



UPGRADE MUNGABAREENA

OPEN STORM WATER DRAIN

CLIENT: CITY OF ALBURY
MAIN CONTRACTOR: BTL AUSTRALIA
LOCATION: ALBURY, NSW
DATE: AUGUST 2005
PRODUCT: PYRAMAT & LANDLOK 450
QUANTITY: 6,500 m²



FIG.1: PYRAMAT & LANDLOK 450 INSTALLED



FIG.2: ORIGINAL DRAIN

DISTRIBUTORS OF :

Geotextiles
Geogrids
Dewatering Tubes
Subsoil Drainage
Wick Drains
Erosion Control
Gabions & Rock Mattresses
Industrial Fabrics
Lining Systems

PROBLEM:

Increasing flows due to development saw the need to widen the existing drain as heavy flows frequently breached the existing drain banks.

SOLUTION:

The original design was to line this drain with 230mm Reno mattresses. Pyramat was chosen over the original mattress design for the following reasons:

- 50%+ cost savings compared to Reno mattresses
- installation time was halved
- Aesthetically pleasing end-finish

The functional nature of the TRM lined drain solution was the definitive factor in deciding upon this option over hard engineering alternatives.

The contractor selected Landlok 450 and Pyramat.

PROJECT INFORMATION:

Following recent flooding the drain was increased in capacity by approximately 200% by reducing the angles of the batters to allow increased discharge capacity. As the channel experienced permanent flow in the base with flow velocities up to 6m/sec Pyramat was used to line the base. Additionally, to reinforce the vegetation just above the invert in case of high flow conditions, Landlok 450 was also installed to reinforce the vegetation in this zone. In total, the client installed TRM's across a 6mt width of this open drain and also around the headwalls and culverts of outfall pipes



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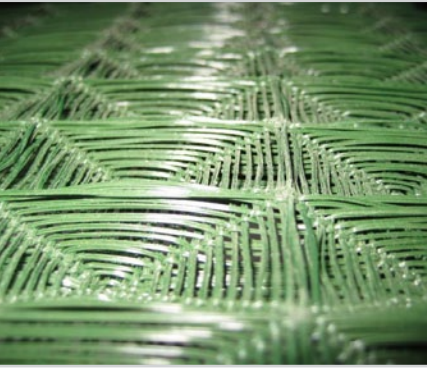


FIG.3: PYRAMAT STRUCTURE

TRM INFORMATION:

Pyramat is a High Performance Turf Reinforcement Mat (HPTRM), has a three dimensional matrix with no loose fibres and is made using UV stabilised polypropylene. The three-dimensional structure increases the surface area by 40%, thus reducing water velocities. A fully vegetated HPTRM drain can resist velocities of up to 7.6 m/sec. A partially vegetated HPTRM drain can resist velocities of up to 6.1 m/sec, and an un-vegetated HPTRM drain can resist velocities of up to 4.6 m/sec. HPTRMs promote revegetation within the drain by slowing water velocities and trapping sediment. After the area is vegetated the mat then provides a stable and durable reinforcement for the roots of the vegetation. As HPTRMs are synthetic, they don't break down over time, thus continuing to stabilise the drain, and ultimately reinforcing the vegetation, for up to 50 years or more.

BENEFITS:

In addition to 50%+ cost savings over the originally specified Reno mattress construction, installation was quick and easy. Both Landlok 450 and Pyramat were easily cut with scissors allowing complicated detail around pipes and culverts to be achieved.

By utilising HPTRM technology this allows storm water to infiltrate back into the soil and facilitates groundwater recharge benefiting the local environment as a whole.



FIG.4: 4 - BRIDGE BEFORE



FIG.5: BRIDGE AFTER



FIG.6: NOV.2009

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