OCTOBER 2014

PRELIMINARY AVIATION IMPACT ASSESSMENT

87 CHURCH STREET PARRAMATTA

Prepared for WFM Motors Pty Ltd C/- Hamptons Property Services

AVIATION PROJECTS

AVIATION PROJECTS

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

Situation

WFM Motors Pty Ltd seeks to construct a building at a site at 87-89 Church St and 4-6 Great Western Highway Parramatta, from hereon called 87 Church Street Parramatta. The proposed ultimate height of the proposed building is 227 m (745 ft) AHD and, during construction, a crane on top of the building may extend to 282 m (925 ft) AHD. The site is in the Sydney Basin, which is an area of complex airspace, high air traffic density and with several aerodromes within 30 nm, including Sydney (Kingsford Smith) Airport and Bankstown Airport.

The site is subject to a planning proposal process as the current planning provisions do not allow for the height and floor space that are sought by the proponent. Parramatta City Council would need to amend the planning provisions for the site in order to accommodate the proposal.

The relevant authorities cannot proceed with the required amendments to planning instruments until the proposal is formalised through the Development Application process, but the proponent does not wish to put forward a proposal to the Council or the Department of Planning that is not achievable.

The purpose of this task is to evaluate the potential impact on aviation safety arising from the proposal as currently scoped, and determine what mitigation measures (if any) would be required to provide an acceptable level of aviation safety.

Background

The following aspects were considered in the analysis:

- Airports Act 1996 and associated regulations;
- Civil Aviation Safety Regulations (1998) Part 139—Aerodromes;
- Parramatta City Council Local Environmental Plan 2007;
- Surrounding aerodromes;
- Affected prescribed airspace;
- Proposed building characteristics;
- Surrounding airspace;
- VFR route operations;
- IFR arrival, approach and departure procedures;
- IFR air routes; and
- Aircraft operations.

Conclusions

As a result of this preliminary assessment the following conclusions were drawn:

Building height

1. The proposed building will extend to a height of 227 m AHD when completed, and to a height of 282 m AHD with the addition of a crane up to 55 m high for a period of approximately five months during construction.

Airports (Protection of Airspace) Regulations 1996

2. The proposed building will be a controlled activity as described in the Airports (Protection of Airspace) Regulations 1996 because it will penetrate the prescribed airspace of Bankstown Airport (future outer horizontal surface). Approval to construct the building and/or operate a crane above a height of 156.0 m AHD will be required from the Secretary of the Department of Infrastructure and Regional Development.

3. Until a precision instrument approach procedure is implemented at Bankstown Airport, the proposed building and/or crane, at a maximum height of 282 m AHD, will not penetrate the operational airspace of Bankstown Airport.

CASR 139/MOS 139

4. Since the proposed building will be within 30 km of an aerodrome and higher than 30 m AGL, it must be reported to RAAF AIS.

5. There is an obligation to provide obstacle lighting for objects that are outside the obstacle limitation surfaces of an aerodrome if they are greater than 110 m above ground level, unless CASA, in an aeronautical study, assesses the object as being shielded by another lit object of that it is of no operational significance.

6. Since the proposed building will extend to a height of approximately 210 m AGL, it will require obstacle lighting.

7. Any crane that sits atop the building will require obstacle lighting and/or marking.

Parramatta VFR reporting point

8. Considering the 2000 ft AMSL ceiling for C class airspace above the area, multi-engine aircraft may not be able to comply with noise abatement procedures set out in ERSA without diverting around the Parramatta CBD. In any case, CAR 157 can be complied with.

Level of acceptable aviation safety risk

9. The proposed building and any cranes used during construction will not pose an unacceptable risk to aviation safety provided appropriate risk mitigations are implemented.

Recommendations

As a result of this preliminary assessment, the following recommendations are made:

1. The proponent should progress its application to Parramatta City Council based on this assessment that the proposed building and any cranes used during construction will not pose an unacceptable risk to aviation safety (if appropriate risk mitigations are implemented).
2. The proponent should forward this preliminary assessment to DIRD for its review of the proposal.
3. CASA Office of Airspace Regulation should consider the suitability of the future use of the Parramatta VFR reporting point during and following construction of the proposed building.
4. Once in-principle approval to design the proposed building to its desired height of 227 m AHD is received from Parramatta City Council and DIRD, the proponent should proceed with the design competition on the basis of an overall height limit of 293 m AHD at the site.
5. Once the building design is completed and the final building height is known, a formal application to conduct a controlled activity should be prepared for submission to DIRD as per Airports (Protection of Airspace) Regulations 1996.
6. The following risk mitigations should be put in place prior to construction:
    a. Details of the proposed structure should be provided to RAAF AIS.
7. The following risk mitigations should be put in place during construction:
    a. Updated details of the proposed structure should be provided to RAAF AIS, Airservices Australia NOTAM office and Bankstown Airport;
    b. The building and any cranes atop the building should be marked and/or lit in accordance with Chapters 8 and 9 of MOS 139. These markings and/or lights may include:
        i. Obstacle markings and/or high intensity flashing white obstacle lighting on the crane (the light may be used during the day in lieu of obstacle markings);
        ii. Medium intensity steady red obstacle lighting should be installed on the building once it reaches a height of 110 m AGL (approximately 127 m AHD); and
        iii. If medium intensity flashing red or high intensity white flashing obstacle lighting is required to be permanently installed on the building, consideration should be given to the potential for adverse environmental (visual amenity) impacts on the surrounding area.

1. INTRODUCTION

1.1. Situation

WFM Motors Pty Ltd seeks to construct a building at a site at 87-89 Church St and 4-6 Great Western Highway Parramatta, from hereon called 87 Church Street Parramatta. The proposed ultimate height of the proposed building is 227 m (745 ft) AHD and, during construction, a crane on top of the building may extend to 282 m (925 ft) AHD. The site is in the Sydney Basin, which is an area of complex airspace, relatively high air traffic density and with several aerodromes within 30 nm, including Sydney (Kingsford Smith) Airport and Bankstown Airport.

The site is subject to a planning proposal process as the current planning provisions do not allow for the height and floor space that are sought by the proponent. Parramatta City Council would need to amend the planning provisions for the site in order to accommodate the proposal.

The relevant authorities cannot proceed with the required amendments to planning instruments until the proposal is formalised through the Development Application process, but the proponent does not wish to put forward a proposal to the Council or the Department of Planning that is not achievable.

