



Doc Ref: WC510-06F02(rev1)- WS Memo

Date: 7 October 2016

To: Atlas Page Kirkland

Address: The Podium Building, 1 Market Street
Sydney NSW 2000

From: Trong Thien Huynh

**RE: CAMPBELL'S STORES, SYDNEY HARBOUR
PEDESTRIAN WIND STATEMENT MEMO**

This technical memo comments on the latest design changes to Bay 12 of the Campbell's Store development, located in Sydney Harbour. A desktop pedestrian wind environment statement has previously been completed for the subject redevelopment by Windtech Consultants Pty Ltd; report reference WC510-04F02(rev0) dated 23rd October, 2015, for the latest architectural drawing set at the time. A glass block structure was proposed to be erected on the site of Bay 12 and a series of in-principle treatments were recommended within the report to ensure the wind conditions within the outdoor trafficable areas to be acceptable for its intended uses.

Since the time of the desktop assessment, further architectural changes have been made to the design of Bay 12 as per the latest drawing set received September 2016. The glass block structure has since been replaced in favour of an outdoor seating area with an impermeable glass awning structure above and densely foliating hedge planting proposed along the perimeter.

A desktop review has been carried out and it is expected the wind conditions within and around the outdoor seating area are expected to remain similar or better than the existing wind conditions the inclusion of the proposed changes to Bay 12. The proposed planter boxes and retractable screens along the northern edge of the outdoor dining area are expected to be effective in enhancing the localised wind conditions. The planter beds and retractable screens act as an effective wind mitigating element, capturing the up-stream north-easterly to westerly winds and reducing the intensity of the wind effect before it reaches the outdoor dining area. It should be noted the planter bed are recommended to be populated with densely foliating shrubs or hedge planting. Furthermore, we can confirm no further wind barriers are required along the Hickson Road or Promenade interfaces. The wind conditions along these areas are expected to be similar or better than the existing wind conditions with the inclusion of the proposed densely foliating trees along Hickson Road and the retention of the existing densely foliating fig tree and hedge planting along the promenade.

The proposed outdoor seating area adjacent to the existing densely foliating fig tree along the promenade may experience relatively higher wind effects from the existing north-easterly winds travelling over the open waters of Campbell's Cove. As the north-easterly winds occur most frequently during the warmer months of the year, the wind breezes are usually welcomed within outdoor areas since they are typically not as strong as the southerly or westerly winds. The patron comfort level is expected to be reasonable without need of additional wind barrier protection, and a review of the wind roses by the Bureau of Meteorology; attached within the appendix of this memo, indicates the wind occurrence is limited to the months of October-March, and typically during the afternoon periods of the day.

DOCUMENT CONTROL

| Date | Revision History | Issued Revision | Prepared By (initials) | Instructed By (initials) | Reviewed & Authorised by (initials) |
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| September 28, 2016 | Initial. | 0 | TH | TH | TH |
| October 7, 2016 | Updated | 1 | TH | TH | TH |

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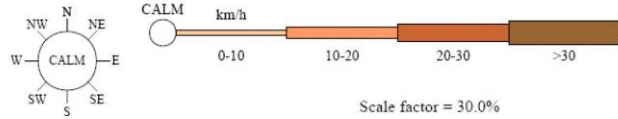
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APPENDIX - WIND ROSES

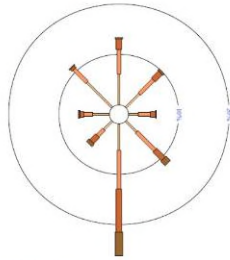
WIND FREQUENCY ANALYSIS (in km/h)

SYDNEY AIRPORT AMO STATION NUMBER 066037

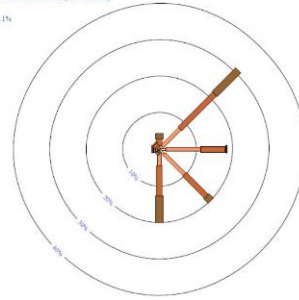
Latitude: -33.94 ° Longitude: 151.17 °



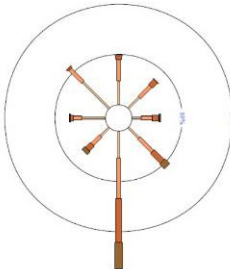
9 am Jan
1933 Total Observations (1939 to 2004)
Calm 9%



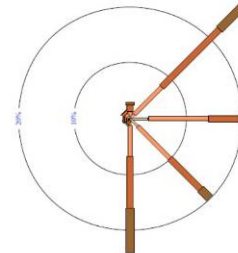
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1941 Total Observations (1939 to 2004)
Calm 1%



