



environs

SCOTCH COLLEGE ENVIRONMENT
MANAGEMENT NEWSLETTER

EDITION 6 NOVEMBER 2011



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● With tank water capacity now nudging 5.5 million litres, Scotch College continues to significantly reduce the amount of potable (drinking) water it uses.

In 2010/11, there was another dramatic decrease in drinking water consumption at Scotch – it was down a further 23 per cent on the previous year. Scotch now uses about 24 million litres of drinking water annually, compared with 55 million litres in 2004/05. See the full story in this issue of *Environs*.

● Meanwhile, during June a team of three Scotch Year 10 students participated in a conference in Singapore.

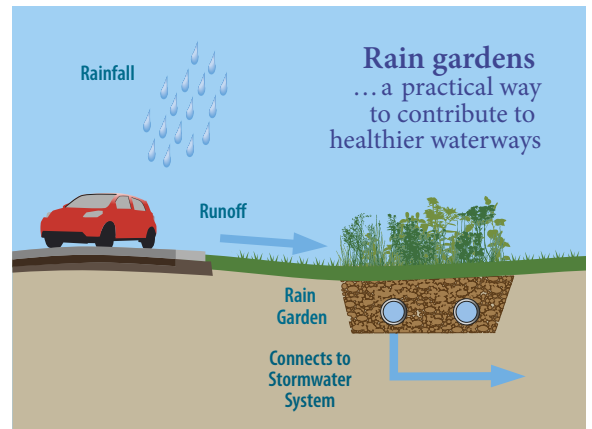
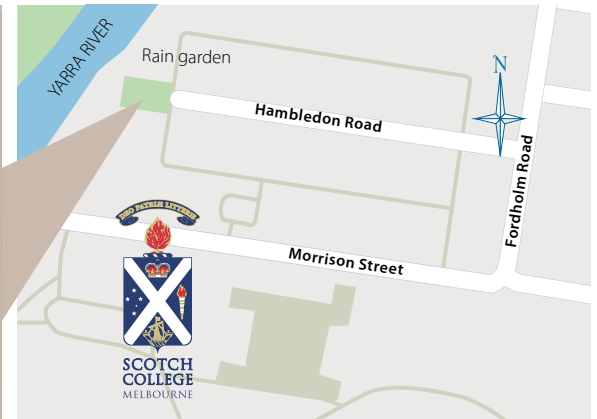
The conference gathered 80 brilliant young men and women from around the world, who were each set world-changing environmental experiments to conduct. Scotch was the only Australian school to be invited to participate in 'TiltShift 2011'. The boys' story is in this issue.

● Also in this edition we visit Scotch's little-known 'underworld', the labyrinth of stormwater drains under the school grounds.

We discover more about the new stormwater-cleansing rain garden on the school grounds; and finally, there's the story of something at Scotch that's a real turn-off – the infra-red sensors which switch lights off automatically when rooms are empty.



The rain garden in Hambleton Road: planting will soon begin in the garden



Cleaner water enters the Yarra

Stormwater entering the Yarra River from Hambleton Road, near Scotch, will soon be of considerably higher quality, thanks to a 'rain garden' on Scotch College land at the end of Hambleton Road.

The rain garden – which has been constructed in partnership by Scotch and the City of Boroondara – is now almost complete, and will help to cleanse stormwater flowing into the Yarra River near the school.

