

Case Studies

Rainwater Harvesting Systems

PROJECTS



Contents

Benefits		03
Case Studies		
THE GABBA, Queensland	AUSTRALIA	04
Kuve Village, Ghana	AFRICA	06
Redeemer Baptist School, NSW	AUSTRALIA	08
School Project, Cheju City, Gyeong-gi	KOREA	10
Hampton Primary School, Victoria	AUSTRALIA	12
Naxos Island	GREECE	14
Spring Hill Enviro-Cottage Project, Qld.	AUSTRALIA	16
Reserve at Park 10, Houston, Texas	U.S.A.	18
Raleigh Street , Cammeray, NSW	AUSTRALIA	20
Aqualand, St. Charles, IL	U.S.A.	24
Bondi Beach, NSW,	AUSTRALIA	26
Manly Beach Front, North Steyne, NSW	AUSTRALIA	28
CERES Harding St Market Garden, Vic.	AUSTRALIA	30
Home Depot, Westbank, BC,	CANADA	32
Lordco Auto Parts, Maple Ridge BC,	CANADA	34
Product Guide		36

BENEFITS

- Atlantis products are patented or have patent applications worldwide.
 - Atlantis systems have been installed in over 20 countries.
 - Atlantis systems have been used to provide up to 11 millions litres of storage capacity.
 - The Atlantis system is a point source solution rather than an end of line problem.
 - Improving water quality through the biodegradation of pollutants in the presence of oxygen.
 - The Atlantis systems reduce or eliminate catchment flow removing the need to additional stormwater infrastructure.
 - Site space is reutilized, as Atlantis systems are underground, providing cost savings to the developer by way of land savings normally required for above ground detention.
 - Atlantis system can be used in a variety of environments – in the desert, in the tropics and everywhere in between.
 - Gross to fine pollutants are loaded into a simple Atlantis Filtration Unit that works as a sediment trap and prevents the ingress of any gross pollutants into the tank.
 - Reduce dependence on main water supplies
- ...and more



Project Details: Rainwater harvesting for a sports field
Completion Date: January 2008
Project Location:

THE GABBA, Queensland, AUSTRALIA

Atlantis Water Management's Matrix® Tanks were installed at an East Brisbane primary school in Brisbane next to the GABBA for the harvesting of water off the roof of the oval's grandstands as well as capturing the water after the sports field is watered. The tank is 1 Megalitre (35,314 cu. ft) in size and will allow the capture and reuse of water for the GABBA and not taking up space in the school's playground.

The Atlantis® Matrix® Tanks were specified by the Queensland Department of Project Services after consultation with Atlantis Water Management's Queensland distributor, John Jensen of East Coast Environmental Solutions.

The tanks will not only capture the rainwater off the roof of the grandstand but will help conserve and capture the water from the watering of the oval. The Atlantis® modular tank system to help the GABBA save water and ensure water is recycled efficiently in an environmentally friendly method while saving money on both materials and installation costs if they had used conventional methods

of water capture. The project was installed during a two week period to ensure minimal disruption to the GABBA and the school.

Installation Volume: 1 Megalitre (35,314 cu ft)



Installation ready for last layer of compacted backfill.





Preparing the excavation for the Matrix® tank installation.



Rolling out the Geotextile and the Waterproof Liner.



Prepared base of sand for level installation of modules.



Ecological sand treatment layer being prepared.

Distributor: East Coast Environmental Solutions

Downpipe dispersion and infiltration system.



Project Details: Rainwater Harvesting Tank for a school and village
 Completion Date: January 2009
 Project Location:

Kuve Village, Ghana, AFRICA

Atlantis/RainXchange™ System is designed to capture, filter and reuse our world's most pre-cious resource... water. Intended as a storm water management solution, the flexibility of the system allows it to be utilized in a variety of unique applications including the provision of clean drinking water. Aquascape, one of Atlantis distributor in the USA, through the Aquascape Foundation made a trip to the Kuve Village in Ghana, West Africa. It was an especially memorable opportunity to put this system to good use. The system is actually quite simple and is not new, since rainwater capture has been used by many cultures throughout the world for thousands of years. Atlantis and Aquascape has up-dated the system to be suitable for the 21st century.

The Kuve village has a brand new school with a new metal roof, which is perfect for capturing the abundant rain that falls in this beautiful coastal country. The roof was found in perfect condition but it had no gutters so was needed to first create a gutter system using 6" PVC pipe that was mounted at the base of the roof to capture the water. The water then flows down a series of pipes that travel underground and make their way to the rainwater storage basin located about 30' from the end of the school.

The team excavated an area of 22' x 24' and 4' deep with a layer of sand spread across the entire bottom; this

provided the perfect base for the 8,000 gallon reservoir. A large sheet of EPDM liner was placed inside of the excavated basin, creating a waterproof barrier. Then two of Aquascape Snorkel Vault™ and Centipede™ Modules



were placed into the lowest portion of this excavation. These units house the pumps and control switches for the system. The rest of the basin was filled with 240 modular tank units, which are designed to create a structural void space that allows them to be filled with water. Once they're wrapped in the EPDM liner they can be completely buried without crushing them under all of the stresses.



Two feet of soil was mounded and compacted over the top of the entire system in order to shed water born contaminants away from the reservoir, allowing only water from the roof of the school to enter. The water enters into the first chamber of the reservoir from the pipes coming from the roof. The swift moving water is allowed to slow down upon entry and any suspended sediments will then fall to the bottom for removal.

Since there is no electricity in the village, we needed to install a solar panel on the roof of the school to power the pump. We incorporated a solar powered transfer pump to move water from the first chamber to the second chamber. During this process the water passes through Genieye Systems' Eye-Nizer™ ionization manifold where trace amounts of copper and silver ions are added to the water. This is a common water treatment practice that is proven to kill bacteria and other water born pathogens.

The now sterilized water is stored in the second chamber until it's needed. The water is accessed by a simple hand pump that was installed, which can be used to fill the many containers in the school and village with cool, cleansed water. A float switch in the second chamber will signal the transfer pump to cleanse and deliver more water as it's needed.

The Atlantis/RainXchange™ System will capture and clean over 100,000 gallons of water per year allowing 400 children access to clean drinking water. In addition, the ready access to clean water makes it possible for the school to cook one hot meal per day for the kids.