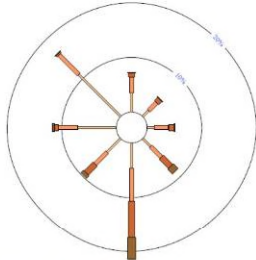
9 am Feb
1700 Total Observations (1939 to 2004)
Calm 13%



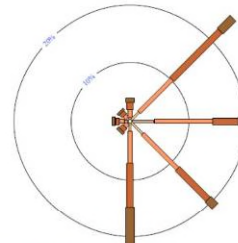
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1776 Total Observations (1939 to 2004)
Calm 1%



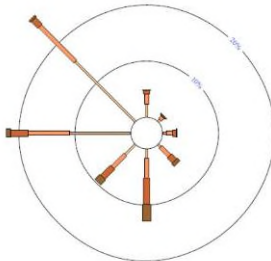
9 am Mar
1908 Total Observations (1939 to 2004)
Calm 14%



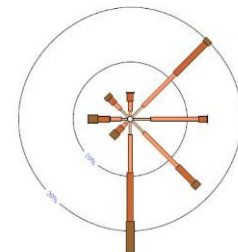
3 pm Mar
1975 Total Observations (1939 to 2004)
Calm 2%



9 am Apr
1895 Total Observations (1939 to 2004)
Calm 14%



3 pm Apr
1863 Total Observations (1939 to 2004)
Calm 2%



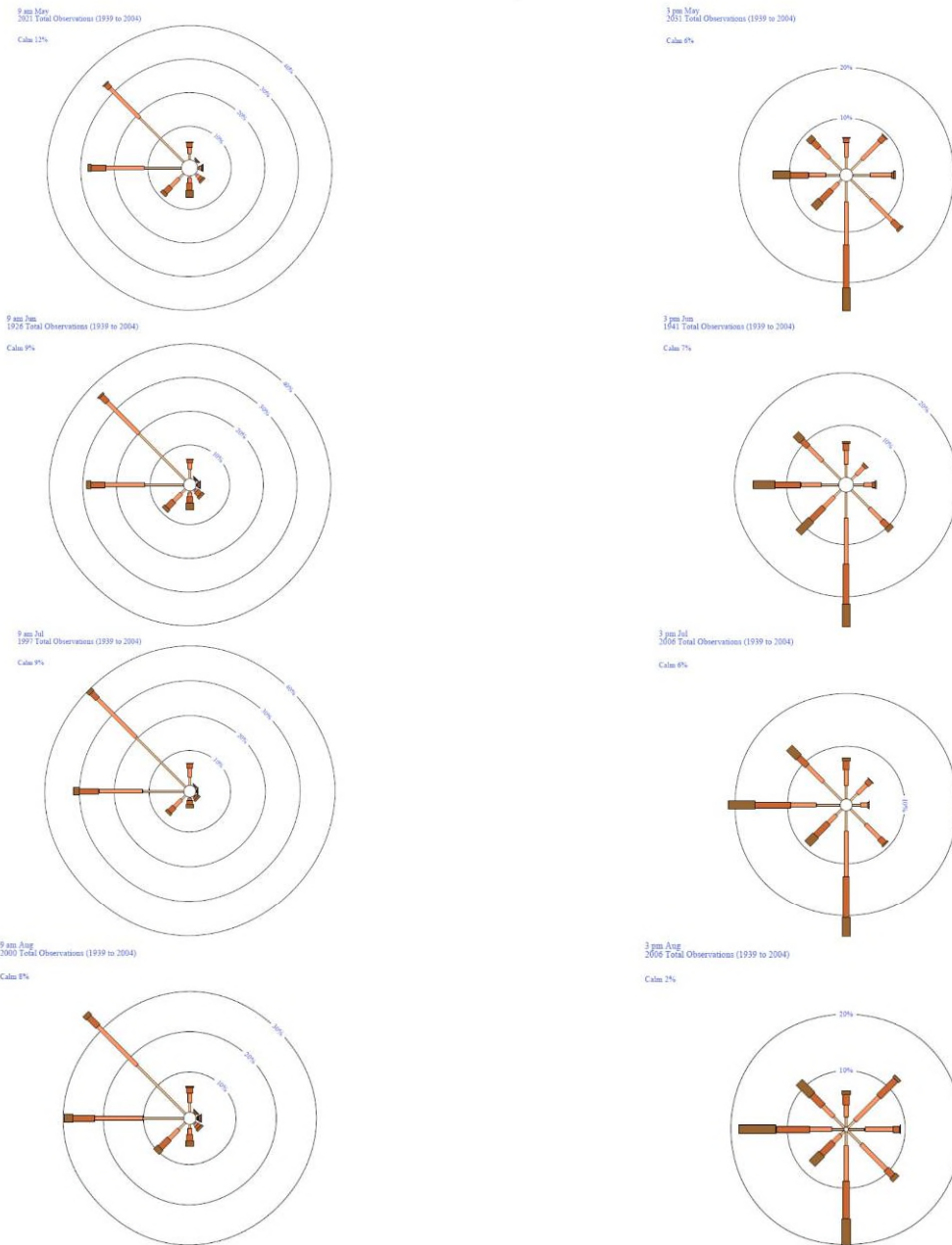
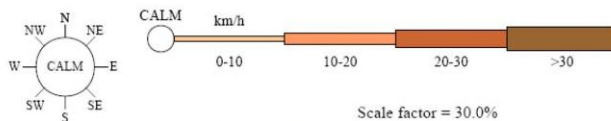
Wind directions are divided into eight compass directions. Calm has no direction.
An asterisk (*) indicates that calm is less than 1%.
An observed wind speed which falls precisely on the boundary between two divisions (eg 10km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.



