

Liquid Assets

Issue 11 2011



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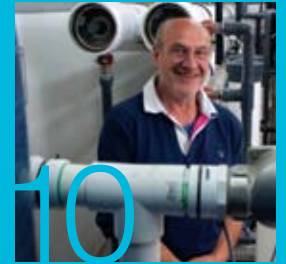
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a success for the
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Anne Barker
Managing Director
City West Water

A new phase in Melbourne's water

The Victorian water industry learned much from the recent drought. As we enter the next phase in our water history, it's unlikely that Melbourne's water landscape will ever be the same again.

Melbourne's water future, one with a diversified supply and an increasing number of fit for purpose projects aimed at satisfying water needs locally, aims to guarantee access to safe and reliable water

supply for the long term, even if the severe drought conditions we experienced over recent years return.

In September this year, we launched our Strategic Plan 2011-16 which sets out our organisational objectives for the next five years. The plan details a number of initiatives that build on our traditional 'bread and butter' functions of water supply, sewerage and trade waste.



Water use crushed at Alex Fraser Group



Brewing water efficiency at CUB



VicTrack puts excess water to good use



Amcor's water saving solution



Victoria University pools water saving

landscape

We will continue to focus on water and resource efficiency and, our programs in the future will factor in the broader community impacts of a restricted water supply, particularly in the areas of urban habitat and liveability.

Many of our customers, large and small, have made phenomenal achievements in lessening their water consumption, and as you'll read over the following pages, businesses are now drilling down to

extract further resource efficiencies and often realising multiple benefits of reduced water and energy consumption as well as lower waste outputs.

That potential for further efficiencies helped shape the Strategic Plan and cements our commitment to continuing to provide the necessary support needed to ensure as many of these types of initiatives get beyond the concept stage and brought to reality.

Salt reduction a success for the Victoria Racing Club

Onsite treatment of saline bore water is set to insulate Flemington Racecourse from water shortages in the future.

As the eyes of the world turn to Flemington Racecourse for the Melbourne Cup Carnival each year, the images of the racetrack and grounds beamed around the world are the result of a dedication and commitment to the efficient use of water.

The Victoria Racing Club (VRC) has, for many years, been a leader in water conservation and sustainability. As part of its Flemington Green Fields program launched in 2008, the VRC focused on three areas of improvement: water, electricity and waste reduction. Since Flemington Green Fields was launched, the VRC has reduced its water use by a staggering 22%.

The VRC investigated a number of options to reduce its consumption of potable water, and identified an extensive saline groundwater resource beneath Flemington.

To capitalise on this resource, traditional desalination was explored but then rejected because of

potential environmental impacts. Following further consultation with City West Water, the VRC committed to an innovative in situ water desalination water treatment technology to extract and treat groundwater.

The technology, developed by Australian company Desaln8, is distinguished by its ability to treat saline water underground and only bring desalinated water to the surface. This removes the need to dispose of brine aboveground, which can negatively impact the environment and ecosystems.

This technology is a uniquely Australian innovation and the Flemington project was a test-bed for the technology, requiring 18 months of development once installed before becoming fully operational.

