



Wind Environment Statement

for the proposed development known as

Site 4B, Sydney Olympic Park, Homebush Bay

February 1, 2007

Report Reference No. WA138-01F03(rev0)- WS Report

This report has been prepared by WINDTECH Consultants Pty Ltd on behalf of our client and in accordance with relevant standards. It takes into account our client's particular instructions and requirements. It is not intended for and should not be relied upon by a third party and no responsibility is undertaken to any third party.

1.0 Introduction

This report is an opinion on the likely wind environment within and around the proposed development known as Site 4B, Sydney Olympic Park, Homebush Bay.

The effect of wind activity within and around the site of the proposal is examined for the three predominant wind directions for Sydney, i.e. north-east, south-east and west. The analysis of the wind effects relating to the proposal was carried out in the context of the local wind climate, building morphology and land topography.

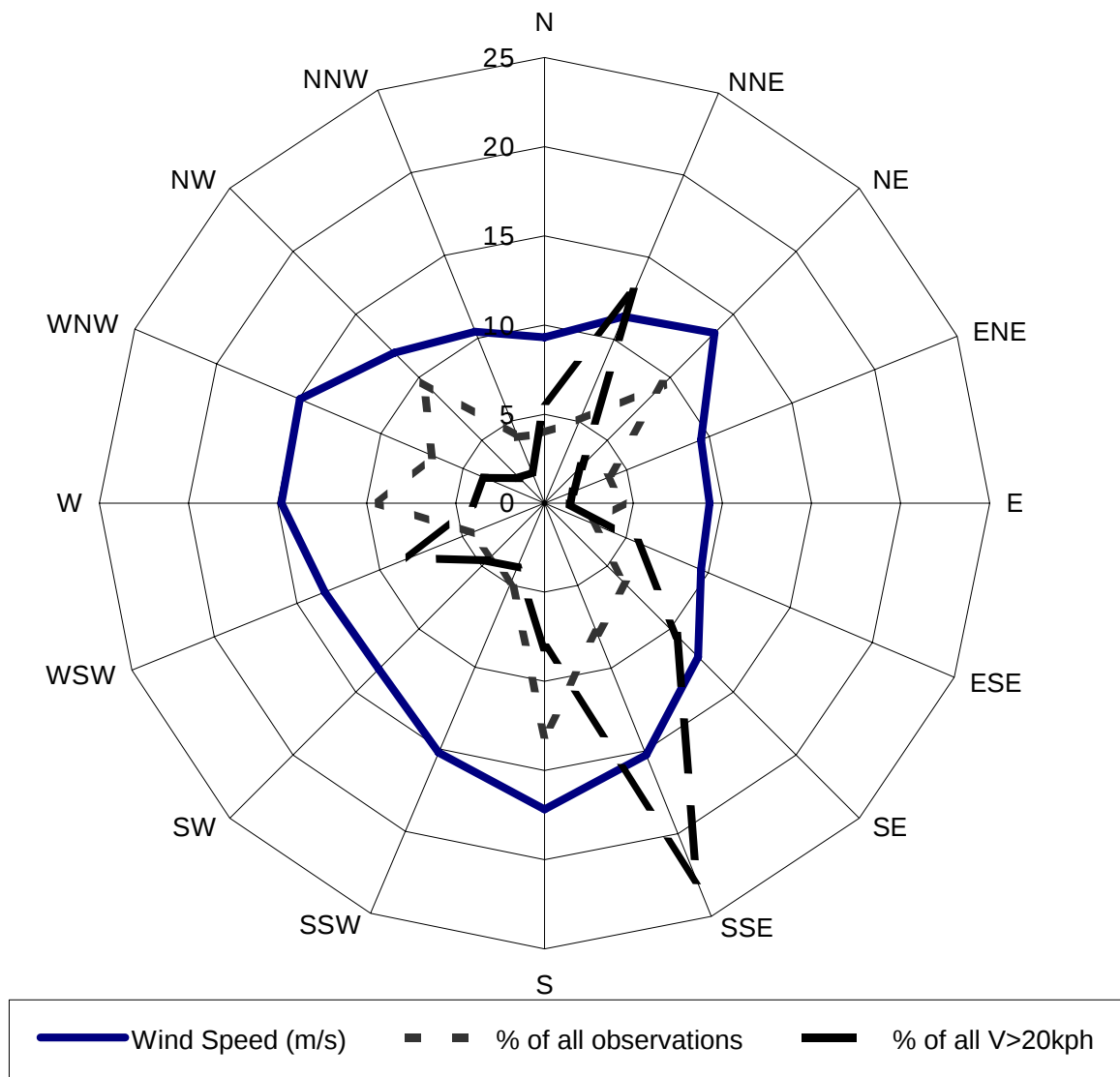
The conclusions of this report are drawn from our extensive experience in this field and are based on an examination of the architectural drawings prepared by Bates Smart Architects Pty Ltd, dated November 10, 2006. No wind tunnel tests have been undertaken for the subject development. As such, this report addresses only the general wind effects and any localised effects that are identifiable by visual inspection. Any recommendations in this report are made only in-principle and are based on our extensive experience in the study of wind environment effects.

