

A Study on Methodological Differences in Time History Analyses for Performance-Based Wind Design of Tall Buildings

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ABSTRACT

In the design of tall buildings for wind resistance, wind tunnel test is an essential component, and recently emerging performance-based wind design also heavily relies on wind tunnel test to acquire wind load time-history data. Wind tunnel test involves two main methods: High-Frequency Pressure Integration (HFPI) test and High-Frequency Force Balance (HFFB) test. In this study, HFFB test and HFPI test were conducted on buildings with various plan shapes (Fig. 1). Based on the measured data, equivalent static wind loads were calculated, and linear time-history analysis was performed to compare the results.

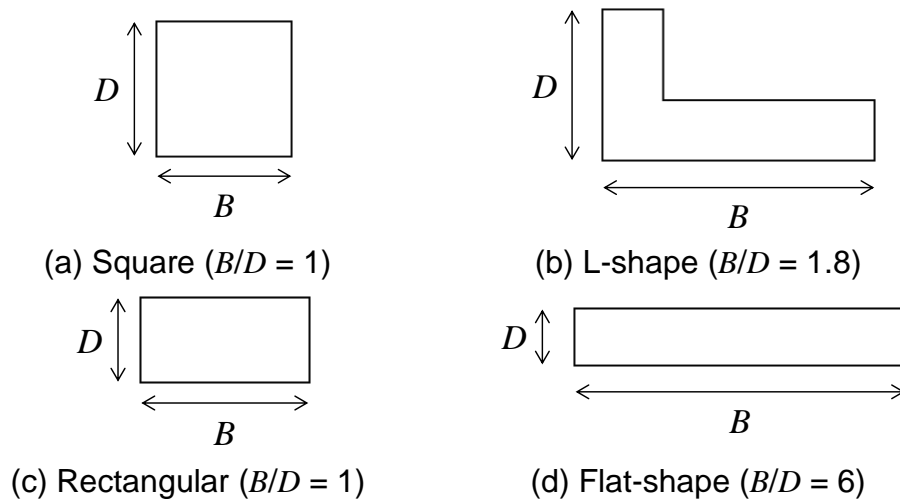


Fig. 1 Plan shape of target building

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