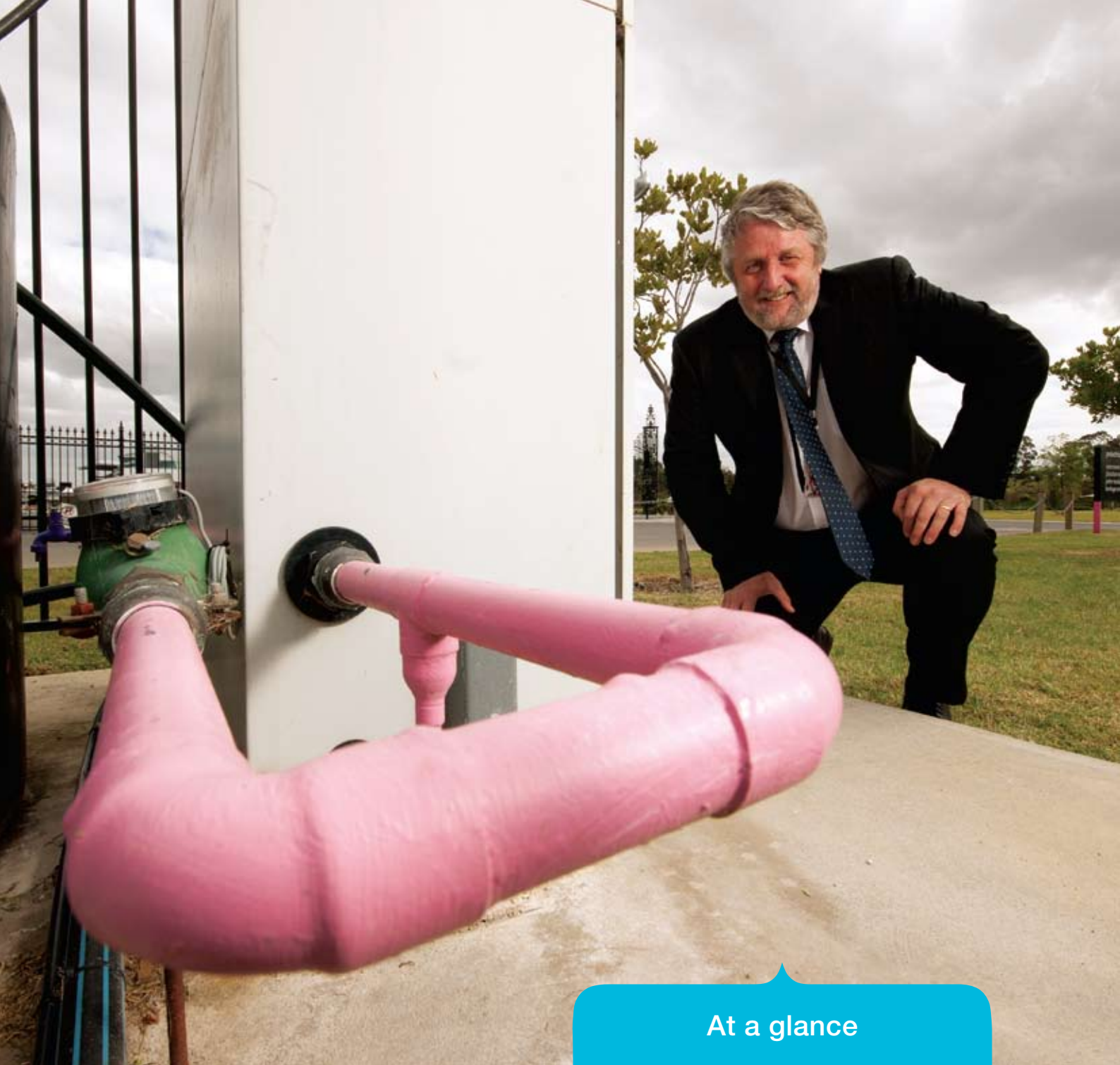
The Desaln8 units partially mimic natural groundwater movement, where tree roots extract the groundwater, leaving the salts to sink to the bottom of the

groundwater, and relatively fresh water at the top.

The units, which have now been fully operational for 12 months, have yielded approximately 45 million litres of water which have been used to irrigate Flemington's grounds. The VRC's next goal is to produce enough desalinated water to satisfy the watering requirements of the main racetrack.

The aquifer naturally recharges from a number of sources, including the Maribyrnong River, so the water removed is naturally replaced making the process sustainable.

The underground desalination units have numerous advantages over conventional aboveground alternative treatment units. Apart from having no brine to dispose of, the system does not use any chemicals and as only treated water is brought up to the surface, there's a lower energy requirement required for pumping. With the majority of the unit located underground, noise and visual impact is minimal.



At a glance

The VRC is proposing to install a further six DesalN8 in situ desalination units at Flemington – which could yield up to 150 million litres per year – and develop aquifer storage and recovery (ASR) technology at Flemington. ASR stores desalinated water in times of surplus, such as winter, back within the original aquifer for use in peak times.

These measures will see the VRC meet the water requirements of the world famous track entirely through non drinking water sources.

- In situ desalination of groundwater for use in irrigation of grounds
- Plans for future expansion to source all irrigation from groundwater

Solvent extraction contributes to Nufarm's water saving

When Nufarm had seemingly exhausted all opportunities to save water at one of their chemical manufacturing facilities, the organisation refused to end its water and trade waste efficiency efforts.

As Melbourne's long drought intensified over recent years, Nufarm, a global agricultural chemical manufacturer, undertook a number of water saving initiatives at its Laverton headquarters site, including rainwater harvesting which has been used for irrigation of the site and process water for use in the manufacturing process.

Since 2001, the company has achieved a remarkable reduction in water use, particularly as measured by per tonne of production, and was keen to extract further efficiencies.

