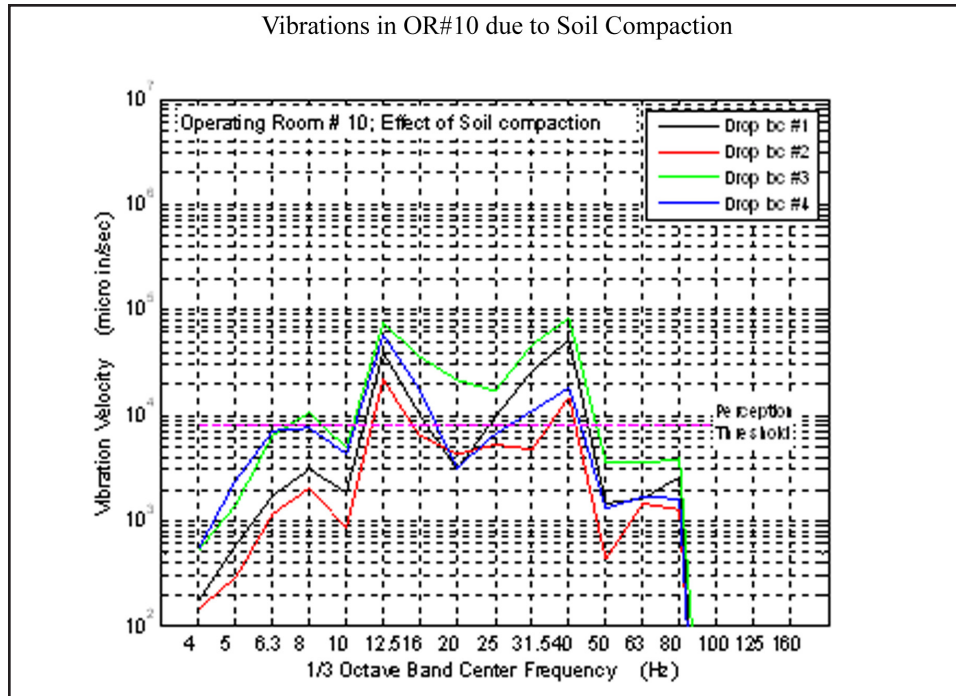


MINIMIZING CONSTRUCTION VIBRATION EFFECTS ON A HOSPITAL

East Coast (Client Confidential)



CONSULTING SERVICES

- Vibration analysis

PROJECT DESCRIPTION

A major hospital recently constructed a large addition adjacent to buildings in which operating rooms and scanning equipment are used intensively. The hospital was concerned about the effects that construction-related vibrations could have on the hospital's functions.

Acentech evaluated the potential intruding vibrations and their effects. We evaluated the vibration transfer characteristics from various points on the construction site to the hospital rooms of concern and characterized the vibrations produced by various construction activities. We combined the results of the first two steps to quantify the vibrations expected in the hospital rooms due to the construction activities at various locations on the construction site, and compared the expected vibrations to criteria relevant to the hospital activities and equipment.

To determine the vibration transfer characteristics Acentech arranged for a concrete weight to be dropped at various locations on the planned construction site and recorded simultaneously the vibrations in the hospital rooms and on the ground near the impacting weight. We processed the recorded signals to determine their frequency distributions and the ratios between them, and used these ratios to develop plots of the frequency distributions of the vibrations expected in the critical areas of the hospital due to the construction activities. The plots permitted ready comparison of the expected vibrations to the relevant criteria, enabling the hospital to develop coordinated construction and hospital facility usage schedules.

