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Date: 19 September 2017

To: Lend Lease Building Pty Ltd

Address: Level 14, Tower Three
International Towers Sydney
Exchange Place, 300 Barangaroo Avenue
Barangaroo NSW 2000

RE: ONE SYDNEY HARBOUR, BARANGAROO
Public Domain Wind Environment Conditions

The wind conditions within the Barangaroo Public Domain have been tested in the wind tunnel to determine the wind comfort conditions with the inclusion of the proposed built form. The area was found to benefit from shielding of the prevailing wind by the subject development with the majority of areas within the comfortable walking criterion of 7.5m/s for the weekly Gust Equivalent Mean wind speeds without the consideration of any landscaping. The location of the subject site on Darling Harbour means there is notable exposure to the southerly and westerly winds, while the north-easterly winds come over the headland.

The following effects were noted:

- The southerly winds were found to funnel along Barangaroo Avenue creating some impact at the western aspect of the park.
- The westerly winds were noted to impact the northern aspect of the park due to the exposure and funnelling along Barangaroo Avenue from over the exposed Watermans Cove.
- The northerly easterly winds were noted to recirculate over the proposed massing for Barangaroo Central impacting the northern aspect of the site, which was based on an amendment of the MOD 9 proposition to provide for increased park area of the MOD 8 design.

A comparison of the wind comfort conditions has been undertaken to determine the probability of exceedance should the short exposure criteria (5.5m/s) be adopted instead of the comfortable walking criteria. It was found that the probability of exceedance will increase to around 12 to 15% for the Hickson Park area. While the short exposure criteria for wind comfort may be preferable, it should be also noted that the location of the precinct on the harbours

edge means the area is susceptible and exposed to the prevailing wind directions due to the sites exposure.

The inclusion of the proposed landscaping adjacent to One Sydney Harbour towers were found to substantially mitigate the southerly winds. The continuation of the street tree planting along Barangaroo Avenue further to the north, as well as future landscape concept in Barangaroo Central will further enhance these conditions and assist in mitigating the winds from the west. While this scenario is not specifically modelled, it is considered that a probability of exceedance of approximately 5% will be achieved for the majority of this area.

It should be noted that the final design scheme for Barangaroo Central (both the waterfront parklands and built form) will have a notable impact on the wind conditions within the park area. Early testing undertaken by Windtech with and without built form massing for Barangaroo Central, noted that the northern areas were impacted, particularly for the north-easterly, southerly and westerly winds. A general reduction in wind conditions was noted with the inclusion of built form in this location. As such it is recommended that any additional work on wind mitigation measures for the park be developed with consideration for the built form on Barangaroo Central once it is further developed. A built form which encourages the north-easterly wind to push up and over the park would be beneficial. The further resolution of the parkland area to the north of Crown will also provide a notable benefit on the wind conditions within the park area for the westerly winds.