At the Laverton site, Nufarm manufactures Dichlorophenoxyacetic acid, commonly referred to as 2,4-D, a broad leaf herbicide that is used to control weeds in agricultural and horticultural applications. A recent rise in production of 2,4-D meant that the overall water savings achieved at the site were being offset by the increased output.

Jason Costin, Nufarm's Environmental Lead, said that despite the company's resolve to reduce their water consumption,

Nufarm discovered a barrier to achieving this goal.

"We'd reached the point where if we took further water out of our manufacturing processes, we'd exceed our permissible limits for trade waste concentrations," Mr Costin said.

"To achieve further efficiencies in our water use, we had to look 'upstream' in our manufacturing process which required a detailed investigation.

"We discovered that for us to be able to achieve further water savings on site we would have to reduce the contaminant levels of our waste streams first."

To achieve the reduction in contaminant levels, Nufarm trialled a solvent extraction program system to reduce the level of phenols in the waste stream. A proprietary organic solvent is used to extract the phenols before further treatment and discharge into the sewer as trade waste.

The trial waste treatment plant has already delivered exceptional

results. To date, it is removing 100% of the phenol and 40% of the phenoxy constituents from the waste stream, which would equate to approximately 390 tonnes of product being saved from discharge as trade waste into the sewer.

"The trial plant has been a fantastic success, resulting in lower contaminant levels in our waste streams, but now allows us to look at greater water saving initiatives in our production process," Mr Costin said.

"With the trial a success, we've been able to identify further water saving measures that are forecast to achieve annual savings of more than 70 million litres per year – all without affecting the concentrations of our waste streams."

With the success of the pilot solvent extraction plant, Nufarm is in the final stages of planning a full scale solvent extraction plant with the capability to process 100% of phenoxy constituents from their waste streams and turn the projected water savings into reality.



- Trial of a solvent extraction program to remove phenols from the waste stream
- Almost 400 tonnes of phenols removed from trade waste discharges

At a glance



Owens Illinois

cools its way to water savings

Transforming the way water was used in the manufacture of glass products has

Of the millions of glass jars and bottles that line the shelves of supermarkets and contain some of our most popular beverages and foods, chances are that many of those originated at the Owens Illinois' (O-I) Spotswood manufacturing plant. Within a 24 hour production schedule, the plant produces around 3 million glass bottles and jars for well known brands of food, beer and wine.

Like many manufacturing processes, water is a vital input in the manufacturing process, especially for cooling to offset the high temperatures required in glass production.

Michael Brown, O-I's Lean Six Sigma Master Black Belt, said that in comparison to O-I's other sites, the Spotswood site did not meet best practice benchmarks for water consumption, which led the company to investigate options to improve water efficiency.

"We set a target to meet benchmarks for water consumption, but before we could achieve that, we had to identify where we could extract those efficiencies without impacting our 24 hour manufacturing schedule," Mr Brown said.

"By far the biggest source of water consumption was our three

compressed air cooling towers, which, like most conventional cooling towers, used evaporation to cool the air compressors that are critical to our manufacturing process.

"The solution was straightforward – upgrade the cooling towers and save water, but the potential consequences could have risked our manufacturing capability so we had to make sure we weren't compromising our operations."

With a funding contribution from City West Water, O-I replaced its three inefficient cooling towers with four Dricon systems. Dricon systems operate similar to a car radiator –



- Upgrade of cooling towers that operate based on ambient air temperature and variable speed drives
- Savings of 22 million litres of water and 440,000 kilowatt hours of electricity each year

helped deliver water, energy and financial savings for Owens Illinois.

they operate depending on ambient air temperature and only use water when the air temperature alone cannot cool the compressed air.

To ensure the new cooling towers were compatible with the existing manufacturing process, the cooling towers were installed in stages to allow any teething problems to be addressed early in the implementation phase.

Mr Brown said that with Melbourne's relatively cool average temperature and hot weather normally confined to the peak of summer, the new system has dramatically reduced the demand for water at the Spotswood site.

"Since we replaced the cooling towers last year, water used for cooling has plummeted from around 70,000 litres per day down to about 20,000 – equal to nearly 22 million litres of water per year."

"On top of the water savings, the new system no longer employs a water sump that needs to be treated for legionella, reducing chemical costs for water treatment as well as removing chemicals from our trade waste, and so also reducing our trade waste bill."

