

Green City

ATLANTIS ENVIRONMENTAL DESIGNS & SOLUTIONS



Green Cities For Life

Atlantis[®]
GREEN CITIES FOR LIFE

Atlantis Green City Vision

We believe in creating Green Cities For Life a symbiotic relationship between humanity and the environment. Our innovations, real world applications and systems embrace and deliver this vision.

Our vision for Green Cities for Life encompasses the elements that effect all life, Air, Water, Fire and Earth creating a sustainable ecology.

Atlantis was conceived in 1986 by Landscape Architect Humberto Urriola following his dream of creating Green Cities, a harmonious paradise covered in beautiful plants that absorb and transform sunlight, capture and recycle water, produce oxygen and transform pollutants creating a sink for carbon.

We frequently create partnerships with our network of friends, contacts and partners to combine industry specific skills, knowledge, and operational expertise.

We believe in making a difference. The coexistence between nature and humanity is the key to sustainability. Atlantis stands for quality, innovation, and delivering solutions that work.

GREEN CITY BENEFITS

- Enhance Air Quality
- Produce Oxygen
- Convert CO² emissions
- Absorb & Transform Sunlight
- Regulate Ambient Temperature
- Regultae Heat Island Effect
- Create Large Catchment Areas
- Capture and Harvest Rainwater
- Attenuate Stormwater
- Reduce Flood Mitigation
- Clean Stormwater Discharge
- Reduce Building Energy Costs
- Create Habitat for Wildlife

Benefits...

- ✓ **Economical**
Eliminates the need for expensive stormwater infrastructure.
- ✓ **Recycle Storm Water**
Capture, clean and recycle 100% of stormwater at point source.
- ✓ **Improve Air Quality**
Increases vegetation, absorbs carbon and produces oxygen.
- ✓ **Reduce Global Warming**
Roof Gardens cool cities and reduce airborne pollutants rising into the atmosphere.
- ✓ **Eliminate City Floods**
Capturing all rainfall on site reduces the burden on urban stormwater systems.
- ✓ **Reduced Maintenance**
Atlantis systems are self cleaning and require little or no maintenance.



Atlantis Green City Solutions

Roof Garden Application
Vertical Garden Solutions
Permeable Surfaces
Sustainable Housing Development
Sustainable Road Application
Sustainable Underground Channel Application
Rainwater Harvesting, Collection & Reuse
Clean Stormwater Dispersion
Sportsfield Water Harvesting, Collection & Reuse
Hydrostatic Pressure Relief
Water Table Relief
Atlantis Products & Components

Green Roof Garden Design

Reduces stormwater runoff from roads and releases clean water.

Atlantis continues to progressively develop innovative products and systems to convert the concrete jungle into a sustainable Green City.

The use of permeable surfaces allows rainfall to immediately soak into the ground. Rainwater can easily be harvested through underground water carriers and tanks.

Green cities act as a large permeable surface and can be easily built, by incorporating roof top gardens, planter boxes and landscaped podiums.

The added vegetation in cities reduces the urban impact on global warming, provides a sink for carbon

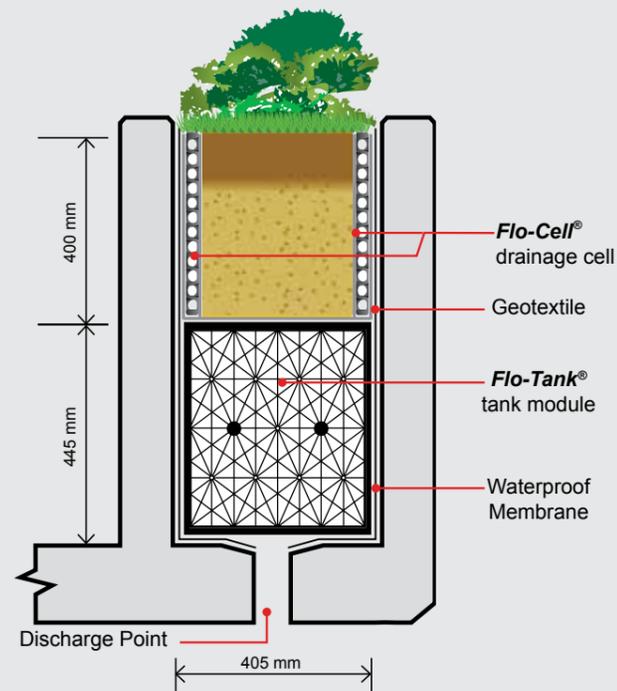
and provides a point source solution for stormwater, reducing and even eliminating contaminated runoff into natural water ways.

The results are a sustainable integration between urbanization and nature, creating a sustainable environment.



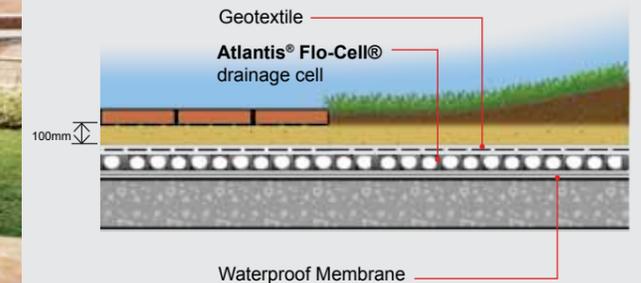
ATLANTIS GREEN ROOF BENEFITS

- Produce Oxygen
- Convert CO² emissions
- Absorb & Transform Sunlight
- Reduce Ambient Temperature
- Reduce the Heat of Buildings
- Create Large Catchment Areas
- Capture and Harvest Rainwater
- Reduce Stormwater Runoff & discharge
- Reduce Energy Costs
- Create Habitat for Wildlife