2.0 Local Wind Climate

Three principal wind directions potentially affect the development. These winds prevail from the north-east, south and west, Table 1 is a summary of the principal time of occurrence of these winds. This summary is based on data obtained by the Bureau of Meteorology from Sydney Airport, between 1939 and 1992. Table 1 presents a summary of the principal time of occurrence of these winds.

Table 1: Principal Time of Occurrence of Winds – Sydney Region

Month	Wind Direction		
	North-Easterly	Southerly	Westerly
January	X	X	
February	X	X	
March	X	X	
April		X	X
May			X
June			X
July			X
August			X
September		X	X
October	X	X	
November	X	X	
December	X	X	



**Figure 1: Basic Mean Wind Speed Data for Sydney, 1932-1992
(based on 3 hourly mean wind speeds, Kingsford Smith Airport)**

3.0 Wind Effects on People

The acceptability of wind in any area is dependent upon its use. For example, people walking or window-shopping will tolerate higher wind speeds than those seated at an outdoor restaurant.

The following table, developed by Penwarden (1975), is a modified version of the Beaufort Scale, and describes the effects of various wind intensities on people. Note that the applicability column related to wind conditions occurring frequently (exceeded approximately once per week on average). Higher ranges of wind speeds can be tolerated for rarer events.

Table 2: Summary of Wind Effects on People (after Penwarden, 1975)

Type of Winds	Beaufort Number	Gust Speed (m / s)	Effects	Applicability
Calm, light air	1	0 - 1.5	Calm, no noticeable wind	Generally acceptable for Stationary, long exposure activities such as in outdoor restaurants, landscaped gardens and open air theatres.
Light breeze	2	1.6 - 3.3	Wind felt on face	
Gentle breeze	3	3.4 - 5.4	Hair is disturbed, Clothing flaps	
Moderate breeze	4	5.5 - 7.9	Raises dust, dry soil and loose paper - Hair disarranged	Generally acceptable for walking & stationary, short exposure activities such as window shopping, standing or sitting in plazas.
Fresh breeze	5	8.0 - 10.7	Force of wind felt on body	Acceptable as a main pedestrian thoroughfare
Strong breeze	6	10.8 - 13.8	Umbrellas used with difficulty, Hair blown straight, Difficult to walk steadily, Wind noise on ears unpleasant.	Acceptable for areas where there is little pedestrian activity or for fast walking.
Near Gale	7	13.9 - 17.1	Inconvenience felt when walking.	
Gale	8	17.2 - 20.7	Generally impedes progress, Great difficulty with balance.	Unacceptable as a public accessway.
Strong gale	9	20.8 - 24.4	People blown over by gusts.	Completely unacceptable.

4.0 Description of the Proposal

The proposed development consists of a 7 level high commercial/retail office building. The site is located on the south-eastern corner of the Olympic Boulevard and Herb Elliot Avenue intersection. No outdoor balcony or terrace areas are proposed for the development.

Neighbouring the site to the north-west is the proposed Sofitel Hotel development, as indicated in the site plan in Figure 3. This forms an outdoor corridor between the proposed development and the neighbouring hotel, allowing pedestrian access from Herb Elliot Avenue to Olympic Boulevard.