In addition to the water savings and reduction in trade waste outputs, the new cooling towers have resulted in significant energy

savings. By utilising PLC-controlled, variable speed drives, fan speeds are matched to ambient conditions, significantly reducing power consumption during cooler weather. This has saved a staggering 440,000 kilowatt-hours of electricity each year, and importantly, nearly 550 tonnes of greenhouse gases from entering the atmosphere.

The initial driver behind the water saving upgrade was to meet an organisational benchmark. That benchmark has not only been met, but with usage averaging below 20,000 litres per machine per day, it has been exceeded even beyond expectation.

Efficiency up the pecking order for **Parkhurst Chickens**

An initiative to reduce reliance on drinking water has enabled Parkhurst farms to achieve an added benefit attaining a reduction in energy consumption.



At a glance

As a major supplier to the poultry industry, Parkhurst Farms in Werribee was approached by City West Water to investigate options to reduce their water consumption.

With 320,000 chickens on site at one time, Parkhurst Farms is one of the largest poultry facilities in the state. And, with those chickens all requiring water to drink, the Werribee site was consuming more than 30 million litres of water each year.

Con Kyriazis, Managing Director of Parkhurst Farms, said that up until they were approached, they'd considered their water use as overhead and hadn't given much thought to trying to minimise that use.

"City West Water approached us and provided us with some options to reduce our water use, including a rainwater harvesting proposal that would have made use of the rain that falls on the roofs of our sheds," Mr Kyriazis said.

"At the time, we were in the worst of the drought and we weren't confident that rainwater could provide a reliable source of water for our operations.

"From there, we took it upon ourselves to investigate using bore

water as an alternative, and the further we looked into it, the more attractive it became as an opportunity."

Like much of the groundwater flowing under the metropolitan area, salinity is a major barrier to viable use of bore water. To combat this, Parkhurst researched the use of a small scale salt reduction plant to treat the water to a standard that would be suited for consumption by the farm's chickens.

Using reverse osmosis to treat water to remove salt can consume large volumes of energy, and to offset the energy required, Parkhurst overhauled its lighting system which resulted in a dramatic reduction in electricity consumption.

With the reduction in energy use and co-funding from City West Water, Parkhurst began drilling a bore in August 2010. After drilling 100 metres, a reliable pool of water was reached, with a flow of up around 10 litres per second.

Bore water is pumped to the surface and treated in the salt reduction plant before being given to the chickens to drink. It is used for every operational aspect of the farm, even irrigation of landscaping.

Mr Kyriazis said that, like many businesses, any initiatives to save water had to ensure that operations would not be adversely impacted and had to be financially viable.

"Any investment we made had to make financial sense, so by changing our lighting system, we cut our power cost down by almost half, which offset the energy we'd need to power the water treatment plant.

"From a cost perspective, we upgraded the size of the salt reduction plant to operate at off peak periods, which keeps costs low and ensures that we're not using the plant at times of peak electricity demand, which is particularly important on hot days when power outages can occur."

The water treatment is capable of producing 300,000 litres of water per day, 365 days a year, equating to more than 109 million litres of water per year.

Mr Kyriazis couldn't be happier with the outcome.

"I know now that when our water bill comes, it's a lot less than it used to be, and with the power savings as well, we're paying a lot less."

- Small scale salt reduction plant to treat groundwater for use in all aspects of operations
- Savings of 17 million litres of water per year





Water use crushed at Alex Fraser Group

A redevelopment at Alex Fraser Group's concrete recycling plant presented an ideal opportunity to overhaul the site's growing water usage.

Of the millions of tonnes of waste generated through construction in Melbourne each year, it is safe to assume that concrete makes up a significant part of that refuse, which, for many years, simply ended up in landfill.

Landfill is no longer the solution for waste concrete disposal, with concrete recycling now processing the overwhelming majority of concrete waste. Concrete from demolition and excess from construction pours are just some of the sources of concrete that is recycled each year at Alex Fraser's Laverton North concrete recycling plant.

As Australia's largest concrete recycler, Alex Fraser's recycling plant receives concrete from across the western metropolitan region. Waste concrete is sent through massive crushing machines that reduce slabs of concrete to a coarse gravel that is used in a number of applications, most commonly, in road construction.

In 2009, Alex Fraser's Laverton North plant underwent a major overhaul which upgraded almost all facets of the operation, including water use. One of the objectives behind the upgrade was to dramatically reduce water use and only use drinking water for site



At a glance

- Stormwater captured onsite replaces drinking water for operational use
- Drinking water usage has been reduced by 34 million litres per year

amenities and not for use as part of the recycling plant.