1.2. Purpose of task

The purpose of this task is to evaluate the potential impact on aviation safety arising from the proposal as currently scoped, and determine what mitigation measures (if any) would be required to provide an acceptable level of aviation safety.

1.3. Scope of task

The scope of work proposed to be undertaken is described as follows:

1. Establish the regulatory framework applicable to the study, including but not limited to:
    a. Airports Act 1996 and associated Airports (Protection of Airspace) Regulations 1996;
    b. Australian Airspace Policy Statement 2012;
    c. Civil Aviation Act 1988; and
    d. Civil Aviation Safety Regulations (1998) Part 139—*Aerodromes* and associated Manual of Standards Part 139—*Aerodromes*.
2. Assess the impacts on the operational airspace (OLS and PANS-OPS surfaces) of registered and certified aerodromes within the vicinity of the proposal;
3. Assess the impacts on other aerodromes and helicopter landing sites within the vicinity of the proposal;
4. Nominate the airspace and air routes that are located near/over the proposal;
5. Consider the impact on aircraft operating under visual flight rules within the vicinity of the proposal;

6. Propose appropriate mitigation measures (if required) as a result of the study; and
7. Outline further actions required following completion of the design competition in support of a formal development application.

The following aspects were excluded from the scope of work:

- The proposed new airport at Badgerys Creek has not been included in the preliminary assessment, since there is not sufficient certainty about its scope of operations or operational airspace to enable detailed assessment; and
- The impact on primary and secondary surveillance radars has not been examined at this preliminary stage of the assessment.

1.4. Methodology

The task was performed according to the method outlined below:

1. the scope and deliverables were confirmed;
2. a site visit was conducted to properly investigate aviation safety aspects of the proposal;
3. client material was reviewed;
4. relevant regulatory requirements and information sources including AIP were reviewed;
5. details of prescribed airspace was requested from, and provided by, Sydney Kingsford Smith and Bankstown Airports and reviewed to scope (if any) the impacts associated with the proposal;
6. a draft preliminary assessment was prepared and presented to the client for discussion/clarification; and
7. a final preliminary assessment was prepared for client acceptance.

1.5. Stakeholders

During the course of this engagement, informal discussions were held with the following stakeholders:

- Bankstown Airport;
- Civil Aviation Safety Authority (Office of Airspace Regulation);
- Department of Infrastructure and Regional Development;
- Sydney (Kingsford Smith) Airport; and
- WFM Motors Pty Ltd C/- Hamptons Property Services.

1.6. References

References used or consulted in the preparation of this report include:

- Airservices Australia Aeronautical Information Package (including Departure and Approach Procedures (DAP), En Route Supplement Australia (ERSA) and Runway Distance Supplement (RDS), effective 21 Aug 2014;
- Bankstown Airport prescribed airspace DWG files;
- Civil Aviation Safety Authority, *Civil Aviation Regulations 1988 (CAR)*, as amended;
- Civil Aviation Safety Authority, *Civil Aviation Safety Regulations 1998* (CASR), First Edition January 2003 as amended;
- Civil Aviation Safety Authority, *Manual of Standards Part 139 – Aerodromes*, version 1.11 dated November 2013;
- Civil Aviation Safety Authority, Sydney Visual Pilot Guide;
- OzRunways accessed up to and including 26 September 2014; and
- Sydney Airport, Prescribed Airspace Critical Surfaces, 17 March 2004.

1.7. Glossary

AAE	above aerodrome elevation
AGL	above ground level
AHD	Australian height datum
AMSL	above mean sea level
CASA	Civil Aviation Safety Authority
ERSA	En Route Supplement Australia
ft	feet
OLS	obstacle limitation surface(s)
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations

2. BACKGROUND

2.1. Airports Act 1996 and associated regulations

The Airports Act 1996 (C'th) and the Airports (Protection of Airspace) Regulations 1996 establish a system for the protection of airspace at, and around, airports. A prescribed airspace is an airspace specified in, or ascertained in accordance with, the Regulations, where it is in the interests of the safety, efficiency or regularity of existing or future air transport operations into or out of an airport for the airspace to be protected under Part 12 of the Airports Act 1996 (protection of airspace around airports).

The Regulations specifies a prescribed airspace as the airspace above any part of either an OLS or a PANS-OPS surface for the airport and which is declared in a written declaration by the Secretary relating to the airport (Airport (Protection of Airspace) Regulations 1996). Details of the prescribed airspace are provided by the related airport authorities.

Activities, such as building construction projects that intrude into the prescribed airspace are controlled activities (Airports Act 1996 (182)). To carry out a controlled activity, an approval must be granted in accordance with the Regulations (Airports Act 1996 (183)), which are obtained by the Secretary.

In accordance with the Regulations, an application for the Secretary's approval must be given to the airport-operator company for the airport, or each airport, concerned at least 28 days before the proponent's intended commencement of the controlled activity and must set out:

- the proposed controlled activity;
- its proposed location;
- if the proposed controlled activity consists of the erection of a building, structure or thing:
    - the proposed maximum height (above the Australian Height Datum) of the proposed building, structure or thing;
    - the proposed maximum height (above the Australian Height Datum) of any temporary structure or equipment intended to be used in the erection of the proposed building, structure or thing; and
- the purposes of the controlled activity.

2.2. Civil Aviation Safety Regulations (1998) Part 139—Aerodromes

The Civil Aviation Safety Authority regulates aviation activities in Australia. Applicable requirements include the Civil Aviation Regulations 1988 (CAR), Civil Aviation Safety Regulations 1998 (CASR) and associated Manuals of Standards (MOS) Part 139—*Aerodromes* and other guidance material.

2.2.1. Civil Aviation Safety Regulations 1998, Part 139–*Aerodromes*

CASR 139.365 requires the owner of a structure (or proponents of a structure) that will be 110 m or more above ground level (AGL) to inform CASA. This is to allow CASA, under CASR 139.370, to assess the effect of the structure on aircraft operations and determine whether or not the structure will be a hazardous object because of its location, height, or lack of marking or lighting.

2.2.2. Manual of Standards 139–*Aerodromes*

Chapter 7 of MOS 139 sets out the standards applicable to Obstacle Restriction and Limitation. Section 7.1.5 deals with objects outside the obstacle limitation surfaces (OLS):

7.1.5 Objects Outside the OLS

7.1.5.1 Under CASR Part 139 any object which extends to a height of 110 m or more above local ground level must be notified to CASA.

