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Departmental Seminar

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Seminar Title : Conference Return Seminar: Seismic Bearing Capacity Analysis of Skirted Footing on Cohesive- Frictional Soil Slopes  
Speaker : Neelagiri Vallaba Datta (521ce1019)  
Supervisor : Dr. M. Gattu  
Venue : CE Seminar Hall  
Date and Time : 17 Dec 2024 (04:30 PM)  
Abstract : Soil reinforced with the help of skirted footing enhances the bearing capacity of a footing placed on the slope with cohesive-frictional ( $c-\phi$ ) soil. The present study investigates to find the seismic bearing capacity ( $N_{cs}$ ) of skirted footing resting on slope with  $c-\phi$  soil using lower bound finite element limit analysis (LB-FELA) and pseudo-static approach. An adaptive meshing provides concentrated finite elements around the skirted footing and gives better results compared to the uniform mesh. While performing the analysis, the present study considers the various parameters like angle of internal friction ( $\phi$ ), slope angle ( $\beta$ ), cohesion factor ( $c/\gamma B$ ), depth of the skirt ( $D/B$ ), and edge distance from the slope crest ( $e/B$ ) and seismic coefficient ( $k_h$ ). This type of analysis provides valuable insights into the behavior of the seismic bearing capacity factor ( $N_{cs}$ ) of a skirted footing resting on slope with  $c-\phi$  soil for various parameters. The stress proximities are generated to understand the yielding nature of a soil under various loading conditions.