Joe Xerri, Alex Fraser's Project Supervisor, said that a key consideration of the upgrade of the Laverton North recycling plant was to increase efficiency in the site's water consumption.

"Recycling concrete is a dusty business, and using water is the main way that we keep dust contained within our site and away from the properties nearby," Mr Xerri said.

"Water is used to suppress dust when we transport the refuse within our site, to keep dust down caused

by vehicles moving within the plant, as well as ensuring that stockpiles of crushed concrete don't get blown away.

"With water such a critical part of our operations, as the drought worsened and restrictions got more severe, we had to look at ways of making ourselves more self-sufficient from a water perspective."

Alex Fraser undertook a complete overhaul of water usage on site. Rain that falls on the 30 hectare site is now captured and collected in two onsite dams and seven storage tanks. An onsite bore extracts groundwater beneath the site and

provides a ready source of water to supplement rainfall capture.

To offset the higher levels of salinity found in the bore water, during periods of significant rainfall, Alex Fraser has access to a nearby stormwater drain that is used to dilute the bore water.

Recycling up to one million tonnes of concrete each year, the Alex Fraser plant has dramatically reduced its drinking water consumption. From using up to 46% of total drinking water in the recycling process, that figure has been slashed to 2%, equal to a staggering 34 million litres of water per year.

Brewing water efficiency at CUB

Identifying where water was being used was the first important step in helping one of Australia's oldest breweries embark upon a program of water saving.



As a Melbourne icon, Carlton United Brewers' (CUB) Abbotsford manufacturing plant has been home to some of Australia's best known beer brands for over 150 years.

Like most beverage manufacturing, the process is a water intensive operation and those vast quantities of water ensure that production takes place as fast as possible, to exact health and quality standards, and products are able to be transported safely.

To identify where water was being used across the plant, CUB installed meters to measure consumption and identify areas where water could be saved.

CUB Health, Safety and Environment Manager, Brett Nicholson, said that water is not only used to make the beer itself, but there's also a considerable

volume that's used in the manufacturing process.

"When you think of water in relation to beer production, most would think of the water that goes into the product, but there's also water needed 'outside the beverage container' that's a large source of water consumption," Mr Nicholson said.

"As a food manufacturer, we have very stringent regulations regarding food safety in our brewery, and that requires water – lots of it – so by installing the meters we were able to get a better picture of where we were using the most water and how much."

The CUB's Abbotsford plant produces approximately 420 million litres of beer every year – that's equal to more than 150 Olympic sized swimming pools full of the

golden ale! In order to reduce the water required to manufacture those enormous volumes of beer, CUB implemented a number of measures to achieve that exact objective.

Eight disused fermenting vats were converted to water storage tanks, with a capacity to hold more than 1.3 million litres of water at one time. These tanks are filled with water that is collected from bottle and can rinsing prior to filling.

Mr Nicholson said that the rinse water was previously discharged into the sewer as trade waste, and now, it is captured and reused for cleaning and washdown.

"The drinking water we use to rinse bottles and cans before they're filled with beer is now captured for reuse, which not only reduces the drinking water we use, but also cuts down on our trade waste outputs."





- Water used for bottle and can rinsing is collected, treated and reused for cooling tower and boiler operation
- Savings of 35 million litres of water per year

At a glance



“The fermenting vats which were converted were on the smallish side for the scale of our operations here, but they were good condition stainless steel vessels, so were ideal for water storage.”

Washdown is regularly carried out in the plant. As bottles are filled, pressure and heat can cause some bottles to shatter as they make their way through the production line. Washdown ensures the Abbotsford brewery meets all the requirements of food manufacturing standards.

To use the water efficiently, washdown is undertaken with one of 18 new high pressure cleaners, ensuring that only the minimum amount of water is used.

The bulk of the recycled water, however, is used for cooling towers and boiler operation. While cooling

tower demand is traditionally lower during the cooler months of the year, it remains one of the thirstier components of the plant. By switching the cooling towers to operate on the recycled water, the cooling towers now operate solely on water recycled through the production process.

Despite being in place for less than 12 months, CUB’s water saving initiatives are predicted to save more than 35 million litres of water per year, and a similar volume of trade waste outputs each year.

CUB has plans to further its water saving initiatives at the Abbotsford site. With more than 35 water meters providing daily usage data, further water saving opportunities are set to emerge and provide the next instalment in the brewery’s water saving story.