It works like this. The run-off from a large catchment, comprising local

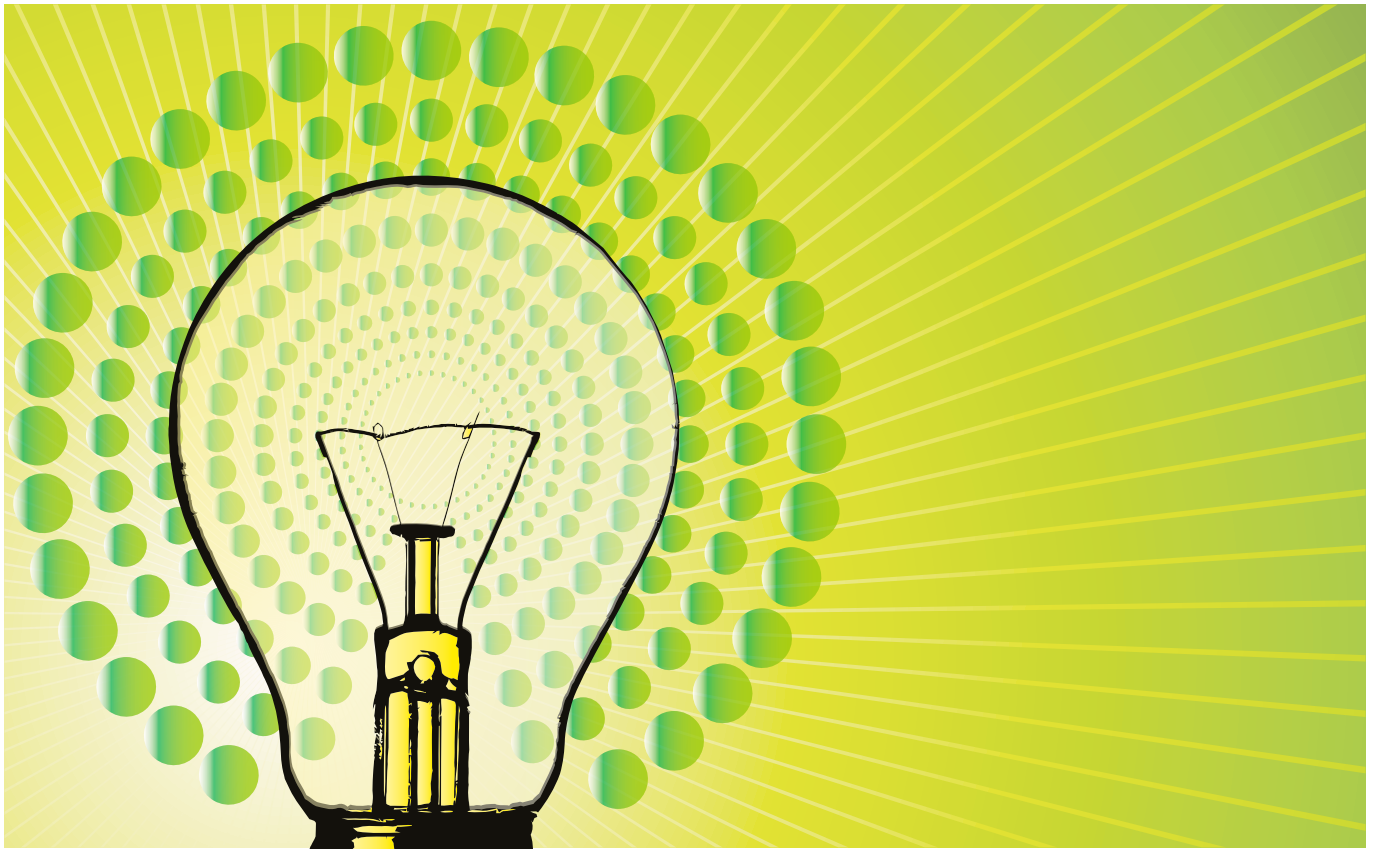
streets and private properties, is captured by a drainage system connected to the rain garden, in which a variety of native shrubs and grasses have been planted. Gross pollutants such as street litter are removed by a trap before the water enters the rain garden. The water floods the garden to a depth of about 100mm. As this water slowly permeates through the layers of soil in the garden, pollutants such as nutrients, heavy metals and sediments are removed. The cleansed water is then channelled into stormwater drains and on into the Yarra.

The native plants in the rain garden remove nutrients from the water, sustain diverse microbial populations

involved in biofiltration, and return moisture to the atmosphere through transpiration. They also help to attract native wildlife, such as birds.

As reported in the previous issue of *Environs*, the rain garden will have learning as well as environmental benefits. Scotch students will have the opportunity to learn in a practical way about water cleaning and management issues involved in the rain garden's pollution-reducing process.

