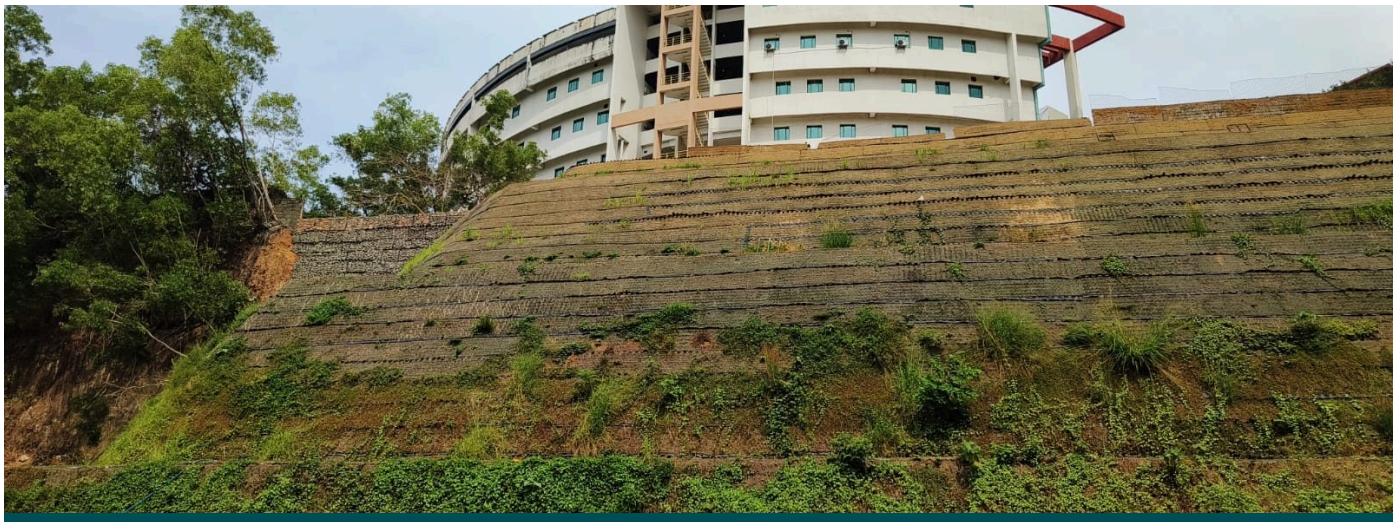
Soil Reinforced Retaining Wall Near CDAC Building at Technopark Phase 1

Thiruvananthapuram



Reinforced soil slope using Green Terramesh Facia

TYPE OF PROJECT	YEAR OF CONSTRUCTION	CLIENT	CONTRACTOR	DESIGNER
Slope Protection	**2023**	**Technopark**	**Kerela State IT Infrastructure Ltd.**	**Maccaferri Environmental Solution Pvt. Ltd.**

PROD. RELATED

Nonwoven Geotextiles (MacTex: 2.950 Sqm), Gabions (Gabion: 45 Cum), Biaxial Geogrids (MacGrid EG: 1410 Sqm; MacGrid AR: 730 Sqm), TerraMesh (Green Terramesh: 785 Nos.; Terramesh: 50 Nos), Biaxial Geogrids (ParaLink 100 : 8000 Sqm; ParaLink 200 : 9030 Sqm; ParaLink 300 : 20240 Sqm), Drainage Geocomposites (MacDrain: 765 Sqm), Reno Mattress Plus (Reno Mattress: 430 Sqm)

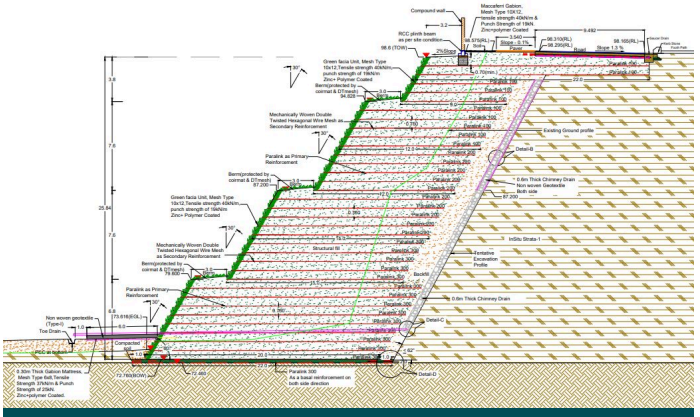
Challenge

Technopark is a technology park in Trivandrum, Kerala established on 18 November 1990 by the Government of Kerala. Technopark houses domestic firms, joint ventures, and subsidiaries of foreign companies engaged in a wide variety of activities. Technopark aims to provide the infrastructure and support facilities needed for IT/ITES and electronics companies to function. In addition to office space, it provides utilities and connectivity, which is done either directly or through private partners.