Note: For instrument runways, obstacle monitoring includes the PANS-OPS surface which extends *beyond the OLS of the aerodrome. See paragraph 7.1.1.*

7.1.5.2 Any object that extends to a height of 150 m or more above local ground level must be regarded as an obstacle unless it is assessed by CASA to be otherwise.

Chapter 9 sets out the standards applicable to Visual Aids Provided by Aerodrome Lighting.

Section 9.4.1 provides some general guidance on obstacle lighting:

9.4.1.2 In general, an object in the following situations would require to be provided with obstacle lighting unless CASA, in an aeronautical study, assesses it as being shielded by another lit object or that it is of no operational significance:

(b) outside the obstacle limitation surfaces of an aerodrome, if the object is or will be more than 110 m above ground level.

Section 9.4.2 provides guidance on Types of Obstacle Lighting and Their Use:

9.4.2.3 Medium intensity obstacle lights are to be used either alone or in combination with low intensity lights, where:

(a) the object is an extensive one;

(b) the top of the object is 45 m or more above the surrounding ground; or

(c) CASA determines that early warning to pilots of the presence of the object is desirable.

9.4.2.5 High intensity obstacle lights are flashing white lights used on obstacles that are in excess of 150 m in height.

2.3. Parramatta City Council Local Environmental Plan 2007

The urban design study for the southern section of Parramatta's CBD outlines that the maximum permissible height by PCCLEP 2007 on the subject site is 28 m. However, the proponent has advised that the PCC land use planning team in meeting with the proponent recommended as long as the proposed building envelope for the site does not overshadow Jubilee Park, located to the east of the site, and remain as the third tallest building in Parramatta CBD there will be no significant concern about the height of the proposed building.

2.4. Surrounding aerodromes

There a several aerodromes and heliports in close proximity to the proposed building site, which are listed in Table 1 and Table 2.

Table 1 Aerodromes in close proximity to the proposed building site

Name	ICAO	Status	Bearing from site (deg M)	Distance (nm)
Bankstown	YSBK	CERT	175	6.3
Holsworthy	YSHW	MIL	182	10.8
Sydney (Kingsford Smith)	YSSY	CERT	119	11.5
Richmond	YSRI	MIL	308	17.3
Camden	YSCN	REG	218	20.6

There is a proposed new aerodrome at Badgerys Creek recently announced by the Federal Government, which will be a second major airport in the Sydney basin. However, details of its layout were not available at the time of writing.

Table 2 Heliports in close proximity to the proposed building site

Name	ICAO	Status	Bearing from site (deg M)	Distance (nm)
Westmead Hospital	YWST	UNCR	308	1.2
Westmead NETS Base	YWNT	UNCR	314	1.2
Rosehill Heliport	YRSH	UNCR	108	1.2
Sydney Olympic Park	YSOP	UNCR	~ SE	~3

2.5. Affected prescribed airspace

The Department of Infrastructure and Regional Development (DIRD), as the coordinating authority for this proposal, has provided data indicating that Bankstown Airport's prescribed airspace will be the only prescribed airspace affected by the proposed building.

The current prescribed airspace for Bankstown Airport reflects the preservation of airspace required for future precision approach operations as per the current Airport Master Plan.

Bankstown Airport's General Manager Aviation provided electronic files with three dimensional models of the Airport's prescribed airspace.

Sydney Airport's prescribed airspace was provided by the DIRD representative in a drawing format, from which it could be readily determined that the airport's prescribed airspace would not be affected by the proposal. A copy of the drawing is provided at **Annexure 1**.

Both airports have advised that their current prescribed airspace has been revised and is subject to approval by Airservices Australia. The scope and potential effects of the changes were not known at the time this report was finalised.

2.6. Proposed building characteristics

The maximum overall height of the tower is currently planned to be 227 m AHD. During construction, a crane located on top of the building may extend a further 55 m, resulting in a maximum height of 282 m AHD. The crane is expected to be required for a period of approximately five months.

The site of the proposed building is irregular in shape and has a slight downward slope of 3.24m from 17.29AHD to 14.05AHD west to east along the Great Western Highway and 1.68m from 15.73AHD to 14.05AHD north to south along Church Street. The site also slopes down from 22.39AHD to 15.73AHD, 6.66m, along the rear boundary from west to east. An indicative representation of the property is provided in Figure 1.

Figure 1 Plan view of proposed building site

2.7. Surrounding airspace

The proposed building site is surrounded by G class airspace, which is designated as a danger area (D539A – Bankstown Lane of Entry, active during daylight hours) with an upper limit of 2000 ft AMSL, above which is C class airspace. The G class upper limit increases to 2500 ft AMSL approximately 0.5 nm to the north west of the site, which is designated as another danger area (D539B – Bankstown Lane of Entry, active during daylight hours). The airspace in the vicinity of the site is shown in Figure 2 (source: OzRunways).

Figure 2 Airspace surround the proposed building site

2.8. VFR route operations

A lane of entry exists directly overhead the proposed building site where outbound Bankstown traffic transits north. Procedures published in ERSA requests pilots of multi-engine aircraft to fly no lower than 1500 ft AGL for noise abatement unless ascending or descending. It is also noteworthy that CAR 157 requires aircraft to fly no lower than 1000 ft above the highest point of the terrain, and any object on it, within a 600 m radius (300 m for helicopters) in populous areas. During the construction stage of the proposed building, the height of the building (with crane operations) will be approximately 925 ft AMSL. Multi-engine aircraft may not be unable to comply with the noise abatement procedures without diverting around the Parramatta CBD, and, to comply with CAR 157, aircraft will have 75 ft of margin from the lowest level of controlled airspace during construction and 255 ft after construction is complete. The outbound lanes tracking from Bankstown Airport over Parramatta CBD are shown in Figure 3 (source: CASA Sydney Visual Pilot Guide).