VicTrack puts excess water to

For many organisations striving towards water efficient practices in their operations, having too much water would be the type of problem they would seldom face.

VicTrack, the state's railway landowner, found itself in that very situation and decided that there would definitely be a potential benefactor nearby in the community.

As part of its environmental programs, at its Spotswood Rail Depot precinct, VicTrack installed two 34,000 litre water tanks to harvest rainwater from its roof area, which measures 3,400 square metres. Over such an area, for

every millimetre of rain, over 3000 litres of rainwater is collected.

Nick Walker, VicTrack's Manager, Environment and Sustainability, said that the installation of the rainwater tanks was part of a broader sustainability program that aimed to reduce the organisation's environmental impact.

"Among a range of environmental and sustainability measures, water conservation and efficiency featured prominently and rainwater harvesting was ideal for the Spotswood Rail Depot site," Mr Walker said.

"We just didn't have the need for this volume of water, so VicTrack

sought interest from organisations that could potentially benefit from the harvested rainwater.

"Thankfully, we didn't have to search too far – in fact – the solution was across the road."

Spotswood Primary School, located directly opposite VicTrack's Spotswood Rail Depot, like many other schools, had struggled to maintain their grounds as Melbourne's water shortage intensified.

With a ban on watering lawns, the playgrounds and sports ovals at the school had been ravaged by a lack of water and were reduced to



good use

Capitalising on an expansive roof area, VicTrack turned excess rainwater into a gift for a local primary school.

patches of rock hard soil riddled with weeds.

To receive the water, Spotswood Primary installed a 90,000 litre water tank, and City West Water donates the use of a tanker to transport this water the short 250 metre distance from VicTrack to the school.

Principal of Spotswood Primary School, Jacqueline Green, said the water made a huge difference because it helped maintain the school's sports ovals and other garden beds.

"It means we can keep the oval green without having to rely on

direct rainfall. At other schools I've worked at, if you don't have access to water like this the oval can become a dust bowl, and that's dangerous for kids," said Ms Green.

Ms Green said most of the school's sports and interschool sports took place on the oval, plus it was used for training by the Spotswood Cricket Club and other community groups.

As well as keeping the oval up to scratch, the donation is used to maintain an indigenous environmental garden planted by school students, and a set of vegetable gardens used by the school gardening club.

At a glance

- Rainwater is harvested from depot roof and gifted to neighbouring school
- Water is used to irrigate school ovals and playing areas

Amcor's

At a glance

- Installation of checkmeters to monitor water usage across the site
- Rectification of a fault identified using checkmeter data has saved 1.2 million litres of water



water saving solution

Identifying where water was being used across Amcor's complex manufacturing site helped pinpoint abnormal water use.

Amcor Packaging's Brooklyn manufacturing facility is one of the largest production sites of cardboard products in the country, producing 30,000 tonnes of cardboard each year.

Like most paper and cardboard production, water is a large and crucial element of the manufacturing process, and Amcor has an ongoing program to reduce their water consumption.

John Pacifici, Amcor's Engineering Manager, said with water being used in a number of elements of the production process, before they could implement initiatives to save water, they had to identify where the water was being used.

"With such a large operation and large volume of water moving through the site, we had to work out exactly where water was being used if we were going to find out where savings could be made," Mr Pacifici said.

To achieve this, Amcor has installed 29 checkmeters across the manufacturing facility over the past three years, focusing on areas of the plant that use large volumes of water.

By tracking water usage to specific areas of the plant through the checkmeters, Amcor was able to identify a problem with its water softener that was using abnormally high volumes of water unnecessarily.

The water softener, which lightly treats water before it enters the production process, was set to flush itself at routine intervals. Investigation revealed a minor fault

in the flushing system, which was consuming more than a million litres of water each year unnecessarily.

Mr Pacifici said that by installing checkmeters, Amcor is better equipped to monitor their water usage in the future and pinpoint areas where they can extract greater efficiencies from their manufacturing process.

"With the checkmeters, we can better track our water usage and it helps us pick up any weak points in our system, such as leaks or faults in the machinery."

With the fault with the water softener flushing system now rectified, Amcor is saving more than 1.2 million litres of water each year from this part of the production process alone.

To further enhance their monitoring of water usage, Amcor have connected a number of the checkmeters to an electronic monitoring system, which provides real time data of water flowing through each checkmeter and enables abnormal water consumption to be identified immediately.

For organisations that use water across a variety of applications, checkmetering can, like it has for Amcor, provide the first vital step in helping reduce water consumption by providing a detailed and highly accurate picture of water consumption.