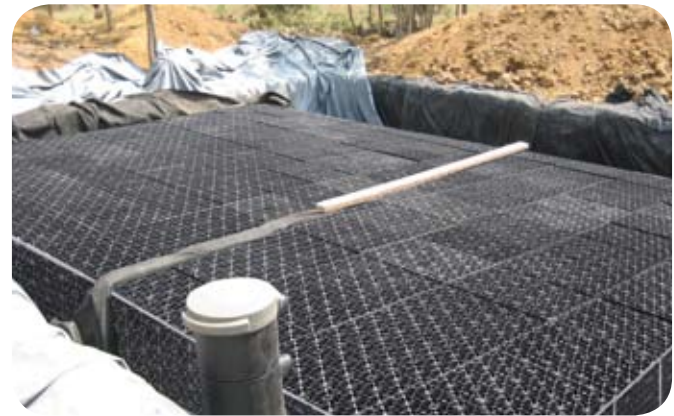
The 22' x 24' basin has a depth of 4 feet. 240 modular tank units will fill this hole.



240 modular tank units are set into the basin creating an 8,000 gallon reservoir.



Underground pipe is installed to carry water from the downspout to the rainwater storage basin.



Two chambers are created. The first holds the initial roof run-off and the second holds the sterilized water.



Aquascape Foundation volunteers pump the first glass of clean drinking water.

Distributor: Aquascape Inc.
 901 Aqualand Way, St. Charles, IL 60174
 Ph.: 630.659.2000
 Fax: 630.659.2100
www.aquascapeinc.com
www.rainxchange.com



Project Details: Rainwater Harvesting Tank for a playing field at a school
Completion Date: July 2007
Project Location:

Redeemer Baptist School, NSW, AUSTRALIA

This project harvested the rainwater from the three buildings at Redeemer Baptist School into a 60,000 litre (2120cu. ft) underground tank. The water is reused to irrigate the sport fields reducing the water consumption at the school. Local water restrictions were affecting the irrigation patterns and turf growth creating a sub-standard

playing surface.

Redeemer Baptist School were interested in a tangible demonstration for the children of a water saving project that also allowed the students to undertake a water audit and develop a water conservation action plan. The water was collected from several school buildings. A government environmental grant was used to obtain partial funding for this project in addition to funds raised through events organized by the school.

The Atlantis Matrix / D-Raintank Double modules were clipped together by the school children and their parents – 240 modules in total. The tank was installed under the edge of the playing fields and covered turf.

Storage Volume: 60,000 L (2120 cu.ft.)





Laying of impermeable liner in the excavated area.



Installing the Atlantis® D-Raintank® (Matrix®) on top of the Geotextile.



Pulling up the geotextile on all sides, taping it on top then installing and



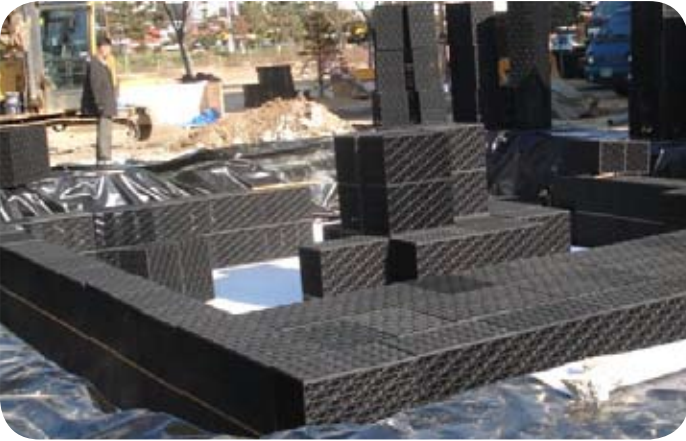
connecting inlets, outlets to filtration units.



Backfilling the tank.

Project Details: Rainwater Harvesting Tank for Stormwater
Completion Date: December 2007
Project Location:

School Project, Cheju City, Gyeong-gi, KOREA



This project was completed for a school in Korea and was designated as a demo site for coastal stormwater management education of MOMAF (Ministry of Marine Affairs and Fisheries). The rainwater is collected from the school buildings and filtered to remove gross pollutant using the Atlantis® Filtration Unit. The tank is constructed using double modules and has a storage capacity of 50,000L.

Distributor: Centennial Technology





Tank modules wrapped in geotextile laid on top of the plastic liner.



Atlantis® Filtration Unit installed in place.



Backfilling the sides of the tank



Backfilling the top of the tank

Easy, fast installation of the Atlantis® Matrix® Tanks Modules.



Project Details: Stormwater Harvesting Tank for a primary school
 Completion Date: August 2004
 Project Location:

Hampton Primary School, Victoria, AUSTRALIA

This project harvested the stormwater from the Hampton Primary School grounds into a 75,000 litre (2500 cu. ft.) underground tank. The water is reused in the school toilets reducing the water consumption at the school by 150,000 litres per month. This practical demonstration of the possibilities for water conservation can be applied at other schools across Australia.



The local water problem in Hampton is the region local amount of stormwater that runs directly into the ecologically sensitive Port Phillip Bay. The local Primary School were interested in a tangible demonstration for the children of how a community cares for and sustains our environment and the local Rotary Club were keen to work with them in developing a water saving project. The school has small, separated roof areas making it difficult to harvest and reuse water. However, water runoff from the paved surfaces of the playground was considerable. Over \$AU20,000 of necessary funding to facilitate this project was raised through government environmental grants.

The Atlantis Matrix / D-Raintank triple modules were clipped together by the school children and their parents – 240 modules in total. The tank footprint was backfilled and covered with a soft landscaping area.

Storage Volume: 75,000 L (2500 cu.ft.)





Laying of impermeable liner for re-use systems.



Installation of Geotextile lining and Tank Modules in the impermeable liner excavated area.



Completely wrapping the Atlantis® D-Raintank® (Matrix®) in Geotextile fabric and taping all the joints.