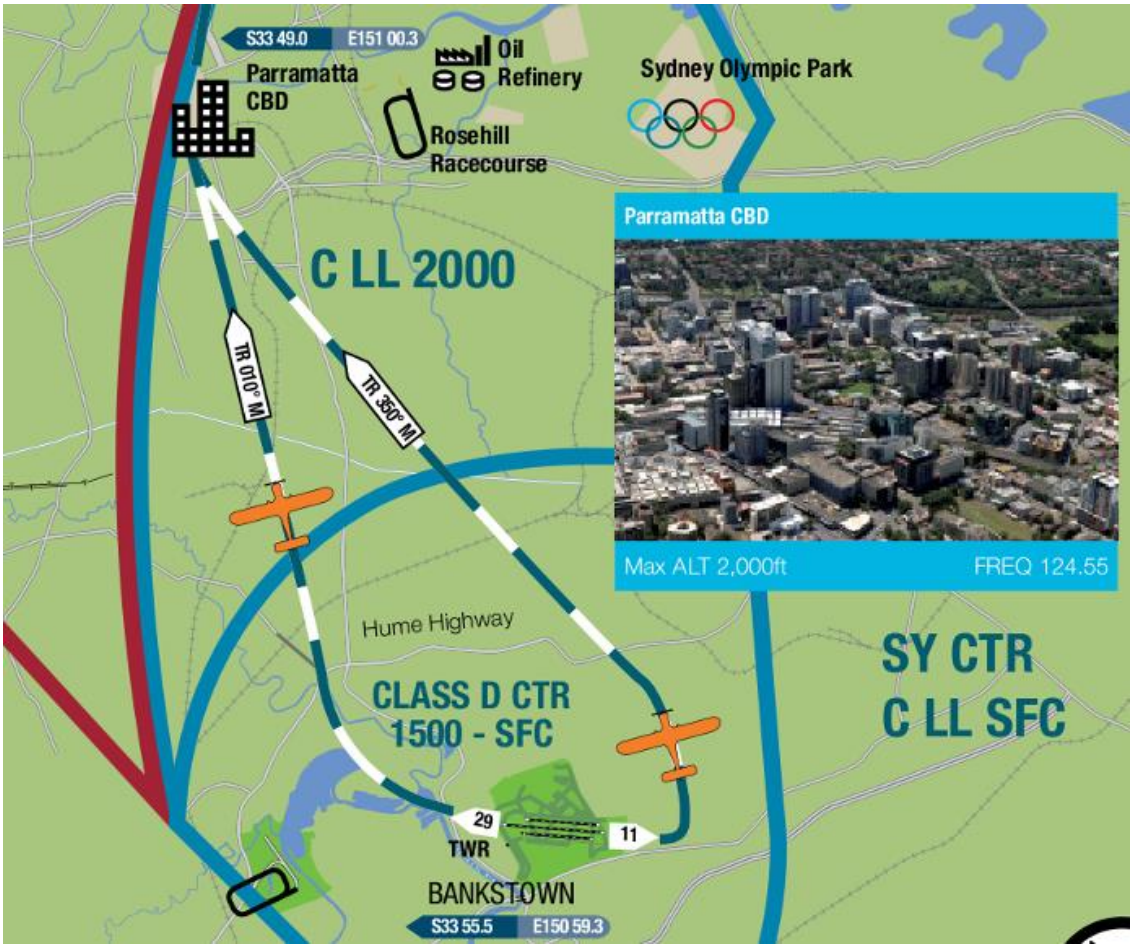
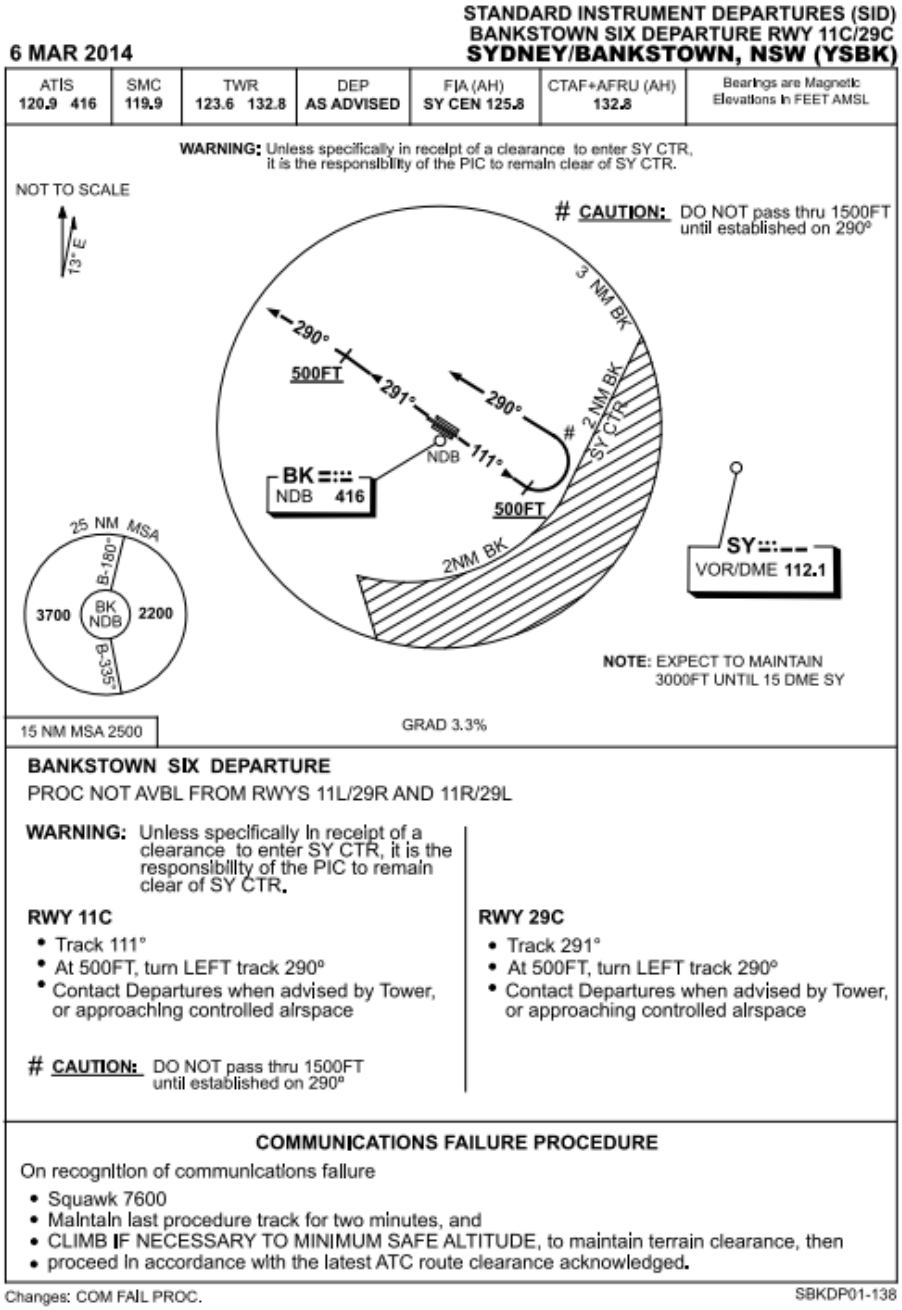


