

26 October 2017

CPP Project 9973

Macquarie Corporate Holdings Pty. Ltd. Level 6, 50 Martin Place Sydney NSW 2000

Attn: Ms. Holly Rhoades

Project: Martin Place Overstation

Dear Ms. Rhoades,

Please find herein an assessment of the expected wind conditions around the proposed Martin Place Overstation development for a full envelope configuration with an 8 m setback on the Martin Place façade of the south tower at RL 76.95 m, Figure 1. This letter provides a qualitative assessment based on the results of wind tunnel testing of maximum envelope configurations with various setback configurations including a 6 m and a 25 m setback on the Martin Place façade, Figure 2. Further details may be found in our wind tunnel test report (Cermak Peterka Petersen, 2017).



Figure 1: Massing of south tower with 8 m setback on the Martin Place façade

Results of previous wind tunnel testing

The results of the previous testing indicated that the wind conditions at pedestrian level in the areas surrounding the proposed development site are generally classified as suitable for pedestrian standing and walking based on the criteria of Lawson (1990). This is valid in all test configurations including the existing building configuration. In the existing configuration a few locations exceed the target comfort and safety criteria, these are located on Elizabeth and Philip Street to the south-east of the development sites, Locations 26 and 29, Figure 3 (T). Location 29 exceeds the safety criterion in all test configurations.

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In the previous wind tunnel testing, wind conditions were measured with the maximum envelope of the two towers with a 6 m and 25 m setback on the Martin Place façade of the south tower at RL 76.95 m, Figure 2. The impact of varying the tower setback on the wind climate was minimal. In both setback variations, the wind conditions at the ground plane are generally similar to the existing configuration, with the majority of locations classified as suitable for pedestrian standing or walking, Figure 3 (BL and BR). Some locations experience slightly stronger conditions, while others become marginally calmer with the inclusion of the towers. In general, it is considered that the wind environment is largely similar to the existing, and is consistent with the intended use of space in this area of the city.

Influence of changed tower setback

In general, an increase in the tower setback would be expected to reduce the amount of downwash flow from the tower façade reaching ground level and hence reduce the wind speeds in the public domain. The amount of downwash generated however depends on several other factors such as building shape and orientation, as well as shielding provided by the surrounding buildings. Wind tunnel tests found no significant differences between the full building envelope with a 6 m and 25 m setback with only minor changes in the 5% exceedance wind speeds. Changes in the Lawson comfort rating as reported in CPP (2017) are primarily in locations at which the 5% exceedance wind speed lies on the boundary between two categories, and the difference in wind conditions between the two configurations is not significant. It is expected that the wind conditions around the site for a configuration with an 8 m setback of the south tower would be comparable to the conditions reported for a 6 m setback.



Figure 2: Full envelope of the south tower with 6 m setback (L) and 25 m setback (R)

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Figure 3: Pedestrian wind speed measurement locations with comfort/distress ratings existing configuration (T) and full envelope of proposed buildings with 6 m setback at Martin Place (BL), and 25 m setback (BR)

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In summary, it is expected that the change in the setback to 8 m will not significantly change the local wind conditions from those measured with the massing model in the full envelope configurations with various setback options during the wind-tunnel study as reported in CPP (2017). I trust this information is of assistance, for any clarification please review the full wind tunnel test report or contact the undersigned.

Joe Paetzold Engineering Manager Cermak Peterka Petersen Pty. Ltd.

cc: Tom Evans, CPP

References

Cermak Peterka Petersen (2017). Wind Tunnel Test for Martin Place Overstation. 'CPP9973_Martin Place Overstation_REP_PW_08R00', dated 25 August 2017

Lawson, T.V. (1990), "The Determination of the Wind Environment of a Building Complex before Construction" Department of Aerospace Engineering, University of Bristol, Report Number TVL 9025.