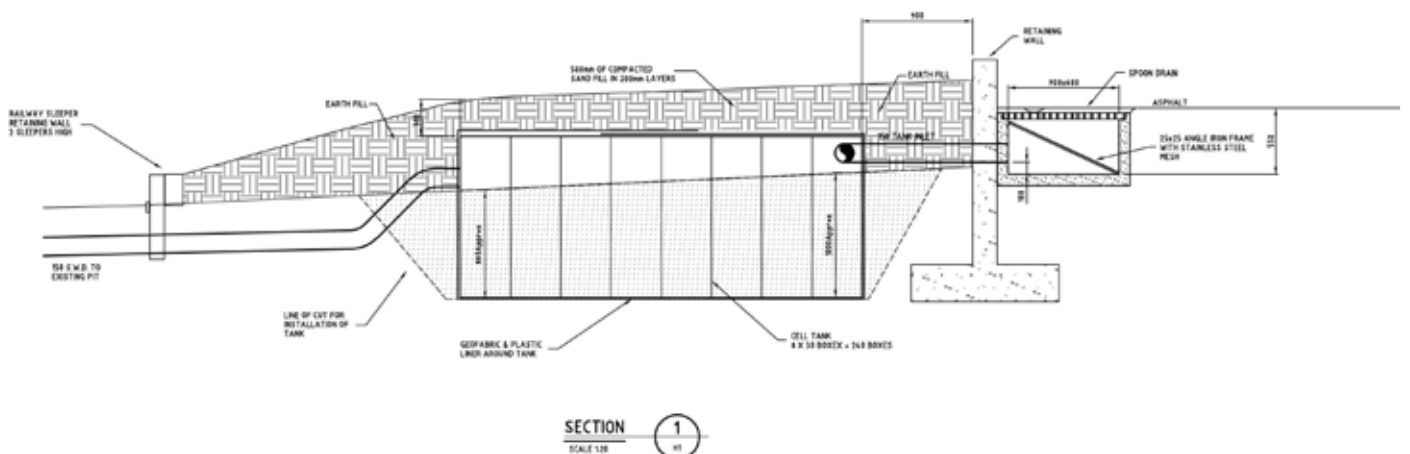


Finally pulling up the impermeable liner on all sides and taping it on top.



The backfilled tank ready for soft fall landscaping.

Stormwater Plan.



Project Details: Rainwater Harvesting Tank for irrigation
Completion Date: October 2008
Project Location:

Naxos Island, GREECE

Rainwater provided free and collected from roofs, can be a valuable source of water. Rainwater harvesting tanks can provide quality water, reducing reliance on town water systems, or can be an alternative to groundwater.

The project was designed by Atlantis distributors in Greece, GES Hellas Ltd. The rainwater tank holds 40m³



(1412.59 cu.ft) using Atlantis® Flo-Tank® / Matrix® double modules and the water is used for irrigation and flushing toilets. The installation of the rainwater harvesting tank took three days including excavation and was carried out by Promos Antonopoulos – Mariakis O.E. The finished surface of the tank is paving materials.

During the design process, there was insufficient information about the location of underground structures. The location of water and electrical services was identified during the excavation, requiring the disconnection of services until the tank was installed then services could be reconnected.

Distributor: **GES Hellas Ltd**
www.istor.gr





Assembling the Atlantis® Matrix® (D-Raintank®) modules.



For extra protection an additional layer of impermeable liner was installed.



Welding the first layer of impermeable liner.



The tank fully wrapped in the first layer of impermeable liner.

The tank wrapped in the second layer of impermeable liner.



Project Details: Rainwater harvesting for a housing development
Completion Date: May 2009
Project Location:

Spring Hill Enviro-Cottage Project, Qld., AUSTRALIA

One of the primary objectives of the Spring Hill “Enviro-Cottage” Project was to recycle and reuse, being as water self sufficient as possible. Tanks are a crucial element of this strategy and on a tight inner-city block the best option is to “bury” tanks where possible, releasing “ground space” for other uses.

The Project makes use of 5 underground tanks:

- 2,000 litre greywater holding tank
- 4,000 litre greywater output tank
- 23,000 litre rainwater tank
- 3,000 underground rainwater tank
- Small overflow sump tank

Atlantis® Matrix® tanks are used to construct the main underground tanks. This system provides spatial flexibility to ensure maximum available water volume is captured and stored. Rainwater can fall onto the courtyard, being filtered through the grass, soil, river sand and geotextile layers into the tank, clean as a whistle, ready for kitchen and bathroom use.



Distributor:

East Coast Environmental Solutions **ECES**





Excavating large enough to hold the water capacity you need, keeping the good topsoil.



Installing the geotextile and the impermeable liner.



The Atlantis® Matrix® tank modules wrapped in Geotextile.



Plumbing connections.



Project Details: Rainwater Harvesting Tank for a complex
Completion Date: December 2008
Project Location:

Reserve at Park 10, Houston, Texas, U.S.A.

PROJECT BACKGROUND

Houston's Energy Corridor is fast becoming the LEED Mecca for the Gulf Coast due to its impressive mass transit plan and miles of biking trails that lead to many of the larger businesses in this area. This 10 mile stretch along IH 10 on Houston's West side includes over a dozen green buildings including British Petroleum's LEED Platinum facility. With all of these LEED points up for grabs just due to the improvements made to this area, it is no wonder WoodCreek Development chose to design and build their new mixed use office complex to the LEED Silver standard.

THE BUSINESS CASE

When TBG Partners, a well known Houston landscape architecture firm, was approached to help design a sustainable landscape, the first thing that came to mind was reducing irrigation consumption. Above ground cisterns had often been the norm, but to store over 10,000 gallons of water required large, unsightly, metal cisterns in which they didn't have room for on site. In order to

educate the public about water harvesting they chose to use a smaller cistern in a fountain area that caught a small fraction of the roof runoff, but chose to use the Atlantis Raintank to capture the majority of the rain water below ground.

Harvested Volume: 37854 liters (10,000 GA)
Completion: December 2008

WHY MODULARITY MATTERS

Modularity in an underground rain water harvesting system matters because as a designer you can never be sure of what will be encountered during construction. On Reserve at Park 10 we were faced with a concrete encased 480 volt electrical line running across our system. To avoid this cable we took our triple module system and broke it down to a double module system and went under the line, saving time and money. Any other premanufactured system would have required extra excavation, the return of materials, and weeks of delays.





Wrapping the Atlantis® Matrix® (D-Raintank®) modules in Geotextile.



Installed Liner.



Backfilling the Atlantis® Matrix® (D-Raintank®) modules.



Backfilling the sides of the tank.

Distributor:



Construction Eco Services

1930 Aldine Western Rd.

Houston TX 77038

www.ecosvs.com

Owner: WoodCreek Development Company

General Contractor: Kingham-Dalton-Wilson

Landscape Contractor: Blue Grass Maintenance

Landscape Architect: TBG Partners

Architect: Arcon Architects



Project Details: Capture and re-use tank for council operations
Completion Date: July 1999
Project Location:

Raleigh Street , Cammeray, NSW, AUSTRALIA

Project Summary:

North Sydney's stormwater flows directly into Sydney Harbour. Raleigh Street receives runoff from a busy shopping centre carpark and stormwater entering the system at that point is laden with litter and oil. Since the carpark was being renewed the opportunity arose to install permeable paving and a capture and reuse tank to provide water for Council operations.

