24 January 2018 CPP Project 11472

Lend Lease Building
Level 14, International Towers
300 Barangaroo Avenue
Sydney
NSW 2000

Attn: Mr Demos Avramidis

Project: Barangaroo C1

Dear Mr. Avramidis,

Please find herein an overview of expected wind conditions and potential mitigation strategies for the pedestrian environment around Commercial Building 1, Barangaroo. Specifically, this letter will address the ground level conditions at the north end of the development, considering the proposed mitigation structures in the context of previous wind tunnel test data.

CPP has conducted wind tunnel tests for the site, for which further details may be found in Cermak Peterka Petersen (2017). The results are summarised in Figure 1. Without the inclusion of local mitigation measures, the northern forecourt area is rated as Pedestrian Standing under the Lawson comfort criteria (Locations 3-5, Figure 1).

Representative mitigation structures were tested for this area, as indicated in Figure 2. These comprised a 1.6 m vertical screen at the north-eastern seating area, and smaller 2 m screens at the north-western corner. These were shown to be effective in reducing wind speeds – conditions in this area are mostly suitable for Pedestrian Sitting under Lawson, with the north-east corner exceeding the sitting threshold by a small margin.

The currently proposed ground floor plan is shown in Figure 3. A 1.6 m high vertical screen is incorporated into the planter at the north-eastern corner, in addition to removable umbrellas extending along the façade in the undercroft area.

The proposed wind screen is similar to the design tested, and conditions in its vicinity would be expected to be comparable to those reported. The addition of the umbrellas is considered likely to further improve conditions by limiting the effect of downwash from the building façade. In summary, the pedestrian level wind environment in the northern forecourt areas of the C1 development is expected to be mostly suitable for Pedestrian Sitting under the Lawson criteria.

Unit 2, 500 Princes Hwy. St. Peters, NSW 2044, Australia Tel +61 2 9551 2000 Fax +61 2 9557 9447 info-syd@cppwind.com www.cppwind.com
Cermak Peterka Petersen Pty. Ltd. ABN 30 125 146 072

Figure 1: Pedestrian wind speed measurements with Lawson comfort ratings - site

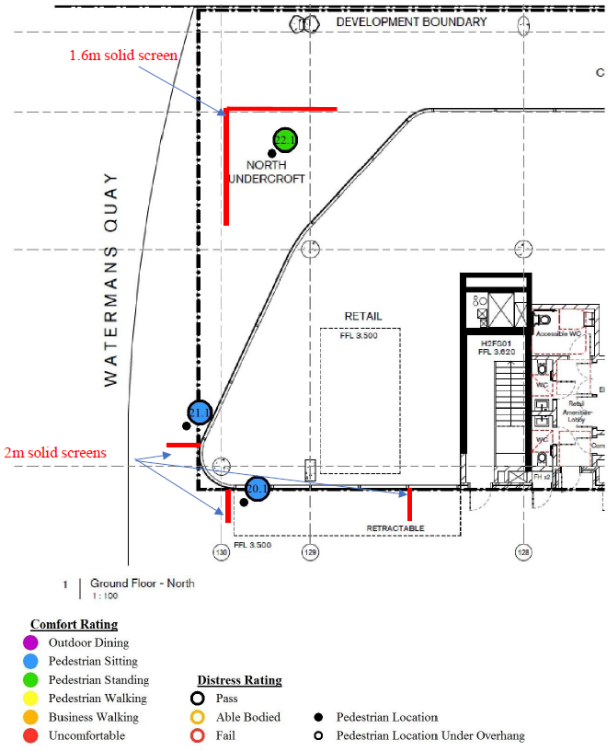

Figure 2: Pedestrian wind speed measurements with Lawson comfort ratings – north forecourt

