



10 December 2018

CPP Project 12622

Yuhu Group Australia Pty Ltd
Suite 1, Level 18, 210 Miller Street
Sydney
NSW 2000

Attn: Mr. Tianyao Ma

Project: Yuhu Sydney One

Dear Mr. Ma,

This letter will summarise the extent of impacts to the pedestrian level wind environment caused by modifications to the design of the Sydney One development subsequent to wind tunnel testing and previous DA submission. Details of the wind tunnel tests conducted by CPP may be found in the report "CPP8366_Sydney One_REP_PW_R03", dated 13 March 2017 – [1]. The design changes relevant to pedestrian wind comfort in and around the development are:

Tower A

- Changes to the Level 2 canopy, blade wall and landscaping underneath the canopy. Blade wall to include small breezeblock like openings and a new circular open skylight to the Sandstone Canopy at Level 2
- Addition of 1400mm high glass balustrade on North side of Level 59 pool in lieu of full height glazing

Tower B:

- Reduction of the tower footprint by approximately 1 m on southern façade and relocation of basement driveway (Ground) 1m to the north
- Revised rooftop bar design to include partially open terrace.

The impact of each of these is discussed briefly below.

Tower A

The Tower A Level 2 canopy remains similar to the configuration that was tested in the wind tunnel. The extent of the canopy itself will largely determine conditions in the area and this remains identical. The size and shape of the skylight opening has been amended - Figure 1. No adverse impacts are expected relative to the tested design as a result. The inclusion of openings in the blade wall is not expected to affect conditions under the canopy, assuming the porosity of the wall remains lower than approximately 60%.

The updates to the Tower A Level 59 terrace are described in Figure 2. The balustrade on the north side of the pool area has been reduced to 1.4 m in height. A marginal increase in wind speeds in the immediate vicinity would be expected as a result, however as there is no significant flow paths available through the space conditions are expected to be mild. The average pedestrian comfort level in this space is expected to remain similar to the previously assessed design.

Tower B

An indication of the proposed changes to the Tower B form is shown in Figure 3. The north-south dimension of the tower sections (Level 06 and above) are reduced by approximately 1 m, and some minor adjustments to the planform are indicated on lower levels. Considering the size and general massing of the building, these modifications to the tower form are not significant and will not quantifiably affect pedestrian wind conditions. The results of wind tunnel testing as previously reported remain reflective of the wind environment at pedestrian level.

Level 25 on Tower B now includes an operable roof over the northern portion (Figure 4), while the previously assessed model had permanently open terraces on Levels 24 and 25. With the roof open, conditions on the terrace are expected to be similar to those reported in [1], in which this area was assessed as suitable for Pedestrian Sitting under Lawson [2]. No wind effects are anticipated with the roof closed.

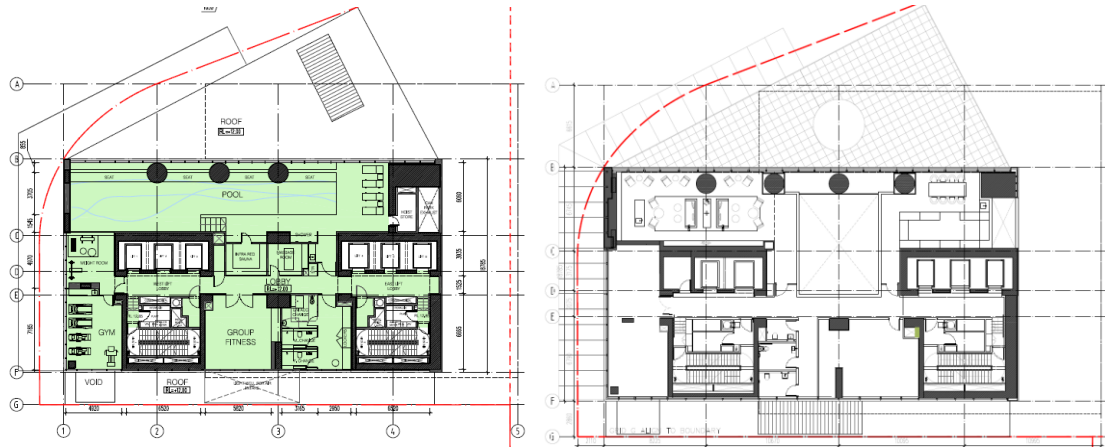


Figure 1: Tower A Level 2 plans: previous (L) and current (R)