This is the first use of permeable paving in a municipal carpark in North Sydney and will be monitored for its effectiveness and potential for further projects of this kind.

Project Objectives:

It has traditionally been more important in North Sydney Council to ensure the quick removal of stormwater than to capture it or to necessarily ensure it is clean. In recent years it has become apparent that what enters the harbour directly affects its value as a tourist attraction and

as a habitat. The permeable paving project will be used as an example of one of the means to achieving cleaner stormwater and will save water for use in everyday Council activities.



Looking across Raleigh Street before permeable paving is installed on threshold.

Looking across Raleigh Street following installation.





Excavation for water tank. Note bedrock at bottom of excavation.



Following excavation the lining was placed, then the geofabric which wrapped entirely around the tank.

Project Outcomes:

The receiving waters from North Sydney's rainwater runoff is Sydney Harbour. Given the high value to tourism and as a habitat for the east coast of Australia, this device will ensure less oil, sediment and other debris flows from Cammeray. The quality of the water will be monitored downstream of the device by drawing samples from the storage tank.

Water will be harvested by Council staff for use in operational activities such as street cleansing and irrigation. There will be less pressure on Sydney's water supply as an outcome. A meter installed at the outlet will be of particular interest, as it will give Council a benchmark as to the amount of water used instead of being drawn from the mains supply.

Learning about the environment and specifically about the potential for capture, cleaning and re-use of stormwater. This will apply to staff and the public and will be a consequence of signage, catchment tours, metering and use of the water captured.

Runoff gathers momentum and volume as it sheets from places from carparks, and this device will reduce the energy before it reaches the system, making flooding and scouring less likely.

Some stormwater from North Sydney flows across bushland areas before reaching the Harbour. Removing nutrients and other contaminants from stormwater will reduce the impact on bushland areas and local creeks. Currently the bush and creeks are susceptible to weed infestation due to nutrient rich perennial stormwater flows.

This type of device is acknowledged as the most effective and cost-efficient means of removing nutrients and attached pollutants in a 0.1 to 0.4 hectare catchment such as small carparks.

Following installation of tank and liners, sand was used for fill. Note the plumbing for drawing off water from the tank.



Technical:

Paving – The paving used was interlocking permeable unit pavers – Eco-lock from C & M Brick. They were laid on 300mm washed river sand atop a thin layer of drainage cells leading to the storage tank. The permeable paving is approximately 48 square metres, and drains a carpark, plaza and two buildings totalling about 1500 square metres.

Tank – The tank was constructed of Atlantis cells to form a matrix tank. The tank was constructed in an area adjacent to the threshold. It was considered that the pavers atop the tank may not bear the movement of delivery trucks to the rear of the shops. The storage tank is approximately 25 cubic metres. It is calculated that this tank will be filled in about 1.3 weeks on average (60 mm rainfall). Technical advice was sought from Atlantis Corporation, as it has a long history in Sydney of practical applications of permeable paving and capture and re-use of stormwater. An irrigation specialist was engaged to advise on pump and irrigation setup.

Installation of interlocking permeable paving.





Looking west across the permeable paving threshold between the two carpark areas.



Looking west after installation. The electrical and pump stations are at far right.

Difficulties Encountered:

This was the first of its type in North Sydney and the learning curve was quite steep for the team. Each member needed to inform themselves of the ways to overcome difficulties – standard construction guidelines are difficult to find.

The retrofit had to be designed to fit into existing services, specifically between a gas main and a water main. As underground services were discovered during demolition and excavation, the design was modified through feedback from the construction contractor.

This project was a small part of a larger project (re-surfacing of an existing carpark). During construction it became apparent that even though it was a relatively small portion, it was vital to the success of the stormwater management on the site.

The paving is not proving to be stable and has sunk by a few millimetres within weeks of being laid. The design of the profile may need to be modified.

Looking west across the permeable paving threshold between the two carpark areas.



Project Details: Rainwater Harvesting Tank for a pond landscaping design
 Completion Date: April 2008
 Project Location:

Aqualand, St. Charles, IL, U.S.A.

Conventional water features are typically built to operate best at full water capacity. As water is lost to evaporation or from splash the edges of the pond are exposed more and more and the appearance and functionality is compromised. With the Atlantis® D-Raintank® system, water is stored in a large modular basin adjacent to the water feature. As the water evaporates the water level drops invisibly in the storage basin but remains constant in the water feature. The water feature can operate for weeks (and sometimes for years) without any water additions. If the next rain event occurs before the storage basin runs low on water, the rain water is used to replenish the basin. This limits or eliminates storm water overflow and conserves water since little or none is added between rain events.

It's a revolutionary way to build water features that's both ecofriendly and water feature beautiful. Traditional methods of harvesting rainwater do not add beauty or value to a home or office setting. We've created a filtration system used in conjunction with a decorative water

feature that captures, filters and houses rainwater run-off for future use. The system also reduces flooding, which is typical when heavy rains follow a period of drought. The system debuted at both the Epcot® International Flower & Garden Show and at the Chicagoland Flower & Garden Show with an overwhelming response.





Excavation preparation for the Atlantis® D-Raintank® (Matrix®) System.



Tank Backfilling and water feature installation.



Dimensions of the Pond: 270' (82.3m) length x 110' (33.5m) wide.

All together holding 400,000 gallons (1514,165L) of water with another storage basin holding approx. 25,000 gallons (94,635L). The 250' (76.2m) x 90' (27.4m) water feature will reside at the entrance of Aqualand, the company's corporate headquarters.

Some Features of the "World's Most Extreme Pond Build"

- **300,000 gallons (1135,624L) of water with multiple pumps that produce 150,000 gallons (567,111L) per hour running through 8-inch (20cm) lines.**
- **Waterfalls ranging in height from 24 inches (61cm) to 10 feet (3m), one with grotto for behind the scenes viewing.**
- **Twenty-foot wide vanishing edge skimmer spilling into overflow basin capable of holding 20,000 gallons (75,708L) of water.**
- **Wetland filtration areas and underwater jets for additional circulation.**
- **Southern Illinois-type cypress swamp area.**
- **Pervious patio with rain water capture and re-use system.**

Distributor: Aquascape Inc.
 901 Aqualand Way, St. Charles, IL 60174
 Ph.: 630.659.2000
 Fax: 630.659.2100
www.aquascapeinc.com
www.rainxchange.com



Project Details: Stormwater harvesting for irrigation
Completion Date: June 1997
Project Location:

Bondi Beach, NSW, AUSTRALIA

The system in place at Bondi Beach has been installed as a result of a joint agreement between Waverley Council and Atlantis Water Management. The objectives of this undertaking were to measure the efficiency of certain amended soil in terms of water infiltration.