Organisations interested in checkmetering are urged to contact City West Water to discuss the potential to identify water savings.

Victoria University

pools water saving

Having been involved in a number of research educational programs related to water conservation and efficiency, Victoria University undertook a decision to investigate and implement an innovative way of saving water.

Victoria University's Footscray campus stretches across seven hectares and has a student and staff population approaching 10,000. Among the University's lecture halls, classrooms and offices is a 25 metre heated swimming pool.

Rachael Keefe, the University's Environment Manager, said since implementing a concrete water monitoring program in 2006, a number of initiatives had been implemented to reduce the volume of water the University was consuming. More recent investigation revealed that the pool was consuming approximately 2 million litres of potable water per year.

"Two million litres of water represents more water than the pool can hold at any one time, which meant that more than the entire volume of the pool was

eventually being discharged into the sewer," Ms Keefe said.

"We looked at a number of options, and rainwater and treatment of the backwash water proved to be a standout in terms of viability, but we made sure that adding treated rainwater and backwash water to the pool didn't affect water quality."

Once water quality could be guaranteed, to provide a reliable source of rainwater, the University installed two underground and three above ground tanks with a combined capacity of 155,000 litres which harvests rainfall from buildings within the campus site.

Before the rainwater can be used, it undergoes filtration and UV treatment to ensure it meets health and quality requirements.

From there, water is then pumped into the pool's balance tank for use

in the pool or the change room and is used for flushing eight toilets, further reducing reliance on drinking water supplies.

The second component of the pool water conservation project is the treatment and reuse of backwash water to top up the pool. Before the backwash water can be reused in the pool it undergoes filtration and treatment through reverse osmosis. The filtered water undergoes further treatment, which is recycled back into the pool balance tank, and waste concentrate, which goes to the sewer.

Ms Keefe said that in addition to saving water, the innovative nature of the water treatment system provides the university with a 'live-in' demonstration of this type of technology.

"The \$300,000 capital cost of the system represented a significant



At a glance

investment for the University, but the educational value of having a working prototype of this method of filtration is a valuable learning resource.

“When we were at the investigation stage, we found that this particular process of rainwater harvesting and water treatment hadn’t been used in an aquatic centre in Victoria, so there was added value in using the system as a showcase for water conservation,” Ms Keefe said.

With good rainfall over recent months, the tanks filled up quickly which enabled the new system to begin operation in July 2011.

In its first six weeks of operation, the system has already saved more than 230,000 litres of water, and is on schedule to achieve projected savings of more than 1.7 million litres over the coming year.

- Treatment and reuse of pool backwash water and collection of stormwater harvesting used to supplement pool backwash system
- Water savings of 1.7 million litres of water per year

Contributing to a healthy urban habitat

An initiative to increase green spaces in the western suburbs aims to create more liveable suburbs, a cleaner environment and contribute to improved community health.

As part of a new Healthy Urban Habitat Strategy, City West Water is facilitating the *Greening the West* program. Greening the West will explore how to improve the health status, climate and environment of Melbourne's west by increasing tree canopy cover and vegetation through its suburbs.

In March this year, City West Water held a Think Tank with more than 100 representatives from local councils, large and small businesses, City West Water customers, community groups, and the Department of Health and Parks Victoria. From this forum, health, liveability and long term water solutions emerged as key issues, and participants displayed an eager interest in working towards a strategic greening program to deliver social and environmental benefits for the western suburbs.

Greening the West's main driver is improved community health and liveability in the western suburbs of Melbourne. A growing body of research by the Department of Health has revealed that some suburbs in Melbourne's west have lower levels of access to green open space, which in turn, can correlate to lower levels of health.

Compounding the health issues affecting the western suburbs is the 'urban heat island effect' which is the result of buildings and paved surfaces with little shade or vegetation locking in heat. Data collected during the January 2009 heatwave shows that many western areas of Melbourne recorded high peak temperatures compared to the eastern suburbs.

To combat this phenomenon and improve green open space areas in the western suburbs, City West Water has committed to expanding the availability of water – including recycled water and stormwater – to ensure initiatives that increase green space and tree canopy cover can survive irrespective of prevailing climatic conditions. Trees work brilliantly to cool paved and dark coloured surfaces like roads, roofs and car parks that contribute to increased temperatures.

City West Water already has a number of working examples of projects specifically designed to maintain green space within its service area. A number of community sporting facilities are already being irrigated with recycled water, and our objective over the coming years is to expand the application of projects of this nature.