ATLANTIS GREEN ROOF SOLUTIONS

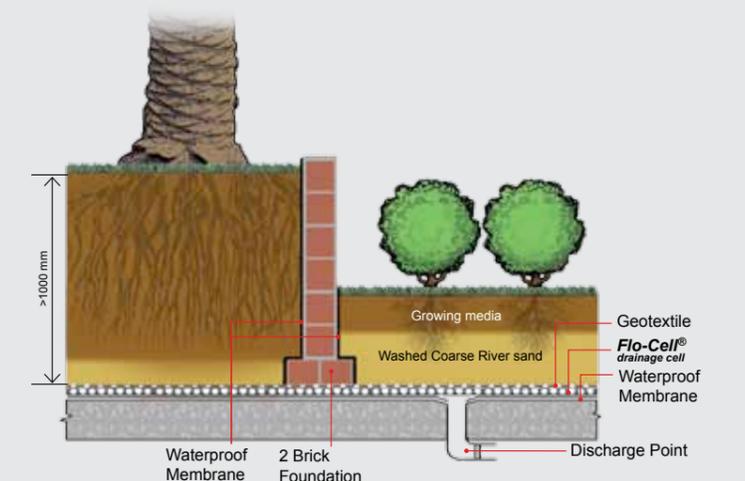
LOW LEVEL ROOF GARDEN APPLICATION



PLANTER BOX DRAINAGE



PODIUM DRAINAGE (Garden over underground parking lot)



Vertical Gardens

Create Lush, Beautiful Vertical Gardens

Designed specifically for vertical garden enthusiasts, **Gro-Wall® 3** includes many new intuitive and constructive features that benefit both users and designers. New features include a revolutionary watering system, improved wall anchoring and improved planting capabilities.

The Gro-Wall® 3 enables designers and users to install vertical gardens in adverse outdoor environmental conditions and in regulated indoor environments with complete access and control. The new enhancements provide targeted watering control of individual plants, maximum water efficiency, last minute design changes and easy access to irrigation components.

Gro-Wall® 3 is the perfect tool for designers creating vertical landscapes and the perfect companion for its' caretakers.

Gro-Wall® 3 at a glance.



New I.P.I. System

Gro-Wall® 3 features **I**ndividual **P**lant **I**rrigation concealed within the structure.



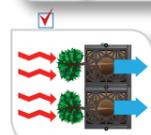
I.F.S. System

Integrated frame work system. Gro-Wall® 3 is fixed directly onto the wall. No additional frame work is required.



Modular

Gro-Wall® 3 is a modular system allowing easy vertical and horizontal expansion.



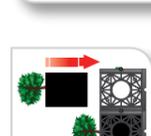
Thermal Insulator

Gro-Wall® 3 performs as a thermal insulator for buildings, cooling in summer and retaining heat in winter.



Versatile Planting

Plant stems are planted at angles ranging from 90°, 62.5° and 45°. Individual planting cells accommodate multiple plants & grasses.



Accessible

Gro-Wall® 3 features easy accessible planting cells allowing easy maintenance and even plant and design changes.



Made From Recycled Materials

Gro-Wall® 3 is made from high grade recycled materials.



Benefits

- Rapid Construction & Plant Installation
- Vertical & Horizontal Expansion
- Optimum Moisture Retention for Plants
- Uses Standard Potting Mixes
- Easy Individual Plant Access & Maintenance
- Easy Creative Planting Design
- Self Supporting Structure
- No Framework Required
- Structurally Strong
- Modular Planting System
- Easy To Maintain
- Excess Water Capture System Available
- Reticulation System Easy To Incorporate



Permeable Surfaces

Ideal to house and protects grass

The **Turf Cell**® reinforcement structure is the most effective product available for both horizontal and vertical root growth. Unlike concrete systems, the roots remain cool and grass growth thrives. Driving vehicles onto the grass has no effect on the protected roots.

Aesthetically, the product allows the grass to fill in completely, creating a lush lawn with an invisible reinforcement structure.

Applications

The cells can be used in any situation where low to medium use parking surfaces, access roads and driveways are required.

The cells can also be used for the construction of swales to collect rainwater and direct water to surface infiltration areas such as Atlantis® sub surface infiltration channels.

Typical Applications

- Access Roads
- Footpath
- Parking Lot Bays
- Driveways
- Slope Reinforcement
- Lattice Structure for Vertical Gardens
- Drainage Under Paving

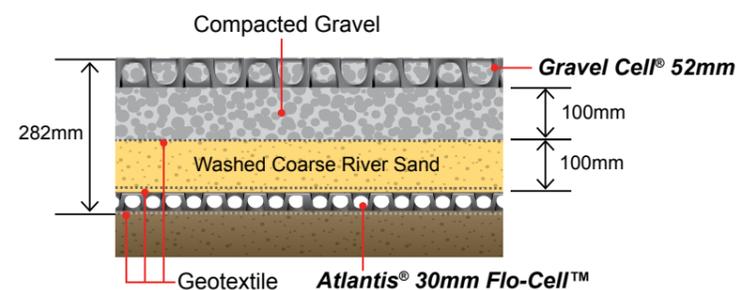
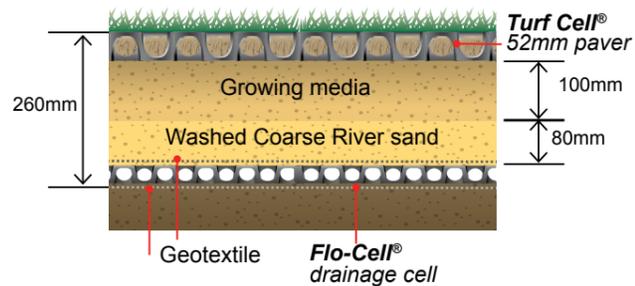
Cost Benefits

The sub-base required for cells is equal to or less than the sub-base required for concrete or bitumen.