And not only will the rain garden help to improve the quality of rainwater flowing into the Yarra – it will also be an attractive streetscape feature. To the casual observer it will simply be a garden feature at the end of Hambleton Road.



Lighting sensors cut power use

Scotch life is always busy, and perhaps the last thing on a teacher's mind as he or she leaves a classroom – while chatting to students, gathering teaching materials or hurrying off to the next class – is to remember to turn lights off.

Scotch is well into a continuing program of installing infra-red sensors in classrooms across the

school, which switch off lights automatically when rooms are empty. The sensors, which detect heat, are timed to activate 10 minutes after rooms are vacated, and can potentially reduce lighting power consumption by about 15 per cent.

The program, which was an initiative of Scotch's Maintenance Department, began in the Junior School last year, where all classrooms now have sensors operating on a ten-minute cycle.

Scotch Property Manager, Bill Sciarretta says the sensor installations are all about saving energy and resources. 'It's part of



All classrooms in the Junior School now have lighting sensors

a schedule of installing infra-red sensors in all existing buildings,' he said. 'They will also be a mandatory fitting in all new buildings.'

Scotch's murky underworld holds dark secrets

As you enter Scotch from Morrison Street or the Monash Drive, a beautiful vista of wide open spaces, colourful flower beds and attractive buildings opens up before you. But lurking below this serene surface lies an underworld that few people know of or associate with.

This story has nothing to do with Underbelly, Al Capone or 'Squizzy' Taylor. The underworld in question is Scotch's labyrinth of stormwater drains, carrying water from the grounds and buildings either into the water tanks under the McKendrick and Melville Ovals or into the Yarra River and Gardiners Creek.

The Scotch grounds have a variety of surfaces including asphalt, sand, mulch and tanbark, and inevitably whenever it rains some of the loose surface material is washed into the drains. Then there are leaves, bark and branches from the thousands of trees on the campus. All of these

loose substances are washed into our drains by normal rainfall, but over the past six years we have experienced four major rainfall events. The flooding rains have instantly dumped thousands of litres of water on the school grounds, and have washed tonnes of material into our drains.

Potentially, blocked drains have dire consequences for Scotch. Run-off water backing up through drains clogged with silt and other material could flood the campus, causing untold damage to infrastructure and

danger and inconvenience to staff, students and visitors.

Gross pollutant traps remove most of the loose surface material, before it enters the drains leading to the water tanks. To ensure drains remain clear, once annually all discharge lines under Scotch are thoroughly backstreamed (cleaned) by a contractor, a process which always removes tonnes of material and minimises the danger of flooding. (continued next page)



A gross pollutant trap on the eastern side of the Main Oval being cleaned by a contractor.



Cleaning drains near the Chapel.

Scotch College Property Manager, Bill Sciarretta says the process is a necessary one. 'It's a vital part of our property maintenance schedule,' Bill told *Environs*.

'The drains are in one sense out of sight, out of mind, but that's certainly not the attitude we take,' he said. 'If silt and other material build up in the lines under Scotch, even normal rainfall can cause potential flooding problems, let alone big rainfall events

such as the major downpour we experienced early this year.'

Before water from the Scotch drains enters Gardiners Creek or the tanks under the McKendrick and Melville Ovals, it passes through one of three gross pollutant traps on Scotch land, collecting litter and debris before it can enter the creek.

And one longstanding 'underworld' legend can be put to rest. A story

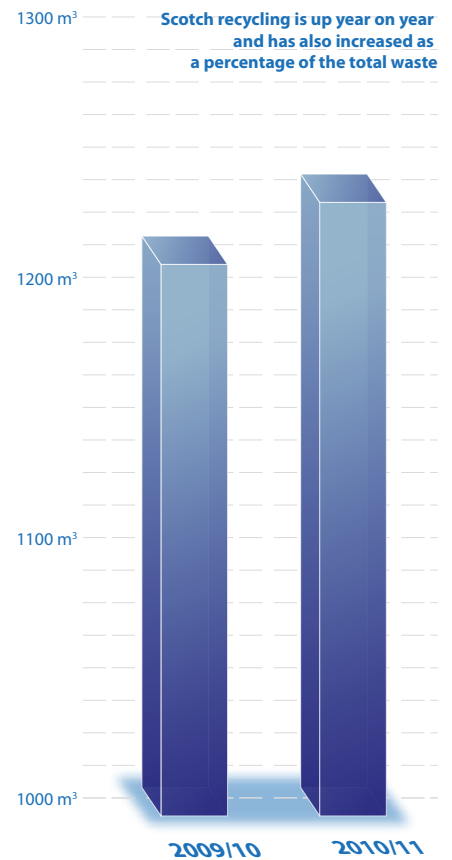
passed on by generations of Scotch boys that there is a tunnel leading from the Chapel under the Main Oval to the rest of the school is just that: a story. There is no such tunnel.

