

CASE STUDY

LONDON TERRACE STREAM REPAIRS

INCOMAT® CONCRETE MATTRESS



CONTRACTOR	Downer New Plymouth
ENGINEER	WSP
CLIENT	New Plymouth District Council
LOCATION	London Terrace, New Plymouth
PRODUCTS USED	Incomat Concrete Mattress

**ADVANCED
GEOSYNTHETIC
SOLUTIONS**

PROJECT

Following a number of storm events 150 meters of the London Terrace stream in New Plymouth suffered significant damage. Due to the level of damage it was decided that the existing rock mattresses would be removed and replaced with a robust Incomat Concrete Filled Mattress. Incomat will provide a long term erosion protection to the stream bed.

DESIGN

Cirtex worked closely with the designer in the early stages of the project to ensure that the Incomat was suitable for the application. This involved assessing a number of site-specific aspects such as flow velocities, interference from nearby vegetation, lifespan and layout. In conclusion, Incomat Filterpoint C 60.148/20 (average thickness of 170mm once filled) was selected by the designer as this was suitable for flow velocities of up to 9m/sec and has been successfully installed on other projects for over 30 years.

INSTALLATION

Before the works commenced, the stream was carefully diverted past the repair area in a temporary culvert pipe to allow the stream to keep flowing and protect aquatic life. The existing rock mattresses were then removed and the subgrade was then carefully trimmed in a shallow 'V' shape ready for the Incomat Concrete Mattress to be laid. The unfilled Incomat Concrete mattress was laid on the subgrade and filled using an in-line concrete pump pumping concrete some distance from the road as there was no access into the site for concrete trucks without significantly disturbing the surrounding vegetation. Cirtex provided support to the contractor during the initial design, pricing and planning stage as well as visiting the site at the start of the installation to provide guidance on the placing and filling of the Incomat product.

The products used provided the following benefits to the project:

- Robust erosion protection solution
- Removes need for any formwork
- Tried and proven system that has been successfully in place on other projects since the 1970's
- Permeable mattress that would relieve any excess pore water pressure below the mattress
- Minimal disturbance to surrounding bush as all concrete was pumped in meaning there was only minimum requirement for equipment in the area.



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