Elimination of the traditional stormwater system required by impermeable carpark installations provides an immediate cost saving when installing **Turf Cell**® reinforcement structures for the same application.

Gravel Cell® reinforcement structure creates an attractive, durable hard surface suitable for light to medium loaded parking areas.

Turf Cell® grass reinforcement structure allows horizontal & vertical root growth.



Car Parking Lot Application

Even during wet weather when grass fields can become muddy, **Turf Cell**® grass pavers keep car parking lots stable, making it pedestrian and vehicle friendly.

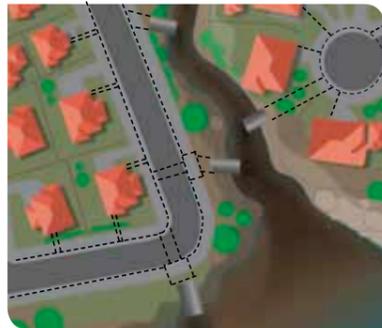


Atlantis Low Density Water Sensitive Urban Design

Atlantis provides a complete solution for new housing estates that maximises land usage, water recycling and lowers energy costs through natural insulation of roof gardens and vertical gardens.

The Atlantis concept delivers a sustainable low impact solution including minimal heat island effect and releases clean water into the environment.

TRADITIONAL SYSTEM



ATLANTIS SYSTEM



- = Stormwater system
- = Pipe outlet into the river and sea
- = Contaminated waterways

Current stormwater systems and collection sumps in residential areas discharge into rivers and eventually into the ocean.

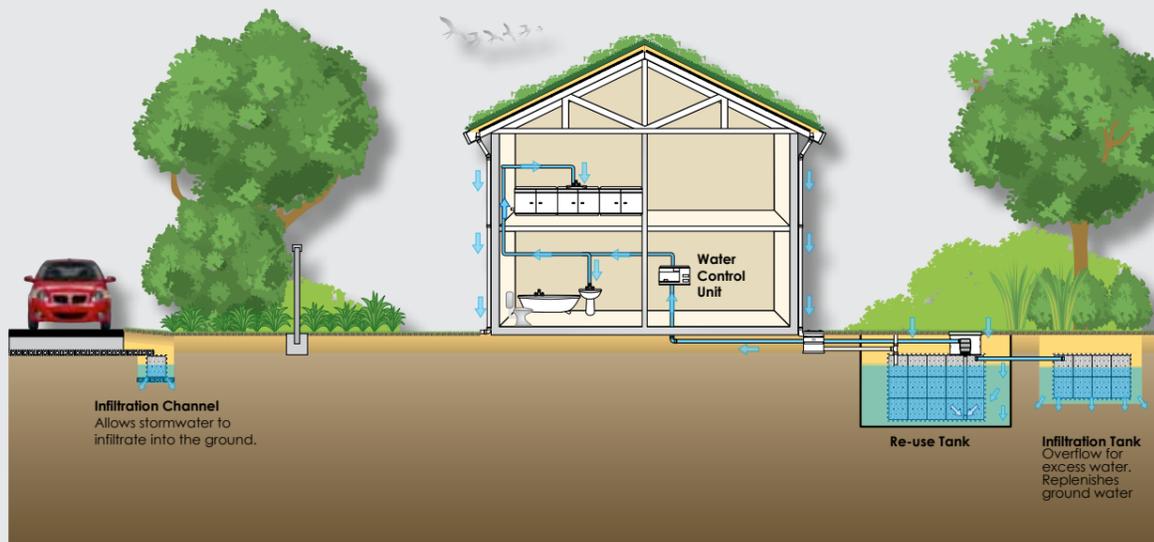
- = Rainwater Harvesting Tank
- = Infiltration Tank
- = Underground Channel
- = Clean waterways
- = Roofgardens



Green Sustainable Housing

- ✓ Maximum Water Recycling
- ✓ Low Heat Island Effect
- ✓ Natural Thermal Insulation
- ✓ Maximum Permeability
- ✓ High Plant Density
- ✓ Cost Effective Infrastructure
- ✓ Low Energy Costs
- ✓ Clean Water Release
- ✓ Cost Effective Maintenance

ATLANTIS ENVIRONMENTAL HOUSING SOLUTION



- Roof Gardens
- Ecological Roads
- Underground Storm Harvesting Tank
- Individual Underground Storm Harvesting Tanks
- Sportsfields & Parks
- Additional / Extra Lots Created
- Inlet to Large Tank from roads



Atlantis Water Sensitive Road Design

The Atlantis philosophy is to resolve water management issues at the source. That's the concept behind the Ecological Road.

The Atlantis system captures surface runoff from roads and, instead of transporting it to a central storage pond, provides short-term localized storage so that stormwater can be either infiltrated to recharge groundwater, released at a controlled rate, or recycled for irrigation.