The system has been design to accept raw stormwater runoff from a curb gutter on Campbell Parade. Two separate trash screens will remove solid pollutants such as papers, cans, cigarette butts and other similar objects. The runoff is then collected in the drainage control unit and stored in two 3,000L holding tanks.

In the event of a large storm, the system is connected to a sub-surface percolation tank, allowing water to return to the groundwater system, nature's water purifier and carrier.

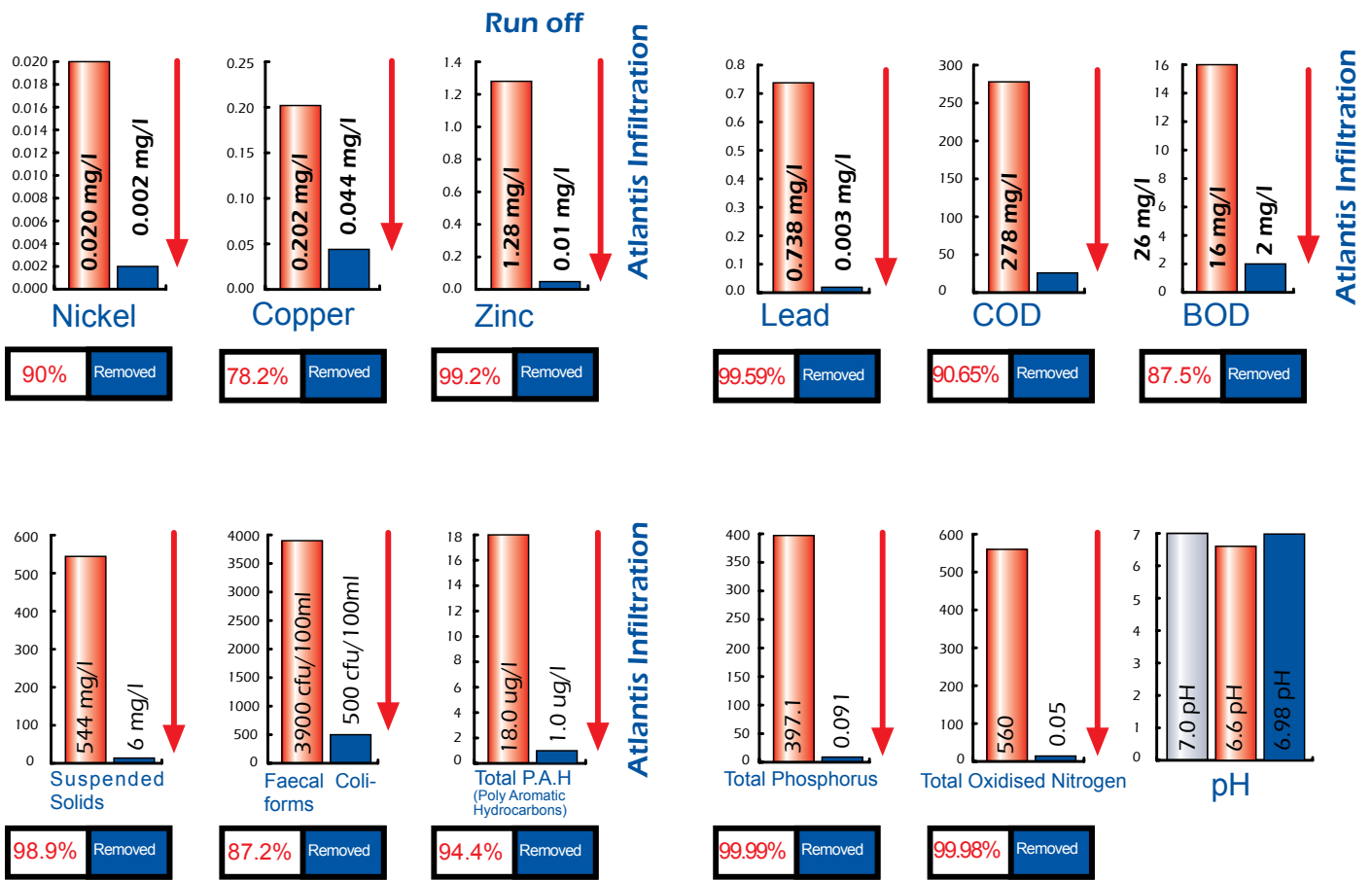
When sufficient volume has been collected, the water will

be pumped out of the holding tanks through distribution liners which connect to an irrigation system.

Six filter beds, each of which contains a specific amended soil are then irrigated using untreated runoff. As the water permeates through the soil profiles, filtration occurs. The water then returns to six individual pits when six individual water samples will be collected. The results of the initial untreated sample will be compared pared to the treated water samples, giving an indication of the filtration efficiency of the each of the amended soils.



Independent Runoff Atlantis Infiltration System Test Results



Analytical Services Provided By: AWT- Australian Water Technologies a Division of Sydney Water.
NATA APPROVED LABORATORY

Legend

- Runoff before Atlantis Filtration System
- Runoff after Atlantis Filtration System
- Pure rain water, contains zero contamination

Project Details: Rainwater Harvesting Tank under Landscaping
 Completion Date: March 2001
 Project Location:

Manly Beach Front, North Steyne, NSW, AUSTRALIA

In 2001, Atlantis Water Management provided Manly Municipality with a revolutionary new system to capture, filter and reuse stormwater runoff from roads. This environmentally sustainable technology set a new standard in road design and the results are still impressive today.

Every year tremendous amounts of stormwater runoff is flushed down traditional systems, which end up contaminating natural waterways with gross and dissolved pollutants.

Atlantis provides viable alternatives that completely replace antiquated systems, providing a sustainable solution with the added benefit of immediate reuse of clean water. This is a major advantage for communities experiencing low rainfall or water restrictions.