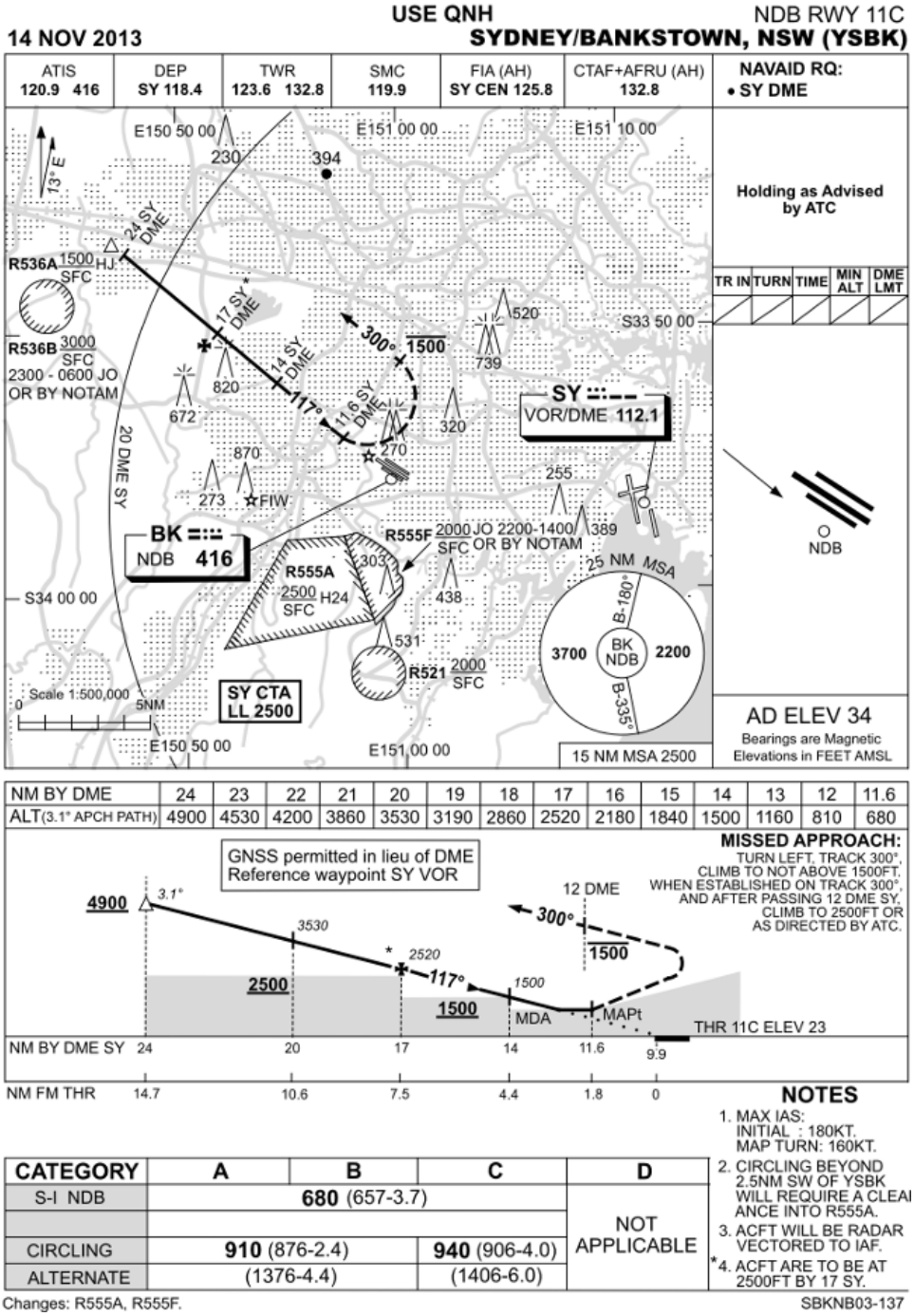
Figure 3 Sydney Visual Pilot Guide extract

2.9. IFR arrival, approach and departure procedures

There are two Standard Terminal Arrival Routes (STARs) and one Standard Instrument Departure (SID) associated with Bankstown Airport. The BANKSTOWN SIX DEPARTURE RWY 11C has potential to conflict with the proposed building in the unlikely event of an aircraft being unable to achieve the published 3.3% Procedure Design Gradient.



Furthermore, there are four instrument approach procedures for Bankstown Airport. The NDB RWY 11C missed approach has the potential to be affected by the proposed building in that the missed approach turns toward the site and is vertically constrained to at or below 1500 ft AMSL.



The proposed building does not demonstrate any potential impact to the procedures of Sydney, Richmond, Camden and Holsworthy aerodromes.

2.10. IFR air routes

The proposed building site is under or adjacent to a number of instrument flight rules (IFR) air routes published on the Sydney Terminal Area Chart. These routes are: V316, H202, V295 and W430. All aforementioned air routes have a lowest safe altitude (LSALT) in excess of 2000 ft AMSL.

An extract of the Sydney Terminal Area Chart is provided at Figure 4 (source: OzRunways).