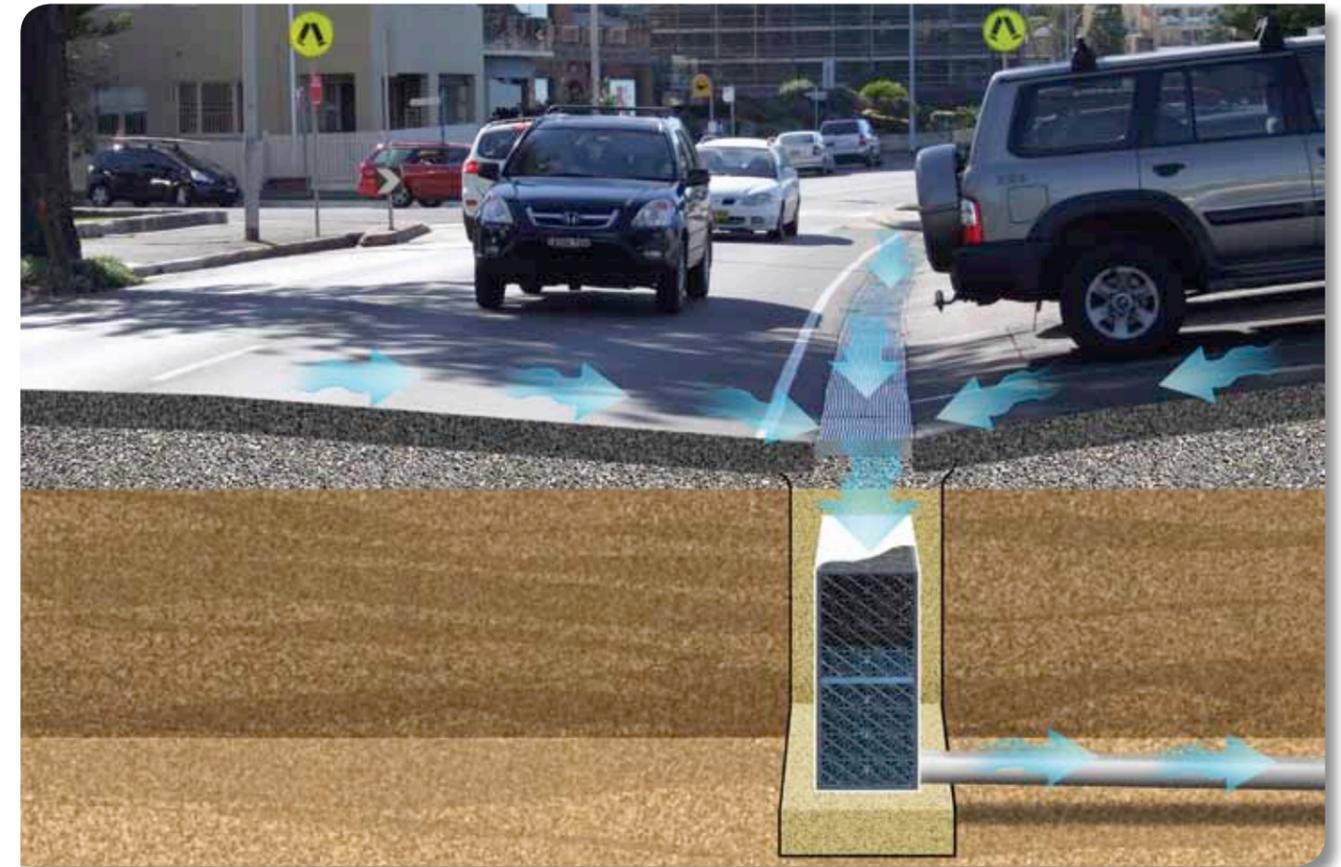
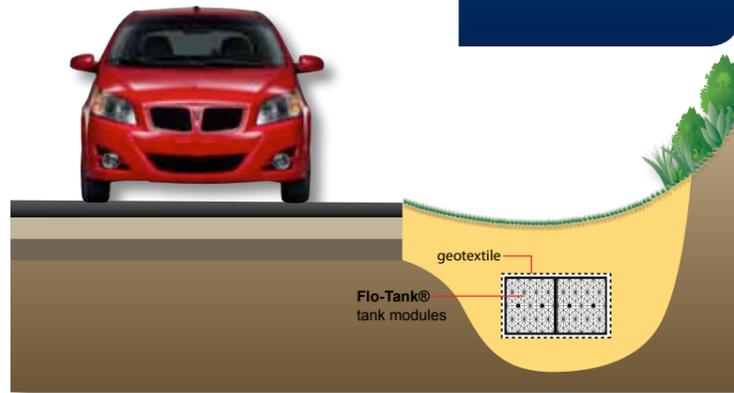
The Atlantis system also provides a strong, permeable structure, that can capture and manage water along the length of the system.

The Atlantis road system reduces thermal contamination up to 17°C

(31°F) in relation to the conventional road methods. In cold areas, permafrost penetration is reduced.

Atlantis solutions provide benefits for developers, municipality, and the community.

Atlantis reduces road stormwater runoff and releases clean water.



ATLANTIS ROAD SYSTEM BENEFITS

ROAD SAFETY

- **Saves Lives**
Dangerous open water channels are eliminated.

ENVIRONMENT

- **Flood Reduction**
Stormwater runoff is immediately infiltrated into the ground reducing the burden on existing infrastructure and urban flooding.
- **Reduced Erosion**
Reduces erosion by infiltrating water at the source.
- **Water Re-use/Harvesting**
Water is purified, stored and recycled on site.
- **Improve Urban Health Conditions**
The Atlantis system is located underground, eliminating stagnant ponds that host mosquitoes infestations and open drains that house vermin and vectors. All gross pollutants are kept out of the system, dissolved pollutants are treated within the system resulting in clean healthy water released into the environment.

