Geofabrics Journal

March 2009

2009 brings a lot of uncertainty for many people in the engineering construction sector. As an Australian textile manufacturer, with manufacturing plants in regional Australia and over 150 employees nationally, we appreciate your support in using our Australian-made products in your projects.

Recent months have seen us working with designers to develop innovative solutions for their project. A recent project in Western Australia saw a unique coastal product installed to counter the aggressive installation and performance conditions. As Australian manufacturers, we can offer you with services that may provide you with a site specific solution.

We continue to develop our "Geosynthetic Centre of Excellence" on the Gold Coast, with a full suite of laboratory equipment being commissioned mid-2009, including equipment that is the only type of its kind in our region.

Our export activities continue to flourish, with project successes in Asia, Africa, Europe and the Middle East in recent months, with Geofabrics Australasia supporting Australian engineers designing the international projects.

Whilst 2009 and 2010 will be challenging, we continue to focus on supporting you in providing world-class infrastructure projects for the Australian community, using Australian-made geosynthetic solutions.

The Geofabrics Team

News & Events:

During February, we held a national seminar series on designing with our ELCOROCK® coastal protection system.
For details on what was discussed, please contact Simon Sheldrick on s.sheldrick@geofabrics.com.au

Recent research on our Megaflo® Ultra system for drainage in tailings dams has yielded project success already. For more details, please contact Rod Fyfe on r.fyfe@geofabrics.com.au

Did you know that our bidim® geotextile and Megaflo® drainage system have been made from recycled polymers for over 10 years?

Use of recycled polymers reduces the amount of waste going to landfill every year.

In This Issue…

Geofabrics Australasia continues to work hard towards reducing the company's impact on the environment. We see the importance of addressing Global Warming, thus we are looking to commit to printing all future brochures and newsletters on environmentally friendly recycled paper, accredited by Forest Stewardship Council (FSC) and produced in ISO 14001 certified paper mills.

FSC Mixed Sources
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BROWNS PLAINS SMART TIP

Logan City Council required a new cell to be constructed at their Browns Plains Smart Tip location and appointed Allan Watson Associates (AWA) as the consultant.

As some clay was available on site, AWA utilised this to design a 2 layer, composite liner system – a geosynthetic clay liner placed above a 250mm thick compacted clay layer. Above the liner a granular drainage layer and leachate collection system was to be placed. The 300mm thick drainage layer also provided the required confining pressure to the GCL to prevent uncontrolled swelling of the clay.

The specification on the GCL called for a powdered bentonite product as this provides an instantaneous seal unlike granular bentonite. Geofabrics Australasia were able to offer two grades of **ELCOSEAL®** Geosynthetic Clay Liner; **X1000** for the base and the **X2000** for the side slopes.

As **ELCOSEAL®** rolls are very heavy, around 900kg each, special consideration must be given to the movement of rolls around site. Geofabrics were able to provide to the contractor, Moggill Constructions, a prong and lifting beam to attach to their own equipment, providing a simple and safe method to unload, maneuver and install rolls on site.

Once the compacted clay layer was complete, the contractor was able to commence installing the GCL. Due to the very short supply chain from the manufacturing plant on the Gold Coast, the contractor was able to get semi load deliveries on a daily basis which would then be installed the following day.

Very little material was stockpiled on site and was therefore not vulnerable to the elements with consignments able to be delayed if inclement weather was expected. With well organised truck movements for the granular drainage material and the GCL, Moggill Constructions were able to place up to 6,000m^2 of liner per day. Exposed edges were covered overnight with plastic to protect them from moisture until the adjoining roll was placed.

With onsite training from Geofabrics branch staff, the contractor, who had never used **ELCOSEAL® GCL** previously, was able to install the GCL and cover 45,000m^2 of **ELCOSEAL®** in one month.

For more information on the project and products used contact Kristina Schaeffer on (07) 3279 1588 or email at k.schaeffer@geofabrics.com.au

CASTLEMAINE LANDFILL

The Castlemaine Landfill is the waste and recycling facility for the Central Victorian town of Castlemaine. This and it's surrounding areas are owned and operated by the Mount Alexander Shire Council, providing responsible management of wastes from household, business and industry.

Recently, a new municipal waste cell, Cell 7, was constructed. The Council engaged consultants from ENSR Australia Pty Ltd to design the composite liner which was approved by the EPA.

The liner consisted of a 500mm thick compacted clay, **ELCOSEAL® X2000** Geosynthetic Clay Liner, 1.5mm HDPE Geomembrane liner and **TX650 bidim®** geotextile to protect the liner against damage from the aggregate that forms the leachate collection and drainage system. A layer of **bidim® A12** filter geotextile was placed above the drainage layer to prevent fine waste entering the course drainage layer and clogging the system.

The cell has an overall area of 6000m^2 and was lined in approximately two weeks by the specialist lining company, Lining Victoria Pty Ltd under the strict construction Quality Assurance verification processes required in Victorian Landfill cell construction.

Geofabrics was pleased to provide world class Australian made products with stringent quality control to ensure the best outcome for the client.

For more information on the project and products used contact John Goumas on (03) 8586 9111 or email at j.goumas@geofabrics.com.au

GABIONS ROCK PRIMARY SCHOOL

Roberts McCubbin Primary School

The Galmac coated, woven mesh **Gabion** "Rock Banks" installed by contractor Ground Tech at Roberts McCubbin Primary School in Box Hill, Victoria are designed to passively assist the ventilation system in providing cool air into the classrooms during the summer months.