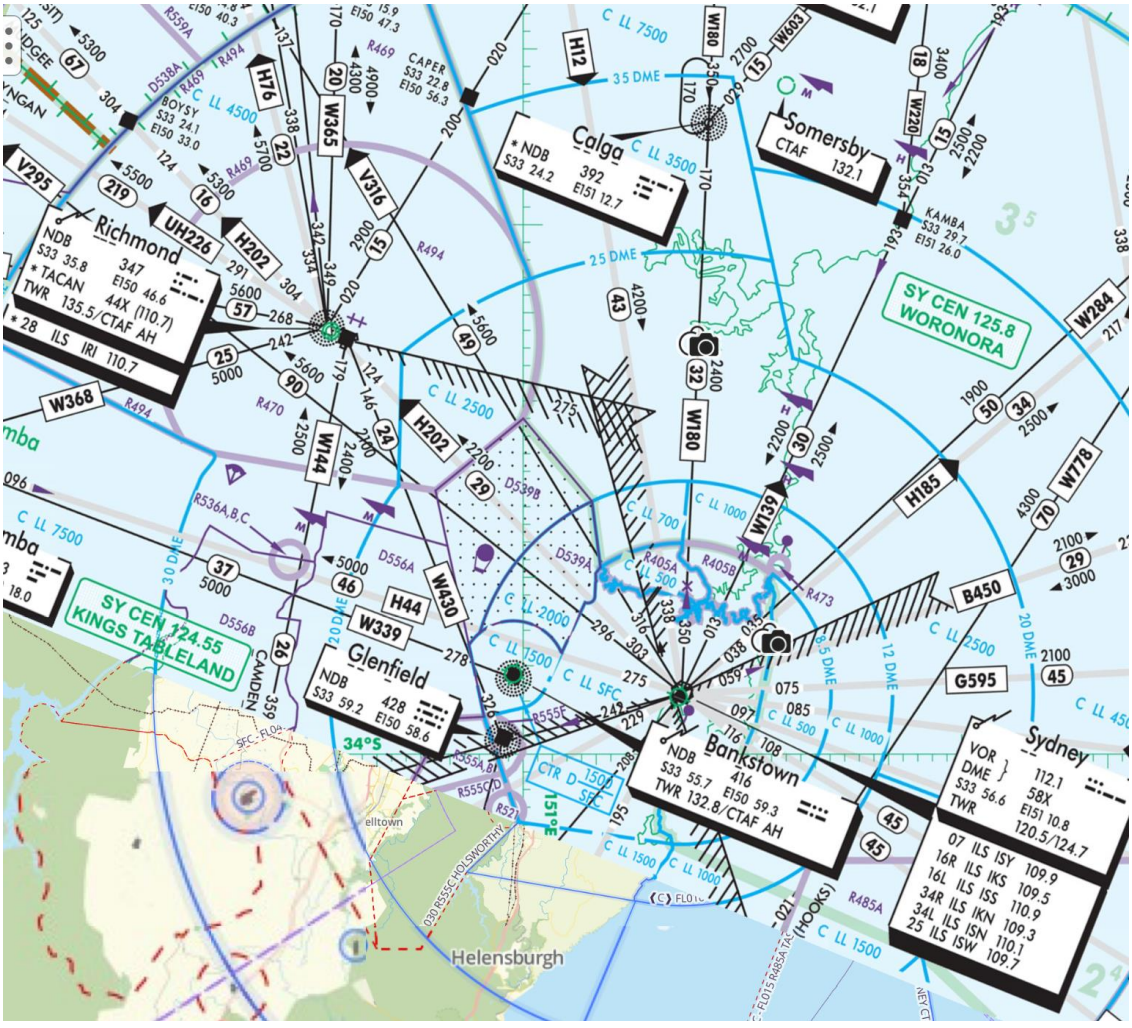


Figure 4 Sydney Terminal Area Chart extract

2.11. Aircraft operations

Aviation operations conducted in the vicinity of the proposed building site include fixed and rotary wing private, flying training and charter.

Untethered ballooning operations are also regularly conducted in the area of the proposed building site.

3. ANALYSIS

3.1. Bankstown Airport prescribed airspace

Bankstown Airport's prescribed airspace was provided in two CAD (.DWG) files via email on 3 September 2014. The file names are listed below:

- B13095-A-003; and
- B13095-A-006.

A cadastre file of the Parramatta Local Government Area was sourced from NSW Government's Land and Property Information Digital Cadastral Database.

Five reference points around the perimeter of the site were nominated as shown in Figure 5.

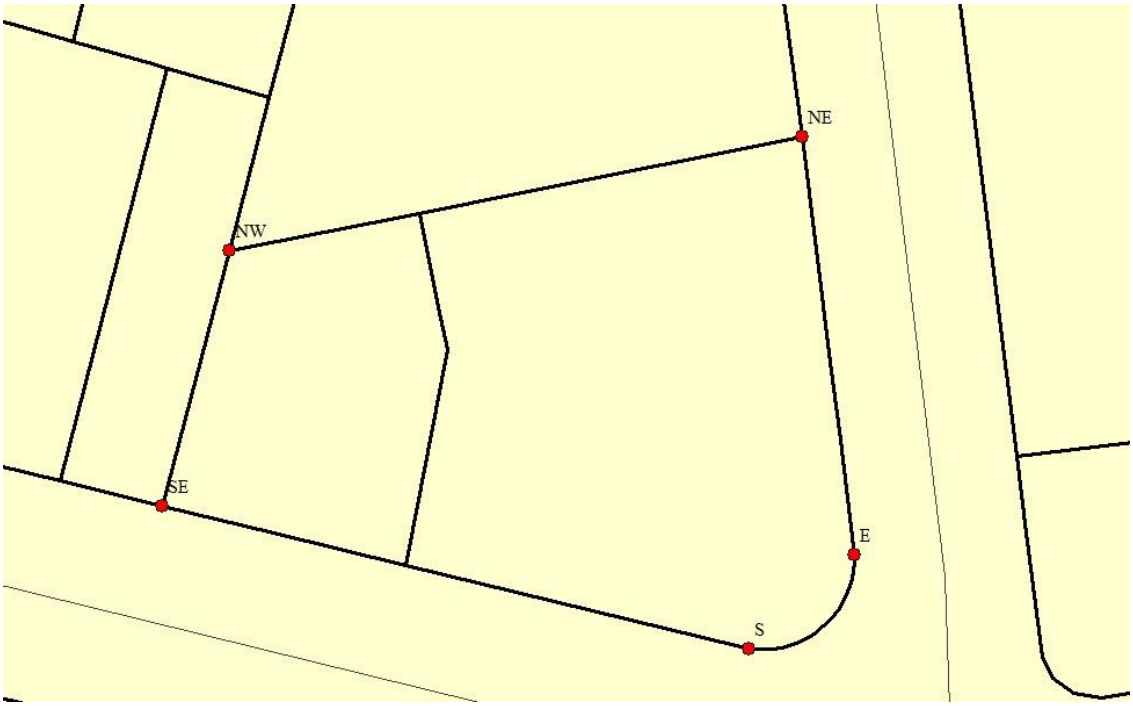


Figure 5 Proposed building site layout – cadastre reference points

The height of the controlling PANS-OPS surface at each reference point was determined according to distance from the applicable contour height at the applicable gradient (2.5%). The UTM coordinates and heights of the OLS and PANS-OPS surfaces at each point are provided in Table 3.