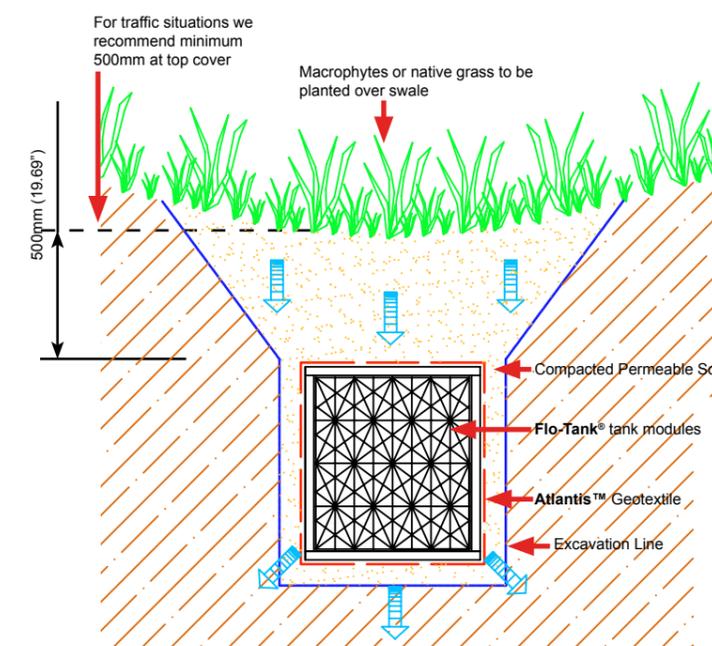
ECONOMICAL

- **Increase Land Use**
The Atlantis system is sub surface providing more land space for recreational areas.
- **Save Time & Labour**
The Atlantis system is cheaper and faster to install than traditional concrete based methods.
- **Maintenance Free Channel**
All gross pollutants and sediment are prefiltered ensuring that Atlantis channels are maintenance free.
- **Increases Road Lifetime**
Effectively relieves hydrostatic pressure preventing potholes and maintaining optimum road conditions.

ENGINEERING

- **High Compressive Strength**
Supports heavy loads up to over 130 t/m² (for Atlantis™ 52mm Drainage Cell) and over 24 t/m² (for Atlantis™ tank modules).
- **Structural Design**
Ensures structural integrity of road and supports shear loads.

Atlantis Road Solutions



Installation of Atlantis solution into a highway in Valencia, Spain. Valencia is one of the most environmentally progressive communities in Europe.



Completed installation, Valencia Spain.

Atlantis Water Neutral Channel Design

Reclaim wasted land and release clean water.

The Atlantis® channel system provides permanent underground waterways that restores water quality and recharges the natural environment. The underground Atlantis® channel system provides a unique way of working with nature to solve the enormous problems currently associated with open concrete channels.

Atlantis® Underground Channels

With the Atlantis® channel system being an underground system, these problems with open concrete channels are rectified. The permeable channel system can be designed to follow inherent contours of the landform and emulate the flow of natural waterways. This channel design creates vertical flow turbulence and reduces the overall flow velocity while increasing the self-cleansing capacity of the channel bed to create healthy aerobic conditions.

Environmental Benefits

By replacing open concrete channels with Atlantis® channel systems, cities can now benefit from increased environmental amenities, greater recreational space and healthier conditions by using the vast tracts of land once given over to rapid flowing concrete channels.

CONCRETE CHANNEL RETROFIT



CHANNEL INFILTRATION

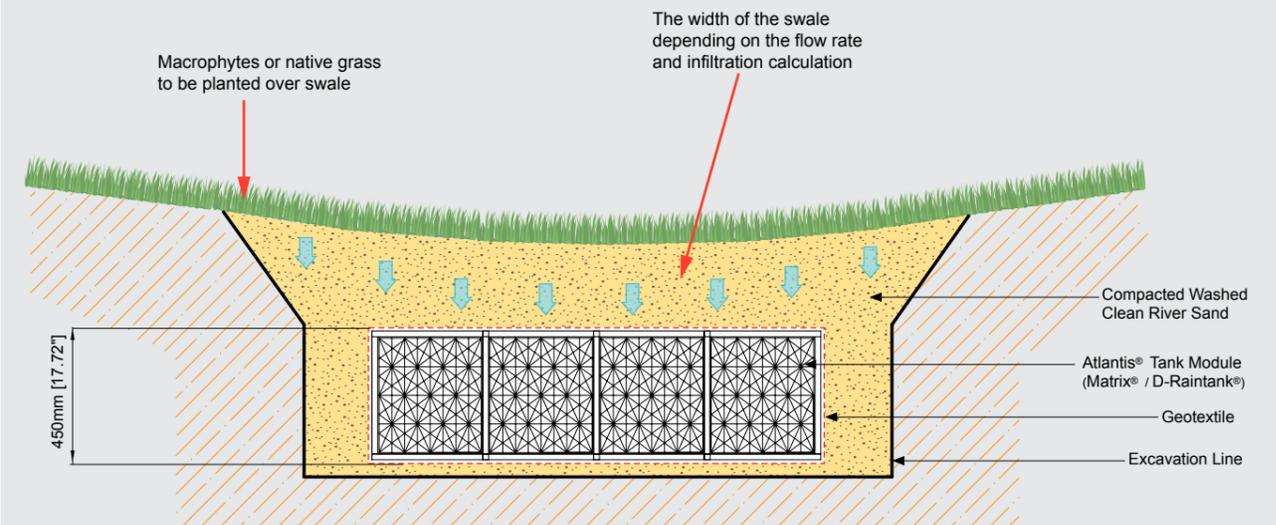
Zayed University Project - Abu Dhabi



The new campus is being built on 75 hectares at New Khalifa City near Abu Dhabi International Airport.