5.0 Site Analysis

The site is located within the Sydney Olympic Park precinct. To the north-west of the site is Sydney Olympic Stadium (currently known as Telstra Stadium) and the Sydney SuperDome. To the north is the Sydney Showground main arena and the Olympic Park Railway Station. To the south is the State Sports Centre, and to the south-west is the Sydney Aquatic Centre.

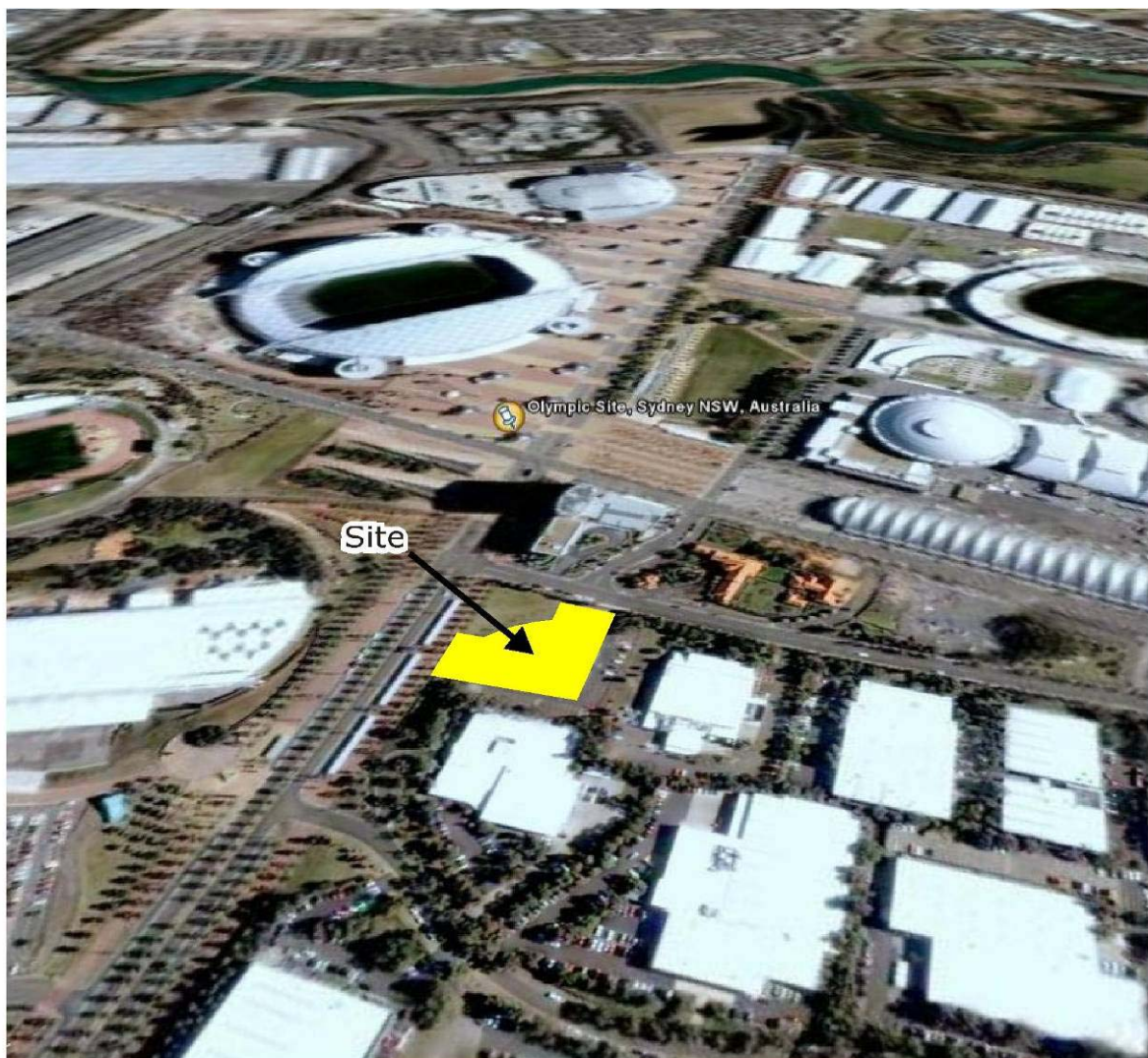


Figure 2: Aerial Photograph of the Proposed Development Site

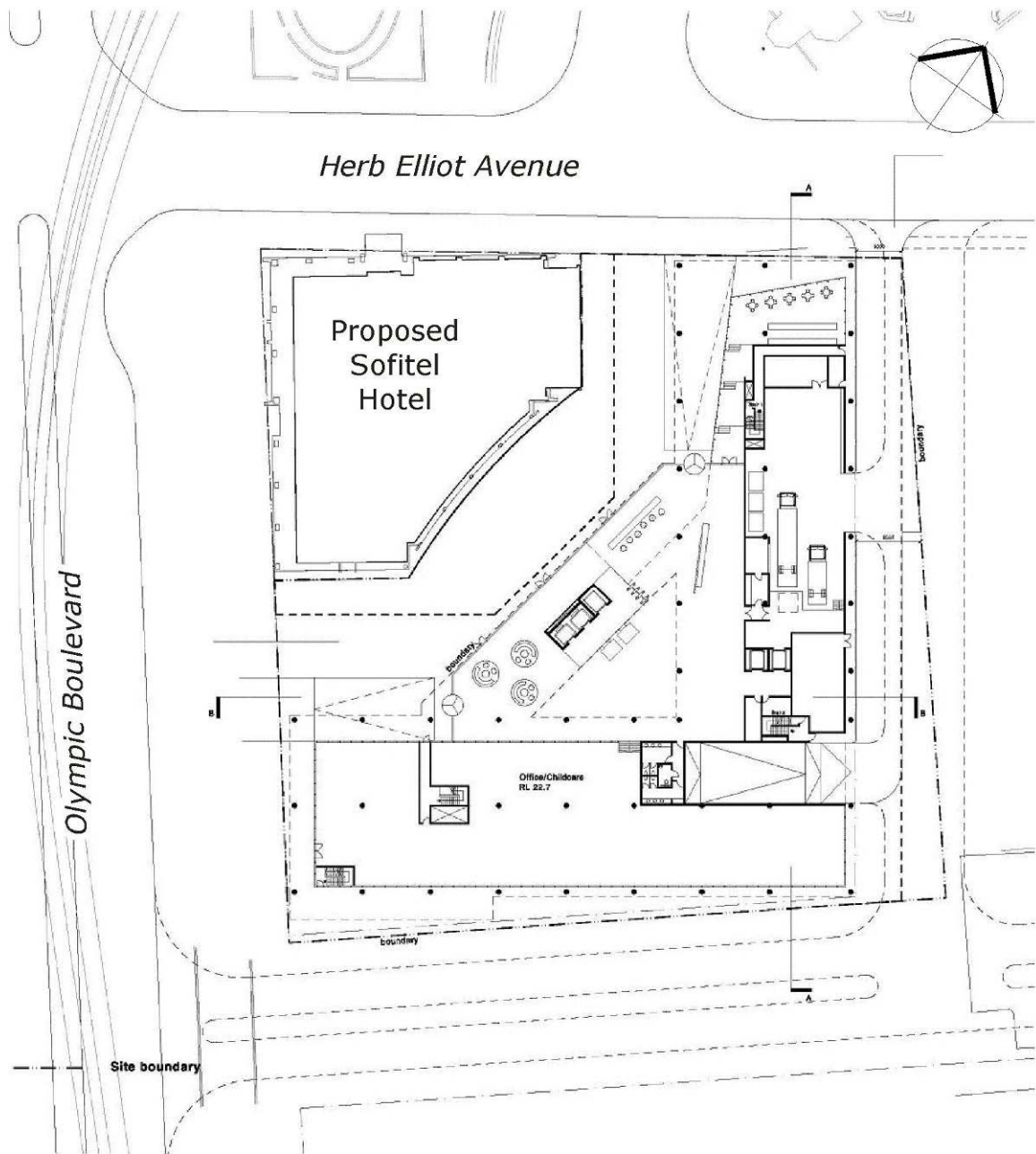


Figure 3: Site Plan of the Proposed Development

Neighboring the site to the north-west, on the northern side of Herb Elliot Avenue, is the Ibis hotel tower, Various other buildings with similar heights to the proposed development are located to the east and south-east of the site, within the Australia Centre precinct (which is bounded by Australia Avenue, Sarah Durack Avenue, Olympic Boulevard and Dawn Fraser Avenue). Trees line most of the surrounding streets of the proposed development site.

