Liam Finn

1st Ishihara Lecturer - 1995

An overview of the behavior of pile foundations in liquefiable and non-liquefiable soils during earthquake excitation

Biography

W. D. Liam Finn graduated from the National University of Ireland in 1954 with a B.Eng. in Civil Engineering. He got his M.Sc. and Ph.D. from the University of Washington in Seattle in 1957 and 1960 respectively. After the 1964 Niigata Earthquake, he began to specialize in Geotechnical Earthquake Engineering and started the first program in Canada at the University of British Columbia (UBC) in Vancouver. He was Head of Civil Engineering and Dean of Applied Science at UBC. In 1999, he was appointed as the first Anabuki Professor of Foundation Geodynamics at Kagawa University, Takamatsu, Japan. Liam Finn is also president of Pan-American Engineering and Computing Services Ltd. in Vancouver. He is an Honorary International Member of the Japanese Geotechnical Society and the Chinese Society of Soil Dynamics, PRC. He is also an Honorary Professor of the Metallurgical Institute in Beijing.

Abstract

The seismic response of a pile foundation is usually analyzed by approximate methods in practice. These methods typically neglect one or more of the important factors that affect seismic response such as inertial interaction, kinematic interaction, seismic pore water pressures, soil nonlinearity, cross stiffness coupling and dynamic pile to pile interaction. A nonlinear 3-D analysis is used to show how all these factors affect pile response, to demonstrate some of the consequences of using various approximate methods and to provide a comprehensive overview of how pile foundations behave during earthquakes in liquefiable and non-liquefiable soils.

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