Atlantis products are being used as part of the stormwater system. Over 6.1km of infiltration channels or soakaways have been installed beside roads and pathways, providing over 4 million litres of storage. The channel system is constructed of thousands of Atlantis Flo-Tank® - Double Modules wrapped in geotextile, placed in the channel two modules wide.

Water from the impervious surfaces is stored in the modules and gradually allowed to percolate into the surrounding soil. The infiltration channels are sized to make sure that it doesn't overflow in severe storm events and to ensure that all the water is dissipated effectively into the surrounding area. A concrete sump has been provided at regular intervals to ensure that sand and vegetation matter cannot enter the infiltration channel.



Rainwater Harvesting, Collection & Reuse

The Atlantis Flo-Harvest™ system provides underground water storage of unlimited capacity and can be installed in various volumes, shapes and depths to meet specific project requirements.

The significant advantage of the Flo-Harvest™ system is the integration of multiple catchment sources to maximise water collection.

The entire project location can be used as a catchment area including stormwater, landscape and roof areas providing the water storage capacity to meet your requirements.

Suitable for both residential and commercial installation projects, Flo-Harvest™ Underground Rainwater Harvesting System maximizes land usage and minimizes stormwater runoff.

Atlantis Flo-Harvest™ system provides unlimited storage and flexible design to meet your water requirements.

FEATURES

- Approved for POTABLE WATER (AS/NZ 4020)
- High Quality Recycled Materials
- Clean Water Storage
- Allows Infiltration of Water
- Unlimited Capacity
- Space Saving
- Create any shape



BENEFITS

- Minimized Excavation Depth
- Lightweight & Strong - Minimum 20t/m²
- Maintenance Free (pre filter required)
- Modular
- Cost Effective
- Easy to Install

ATLANTIS FLO-HARVEST™ SYSTEM BENEFITS

- ✓ **Create Any Volume**
The modular system enables the design of volumes to suit project requirements.
- ✓ **Maximise Land Usage**
The system is installed underground.
- ✓ **Recycle Rain Water**
Capture, clean and recycle 100% of water at point source.
- ✓ **Strong Design**
The system can be designed for different load requirements of up to 148t/m².
- ✓ **Recycled Materials**
Made from 100% recycled materials
- ✓ **Reduced Maintenance**
Atlantis systems are self cleaning and require little or no maintenance.
- ✓ **Maximise Excavation**
Flo-Harvest™ systems feature 95% void capacity maximise the volume usage of excavated area.



FLO-HARVEST™ INSTALLATIONS



Clean Stormwater Dispersion, Infiltration & Attenuation

T The Atlantis Flo-Store™ system is designed to capture stormwater at the source and slowly release clean water into the ground.

The Flo-Store™ system can be configured into many possible configurations to suit specific project requirements. These configurations include underground storage of unlimited capacity and can be installed in various volumes, shapes and depths.

The Flo-Store™ system can utilise the entire project as a catchment area including capturing water from hard surfaces and landscape areas without the need for conventional stormwater systems.

Atlantis FLO-STORE™ stormwater system is ideal for water sensitive urban design applications and ensures clean natural waterways.

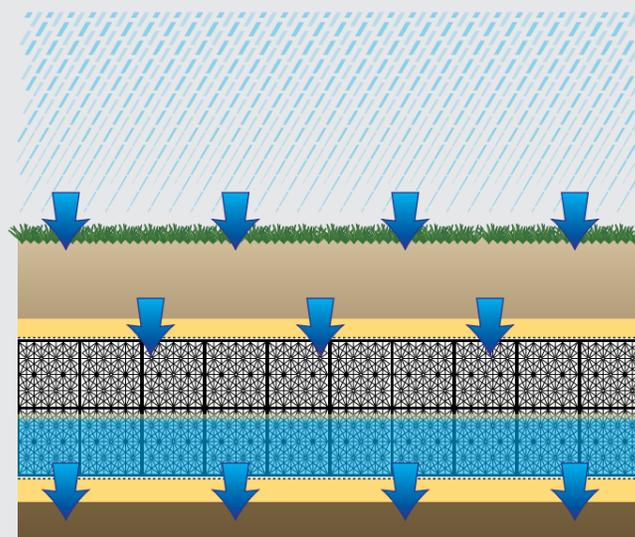


FLO-STORE™ STORMWATER DISPERSION INSTALLATIONS



ATLANTIS STORMWATER DISPERSION SYSTEM BENEFITS

- ✓ **Create Any Volume**
The modular system enables the design of volumes to suit project requirements.
- ✓ **Maximise Land Usage**
The system is installed underground.
- ✓ **Release Clean Water**
Flo-Store™ captures, cleans and disperse clean water into the environment.
- ✓ **Strong Design**
The system can be designed for different load requirements of up to 148t/m².
- ✓ **Recycled Materials**
Made from 100% recycled materials
- ✓ **Reduced Maintenance**
Atlantis systems are self cleaning and require little or no maintenance.
- ✓ **Maximise Excavation**
Flo-Store™ systems feature 95% void capacity maximise the volume usage of excavated area.



FLO-STORE™ Stormwater Dispersion System

Sportsfield Water Harvesting, Collection & Reuse

Football, Rugby, Horse Racing and other sports can now enjoy utilizing their fields throughout the year and even during heavy rainfall. With the Atlantis SPORTSDRY™ system no longer will supporters be disappointed with costly cancellations due to heavy or prolonged rainfall.

The Atlantis SPORTSDRY™ playing field system ensures quick drainage during the heaviest rainfall and provides water during the dry periods. The SPORTSDRY™ system will quickly drain and store water in underground storage tanks ready to meet the most demanding watering requirements throughout the year.