Note: The maximum overall height of the proposed building is currently planned to be 227 m AHD (282 m AHD during construction). For building design and planning purposes, the height of the PANS-OPS surface above the proposed building site should be rounded down to the nearest metre (293 m AHD).

Table 3 PANS-OPS/OLS surface heights at reference points of proposed building site

Ref Point	Easting	Northing	PANS-OPS Surface approx (m AHD)	OLS Surface (m AHD)
NE	315253	6256057	294.800	156.0
E	315259	6256009	293.725	156.0
S	315247	6255999	293.375	156.0
SE	315179	6256015	293.175	156.0
NW	315187	6256044	293.925	156.0

From the analysis provided in Table 3, it can be seen that it is feasible to build up to the desired 227 m AHD, including the operation of a 55 m high crane on top of the building during construction, without penetrating the operational airspace of either Bankstown or Sydney Airports (given the limiting height of 293 m AHD). When an instrument landing system (ILS) is installed and operating at Bankstown Airport the outer horizontal surface, which is included in the prescribed airspace model, would become operational, and would be penetrated by the completed building.

3.2. Obstacle marking and lighting

Notwithstanding the building (and crane during construction) will not penetrate the operational airspace of any aerodromes (until Bankstown Airport implements precision instrument approaches), it will extend to a height above which CASA requires marking and lighting as per Manual of Standards Part 139 Chapter 8 and Chapter 9.

3.3. Parramatta VFR reporting point

During construction, the height of the proposed building (with crane operations) will be approximately 925 ft AMSL. After the construction stage, the height of the proposed building will be approximately 745 ft AMSL.

In order to comply with Civil Aviation Regulation (1988) 157 (which relates to low flying) and Lane of Entry procedures set out in En Route Supplement Australia, multi-engine aircraft will need to transit the area (since Parramatta CBD is a visual reporting point) at an altitude of 2425 ft AMSL during construction and 2245 ft AMSL after construction. Other aircraft will need to transit the area at 1925 ft AMSL during construction and 1745 ft AMSL after construction.

4. CONCLUSIONS

Building height

1. The proposed building will extend to a height of 227 m AHD when completed, and to a height of 282 m AHD with the addition of a crane up to 55 m high for a period of approximately five months during construction.

Airports (Protection of Airspace) Regulation

2. The proposed building will be a controlled activity as described in the Airports (Protection of Airspace) Regulations because it will penetrate the prescribed airspace of Bankstown Airport (future outer horizontal surface). Approval to construct the building and/or operate a crane above a height of 156.0 m AHD will be required from the Secretary of the Department of Infrastructure and Regional Development.

3. Until a precision instrument approach procedure is implemented at Bankstown Airport, the proposed building and/or crane, at a maximum height of 282 m AHD, will not penetrate the operational airspace of Bankstown Airport.

CASR 139/MOS 139

4. Since the proposed building will be within 30 km of an aerodrome and higher than 30 m AGL, it must be reported to RAAF AIS.

5. There is an obligation to provide obstacle lighting for objects that are outside the obstacle limitation surfaces of an aerodrome if they are greater than 110 m above ground level, unless CASA, in an aeronautical study, assesses the object as being shielded by another lit object of that it is of no operational significance.

6. Since the proposed building will extend to a height of approximately 210 m AGL, it will require obstacle lighting.

7. Any crane that sits atop the building will require obstacle lighting and/or marking.

Parramatta VFR reporting point

8. Considering the 2000 ft AMSL ceiling for C class airspace above the area, multi-engine aircraft may not be able to comply with noise abatement procedures set out in ERSA without diverting around the Parramatta CBD. In any case, CAR 157 can be complied with.

Level of acceptable aviation safety risk

9. The proposed building and any cranes used during construction will not pose an unacceptable risk to aviation safety provided appropriate risk mitigations are implemented.

5. RECOMMENDATIONS

As a result of this preliminary assessment, the following recommendations are made:

1. The proponent should progress its application to Parramatta City Council based on this assessment that the proposed building and any cranes used during construction will not pose an unacceptable risk to aviation safety (if appropriate risk mitigations are implemented).
2. The proponent should forward this preliminary assessment to DIRD for its review of the proposal.
3. CASA Office of Airspace Regulation should consider the suitability of the future use of the Parramatta VFR reporting point during and following construction of the proposed building.
4. Once in-principle approval to design the proposed building to its desired height of 227 m AHD is received from Parramatta City Council and DIRD, the proponent should proceed with the design competition on the basis of an overall height limit of 293 m AHD at the site.
5. Once the building design is completed and the final building height is known, a formal application to conduct a controlled activity should be prepared for submission to DIRD as per Airports (Protection of Airspace) Regulations 1996.
6. The following risk mitigations should be put in place prior to construction:
    a. Details of the proposed structure should be provided to RAAF AIS.
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    a. Updated details of the proposed structure should be provided to RAAF AIS, Airservices Australia NOTAM office and Bankstown Airport;
    b. The building and any cranes atop the building should be marked and/or lit in accordance with Chapters 8 and 9 of MOS 139. These markings and/or lights may include:
        i. Obstacle markings and/or high intensity flashing white obstacle lighting on the crane (the light may be used during the day in lieu of obstacle markings);
        ii. Medium intensity steady red obstacle lighting should be installed on the building once it reaches a height of 110 m AGL (approximately 127 m AHD); and
        iii. If medium intensity flashing red or high intensity white flashing obstacle lighting is required to be permanently installed on the building, consideration should be given to the potential for adverse environmental (visual amenity) impacts on the surrounding area.