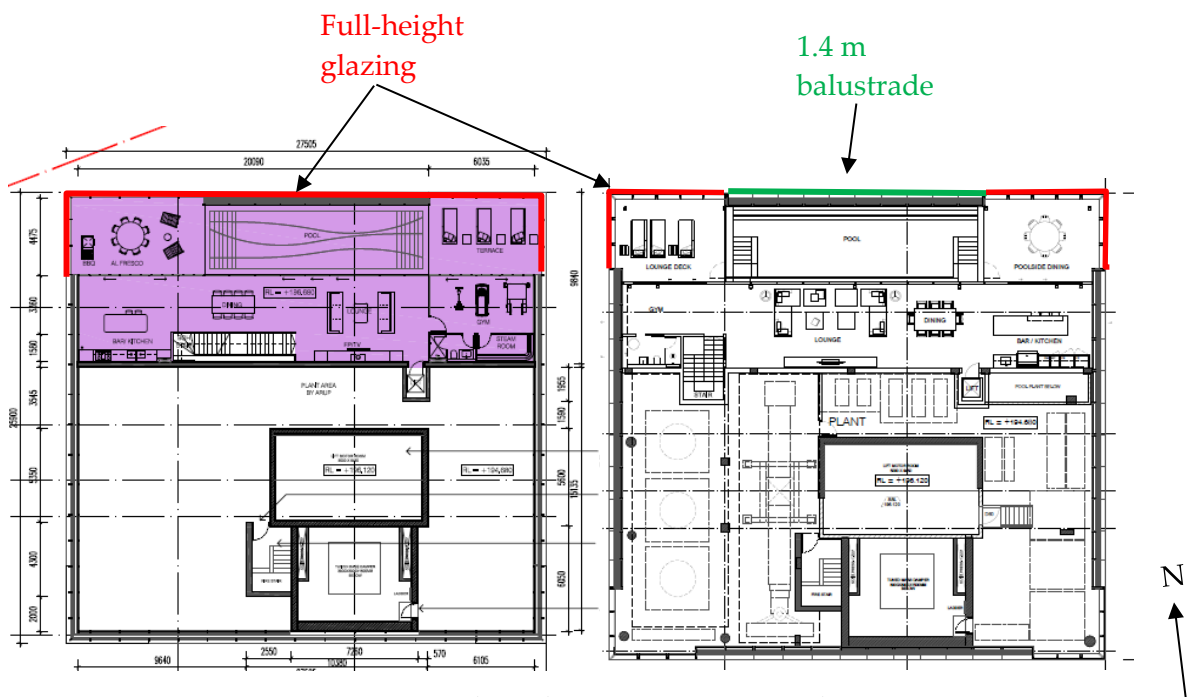


Figure 2: Tower A Level 59 plans: previous (L) and current (R)



Figure 3: Tower B: Comparison of tower geometries (T) and Ground floor general arrangement (B)

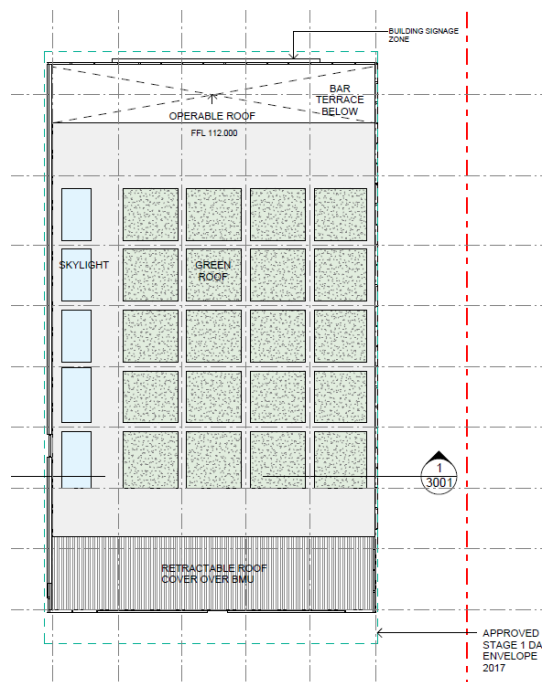


Figure 4: Tower B Rooftop plan

General Comments

It is highlighted that the wind conditions on the ground plane are not significantly altered by the proposed design of the towers when compared with the currently approved Stage 2 design. The most recent modifications are not significant from the perspective of pedestrian wind comfort and the results reported in [1] remain applicable. It is expected that the inclusion of the proposed Lend Lease Circular Quay tower to the south of the site together with the open plaza at 182 George Street will provide a slight improvement of the wind conditions in the space between the two towers. It is reiterated that this exposed section of the city is already windy and changing the building massing on the city fringe will redistribute the flows down the various north-south streets. For further details please review the wind tunnel test report.

Yours sincerely,

Joe Paetzold
Engineering Manager
Cermak Peterka Petersen Pty. Ltd.

cc: Tom Evans, CPP

References

- [1] Cermak Peterka Petersen (2017). Environmental Wind Tunnel Tests For: Sydney One. CPP report 8366 '*CPP8366_Sydney One_REP_PW_R03*'

- [2] 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*.