The excellent drainage properties of the system ensures an even playing surface and provides adequate moisture for healthy grass growth. The SPORTSDRY™ system is also ideal for artificial turf playing fields. Any excess water is fed into underground infiltration tanks where the water is dispersed.

Atlantis SPORTSDRY™ playing field system ensures that games, events and training can be held all year long.

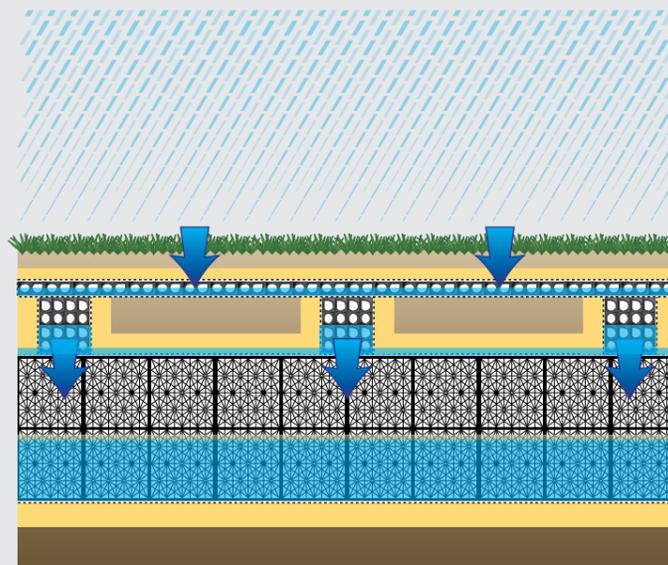


SPORTSDRY™ WATER HARVESTING, COLLECTION & REUSE



ATLANTIS SPORTSDRY™ PLAYING FIELD SYSTEM BENEFITS

- ✓ **Continous Use of Field**
The playing field can be used during heavy rainfall.
- ✓ **Even Playing Surface**
Excellent drainage maintains an even playing surface.
- ✓ **Recycle Rain Water**
Capture, clean and recycle 100% of water at point source.
- ✓ **Optimal Growing Conditions**
Soil profile retains sufficient moisture for healthy grass growth.
- ✓ **Compatible with Artificial Turf**
The SPORTSDRY™ system can be used with artificial turf.
- ✓ **Reduced Maintenance**
Atlantis systems are self cleaning and require little or no maintenance.



SPORTSDRY™ Playing Field System

Efficient Vertical Drainage & Hydrostatic Pressure Relief

Perfect for controlling water seepage! Ideal for underground car parks, basements, retaining walls and seepage cutoff trenches.

Recommended Uses:

Wall Panels are suitable for retaining walls, foundation walls, basements, underground car parks, bridge abutments, civil structures, tunnels and anywhere hydrostatic pressure relief is required.

Benefits

- Protects Waterproof Membranes
- Install Wall Drainage Only Once
- Rigid Design
- Quality Australian Made Product
- High Performance
- Rapid Installation
- Maintains Structural Integrity of Wall
- Lightweight
- Easy To Use
- The Most Efficient Wall Drainage System
- Effectively Relieve Hydrostatic Pressure

Long Term Benefits

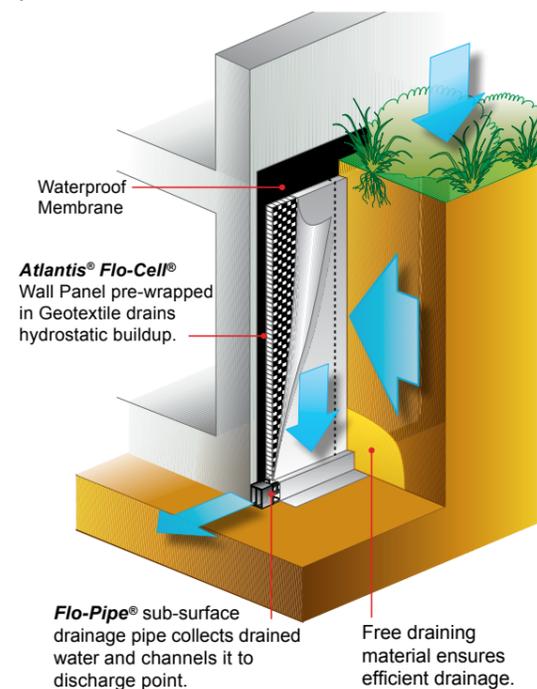
- Assured Integrity of Basement Walls
- Protection of Waterproof membrane



Reduce Heat Induced Cracking.

Temperature in soil can vary by 20°C at 10cm below the surface and 10°C at 50cm below the surface. This can produce enormous tension and strain on basement walls which can lead to the cracking of both the waterproof membrane and the wall itself.

Atlantis® wall panels provide a structural cavity that creates a buffer between the wall and the backfill material which regulates the temperature.



High Water Table Relief

The Atlantis underdrain is the most efficient and economical way of handling spring waters or preventing the rise of water.

It may also be utilised as a barrier in areas where the high water table needs being kept under control.

The Atlantis underdrain system uses the Heavy Duty 52mm (2.05") interlocking Flo-Cell®, pavers which is easy to install, thus saving a builder or a contractor time and money.

Atlantis underdrain is used in place of the traditional complicated, expensive and inefficient pipe and gravel blanket that are currently being utilised.