For each of the three predominant wind directions, the interaction between the wind and the building morphology in the area was considered. Important features taken into account include the distances between the proposed building forms, their overall heights and bulk as well as the landform.

5.1 North-Easterly Winds

It is not expected that the proposed development will cause north-easterly winds to produce any adverse effects to the surrounding streets and buildings within the local area.

The existing trees along the southern side of Herb Elliot Avenue will provide a shielding effect to the proposed development from north-easterly winds. Wind conditions within the outdoor areas of the site are expected to be acceptable for their intended uses. Any additional planting of trees within and around the site will further enhance wind conditions.

The northern end of the proposed development will shield north-easterly winds from being funneled into the outdoor corridor between the study building and the neighbouring proposed Sofitel hotel development.

5.2 Southerly Winds

It is not expected that the proposed development will cause southerly winds to produce any adverse effects to the surrounding streets and buildings within the local area.

The existing trees along the north-eastern side of Olympic Boulevard will provide a shielding effect to the proposed development from southerly winds. Wind conditions within the outdoor areas of the site are expected to be acceptable for their intended uses. Any additional planting of trees within and around the site will further enhance wind conditions.

The south-western end of the proposed development will shield southerly winds from being funneled into the outdoor corridor between the study building and the neighbouring proposed Sofitel hotel development.

5.3 Westerly Winds

The proposed development is relatively exposed to westerly winds. The existing trees along Olympic Boulevard will provide some shielding to the outdoor areas along the western side of the site.

Since the proposed development is taller than the podium of the neighbouring Sofitel hotel development, it is likely that westerly winds could be downwashed and funneled into the outdoor corridor area. To mitigate this effect it is recommended that trees are planted within this corridor area and across the western entrance on Olympic Boulevard, similar to the layout indicated in Figure 4.

Since westerly winds predominantly occur during the winter months for Sydney (see Table 1) it is recommended that these trees are selected

from an evergreen species. These trees should also be densely foliating to ensure their effectiveness in wind mitigation. Palm trees, for example, would not be effective in ameliorating local ground level wind conditions.

With a planting scheme similar to the one indicated in Figure 4 implemented, it is not expected that the proposed development will cause westerly winds to produce any adverse effects to the surrounding streets and buildings within the local area. Any additional planting of trees within and around the site will further enhance wind conditions.