ANNEXURE 1 – SYDNEY AIRPORT PRESCRIBED AIRSPACE

LEGEND - PANSOPS SURFACES

- CIRCLING MINIMA CATEGORY A & B
- CIRCLING MINIMA CATEGORY C & D
- ILS TRANSITIONAL SURFACES
- RWY 07 ILS
- RWY 07 LLZ / DME
- RWY 07 VOR / DME
- RWY 16L ILS
- RWY 16L LLZ / DME
- RWY 16R ILS
- RWY 16R LLZ / DME
- RWY 16R VOR / DME
- RWY 25 ILS
- RWY 25 LLZ / DME
- RWY 25 VOR / DME
- RWY 34L ILS
- RWY 34L LLZ / DME
- RWY 34L VOR / DME
- RWY 34R ILS
- RWY 34R LLZ / DME
- NO CIRCLING

LEGEND - TOPOGRAPHIC FEATURES

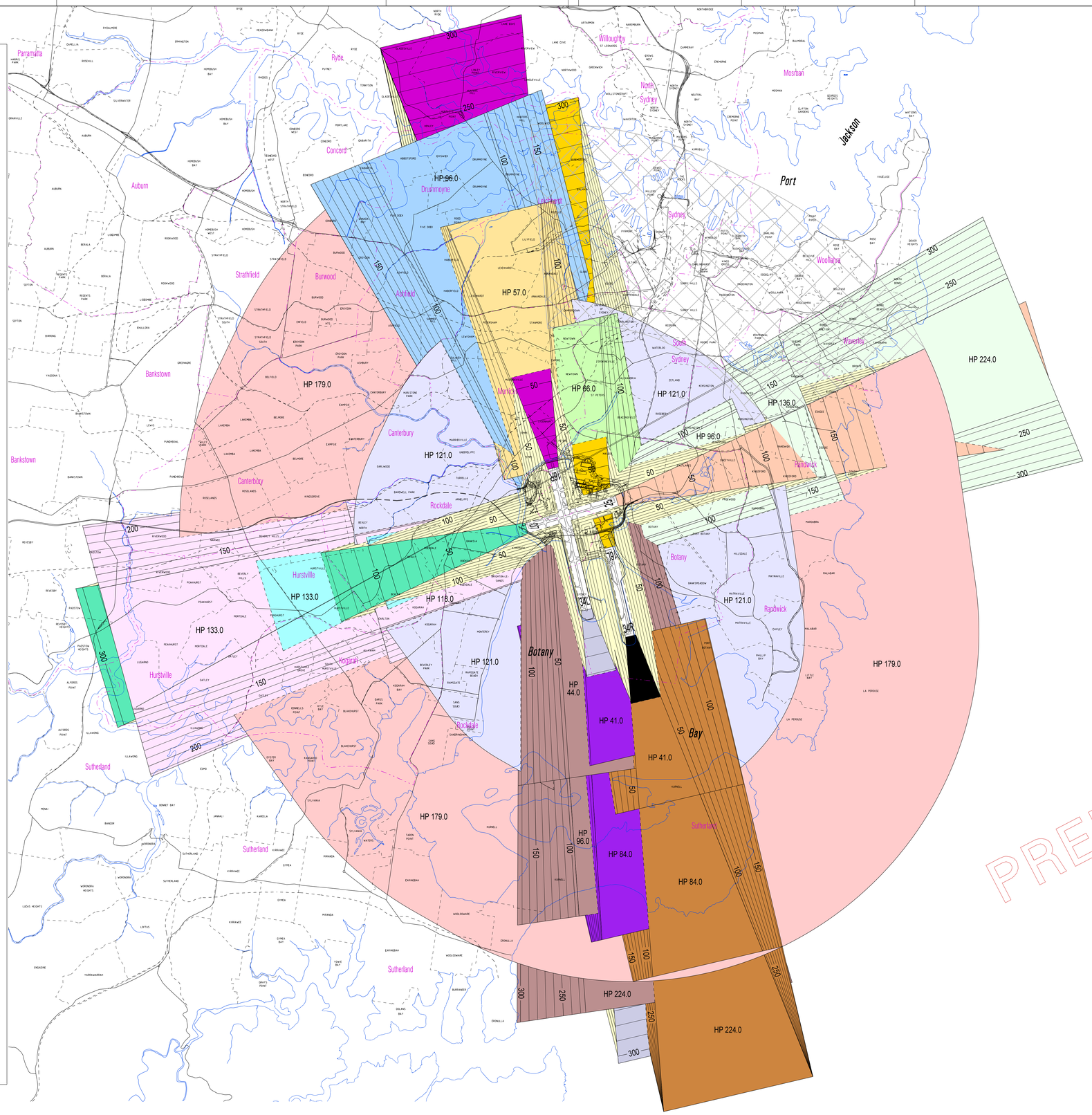
- MAIN ROADS (INCLUDING MOTORWAYS)
- RAILWAYS
- COASTLINE & WATERWAYS
- LOCAL GOVERNMENT BOUNDARY
- Sutherland — LOCAL GOVERNMENT AREA

NOTES

1. VERTICAL DATUM IS AUSTRALIAN HEIGHT DATUM (AHD)

2. BACKGROUND REFERENCE MATERIAL (STREETS, LGA, RAILWAYS ETC) ARE INDICTATIVE AND ACCURATE HORIZONTALLY TO +/- 20 METRES.

3. HP - HORIZONTAL PLANE



PRELIMINARY

1000 0 1000 2000 3000 4000 5000

1:50000
(when plotted at B1)

AIRPORT CONSULTING

DOCUMENT CONTROL STATUS

Manager, Computer Aided Drafting & Design	Signature	Date	Appd Issue

Unless signed by the Manager, Computer Aided Drafting and Design', this drawing is an UNCONTROLLED DOCUMENT. Detail & data must be verified against a controlled copy before use. Controlled Documents, produced in full & at original scale are the only drawings checked, approved and authorised by the Computer Aided Drafting & Design Group for copying and distribution

Origin of Coordinates
Universal Transverse Mercator MGA94 Zone 56
TS10951 E 334059.750 N 6245948.127
Lat 533° 54'49.77583" Long E151°12'18.06374"
TS04138 E 337457.696 N 6238164.879
Lat S33°59'04.92331" Long E151°14'25.11771"
A.D.P. (Aerodrome Datum Point)
- Geographical Coordinates Lat S33°56'45.60078" Long E151°10'37.59889"
All coordinates shown are based on GDA94 / WGS84
- MGA94 Coordinates E 331542.904 N 6242336.670

JOB No	DRAWN	CHKD	AMENDMENTS	EXAMD	APPD	DATE	No.
	SNL	MJT				17/3/04	1

Sydney Airport

SYDNEY AIRPORT
PRESCRIBED AIRSPACE
CRITICAL SURFACES

SCALE 1:50000
DRAWING No
SHEET 1 of 1 B1

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE

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