

CASE HISTORY

Rev:00, Date : 05.11.2025

REINFORCED SOIL WALL USING TECHGRID UNIAXIAL GEOGRID & TECHDRAIN DRAINAGE COMPOSITE TO PROTECT KIGALI GOLF VILLAGE APARTMENTS, KIGALI, RWANDA



REINFORCED SOIL WALL

Client:	Products used:
FIDUS ENGINEERING	• TECHGRID UNIAXIAL GEOGRID : TGU 80/30, TGU 100/30, TGU 150/30, 200/30 • TECHDRAIN DRAINAGE COMPOSITE 55130
Contractors:	
FIDUS ENGINEERING	
Manufacturer & Supplier:	Year of Construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2025

Project brief & Problem description:

The Kigali Golf Village Apartments, located in the scenic city of Kigali, Rwanda, form part of an exclusive residential development designed to offer modern living amid hilly terrain. However, the project site presented significant geotechnical challenges due to steep slopes and varying soil conditions. During site preparation, the developers identified the risk of slope instability and potential erosion, which could endanger the safety and durability of the apartment structures and surrounding access roads.

Traditional protection methods such as mass concrete retaining walls and masonry structures were initially considered but were found to be uneconomical, time-consuming, and less adaptable to the project's aesthetic and environmental requirements. Furthermore, the high rainfall intensity in the region increased concerns regarding surface and subsurface drainage, posing a risk of water pressure buildup behind the retaining structures. Hence, an engineered solution was required to provide both structural stability and efficient drainage while maintaining cost-effectiveness and ease of construction.

The client sought a technically robust, durable, and sustainable solution that would enhance the long-term performance of the development while integrating well with the surrounding landscape.



Photo 1 : Site Condition Before Reinforced Soil Wall Construction

Solution Proposed:

After evaluating various protection measures, the client decided to construct a Reinforced Soil Wall, as it is faster to construct and ensures reliable performance. TechFab India supplied high-performance TechGrid Polyester Uniaxial Geogrid for wall fascia and soil reinforcement. The geogrid, known for its excellent tensile strength and low creep characteristics, provided the necessary reinforcement to stabilize the retained soil and resist lateral earth pressures.

To ensure efficient drainage and prevent the buildup of pore water pressure behind the reinforced soil wall, TechDrain Drainage Composite was incorporated into the system. This lightweight, easy-to-install composite offered superior in-plane flow capacity, effectively channeling seepage water away from the reinforced zone and reducing the risk of wall deformation or failure.

The combined use of TechGrid and TechDrain ensured a cost-effective, durable, and sustainable solution suitable for the challenging topography of Kigali. The system not only addressed stability and drainage issues but also contributed to faster construction timelines compared to conventional systems. The result was a structurally sound, aesthetically pleasing retaining wall system that provided long-term protection to the Kigali Golf Village Apartments and enhanced the safety and longevity of the entire development.

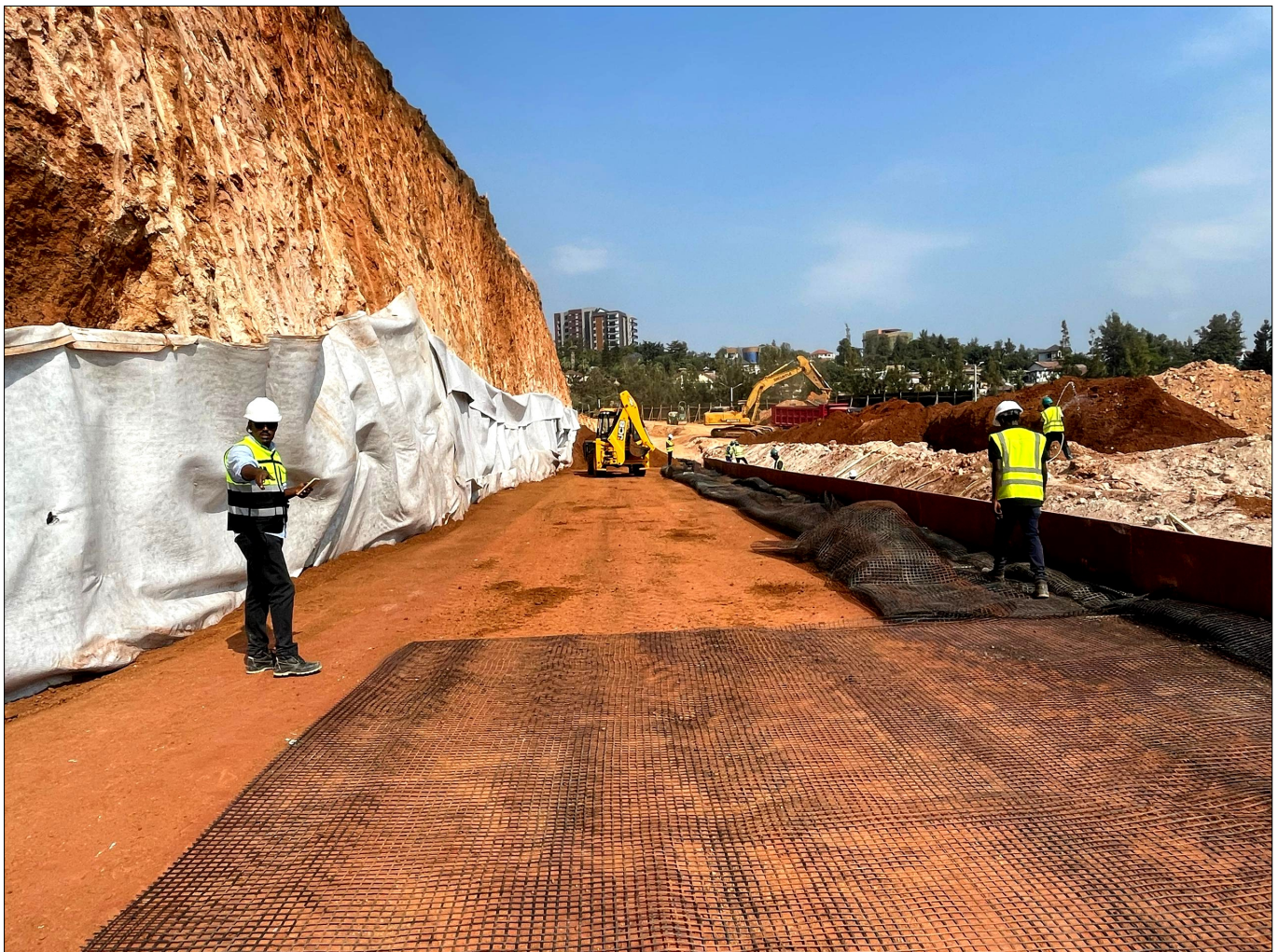


Photo 2 : TechGrid Geogrid Installation in Progress



Photo 3 & 4 : Structural Filling and Compaction Works in Progress



Photo 5 & 6 : During Construction – Reinforced Soil Wall Execution in Progress

Conclusion:

The Reinforced Soil Wall system using TechGrid Uniaxial Geogrid and TechDrain Drainage Composite offers a durable, cost-effective, and efficient solution for the Kigali Golf Village Apartments. The integrated reinforcement and drainage system ensure long-term slope stability and safety. The work is currently ongoing, progressing steadily toward successful completion.

For further details kindly contact :

TechFab India Industries Ltd.

46 & 47, Maker Chambers VI, Nariman Point, Mumbai - 400021

Tel: + 91- 22 - 2287 6224 / 6225

E: info@techfabindia.com

W: www.techfabindia.com