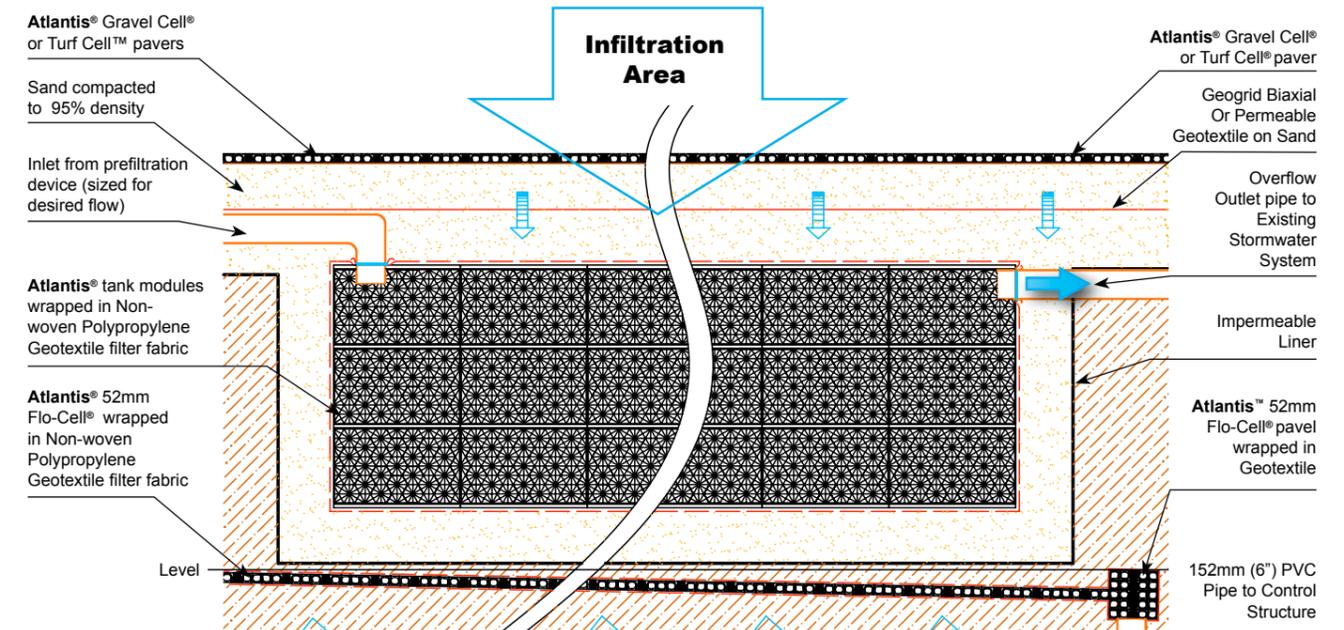


Ground Preparation



Installation of Atlantis 52mm Flo-Cell® as underdrain.

High Ground Water Table Relief



The product is ideal for shotcreting saving time and labour costs through rapid installation and thereby reducing labour requirements. The product is easily installed by one person and rigid enough to easily place and fix on the wall in seconds.

Gravel Cell® Gravel Reinforcement Structure

Part Number: 80052



H: 52mm (2.05") • W: 260mm (10.24") • L: 480mm (18.9")

Color: Black

-- Supplied in 1m² panels

Flo-Cell® 20mm Drainage Cell

20mm Part Number: 80020



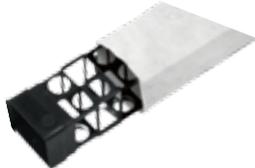
H: 20mm (0.78") • W: 405mm (15.94") • L: 620mm (24.4")

Color: Black

-- Supplied in 1.5m² panels

Flo-Pipe® Permeable Pipe

Part Number: 30014



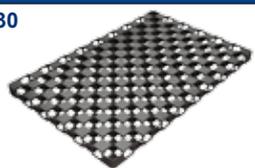
H: 80mm (3.14") • W: 100mm (3.97") • L: 1080mm (42.52")

Color: Black wrapped in geotextile

-- Supplied in wrapped in geotextile

Flo-Cell® 30mm Drainage Cell

30mm Part Number: 80030



H: 30mm (1.18") • Width: 405mm (15.94") • Length: 620mm (24.4")

Color: Black

-- Supplied in 1.5m² panels

Flo-Log™ Premium Drainage Logs

Code	Product Name	Size
10519	52mm Flo-Log™ (1.9m)	(H)52 x (W)260 x (L)1920
10520	104mm Flo-Log™ (1.9m)	(H)104 x (W)260 x (L)1920
10521	156mm Flo-Log™ (1.9m)	(H)156 x (W)260 x (L)1920
10522	208mm Flo-Log™ (1.9m)	(H)208 x (W)260 x (L)1920
10523	260mm Flo-Log™ (1.9m)	(H)260 x (W)260 x (L)1920

Gro-Wall® Vertical Garden System

Part Number: 80040



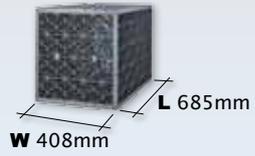
Kit Height: 1230mm (48.42") • W: 680mm (126.77") • L: 220mm (8.66")

Color: Black

-- Supplied in kits of 6 modules

Flo-Tank® Rainwater Harvesting

NOTE: All Flo-Tank® modules are 408mm in width and 685mm in length.




Mini P/N 70010

Single P/N 70003

Double P/N 70004

Triple P/N 70005

Quad P/N 70006

Penta P/N 70007



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.

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 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 Atlantis Corporation Pty Ltd. 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 Atlantis Water Management, Atlantis Corporation Pty Ltd. Copyright © 2011.

Atlantis Water Management
 PHONE: + 612 9417 8344
 FAX: + 612 9417 8311
 EMAIL: info@atlantiscorp.com.au
 WEB: www.atlantiscorp.com.au

