

Wind Pressure Characteristics of High-rise buildings in Middle and High-height Urban Areas Spread over Local Terrain

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The Akasaka area, which is adjacent to the green areas such as the Akasaka Imperial Property, the Hie Shrine, and the Sotobori area, is densely built with middle and high-rise buildings over the local terrain. It is important for wind resistance design to understand what kind of strong wind blows during a typhoon in such an urban area and the wind pressure acts on the buildings.

In this study, we focused on the wind of the wind direction SSE observed during Typhoon Lan (2017). We clarified the relationship between the wind flow field around buildings and the wall surface pressure by LES. The inflow turbulence obtained by the meteorological analysis and CFD for wide area was applied to the inflow boundary condition of LES.

Based on this result, we report the results of the effects of micro topography and trees on the wind flow and the wall surface pressure, and the characteristics of wind pressure acting on the uniquely shaped façade.

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