Next time you visit Scotch and take in the pleasant panorama, spare just a moment's thought for what goes on under the surface, in Scotch's underworld.





(Left to right): Sorin Zota, Sam Banks and Peter Williams



Looking locally for life-changing worldwide ideas

A team of Scotch Year 10 boys hit the world stage in July, travelling to Singapore to submit their views on changing the world for the global good. To come up with their world-changing ideas they turned to an environment close to their hearts: the Scotch campus.

Scotch was the only Australian school to be invited to participate in 'TiltShift 2011' in Singapore, which was conducted by the Raffles Institute in June. The boys – Sam Banks,

Peter Williams and Sorin Zota – were accompanied to Singapore by Ms Michele Linossier, Scotch's Academic Extension Coordinator.

TiltShift 2011 was a five-day, high-impact conference, gathering 80 brilliant young men and women from around the world, who were each set world-changing experiments to conduct in team environments.

The Scotch team worked with the Glass Ark – Climate Change area of TiltShift, which sought ways to reduce school carbon emissions by raising student awareness of how they could make a difference. The team's project,

entitled EVOgreen, focused on waste management, identifying several areas they wish to work on, including using recycled paper around the school campus, replacing current exterior lighting with solar powered lighting, and investigating issues connected with heating Scotch's indoor swimming pool.

The TiltShift website proclaims that 'the biggest problems are sometimes solved by a simple change of perspective', and this was the slant the Scotch team took, as they looked at environmental issues close to home, in a Scotch context.



With a total tank water storage capacity of close to 5.5 million litres, Scotch continues to make significant inroads into the quantity of potable (drinking) water it uses. Tanks are now in place under the McKendrick (Soccer) and Melville Ovals.

During 2010/11, potable water consumption at Scotch was reduced by a further 23 per cent on the previous year. Since 2004/05 the reduction in mains water use has been dramatic. In that year, Scotch used 55 million litres of potable water. By 2009/10 this had fallen to 32 million litres, and in the 2010/11 year it shrank again to 24.5 million litres.

Scotch Curator Michael Smith said Scotch has been totally independent from mains water for all its grass sports fields since January of this

year, although some mains water is used on garden beds because of the practical difficulty of piping tank water to every garden bed on the campus.

‘When new garden beds are created or existing beds are replanted, we are using as many native species as possible,’ Michael said. ‘This is helping to reduce our dependence on potable water still further.’

He said all of Scotch’s grass sports fields – covering a total of 7 hectares – had now been converted to drought-tolerant Santa Ana turf. ‘This four-year program has also helped us to reduce our water consumption drastically, while retaining the beautiful green appearance of all our ovals.’

But from the aesthetic point of view, Santa Ana has one drawback – it thrives on sun and heat, and becomes dormant in the winter months, turning from green to light brown in colour.

Once autumn comes, Scotch’s ovals are oversown with cool season grass to retain the beautiful green vista. In spring the increasing soil temperature encourages the Santa Ana couch to start growing again: the warmer the weather, the stronger the growth. The cool season grass is then removed.

In an extensive article, *The Australian Water Management Review 2011* summed up Scotch’s initiatives in irrigation self-sufficiency:

‘After four years of planning and construction, the school now has a water storage capacity of 5.4 million litres. The stormwater harvesting and irrigation reticulation masterplan now allows Scotch to irrigate, maintain and present its sports fields at a high standard with safe conditions all the year round.’