



CASE STUDY:

SIGHT SCREENING BUND WALL

**COMMERCIAL DEVELOPMENT
WESTERN SYDNEY**

APRIL 2019

MACCAFERRI GREEN TERRAMESH®

Maccaferri Terramesh is a versatile, modular system for reinforced slope systems and mechanically stabilised earth walls that can be a more cost effective solution than the mass gravity Gabion wall because of the speed of installation and reduced rock fill requirements.

The Maccaferri Terramesh retaining wall system is designed for use in a wide range of applications in road, mining and rail infrastructure works. The system comprises of a gabion type facing with integral woven mesh soil reinforcement panels that can be used to construct structures with either a stepped front face or vertical facing.

Maccaferri Terramesh are pre-assembled units of double twisted wire mesh. The facing section of the unit is formed by connecting a back panel and diaphragms to the main fascia unit, thus creating the rectangular shaped cells used for stone confinement. The geogrid reinforcement, fascia and lid are all one continuous panel of mesh.

GEOFABRICS®
Smarter Infrastructure

A commercial development in Western Sydney required a structure to be built to provide sight screening of the development from local residents. The key element to the barrier was that it had to have a limited visual impact for residents facing the structure. Therefore, a berm which could ultimately be vegetated was considered the most appropriate option. This sight barrier was achieved by constructing a soil reinforced berm. The double-sided berm was constructed using the Maccaferri Green Terramesh® system.

Green Terramesh® is a modular system comprising 8 x 10 double twisted steel woven wire mesh. The facing section of the unit is reinforced with additional PVC coated steel rods inserted through the twists during the manufacturing process. Attached behind the woven wire mesh is a welded wire mesh panel. Two steel brackets (8 mm diameter) are used to form a fixed 70 degrees face angle.

A biodegradable erosion control blanket is also attached to the face to retain vegetative soil.

A key component for the approval of the development application was that the side of the berm facing the residents was to have a maximum slope of 45 degrees. To achieve this, the structure was stepped back 1 m every second lift (1.2 m).

> Sight Screening Bund Wall



Placing vegetative soil behind the face of the wall.



Paralink 200 geogrid as primary reinforcement.



45 degree face achieved by stepping back every second layer.

In using the Green Terramesh units, which has the internal bracing with the rigid mesh panel face and the high strength Paralink geogrid, the slope on the industrial side was able to be installed at 70 degrees and this meant a narrower footprint and therefore more available development space. The Green Terramesh and Paralink system has had full scale testing done to ensure connection strength and is a BBA certified system.

The berm was installed by Retaining Solutions. Geofabrics provided technical information regarding the connection detail between the Green Terramesh units and the Paralink and site visits were regularly carried out to support the construction team.

A key part of the design process was the installation techniques to be used. The Installation Guidelines for Green Terramesh produced by Maccaferri formed part of the CQA documentation.

The berm has now been landscaped and planted and is greening up well.

The Green Terramesh berm provided both the desired minimal visual impact for the local residents while providing a cost effective solution to the developer.



Aerial photo of completed bund.