Editorial
Volume 11:3, 2021

Journal of Civil & Environmental Engineering

ISSN: 2165-784X

Open Access

Editorial on Geotechnical Engineering

Sushma Pullela*

Department of Biotechnology, Osmania University, Hyderabad, Telangana, India

Introduction

The systematic implementation of techniques that make construction on, in, or with geomaterials, such as soil and rock, is known as geotechnical engineering. Any civil engineering structure and construction is connected to soil in some way, and as a result, its architecture is influenced by soil or rock properties. Soil drilling, examining geomaterial properties, monitoring groundwater level and flow, and environmental and hydrological interactions all involve geotechnical operations. Excavations and supporting earth systems, underwater structures, bridges, natural or artificial fills, highways and airports, subgrades and ground structures, and slopes are all examples of foundation architecture.

Despite significant advancements in geotechnical engineering, many methods remain approximate, owing to the natural inhomogeneity of soils and prevailing environmental factors. Furthermore, relative to other prefabricated construction materials like steel or concrete, soils are more vulnerable to local environmental conditions. As a result, a thorough understanding of natural soil deposits, environmental interactions, and reaction to local conditions will be needed in order to make more reliable predictions of geomaterials engineering performance and behaviour in projects. Other fields such as geology, structural engineering, building management, hydraulics, earthquake and transportation engineers, and other relevant divisions are involved in geotechnical engineering operations. Any project's final design is the product of a partnership between these disciplines.

Geotechnical engineering is concerned with materials (such as soil and rock) that, by their very existence, show a wide range of action due to the imprecise physical processes that lead to their creation. Modeling the actions of such materials is challenging, and most conventional types of mechanically driven engineering approaches are incapable of doing so. Since it has shown superior predictive potential compared to conventional approaches. Artificial intelligence (AI) is becoming more common and especially suited to modelling the dynamic behaviour of most geotechnical engineering materials. AI has been successfully applied to nearly every issue in geotechnical engineering over the last decade.

Geotechnical engineering encompasses a wide range of topics; however, the study of soil that serves as the basis for large highway elements such as roadways and bridges, as well as elements that travel underneath roadways such as culverts, is the focus of this major subject of civil engineering. In terms of it being an engineering material, soil has several characteristic attributes:

- It's a material that's been used for quite a while. It was not only the cornerstone of many magnificent buildings, but it was also the material used to build them. Many of what we know now came through trial and error, and new science and technology are constantly adding to our understanding of this ancient substance.
- That is a natural phenomenon. It might seem trite to claim, but dirt, unlike steel, aluminium, or even concrete, is not a man-made material. We have to work with what nature has offered us, which stresses the value of geotechnical engineering. Even within the same city, its properties differ greatly. When used as a building material, soil can behave in unexpected ways.
- Soil is used all over the place. Understanding the soil quality must be a top priority for any highway operation. Roadways and bridges, of course, must be adequately supported; however, even the surface contours along roadways must be constructed to allow for adequate storm water runoff.

How to cite this article: Sushma P. “Editorial on Geotechnical Engineering.” Civil Environ Eng 11 (2021): 381

***Address for Correspondence:** Sushma P, Department of Biotechnology, Osmania University, Hyderabad, Telangana, India, E-mail: pullelaasushma20@gmail.com*

***Copyright:** © 2021 Sushma P. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.*

Received March 12, 2021; **Accepted** March 21, 2021; **Published** 26 March, 2021