It has been observed that the major portion of the landslide location is covered with lateritic soil. The lateritic soils are very soft and can be cut with a chisel when wet. However, these harden with time. The plasticity of the lateritic soils decreases with depth as they approach the parent rock. These soils, especially those which contain iron oxide, have relatively high specific gravity. A landslide occurred near the Thejaswini building, below the existing road, in front of the CDAC building in Technopark Phase – I campus on August 2020. The average height of the slope is about 25m.



Slope Failure within Technopark Campus



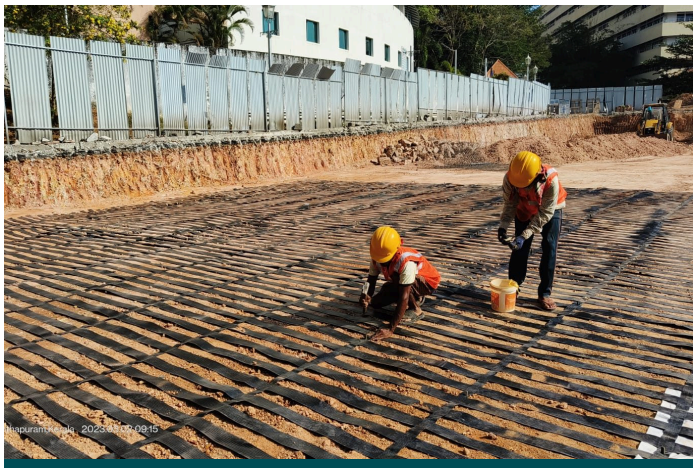
Proposed Reinforced soil structure using Green Terramesh

Solution

The site of the presidential suite building area is on hilly terrain and the foundation strata is completely rock. The height of the retention is varying from11m to 26m. In order to meet the requirement of increasing the retention height and good aesthetic view, it is decided to go with the reinforced soil system with Green Terramesh as the facia for the entire length of 150m. As the foundation strata is completely rock, to avoid further excavation, RCC pedestal is proposed on the valley side to create flat base of required width. High strength geogrids i. e. Paralink are proposed as a primary soil reinforcement. Behind facia unit, vegetative soil of 0.6m thick is used. For drainage arrangement, longitudinal and transverse perforated PVC pipe of 160mm dia. wrapped with geotextile are installed to collect the surface and subsurface flow to main drains. Further, at the interface of insitu strata and structural soil, a drainage composite is proposed to dissipate the pore water pressure developed and to assist the flow of seeping water.

Based on the site conditions and specific requirements of the client, Green Terramesh units consisting of double twisted hexagonal shaped steel woven wire mesh along with a biodegradable erosion control blanket and a welded mesh panel with three steel tie rods were installed.

ParaLink were installed as a primary reinforcement. Drainage composite, chimney drain was used for drainage purposes between two different fills. Polyester needle punched non woven geotextile, MacTex was used as a filter media below Reno Mattress which allowed free movement of water and prevented backfill soil from entering in the voids between stone filling and wrapped around PVC pipe.



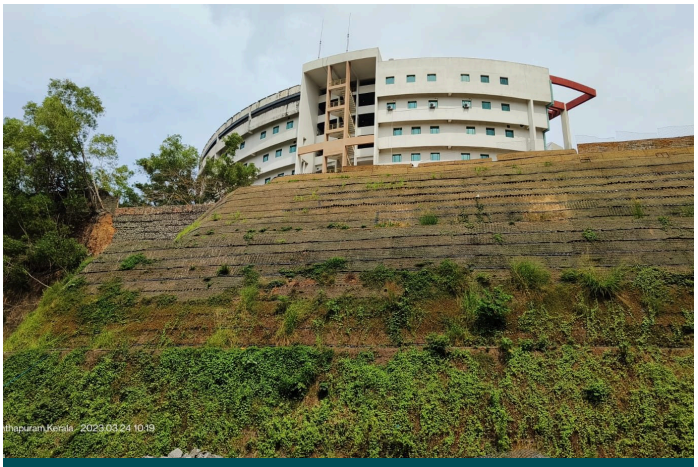
Laying of ParaLink reinforcement on the prepared bed.



Placing stone into Reno mattress units



Watering the fascia units for vegetative growth



Completed Reinforced soil structure using Green Terramesh



Structure blending with nature after vegetative growth

MACCAFERRI ENVIRONMENTAL SOLUTIONS PVT. LTD. 5th Floor, DLF Building No. 9, Tower A, DLF Cyber City, DLF Phase 3, Sector 24, Gurugram 122002, Haryana, India
Ph: +91 1244 360824 E-mail: info.in@maccaferri.com

OPEN GOOGLE MAPS

OPEN GOOGLE EARTH

MACCAFERRI ENVIRONMENTAL SOLUTIONS PVT. LTD. 5th Floor, DLF Building No. 9, Tower A, DLF Cyber City, DLF Phase 3, Sector 24, Gurugram 122002, Haryana, India
Ph: +91 1244 360824 E-mail: info.in@maccaferri.com