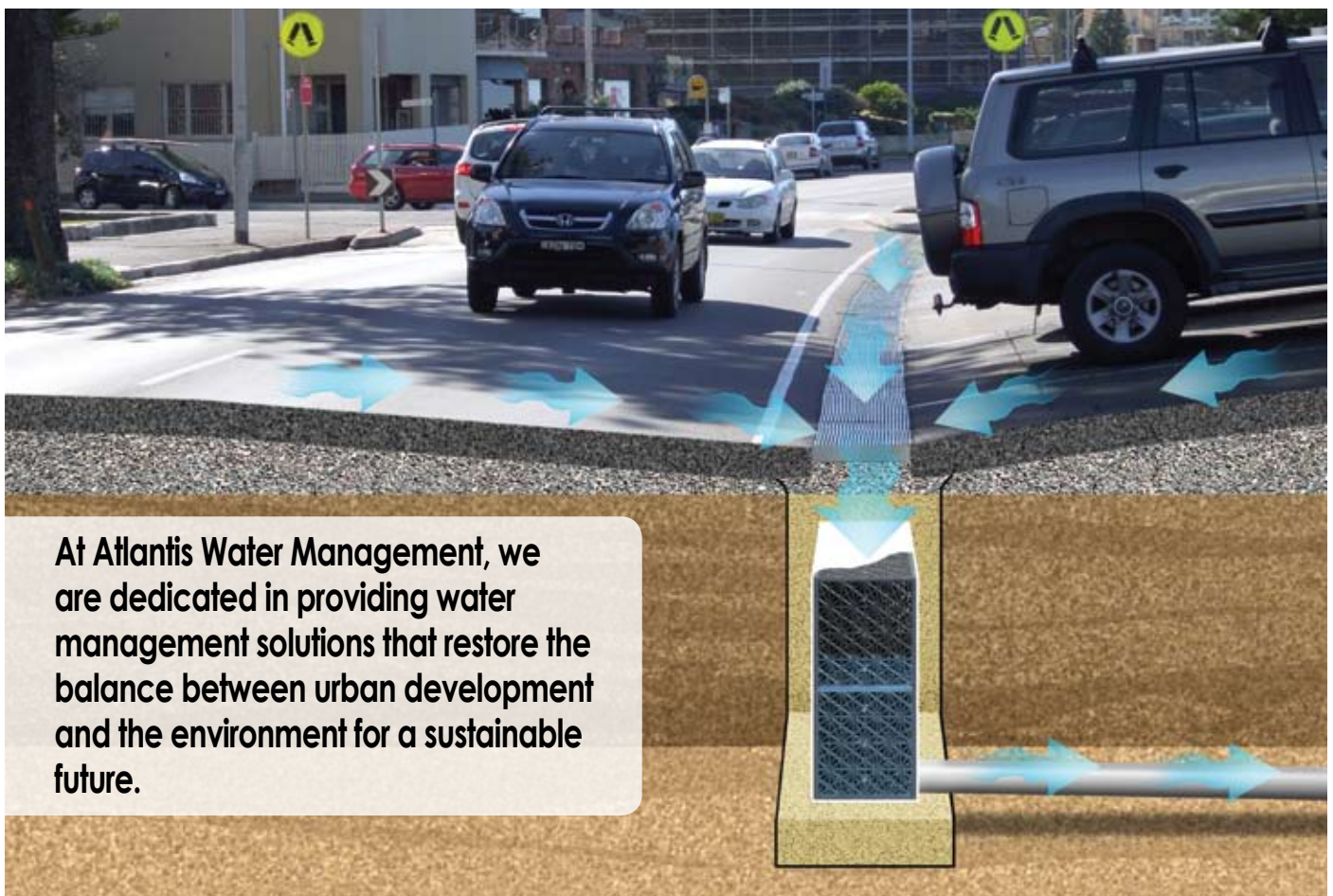
In Manly, Atlantis Water Management designed and provided the road stormwater reuse system that filters and stores clean water in large underground tanks. This is achieved by capturing stormwater runoff through surface infiltration via a 500m strip of porous pavement, strong

and durable enough to handle traffic areas while retaining infiltration capacity.

As the water infiltrates into the pavement, it passes through a layer EcoSoil® which contains naturally occurring and bio-engineered micro-organisms, that degrade and remediate chemicals generated by daily urban and industrial pollution.

After the water has filtered through the EcoSoil® it is collected into an underground Atlantis road channel, and then directed into a 50,000 litre Atlantis Rainwater Tank located beneath the grassed garden area. Water is reused through a pump feeding a spray irrigation system used to irrigate the Norfolk Pines that are a major feature of the Manly seascape. Clean water also ensures the irrigation system a longer service life and reduced maintenance. Excess treated water overflows and percolates into the existing sandy soils to naturally replenish ground water.

After many years of service, the innovative stormwater treatment and reuse project at historic Manly Beach continues to save council over \$28,000 per year.



At Atlantis Water Management, we are dedicated in providing water management solutions that restore the balance between urban development and the environment for a sustainable future.

Manly Beach, Sydney Australia



Reuse Storage Tank

Pump Station

Reuse Storage Tank

Infiltration Strip



Atlantis offers an environmentally sustainable solution that replaces antiquated Roman technology.

Pipes, sumps, pits or difficult to manage gross pollutant traps, are no longer required to manage stormwater.

Restoring the balance between the environment and urban development has never been easier.

Project Details: Rainwater harvesting for a vegetable garden
 Completion Date: May 2007
 Project Location:

CERES Harding St Market Garden, Vic., AUSTRALIA

Harding St Market Garden is 2.5 acres of vegetable growing heaven, 2kms North of CERES on the bike path. Farmed continuously for around 150 years, this garden is providing amazing organic produce for the CERES Market, Café, the CERES Farmer's Market stall and a number of local food co-ops. The Market garden is certified organic by NAASA.

Water from the roofs of the townhouses to the west of the site fills the tank. The tank is located under the western side of the garden and holds 100,000L. The tanks forms an artificial aquifer, 1.7m deep (Penta Modules). Overflow from the tanks flows into Merri Creek.

Vegetable growing requires regular watering. Water use is kept low by keeping the soil is good condition by mulching to protect the soil, and by trickle irrigation to put small amounts of the water where the plants needs it.

