

The build achievements of the intermediate soil liquefaction potential map and inquiry system of Taipei city

Chun-Chieh Tseng

Public Works Department, Taipei City Government

Taiwan is located at the meet of the Eurasian Plate and the Philippine Sea Plate. The chance of earthquake occurred is very frequent. In addition, Taipei Basin is scoured by the Tamsui River and the other three tributaries so that the soil in some areas is loose and soft as well as the groundwater level is relatively high. When a large earthquake attacks, it may cause soil liquefaction and lead to disasters, such as structure toppling and road damage, and endangering people's lives and properties.

To understand the situation of soil liquefaction in Taipei City, the intermediate soil liquefaction potential map and inquiry system have been built in Taipei City since 2017. A total of more than 10,000 drilling data were collected and 4,769 drilling data

have been adopted after screening (about 40 holes per square kilometer). As to the situation of soil liquefaction in Taipei City, the above drilling data have been analyzed through four analytical methods (including HBF, NJRA, NCEER, T&Y, etc.). The analysis results show that the HBF method used in this project plan has a good accuracy of prediction and is a suitable method for the domestic soil liquefaction analysis. Taipei City government has announced the map and inquiry system for intermediate soil liquefaction potential on March 22, 2018, which will be available for the public inquiries and provide professionals with applications, such as urban planning, urban disaster prevention, and site planning.