Unit 2, 500 Princes Hwy. St. Peters, NSW 2044, Australia Tel +61 2 9551 2000 Fax +61 2 9557 9447 info-syd@cppwind.com www.cppwind.com
Cermak Peterka Petersen Pty. Ltd. ABN 30 125 146 072

mitigation

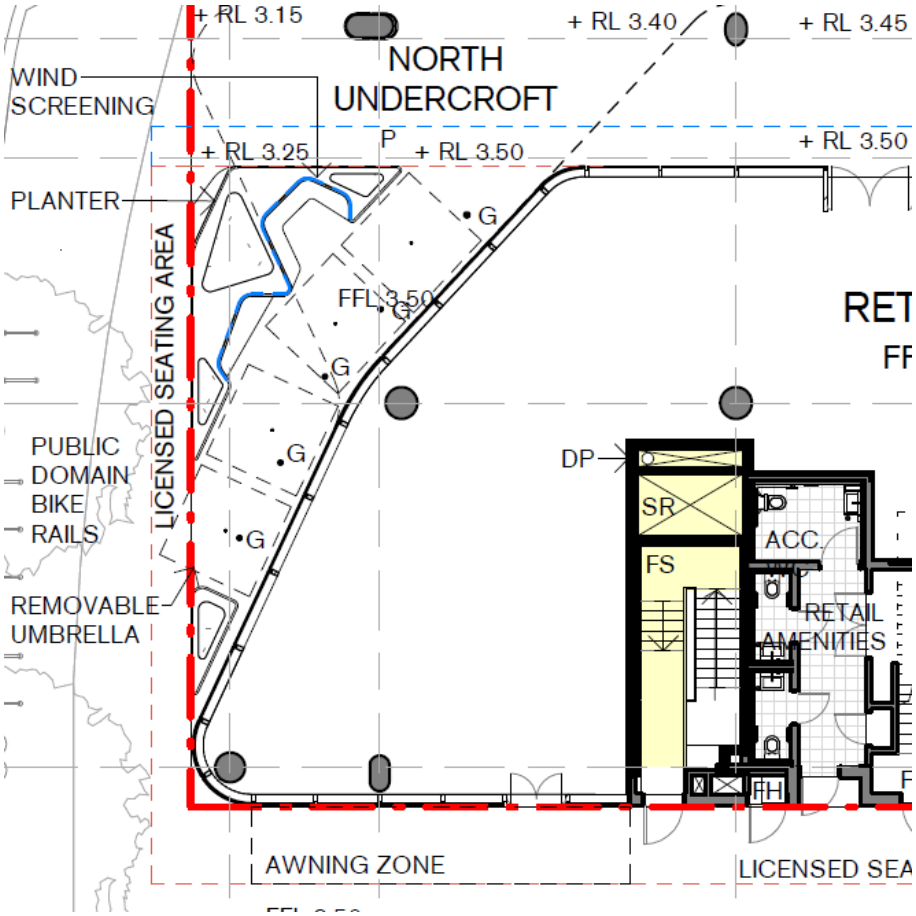

Figure 3: Ground floor plan dated 17/01/18

I trust this information is of assistance, for further clarification please review the wind tunnel report or contact the undersigned.

Regards,

Tom Evans
Project Engineer
Cermak Peterka Petersen Pty. Ltd.

cc: Matt Glanville, CPP

Unit 2, 500 Princes Hwy. St. Peters, NSW 2044, Australia Tel +61 2 9551 2000 Fax +61 2 9557 9447 info-syd@cppwind.com www.cppwind.com
Cermak Peterka Petersen Pty. Ltd. ABN 30 125 146 072

References

Cermak Peterka Petersen (2017). Environmental Wind Tunnel Test for Building C1, Barangaroo South. *'CPP11472_Barangaroo C1_REP_PW_R00'*, dated 24 October 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.

Unit 2, 500 Princes Hwy. St. Peters, NSW 2044, Australia Tel +61 2 9551 2000 Fax +61 2 9557 9447 info-syd@cppwind.com www.cppwind.com
Cermak Peterka Petersen Pty. Ltd. ABN 30 125 146 072