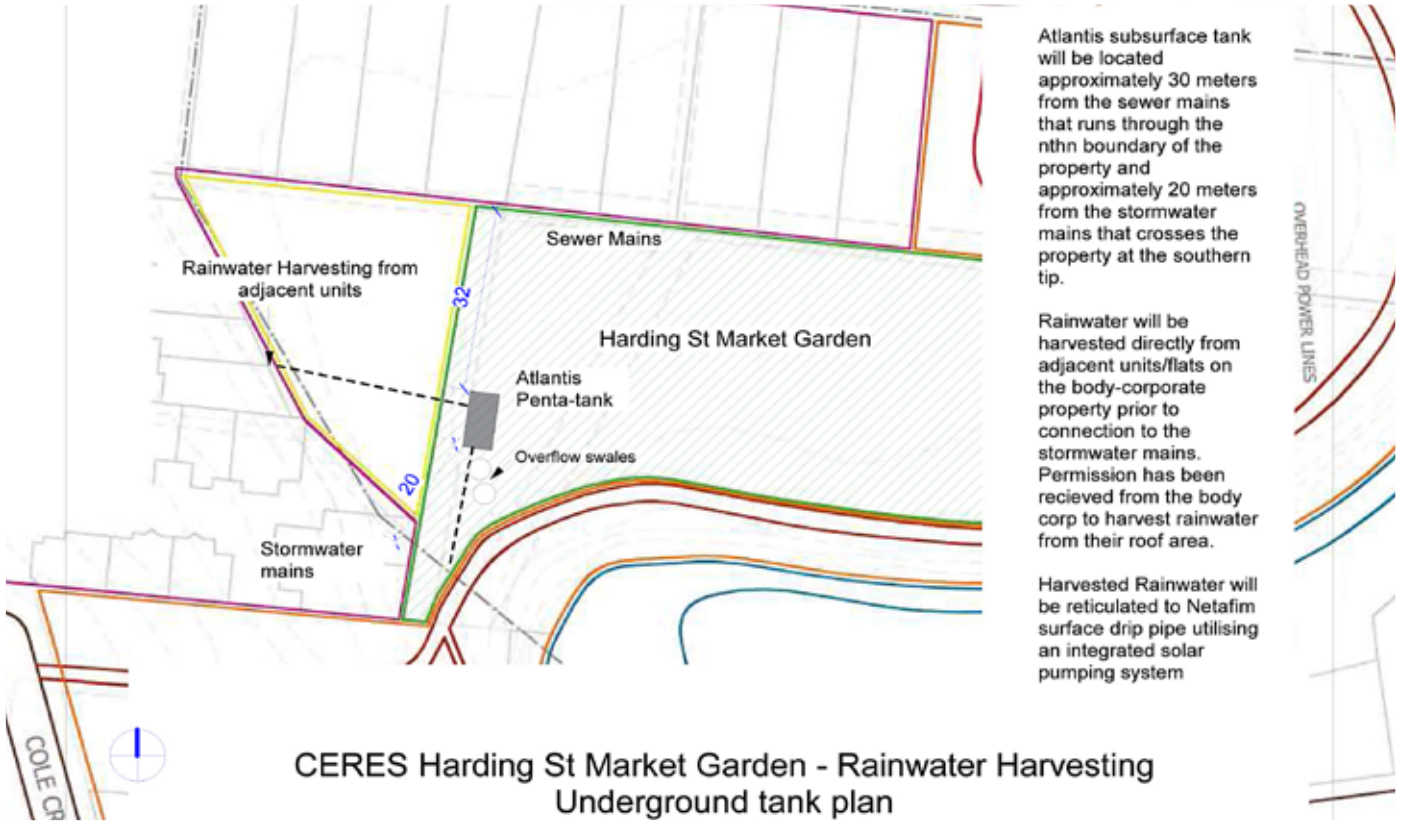
The tank is big enough to hold water for 10-14 days worth

of water. The tanks saves approximately 35% of the water use at Harding St Market Garden or \$1000 per year. The market garden needs approximately 2,000,000L (2ML) of water each year.

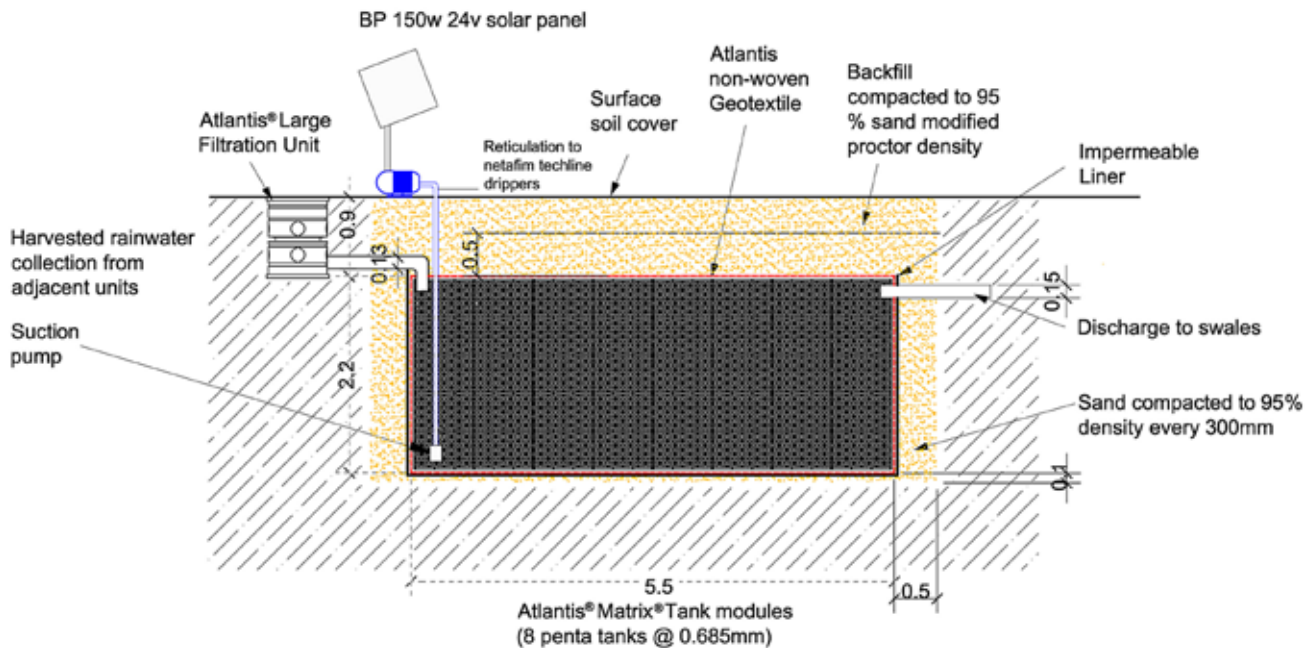
Installation Volume: 2 Megalitre (70,629 cu ft)



Rainwater Harvesting Site Plan.



Cross-section of the tanks.