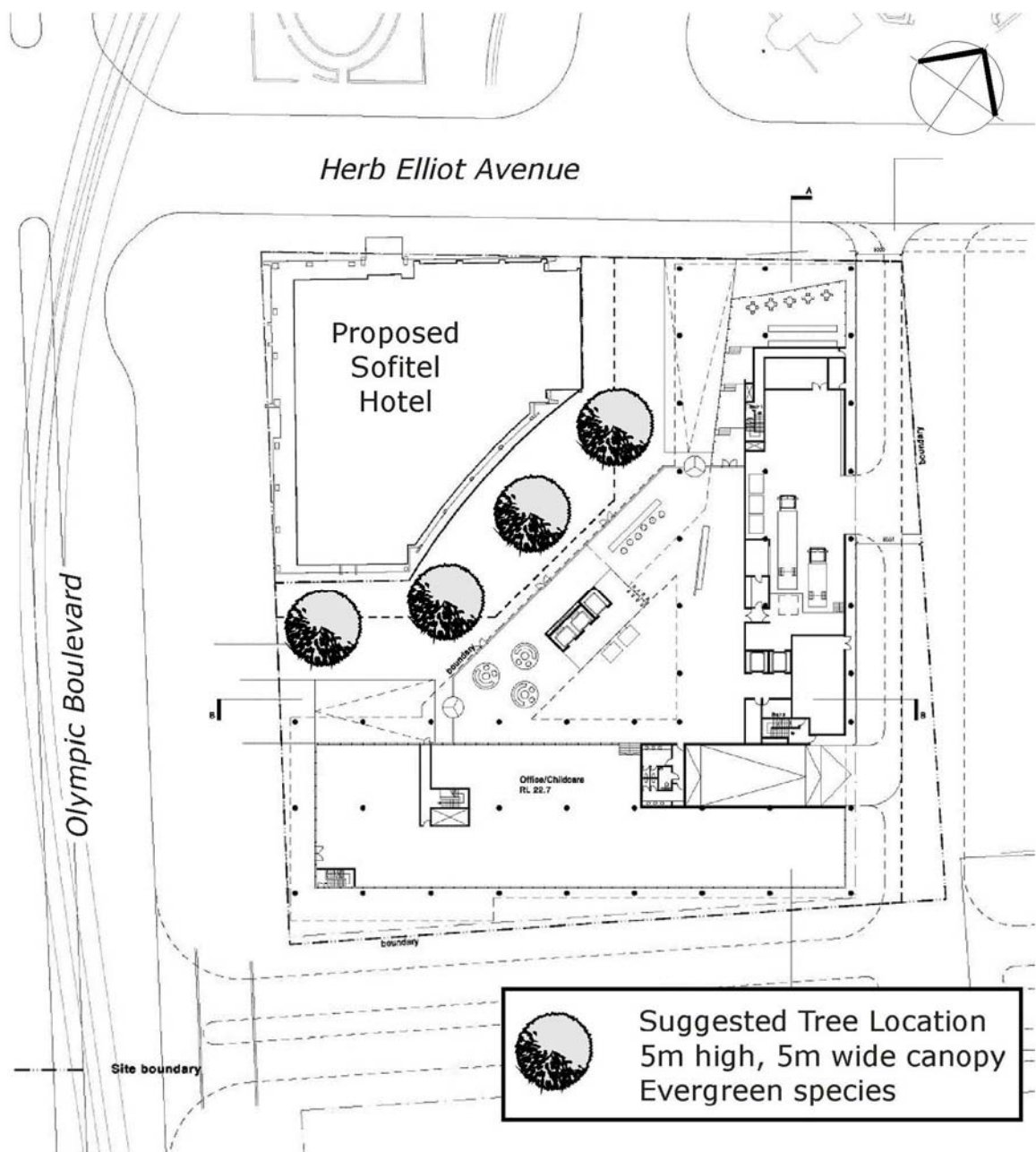


Figure 4: Suggested Tree Locations

6.0 Conclusions

An analysis of the wind environment impact with respect to the principal wind directions for Sydney has been completed for the proposed development known as Site 4B, Sydney Olympic Park, Homebush Bay.

The wind conditions within and around the ground level areas of the proposed development are expected to be acceptable for their intended uses with the implementation of a tree planting scheme similar to the one detailed in Figure 4 of this report. It is recommended that the selected trees be somewhat densely foliating so as to provide protection from wind. The species of trees selected should also be of an evergreen variety to ensure their effectiveness during the winter months.