Australian Government
Bureau of Meteorology

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WIND FREQUENCY ANALYSIS (in km/h)
SYDNEY AIRPORT AMO STATION NUMBER 066037
Latitude: -33.94 ° Longitude: 151.17 °

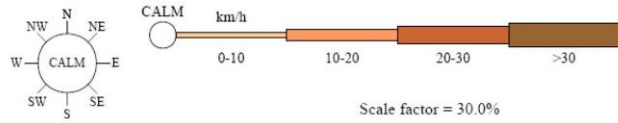


Wind directions are divided into eight compass directions. Calm has no direction.
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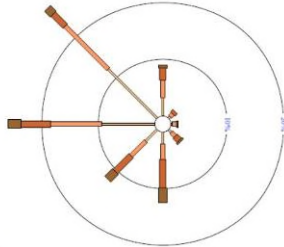


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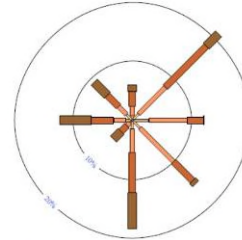
WIND FREQUENCY ANALYSIS (in km/h)
SYDNEY AIRPORT AMO STATION NUMBER 066037
Latitude: -33.94 ° Longitude: 151.17 °



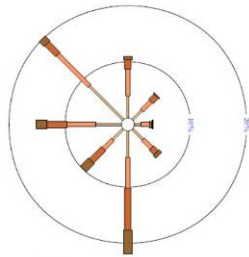
9 am Sep
1934 Total Observations (1939 to 2004)
Calm 7%



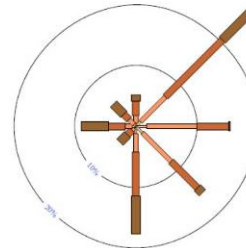
3 pm Sep
1931 Total Observations (1939 to 2004)
Calm 1%



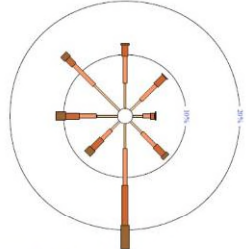
9 am Oct
1993 Total Observations (1939 to 2004)
Calm 6%



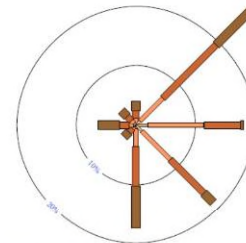
3 pm Oct
1997 Total Observations (1939 to 2004)
Calm 1%



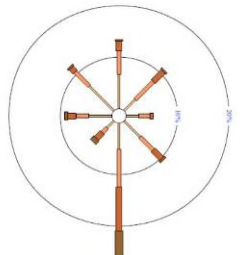
9 am Nov
1997 Total Observations (1939 to 2004)
Calm 7%



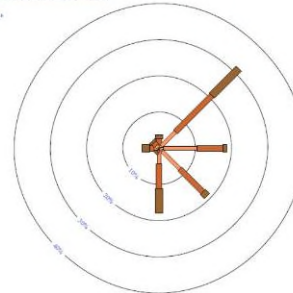
3 pm Nov
1991 Total Observations (1939 to 2004)
Calm 1%



9 am Dec
1937 Total Observations (1939 to 2004)
Calm 7%



3 pm Dec
1939 Total Observations (1939 to 2004)
Calm *



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