways and, ultimately, to reduce run-off pollution flowing into Port Phillip Bay.

The Bursar, Mr Ross Congleton, said the proposed rain-garden will be located on the edge of the Scotch College campus and will provide the potential for students to learn about the issues around designing water-cleaning and water-management features into the urban environment.

It is expected that the project will attract funding from Melbourne Water as part of the Water Sensitive Urban Design (WSUD) program.

When it rains, litter, cigarette butts, nutrients, chemicals & sediment is washed from roofs, roads & footpaths down stormwater drains, damaging the health of our rivers and creeks and Port Phillip Bay.

Rain-gardens resemble regular gardens, but their main purpose is to receive and improve the quality of the rainwater from stormwater drains or road surfaces.

Rainwater is directed into the garden bed and floods it to about 100mmm in depth. This water slowly permeates through the layer of soil especially designed to remove pollutants.

At the same time carefully selected plants remove nutrients from the water. An agricultural/slotted drainage system located beneath the soil layer collects treated rainwater and returns it to the drainage system or to the nearest creek or river. This system is designed to treat the first flush of rainwater carrying most pollutants.

The key principles of Water Sensitive Urban Design are to protect natural water systems and protect water quality while integrating stormwater treatment into the urban landscape.

The program is intended to deliver a range of benefits, such as slowing stormwater flows, reducing irrigation requirements and improving the urban landscape while reducing the discharge of pollution into creeks and waterways.

Mr Congleton said Scotch College is pleased to enter this partnership with the City of Boroondara. Construction of the rain garden is due to start in the first half of 2011.