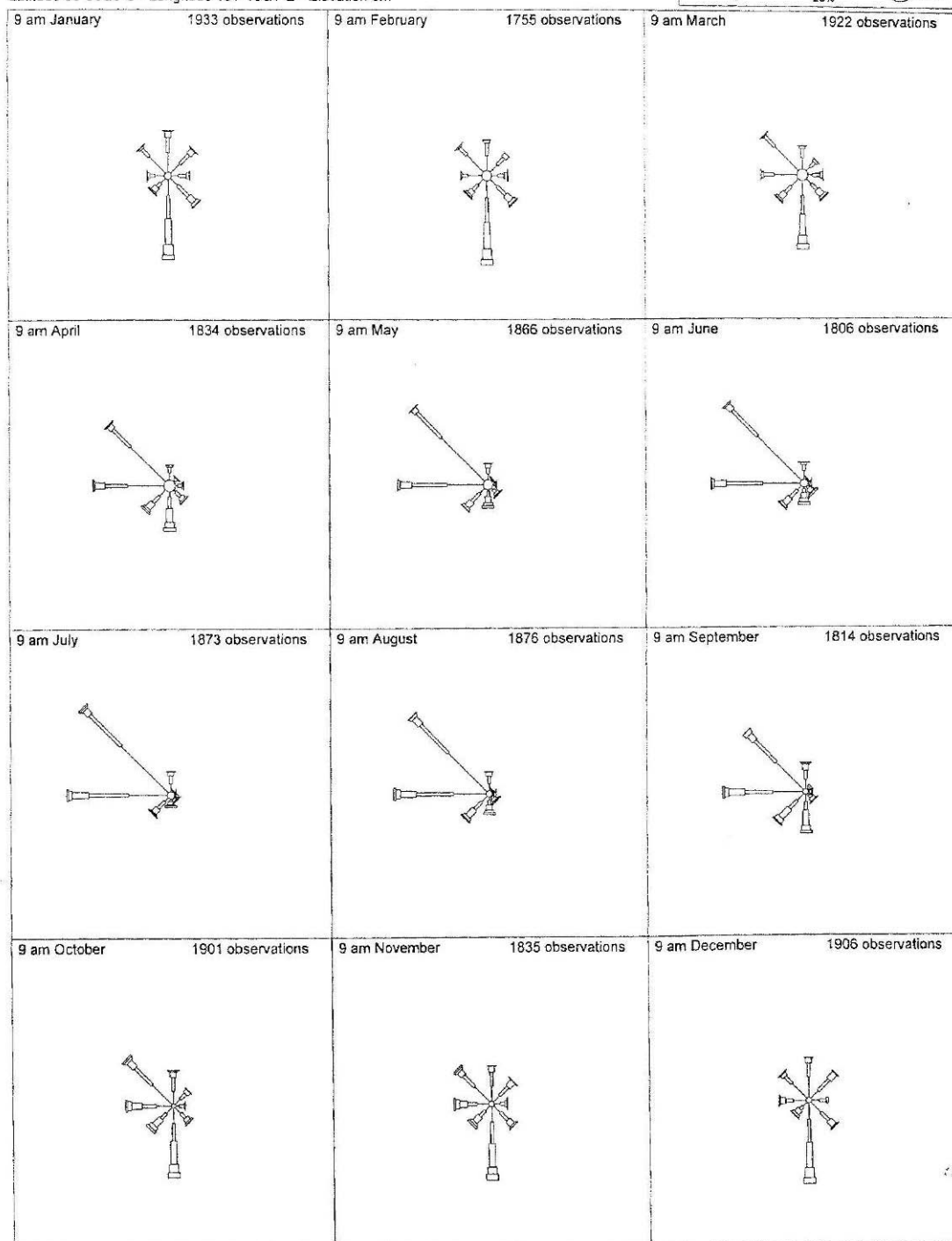
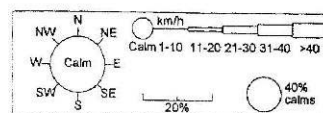
It is not expected that the proposed development will cause winds to produce any adverse effects to the surrounding streets and buildings within the local area.

Appendix

Wind Roses for Sydney Airport 1939-2000

Wind Roses using available data between 1939 and 2000 for SYDNEY AIRPORT AMO

Site Number 066037 • Locality: SYDNEY AIRPORT • Opened Jan 1929 • Still Open
Latitude 33°56'28"S • Longitude 151°10'21"E • Elevation 6m

