Technical Paper | Published: 10 February 2023

Early detection of adverse conditions in deep excavations using statistical process control

Dina Al Suwaidi, Salah Haridy, Marwan Al Zaylaie, Mohammad Shamsuzzaman, Hamdi Bashir, Ahmed Maged & Mohamed G. Arab

Innovative Infrastructure Solutions **8**, Article number: 93 (2023)

Abstract

Deep excavation is a typical practice in the construction of modern high-rise buildings, especially in urban centers and modern congested cities. Due to the uncertainties inherited from geotechnical works, monitoring programs are mandated at excavation sites to avoid undesired consequences of failures or excessive deformations. In these monitoring programs, the common practice is using fixed threshold limits to identify possible adverse conditions that may lead to undesirable consequences and delays in the