



## Terraform Geotechnical

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“Our customized design and multipurpose approach within the stipulated budget in drilling, grouting, and in dredging applications, and our custom-made equipment, tools and accessories, with datalogging system and software, makes our solutions very comprehensive.”

### What are the challenges of geotechnical investigation in hilly and coastal regions and what are the risks if not conducted before the design or construction phase of the project?

Hilly and coastal regions present unique challenges such as soil instability, erosion, and varying water levels and climate changes. Geotechnical investigation in these regions assesses the soil and rock properties, helping to identify potential hazards like landslides and erosions.

If not conducted before the design or construction phase, there could be consequences such as structural failure,

increased cost, safety hazard, regulatory non-compliance, environmental impact, long-term maintenance issues, and so on.

Due to climate change, there is a growing recognition of the need for a policy framework that mandates the use of sustainable materials, such as geosynthetics in projects like roads, rails, and tunnels.

Geosynthetics offer several benefits that align with sustainability goals such as Resource Efficiency, Enhanced Durability, Climate Resilience, Soil Stabilization, Water Conservation, Regulatory Compliance, and Economic Benefits.

### Geotechnical investigations often receive minimal attention in tender practices, particularly in government projects; how can the tendering process be improved to prioritize quality and professional standards?

Even though earlier, minimum attention was given to geotechnical investigations in tender practices, we have felt the necessity of doing proper geotechnical investigations during a project's DPR stage and ensuring that its execution is monitored closely.

The implications of awarding projects to the lowest bidder can sometimes compromise this aspect, especially if the tender document does not mention geotechnical investigation in detail. It is suggested that geotechnical investigation, its method, equipment and tools used, should be mentioned in the tender document and be rechecked during execution, as per the Indian and international codes.

The main factor contributing to such an oversight is due to our cost-driven culture, lack of awareness of equipment and tools, lack of standardization, and limited expertise in evaluation. In case of time or design changes and cost variations, a committee should take the decisions based on valid proof of the geotechnical investigations conducted.





To bring quality and professional standards into the tendering process, we need to shift to quality-based selection, pre-qualification criteria, mandatory geotechnical reports, training, updating codes and standards on time, incentives for quality jobs, and early project completion proposals in the tender.

**How do Terraform's solutions address the specific technical requirements of various projects and integrate sustainability into its products and services, particularly in areas such as dam rehabilitation, bridge foundations, hydropower projects, tunnel segment lining, slope stabilization, and dredging?**

The construction industry can reduce carbon emissions and lower costs while extending project lifespans by using sustainable materials, optimizing machinery, and using energy efficient equipment.

Terraform addresses the specific technical requirements of various projects while integrating sustainability through its tailored solutions and use of robust materials for equipment. The company undertakes

regular research and development to enhance the sustainability of its products and services, and is deploying emerging technologies and best practices in the construction industry.

**How does Terraform tailor its solutions to meet specific project needs and what methodologies does it use to ensure the accuracy and reliability of its geotechnical assessments?**

Terraform integrates various data sources, including real time monitoring and recoding systems, historical data evaluation, remote sensing information, to create a holistic view of the site conditions. This multi-faceted approach enhances the reliability in datalogging capabilities and in project monitoring which gives real-time data collection. Automated reporting and data analysis with project management tools enable improvements in the design.

Along with our global associates, we customize the solutions as per clients requirements after understanding their project's specific needs and challenges.

Our customized contribution in drilling, grouting, and in dredging applications, custom-made equipment, tools and accessories, with datalogging system and software, makes our approach different. Our customized design and multipurpose approach within the stipulated budget is a commitment to our clients.

**What is Terraform showcasing at bauma India 2024?**

We are showcasing innovative products and technologies that contribute to sustainable construction practices. We are highlighting our advancements in construction equipment and tools, accessories, datalogging and software, emphasizing the importance of innovation in driving economic growth and infrastructure development.

Terraform is demonstrating how its commitment to innovation supports national development goals, and how its products and practices contribute to a sustainable and efficient construction industry.