

LES around a Realistic City Block Designed Based on a Future City Concept

Tsuyoshi Nozu^{1*}, Azusa Ono², Tetsuro Tamura³ and Hidenori Kawai⁴

¹ Shimizu Corporation, 3-4-17 Etchujima, Koto-ku Tokyo, Japan, nozu@shimz.co.jp

² Shimizu Corporation, 3-4-17 Etchujima, Koto-ku, Tokyo, Japan, ono.azusa @shimz.co.jp

³ Tokyo Institute of Technology, 2-12-1 Ookayama, Meguro-ku, Tokyo, Japan, tamura.t.ab@m.titech.ac.jp

⁴ Ochanomizu University, 2-1-1 Otsuka, Bunkyo-ku, Tokyo, Japan, kawai.hidenori@ocha.ac.jp

Key Words: *LES, Super High-rise Building, Peak Pressure, Typhoon*

As a concept of the city in the future, it is proposed to create a city where super high-rise buildings and low-rise buildings are combined based on an open space with abundant greenery. In this case, it is necessary to have a plan that fully considers not only comfort (heat environment, wellness) but also disaster prevention.

In particular, in the case of considering safety under strong winds, a large-scale numerical simulation of CFD^[1] is required, since it is necessary to simulate a complicated flow field by reproducing detailed shapes including green areas, terrain, low-rise buildings and high-rise buildings.

In this study, we introduce the numerical simulation for the flow field of the realistic city block model planned according to the concept of the future city, in the case of an actual typhoon hits.

REFERENCES

- [1] Kawaguchi, M. and Tamura, T. An Analysis on the peak wind pressure in the center of Osaka city during the passage of Typhoon Jebi 2018., Summaries of technical papers of annual meeting Architectural Institute of Japan (2020), 119-120. (in Japanese)