Cooler, shaded spaces in passive recreation sites such as reserves, in streetscapes and alongside homes, can deliver health benefits particularly for those in our community who are most vulnerable to heat impacts. There is also evidence to suggest that people living in areas with greenery are more likely to be physically active and less likely to be overweight or obese than those living in areas with low levels of greenery.

City West Water aims to be a facilitator and enabler of this project, working hand in hand with project partners. While still in the early scoping phase, it is envisaged that as Greening the West gains momentum there will be a role for businesses to get involved. This may be through rainwater harvesting to irrigate plantings or perhaps your business could contribute funding to purchase trees for a nearby site. If you have any ideas for how your business could contribute to this project, please email the Project Manager, Clare Lombardi at: greeningthewest@citywestwater.com.au.

For more information on the project, including presentations from the Greening the West Think Tank, visit www.planbig.com.au/greening-the-west.

National Business Water Efficiency Benchmark Project

To consolidate knowledge across the water industry, and provide non-residential customers with water efficiency information, City West Water is leading a research initiative to comprehensively benchmark water and trade waste usage, which for the first time, will deliver a set of national metrics for efficient water use in businesses across Australia.

The National Business Water Efficiency Benchmark Project is a collaborative study developed between City West Water, South East Water, Yarra Valley Water, Barwon Water, Western Water, the Water Corporation (WA), Sydney Water (NSW) and Hunter Water (NSW). The aim of the project is to develop a national approach to measuring water efficiency across a diverse customer group and highlighting performance when compared to a group of 'like industries'.

The driver behind the initiative is that all of the project participants recognise the benefit of having a collaborative approach and that learning from each other will produce a consistent industry approach to benchmarking.

Comparisons between like industries are extremely useful for business customers and the water industry as they indicate business customer's efficiency characteristics and potential for improvement.

Stage 1 of the project involves a comprehensive literature review of water efficiency and detailed analysis of customer data benchmark segmenting. So far, 20 of the greatest water using industry sectors have been identified and benchmarks will address these sectors as a priority.

Funding has been secured from the Smart Water Fund for Stage 2 of the project, which will create an interactive online portal for business customers to measure their water use and trade waste efficiency, as well as providing an opportunity for their respective water authority to measure changes in customer behaviour.

Businesses interested in being involved in the initiative are encouraged to contact their water authority.

Resource Efficiency and Trade Waste Seminar

City West Water's annual Resource Efficiency and Trade Waste Seminar was held at Moonee Valley Racing Club on 10 March.

Over 150 guests heard from an impressive array of speakers, including Dr Penny Whetton from the CSIRO and Chris Hutchins from the Essential Services Commission. City West Water's April Chan and Angela Ganley also gave presentations on alternative water sources and steam system efficiency.

After last year's success, the event again included the Service Provider Expo, which gave guests the opportunity to discuss ways to improve their resource efficiency with exhibitors.

To conclude the day, guests were invited to attend one of three tours to Melbourne and AAMI Parks, Carlton and United Brewers and the Winneke Treatment Plant. Planning for the 2012 Resource Efficiency and Trade Waste Seminar is already under way.

Providing business resource efficiency

City West Water's Business Resource Efficiency Program is well equipped to help our customers to improve their water and energy efficiency. Over many years, we have provided businesses with support to help reduce water use, trade waste outputs and energy consumption.

We do not work alone though. To ensure customers get the best resource efficiency advice, City West Water works closely with peak industry associations, relevant stakeholders and government bodies to ensure we provide our customers with a comprehensive sustainability support program.

If your business could benefit from advice or support in relation to water consumption, trade waste outputs or energy use, we have a team of experts who can help you to identify and implement opportunities to save.

City West Water

Business Resource Efficiency team
Ph: (03) 9313 8254



Liquid Assets is produced by

City West Water Ltd

ABN 70066902467

247-251 St Albans Road

Sunshine Victoria 3020 Australia

Phone 131 691

citywestwater.com.au

Please note that City West Water does not endorse any of the products or services offered by the service providers mentioned in this publication. It is strongly recommended that you undertake normal diligence enquiries to select appropriate service providers. Estimates of financial savings in this publication are based on City West Water's charges as at July 2011 (\$1.9189/kL for non residential water usage and \$1.6906/kL for non-residential sewer disposal discharge). Savings are indicative only.

Photography by Philip Smith Photography (Photosmith).
Design and print production by Edit Media Pty Ltd.

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