Atlantis Subsurface Tank Cross-section. CERES Site

Tank installation to accord with manufacturers procedures and instructions

Scale 1:50 all dimensions in meters 14 May 2007

Project Details: Stormwater Detention Chamber under a carpark
Completion Date: May 2006
Project Location:

Home Depot, Westbank, BC, CANADA

The Atlantis® Matrix® / D-Raintank® installation consisted of a 267m³ (9429cf) detention tank installed under a car park. The underground detention system receives surface run-off through a network of catch basins connected to the tank by underground pipes. The depth of cover above the tank is 600 mm (23.6") to substantiate H 20 Vehicle loading requirements.

The water will drain into the existing municipal storm sewers through a controlled outlet. By managing the storm water locally and delaying its release, this tank will prevent local flooding and stream erosion during heavy storms.

Installation Volume: 267 m³ (9429 cf)
Installation Date: Start – April 6th 2006
Completion Date: May 2nd 2006





Excavation preparation and levelling for the Atlantis® D-Raintank® (Matrix®) System.



Installing the Atlantis® D-Raintank® (Matrix®) modules on top of the impermeable liner layer and the geotextile layer.



Atlantis® D-Raintank® (Matrix®) modules wrapped in impermeable liner.



Backfilling the tank.

Current Contact:



General Contractor:

BC General Ltd.

Engineering Consultant:

Quantum Consulting Group Ltd.

3105 E 31st Ave., Vernon, BC, V1T 2G9

Adding Geogrid on top of the backfilled tank.



Project Details: Stormwater Detention under a carpark
Completion Date: July 2006
Project Location:

Lordco Auto Parts, Maple Ridge BC, CANADA

Lordco is the largest distributor and retailer of automotive parts and accessories. Lordco has over 90 stores throughout British Columbia with sites located in key centre to take full advantage of their proximity to existing and new clientele.

The Atlantis® Matrix® / D-Raintank® installation consisted of a 60.27 m³ (2128 cf) detention tank installed underneath a parking lot. The design and location of the tank was based on the strength of the Atlantis® Matrix® / D-Raintank® modules, which due to an internal vertical baffle system, supports heavy vehicle loading with ease.

Some of the collected storm water will ex-filtrate into the ground through the surrounding slightly permeable native soil. The remaining water will drain into the existing municipal storm sewers through a controlled outlet. The modular design and compact footprint makes it ideal and cost effective for all types of applications.



Adding Geogrid on top of the backfilled tank.





Assembling the Atlantis® D-Raintank® (Matrix®) boxes.



Atlantis® D-Raintank® (Matrix®) modules wrapped in geotextile, waiting to be further wrapped in impermeable liner.



Backfilling the tank.

Current Contact:



Project Name:

Lordco Auto Parts
22921 & 22941 Dewdney Truck
Road, Maple Ridge, BC
V2X 3K6

Engineering Consultant:

Hub Engineering Inc. Suite 101 –
7485 130th St. Surrey, BC V3W 1H8


Contractor:

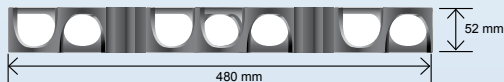
Lordco Auto Parts

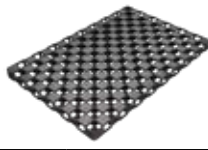
Project Manager:

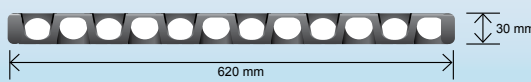
Kevin Bennett



52mm Flo-Cell® drainage cell		
Part Number: 80052		
		
Height:	52mm	2.05"
Width:	260mm	10.24"
Length:	480mm	18.9"
Crush strength:	148.58 t/m ²	
Color:	Black	

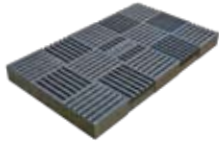


30mm Flo-Cell® drainage cell		
Part Number: 80030		
		
Height:	30mm	1.18"
Width:	405mm	15.94"
Length:	620mm	24.4"
Crush strength:	101 t/m ²	
Color:	Black	





Our Strongest TANK Module

Flo-Grid® porous paver		
Part Number: 80008		
		
Height:	50mm	1.96"
Width:	395mm	15.55"
Length:	685mm	26.96"
Crush strength:	240 t/m ²	
Color:	Black	

Flo-Tank® Modules

ASSEMBLY: All units are assembled from 4 small plates and 4 large plates. These plates are clipped together to form the box structure.



Note: Atlantis® products are manufactured from high quality recycled materials, carefully selected and under strict quality control procedures. The strength could vary slightly due to raw material, country of manufacture, manufacturing process and external conditions. **All trademarks are the property of Atlantis Water Management Australia.**

Safety Factors: Engineers, designers and geotechnical engineers should design and calculate safety factors to a serviceable limited state to suit specific project. In case of doubt, consult your nearest distributor or Atlantis representative.

Disclaimer: All information provided in this publication is correct to the best knowledge of the company and is given out in good faith. This information is intended only as a general guide, no responsibility can be accepted for any errors, omissions or incorrect assumption. As each project is unique, and as Rebirth Pty Ltd, Atlantis Water Management, Atlantis Corporation Pty Ltd and its distributors and agents world wide have no direct control over the methods employed by the user in specifying, installing or supervising of its products hence no responsibility

is accepted by Rebirth Pty Ltd, Atlantis Water Management, Atlantis Corporation Pty Ltd and its distributors and agents world wide. Users should satisfy themselves as to the suitability of the product for their purpose.

All product designs, and specification are subject to change without further notice. All Atlantis® products are tested in approved NATA laboratories, and safe allowed tolerances should be practised in the actual field, to compensate for any unforeseen situations, on site and on products.

All material contained within this brochure is subject to copyright, and belongs to Humberto E. Urriola and Christian Urriola, Rebirth Pty Ltd Australia. No part of this brochure may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of Rebirth Pty Ltd. Australia, Atlantis Water Management, Atlantis Corporation Pty Ltd. Copyright © 2009.

Atlantis Water Management

HEAD OFFICE:

3/19-21 Gibbes Street, Chatswood, NSW 2067 Australia

PHONE: + 612 9417 8344 / 1300 38 28 38

FAX: + 612 9417 8311

EMAIL: info@atlantiscorp.com.au

WEB: www.atlantiscorp.com.au

Atlantis Water Management Victoria

30 Venture Drive, Sunshine, VIC 3020 Australia

PHONE: 1300 38 28 38

Agent: