



Wind Environment Statement

for the proposed development known as

Sydney Olympic Park Private Hospital

July 25, 2007

Report Reference No. W653-02F01(rev1)- WS Report

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1.0 Introduction

This report is an opinion on the likely impact of the proposed development known as Sydney Olympic Park Private Hospital on the wind environment within and around the site.

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 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 PTW Architect, dated 26 July, 2007. 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	

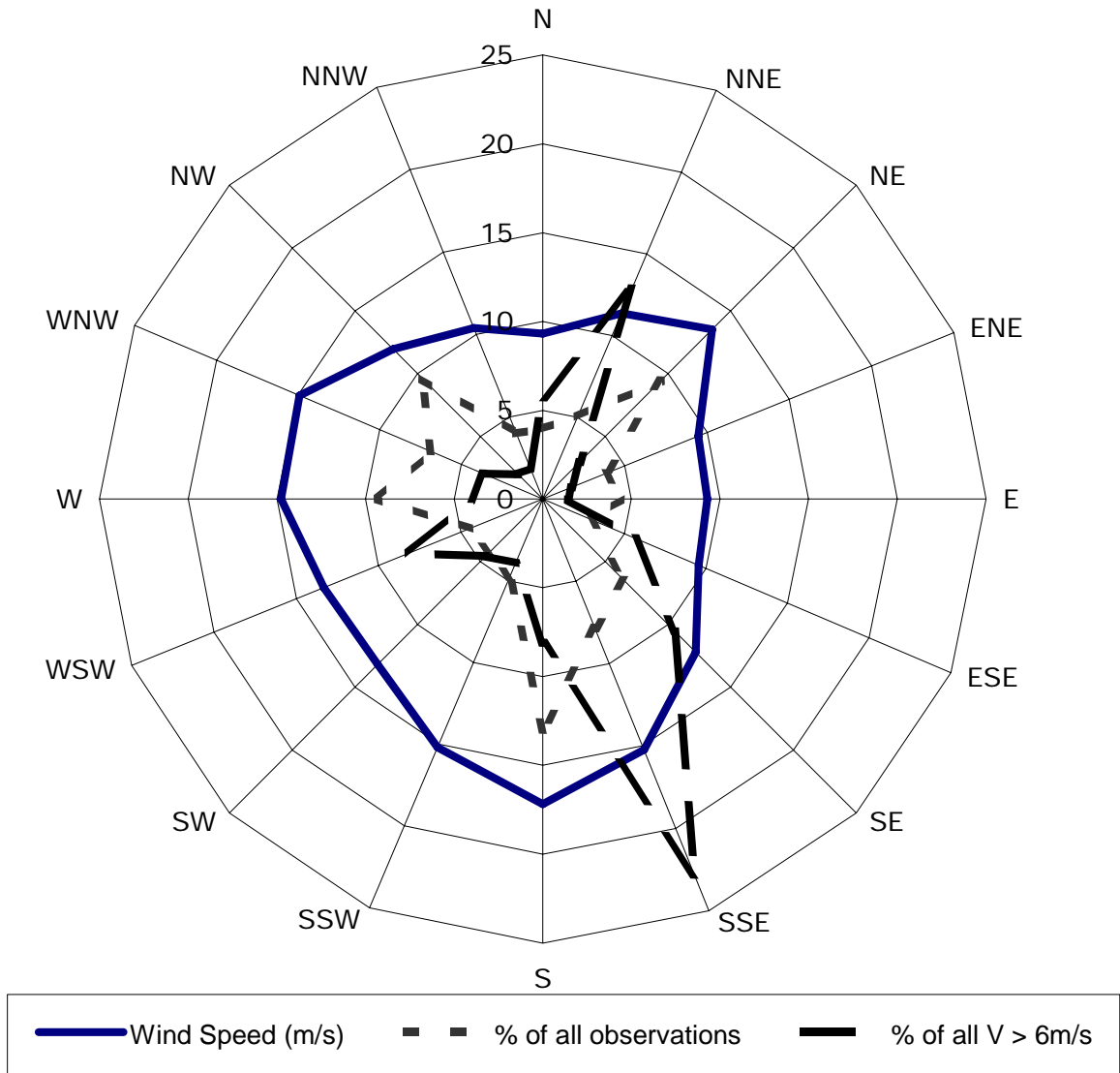


Figure 1: Basic Mean Wind Speed Data for Sydney, 1932-1992 (in metres per second, based on 3 hourly mean wind speeds, at 10m height at Kingsford Smith Airport)

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 hospital development consists of six levels above ground. The development is generally rectangular in plan from Ground to Level 1. From Levels 3 to 5 the centre section of the eastern aspect is setback.

The main entrance is located at the corner of Sarah Durack Avenue and Olympic Boulevard. A service entry/exit is proposed at the south-eastern corner of the development. A terrace is proposed at the eastern aspect of Level 1.

5.0 Site Analysis

The site of the proposal is located within the Sydney Olympic Park. Directly east of the site is P3, a car parking station, which rises 3 levels above ground. To the north of the site are several low-rise developments that are part of the Australia Centre. The State Sport Centre, Tennis Centre and Hockey Centre are south of the development. The Aquatic Centre, Athletic Centre and Warm up area are to the west of the site. Stadium Australia is located much further to the north-west.

The subject building is partially shielded from winds from the south due to the substantially large sporting facilities that lie towards the south of the proposed development. The effect of the westerly winds will also be somewhat reduced due to the effect of the sporting facilities that lie west of the site. The adjacent parking station P3 and the numerous low-rise building structures that make up the Australia Centre will reduce the impact the north easterly winds on the site.

The subject building is relatively exposed to winds from the north-east and west.

The local land topography is relatively flat for the various directions.

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.

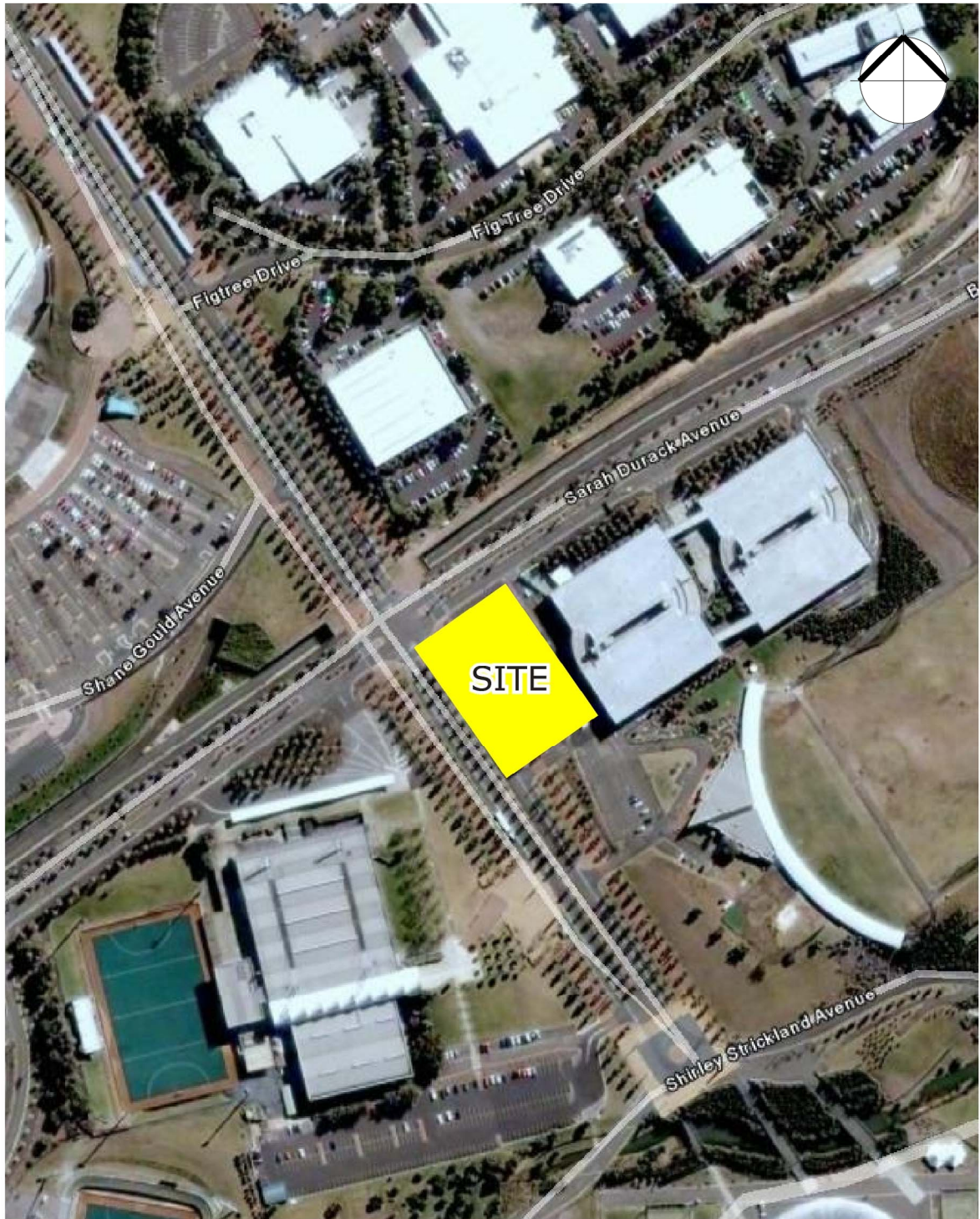


Figure 2: Aerial Photograph of the Proposed Development Site

5.1 North-Easterly Winds

Wind conditions along Olympic Boulevard are expected to be acceptable under the effect of north-easterly winds. The wind conditions at the main entrances along the Olympic Boulevard frontage are expected to be acceptable. Wind conditions at the services entrance located at the south-eastern corner of the development is also expected to be suitable for its intended uses.

The numerous trees along Olympic Boulevard will also reduce the effects of side-streams around the southern corner of the site.

Wind conditions along Sarah Durack Drive will not be adversely affected by the development.

The setback on the upper levels of the development along the eastern aspect will reduce the amount of downwash that may occur under the effect of the north-easterly winds.

The wind conditions on the terrace are expected to be acceptable for its intended uses.

5.2 Southerly Winds

The subject building is partially shielded from winds from the south due to the numerous sporting facilities that lie to the south and south-west of the proposed development.

Wind conditions along Olympic Boulevard are expected to be acceptable. The numerous trees along this street will reduce the effect of the southerly winds.

Wind conditions at the entrances from Olympic Boulevard are expected to be acceptable. The numerous trees adjacent to the entrances and the waved southern alignment of the ground floor will reduce the effect of the southerly winds that may shear along this aspect.

Wind conditions along Sarah Durack Drive are expected to improve with the proposed development in place. The development will help reduce the effect of the south-westerly winds along Sarah Durack Drive.

5.3 Westerly Winds

The wind conditions along Olympic Boulevard under the impact of westerly winds are expected to be acceptable. The sporting complexes to the west of the site and numerous trees along Olympic Boulevard will reduce the impact the westerly winds will have on the site.

The wind conditions at the entrance located at the corner of Sarah Durack Avenue and Olympic Boulevard are expected to be acceptable.

It is expected that the interaction of westerly winds and the proposed development will not result in any adverse effects to the surroundings streets and buildings within the local area.

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 Sydney Olympic Park Private Hospital.

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 PTW Architect, dated 26 July, 2007. 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.

The results indicate that the proposed development is partly shielded from the north-easterly and southerly winds. The interaction of three predominate winds with the proposed development will not adversely effect the wind conditions within the surrounding streets.

Wind conditions at the main entrances and services entrance to the development are expected to be acceptable.

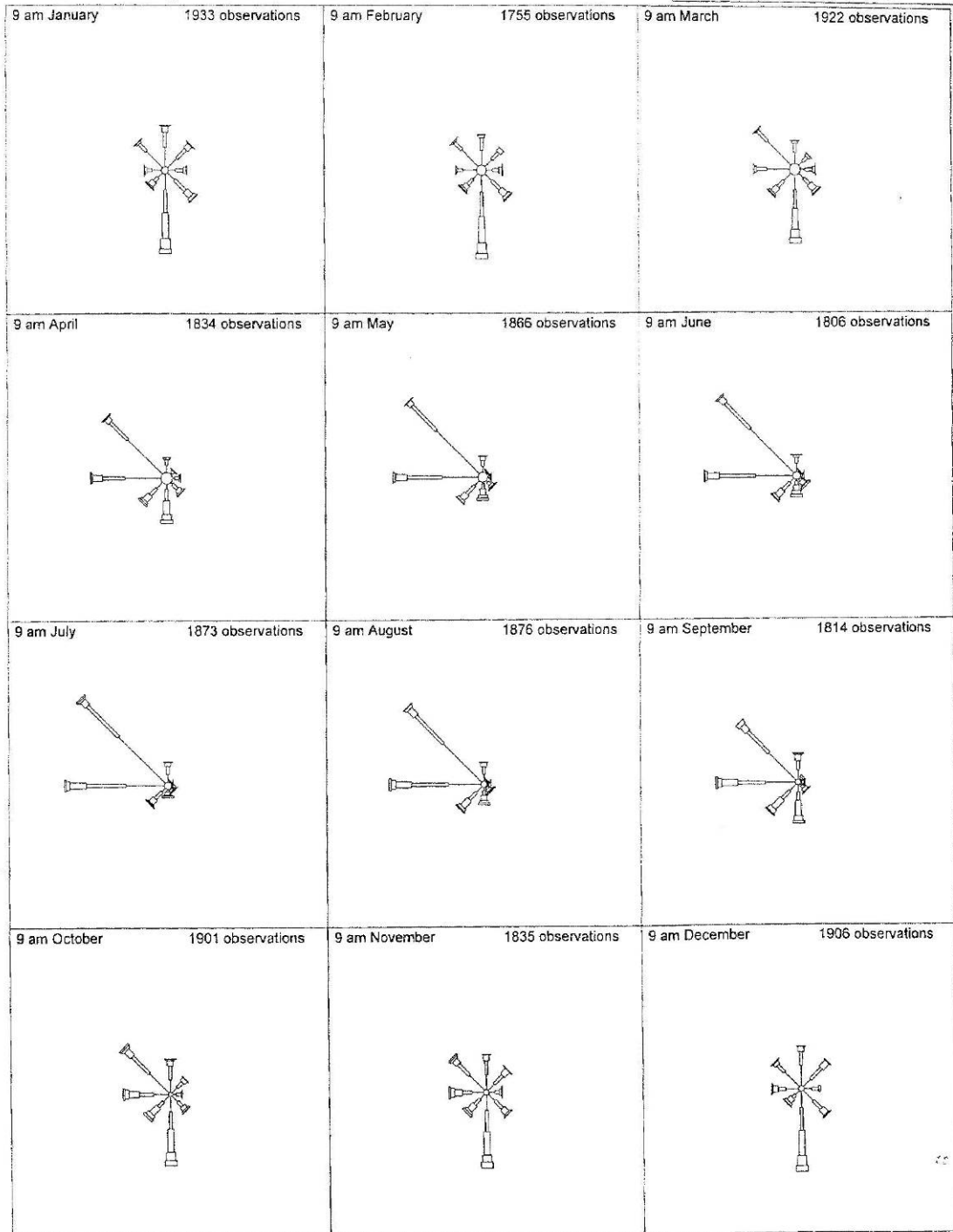
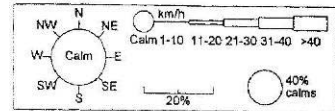
Wind conditions on Level 1 terrace areas within the proposed development are expected to be acceptable for its intended uses. The use of impermeable balustrades will further enhance the wind conditions.

Appendix

Wind Roses for Sydney Airport
1939-2000

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

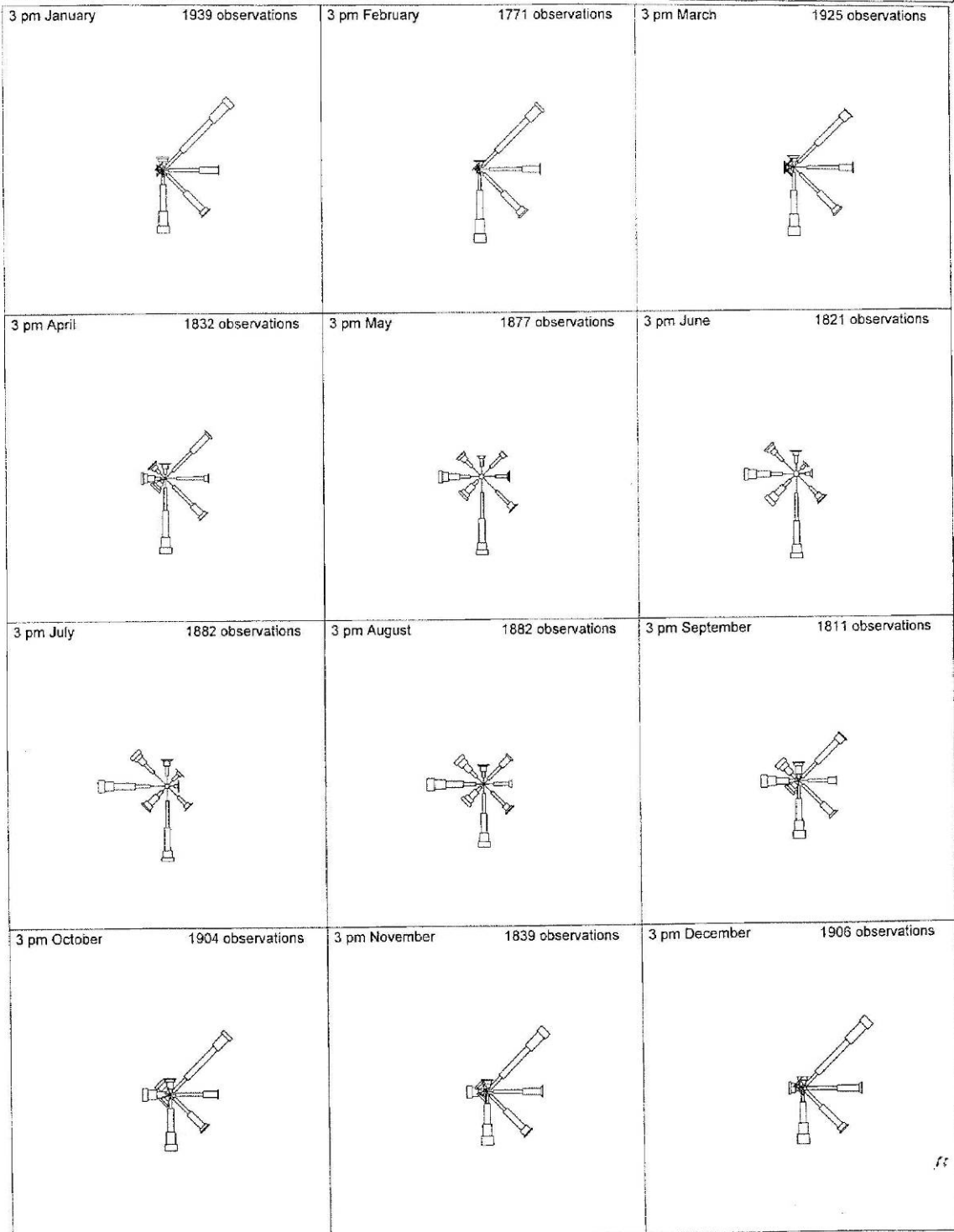
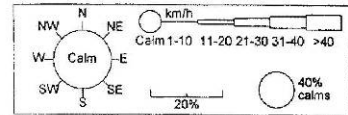
Site Number 066037 • Locality: SYDNEY AIRPORT • Opened Jan 1929 • Still Open
 Latitude 33°56'28"S • Longitude 151°10'21"E • Elevation 6m



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

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