Global Synthetics is a 100% Australian owned company staffed by engineers with extensive experience in geosynthetics in Australian conditions. Large stock supplies are held throughout Australia to service your requirements efficiently.

This newsletter showcases some recent projects with which Global Synthetics has been proud to be associated.

**Bentofix®**

Global Synthetics and Naue are pleased to announce the release of their new landfill brochure. The brochure details a range of case studies and offers designers some very practical advice in the general construction of various aspects of a modern landfill and specifically demonstrates the advantages of using trusted names in both HDPE membranes and Geosynthetic Clay Liners (GCLs).

For a copy of this brochure just go to our website www.globalsynthetics.com.au fill out the contact form and request “Landfill Brochure”.

For high quality products you can trust in our name and reputation.

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**WMAA Annual Conference a Success- Global Synthetics Platinum Sponsor**

The Waste Management Association of Australia recently held their annual conference at Rosehill Gardens- Sydney from the 28th through to the 31st of March 2017. Global Synthetics was proud to be the Platinum Sponsor at this event as well as being the major sponsor at the geosynthetics CQA conference workshop held in conjunction with the conference.

In total, nearly 300 delegates and a range of industry exhibitors were present to support the conference event.

The conference highlight was a first ever conference workshop on the use of geosynthetics in landfill applications. Guest speakers included Professor Richard Brachman from Queens University (Canada); Dr Ian Peggs from I-CORP International (USA) and Kent von Maubeuge as the vice president Naue Geosynthetics (Germany) and as the Chair of ASTM Committee 35 D4- Barrier System. Other local speakers including Fred Gassner (Golder Associates), Adrian Roberts (GHD) and John Scheirs (ExcelPlas) who made a significant contribution over a range of issues affecting landfill construction and CQA and the specific application of use of geosynthetics.

The workshop was a unique opportunity for suppliers, installers, purchasers and designers to hear the latest research findings and to gain an insight into best practice in the specification, installation and construction quality assurance (CQA) procedures in the delivery of all aspects of the landfill project.

Major outcomes from the conference included:

- a need for further discussion on appropriate levels of product acceptance testing (MQA/CQC) and risk based testing from a CQA perspective, with respect to landfill construction.
- a need to introduce a more rigorous approach in the evaluation of appropriate test methods and the inherent variability of these tests both from intra and inter laboratory perspectives to assess CQA compliance.
- the potential issues with the use of polymer additives introduced into the GCL clay component and the research that has recently completed by Professor K Rowe et al suggesting possible elution, with time, of the polymer additive and hence changes to the permeability (poorer performance) of the GCL. Recent research is suggesting that polymer additives may cause a reduction in interface friction values of a GCL with possible stability issues on landfill side-slopes.
- a need to address the issues of puncture of geomembranes such as HDPE lining systems and the need for much heavier mass protection geotextiles than is the current practice in Australia.
- a need to have much longer field studies of potential degradation processes of geosynthetics used in landfill. Short term laboratory tests may be inappropriate when aspects of long term durability need to be considered.

The conference organisers are to be congratulated in organising the event and the quality of international and local speakers.

For further information please contact info@globalsynthetics.com.au
Cocos Islands Under Threat
GeoRock™ GSC’s to the Rescue

Just 2750 kilometres North West of Perth within the pristine blue waters of the Indian Ocean lies Australia’s last true untouched paradise, the Cocos (Keeling) Islands. Home to some 600 people, comprised mostly of the local Cocos-Malay residents, this remote island destination attracts thousands of visitors each year, with its kite and windsurfing, exceptional fishing and diving. However this tranquil paradise is under relentless attack from the forces of the open seas, with severe foreshore erosion resulting in the destruction of important infrastructure, such as main roads, air strip and housing. With the highest points on the Islands being 2-3m above sea level, the islanders have their heads just above water.

Federal Government funding was granted to Cocos Island to address the issue of foreshore erosion. Conventional method of armouring with large stone is impractical & cost prohibitive. Unfortunately there is no rock on Cocos Island, only sand and coral, which meant a different approach was needed to defend the foreshore.

The Shire of Cocos (Keeling) Islands chose to use GeoRock™ GSCs (geotextile sand containers) to remediate a severely eroded section of William Keeling Cres. GeoRock™ provides an aesthetically pleasing, soft armour solution comprising a staple fibre geotextile with exceptional UV resistance, superior tensile strength and high levels of abrasion resistant. The following were installed on this project:

- GeoRock™ 1.0m³ Anti Vandal (AVL) Geotextile Sand Containers: +5,350 units
- ProFab® ULTRA AS1200X Nonwoven Revetment Filter Geotextile: +5,500m²

The GeoRock™ 1.0m³ units were the preferred option by the Shire as it meant they were benefiting from 25% greater mass than traditional 0.75m³ units. The higher mass results in greater unit stability with a negligible increase in unit cost and improved installation efficiencies. This is critical on islands with a narrow tidal window for works access.

The Shire of Cocos (Keeling) Islands achieved all structural design objectives within their financial and timing allowances. Feedback from the local island community also suggests they are happy with the ‘soft armour’ approach taken by the Shire whilst comforted by reduced storm threat levels.

For further information please contact sean@globalsynthetics.com.au
Martin Munro Parklands, Cairns - LinkWeld® Gabion Structures

In late 2015, Global Synthetics was contacted by Cairns Regional Council to assist in the design and specification of a number of LinkWeld® gabion structures that were proposed to complement the redevelopment of Cairns Park to the new Martin Munro Parklands.

LinkWeld® rigid mesh gabions coated with Galfan® wire technology were used to line outdoor gardens and changes in grade and provided an attractive backdrop and surround to the amphitheatre centre stage.

LinkWeld® gabions were utilised in the most difficult structure of a shear vertical sound wall surrounding the amphitheatre. To allow this structure to stand with a relatively thin one metre thickness and height over six metres, LinkWeld® was checked for internal and external stability with internal steel columns used to prevent overturning and additional LinkWeld® wire brace hooks used to create a structurally stable rock filled gabion appearance.

The LinkWeld® gabion units were placed around the steel columns and secured and were used to surround and conceal a large steel beam lintel used to create a portal through the LinkWeld® gabion sound wall structure. The attached images show the fantastic final appearance of the wall combining the natural look of rock with the durability of the Galfan® wire coating technology used on LinkWeld® gabions.

The park was officially opened in August 2016 by Cairns Regional Council Mayor Bob Manning and the Governor of Queensland, His Excellency the Honourable Paul de Jersey (AC). All levels of Government involved and the general public are extremely happy with the outcome of the park and LinkWeld® gabions aided in this beautification whilst providing a structurally sound solution.

For further information please contact jason@globalsynthetics.com.au