The concept is that the rocks store energy, so in summer they are cooler than the hot summer sun (and air) during the day and so air drawn through the **Gabion** rock bank will be cooled by the rocks prior to being introduced into the classrooms at a low level (near the floor).

Also, in winter, the rocks will be warmer than the cold night air, so in the mornings the air can again be drawn through the rocks to help the heating of the classrooms.

In operation, the classrooms are consistently 3-5°C cooler than the external temperature.

These systems are unique and require specialist design. When designed correctly, they are effective in providing a passive source of cooling, particularly in the autumn and spring seasonal months.

For more information on this project or on similar works throughout the country, contact Dale Chaychuk on (08) 9309 4388 or email d.chaychuk@geofabrics.com.au

Latrobe Landfill

Latrobe City expected to soon reach maximum capacity of the Morwell Landfill and thus engaged GHD to undertake site feasibility assessments of potential landfill sites, environment and planning assessments for proposed sites and the detailed design for the proposed Callignee South Road landfill site.

Early designs intended to use a double composite liner system consisting of a primary liner, a secondary liner and a geomembrane (HDPE) liner. Both the primary and secondary liner would consist of a layer of compacted clay (CCL), each no less than 600 mm thick. The leachate detection layer would consist of a 300 mm thick layer of coarse gravel. The council however was interested in reducing the thickness in order to optimise fill capacity of the landfill while maintaining the liner integrity and performance.

GHD Pty Ltd designed Cells 1 and 2 to consist of a geosynthetic clay liner (GCL), drainage layers, clay layer, a geomembrane (HDPE) and a geotextile. This composite base liner was designed as per best practice specified in the Landfill BPEM.

An increase of up to 0.9m of airspace was achieved by replacing a traditional Compacted Clay Liner (CCL) with **ELCOSEAL® X1000** (GCL), a further 0.3m of airspace was gained by replacing a traditional leachate detection system with the **Trinet® GTG512** (Geonet). The construction period was also significantly reduced due to the speed and ease of installation of both the **ELCOSEAL®** and Trinet® products.

Geofabrics supplied to this project:

- 35,000m² of **ELCOSEAL® X1000** GCL
- 56,000m² of **bidim® A34** cushioning geotextile
- 20,000m² of **Trinet® GTG512** drainage geonet

The project was awarded to Akron Roads, who started construction in September 2008 and expect to complete the project by mid 2009.

For more information on the products and services provided by our technical sales team, please contact Sharon Hunter-Smith on (03) 8586 9111 or s.hunter-smith@geofabrics.com.au

Latrobe Landfill

GRASSPROTECTA™ FOR BOX HILL GOLF CLUB

Mark Jennings, Superintendent at the Box Hill Golf Club in Melbourne, has had a problem area at his course in which both foot traffic and car traffic has created a worn, and often slippery area between the tee and green of the 13th at Box Hill Golf Course.

The affected area is towards the bottom of a slope that is the main thoroughfare running between the green and a creek.

Mark was in search of a product that would provide traction to cart and maintenance vehicles, allow grass to survive and still create a grass appearance.

The affected area was lightly scarified and raked. The **GrassProtecta™** product was then rolled out and laid directly on top of the prepared soil and pinned. The area was then lightly rolled and seeded.

The grass has now established itself through the **GrassProtecta™**, providing a non-slip surface with a fully grassed appearance.

For more information on this project contact Neil Taylor on (03) 8586 9100 or email n.taylor@geofabrics.com.au

STAFF PROFILE

Phil Micallef

Phil Micallef commenced employment with Geofabrics in October 2008 as a Technical Sales person in our recently opened office in Coffs Harbour.

Phil has had a long association with the building and mining industries providing sales and technical design services. This technical background, as well Phil's passion for customer service, is proving to be an ideal combination as Phil gets to meet customers in the northern NSW coastal region as well as north western NSW. Phil is ideally located to service this region of anticipated growth, particularly projects associated with upgrading of the Pacific Highway and improvements to infrastructure.

Phil is working towards an Associate Degree in Engineering and with intensive ongoing product training, he is looking forward to helping clients with their enquiries.

Phil is available on 0418 533 767 or you can email him at p.micallef@geofabrics.com.au.

FORRESTDALE SWALE DRAIN

The new business development park at Forrestdale, located on the corner of Lakes/ Ranford Road, Forrestdale (approx. 20km south of Perth CBD) required for the discharge of stormwater runoff from the road infrastructure to be captured and redirected to the business park sump.

Traditionally, roadside swales are used but these swales require long term maintenance by the local authority. The civil consultant Wood and Grieve and the contractor Georgiou Group decided that they were not satisfied with conventional swale lining systems such as rock pitching and erosion control blankets and contacted Geofabrics Australasia to assist in recommending an economical solution.

Geofabrics Australasia suggested a new innovative product called **Geoweb®** cellular confinement system.

The swale when constructed was 7.0m wide with a 1 in 3 batter slope. A 75mm high **Geoweb®** panel was selected for the project because of the size of the infill material.

Two different types of infill material were used within the **Geoweb®** cellular panels - washed river sand for the base and the property side swale batter and pea gravel on the road side swale batter. The pea gravel infill was installed because of the anticipated high discharge velocity from the road stormwater runoff.

The swale was formed and then lined with a **bidim® A24** geotextile used as a separation layer. Then a 75mm high **Geoweb®** panel was pinned within the swale and then infilled with above material. In total 14 000m² of 75mm **Geoweb®** and **bidim® A24** was supplied to the project.

For more information on the project contact Estyn Charles on (08) 9309 4388 or email e.charles@geofabrics.com.au