GEOTECHNICAL ENGINEERING
Product: MACGRID™, MACMAT™, MACDRAIN™, MACTEX™ NON-WOVEN GEOTEXTILE

Problem
Chemara Hills development nestled against the lush slopes and historical ground of Bukit Chemara in Seremban city centre. It offers greenery, natural ambience and charming homes for potential residents.

Earthworks started in early 2013. At the South East of the 43.68 acres land, there was a 200m stretch of reinforced earth wall to meet uneven platforms of the existing development area. Since the focus of the development was towards nature and preservation of the historic place, the geogrid wrapped around slope with vegetated facing was selected.

Solution
The geogrid wrapped around slope consists of MacGrid™ geogrid as a reinforcement of the slope with inclination at 60 degree. The retained height is 7m.

Stages construction started with base preparation using granular material with thickness of 500mm and wrapped around with MacTex™ non-woven geotextile separator layer. After the completion of the base, the geogrid was cut to a designated length and first layer was laid on top of the base. Each layer of the geogrids is 600mm thick, with extended facing to wrap back after the reinforced fill was laid and compacted. The compaction works should follow the standard of practice in earthworks. The sequence of geogrids installation is repetitive until it reaches the designated slope height.

For the slope facing, BRC was used to form the 60 degree inclination together with MacMat™ for vegetation purpose. MacMat™ is geomats with high voids content made from PP mono-filaments heat-bonded at the contact points with a variable thickness for erosion control applications. With MacMat™, it also helps to retain top soils and grass seeds until the grass started to germinate.

As for drainage system of the slope, MacDrain™ was introduced. MacDrain™ is a three-dimensional, light and flexible composite matting made up of a drainage core of looped polyamide filaments which gives it a high discharged
capacity, covered on both sides with a non-woven filter fabric. It shall be laid at specified spacing.

After the completion of the slope, hydoseeding was used to vegetate the slope surface.