

Seminario

“Towards Resilient Infrastructure”: A Clay Recipe for Treatment of Expansive Soils in Construction

Martedì, 2 maggio – ore 16:30 Aula Arduino

Relatore: **Dr. Joseph Mwiti Marangu**

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A huge portion of the total land area in the world is covered by expansive soils. These soils expand when they absorb water, then shrink when they dry out. The volume change exerts pressure on engineering structures causing deformations, cracks, and movement of walls. This reduces the service life, and hence failure of structures constructed on expansive soils. Several lives have been lost as a result of collapsing of buildings and other engineering structures whose foundation is on expansive soils. In addition, properties worth millions of euros are lost annually when these structures collapse, as well as in maintenance of the existing structures. Treatment of these expansive soils is an emerging global concern in the modern construction industry. Therefore, stabilization of expansive soil is important to lessen the negative characteristics of the soil and improve its general toughness and durability. This ensures that structures constructed on expansive soils are resilient to volume changes, especially during rainy and dry seasons. The most common practice in stabilization of expansive soils during construction is the addition of Ordinary Portland Cement (OPC). However, OPC remains unaffordable in most developing countries, and its production also contributes about 6-8 % of global anthropogenic CO₂ emissions that are responsible for global warming and climate change. There is need for green solutions. The presentation will highlight the key aspects of a clay recipe for treatment of expansive clay soils in construction with a view to promote resilient infrastructure in the built environment.

Proponente: **Luca Valentini**