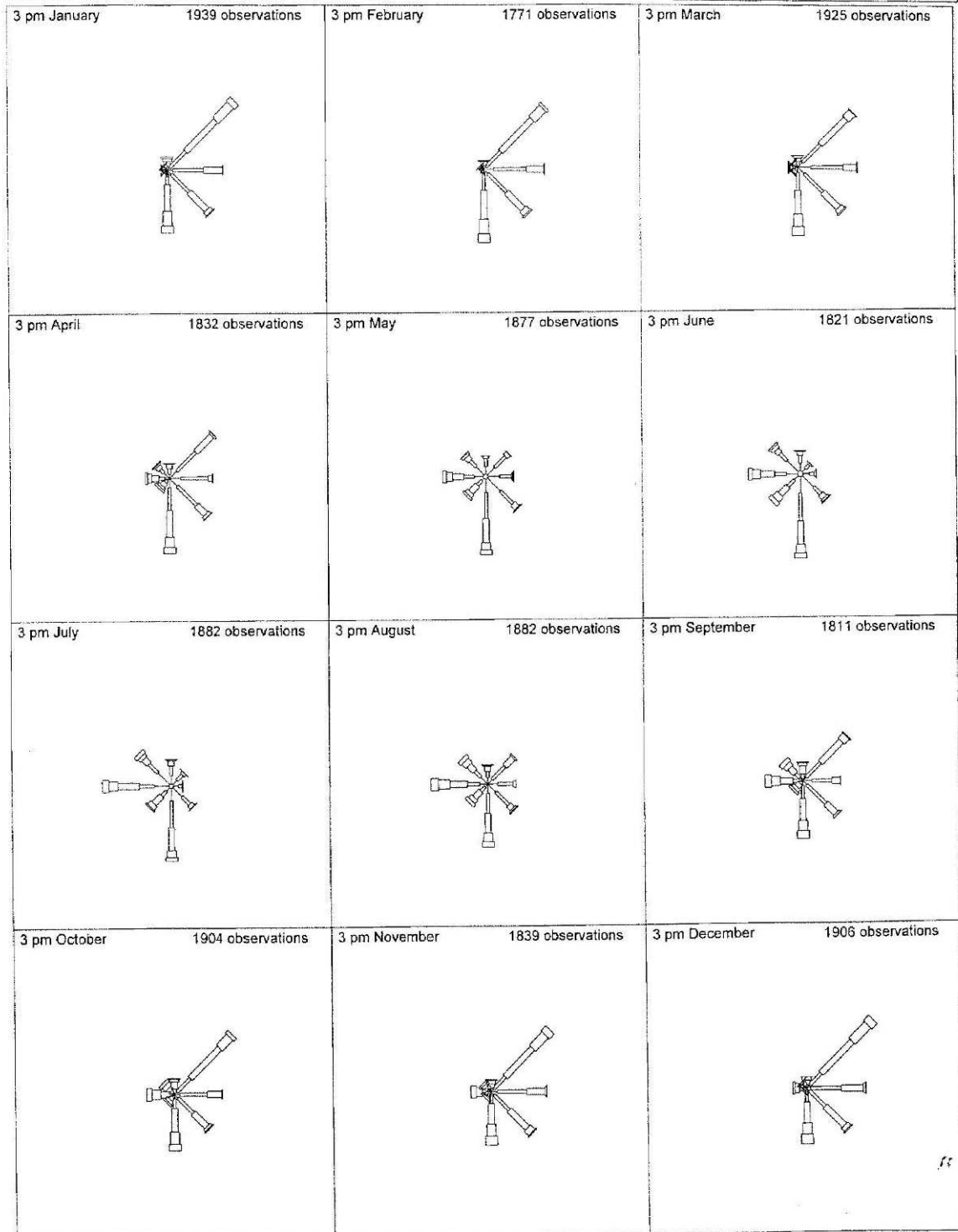
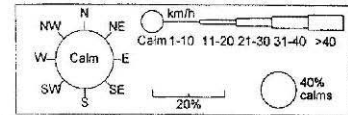


Copyright © Commonwealth of Australia 2000
Prepared by Climate and Consultancy Section in the New South Wales Regional Office of the Bureau of Meteorology
Contact us by fax 02 9296 1567, or by email on regnsw@bom.gov.au
We have taken all due care but cannot provide any warranty nor accept any liability for this information.

Page 1 of 1

Wind Roses using available data between 1939 and 2000 for SYDNEY AIRPORT AMO

Site Number 066037 • Locality: SYDNEY AIRPORT • Opened Jan 1929 • Still Open
Latitude 33°56'28"S • Longitude 151°10'21"E • Elevation 6m



Copyright © Commonwealth of Australia 2000
Prepared by Climate and Consultancy Section in the New South Wales Regional Office of the Bureau of Meteorology
Contact us by fax 02 9296 1567, or by email on regnsw@bom.gov.au
We have taken all due care but cannot provide any warranty nor accept any liability for this information.

Page 1 of 1