

16 June 2010

Manager
Airport Design Services
Sydney Airport Corporation Ltd
Locked Bag 5000
Sydney International Airport NSW 2020

Attention: Lynne Barrington

Dear Lynne,

**Development Application : Discovery Point Pty Ltd
Discovery Point New Masterplan, Wolli Creek**

This application is submitted by Discovery Point Pty Ltd and seeks approval under the *Airports Act 1996* and the *Airports (Protection of Airspace) Regulations 1996* for the proposed development of high rise buildings at Discovery Point, Wolli Creek.

Because of the proximity of the proposed high rise development to Sydney Airport, Discovery Point recently commissioned The Ambidji Group Pty Ltd to undertake an aeronautical impact analysis of the proposed development which resulted in the attached report – "Aeronautical Impact Assessment, Proposed Development at Discovery Point, Wolli Creek, Sydney". Full details of the impact assessment are contained in the attached report, but the major findings are:

- a. The proposed development comprises a number of high rise buildings on the site with buildings varying in height up to a maximum of 79.65m AHD;
- b. Nine (9) of the proposed buildings will infringe the Sydney Airport Inner Horizontal Surface of 51m AHD, with a maximum penetration of 28.65m;
- c. The two (2) tallest buildings are at a height and location that may impact on Sydney Airport radar coverage. As such, Airservices Australia may need to assess this impact and, if appropriate, may be able to provide consent subject to certain access conditions for installation of roof-top mounted air traffic surveillance equipment. Discovery Point acknowledges the requirement for this access and appropriate accommodation for the equipment, but would seek to be formally advised of this requirement before agreeing to same;
- d. All buildings are clear of the PANS OPS surfaces for Sydney airport;
- e. It is understood that approvals already exist in the area for buildings that exceed the Inner Horizontal Surface and which may also impact on radar coverage;
- f. Cranes (temporary obstacles) to be used during the building construction would be eligible for approval under condition of the developer providing timely advice to Sydney Airport so that NOTAMS may be issued. Discovery Point acknowledges that the submission for the use of cranes would need to be provided in sufficient time to enable Sydney airport to assess the impact on airport operations; and
- g. The proposed development does not have a direct impact on other factors assessed.

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The infringements of the Obstacle Limitation Surface are in an area where it is believed they will not impact on the efficiency or regularity of aircraft operations. Therefore, based on the provisions of the *Airports (Protection of Airspace) Regulations 1996*, this would enable the Department of Infrastructure, Transport, Regional Development and Local Government to approve development of the site, subject to examination of the development proposal by Sydney Airport Corporation Limited, the Civil Aviation Safety Authority and Airservices Australia. It will be noted that the attached report indicates that there are other buildings in the vicinity of the development that are of similar height and which could have similar impacts on OLS and radar coverage.

Discovery Point accepts that conditions of approval for the proposed development may include:

- a. a requirement for obstacle lighting of the buildings that penetrate the OLS;
- b. providing Airservices Australia with reasonable access to, and accommodation on, a building rooftop area of the proposed development for the installation, operation and maintenance of air traffic surveillance equipment to overcome any loss of radar coverage. Although accepting this access requirement, Discovery Point wishes to reserve the right to review and, if necessary, negotiate any specific conditions; and
- c. submission of a separate application seeking approval for the use of cranes to be used during construction when the details are available.

In submitting this application to Sydney Airport, it is acknowledged that in accordance with the Regulations, the application may be referred to DITRD LG, CASA and Airservices Australia for approval. Discovery Point would appreciate the opportunity to meet with SACL and to consider Sydney Airport's comments prior to the forwarding of the application to these aviation agencies.

Your favourable and early consideration of this application would be appreciated. Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully,
Discovery Point Pty Ltd



Chris Pope
Senior Development Manager

Encl. Aeronautical Impact Assessment, Proposed Development at Discovery Point, Wolli Creek, Sydney

AERONAUTICAL IMPACT ASSESSMENT

**PROPOSED DEVELOPMENT
AT
DISCOVERY POINT, WOLLI CREEK
SYDNEY**

FINAL REPORT

J0323

Copy No.: [V3]

Report to:

DISCOVERY POINT PTY LTD

10 June, 2010



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Melbourne, Australia

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DOCUMENT RELEASE APPROVAL

Approved for Release: Final Report

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Date: 10 June 2010

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EXECUTIVE SUMMARY

Discovery Point Pty Ltd has engaged The Ambidji Group Pty Ltd (Ambidji) to prepare an aeronautical impact assessment in relation to a proposed development at Discovery Point, Wolli Creek. The development is located approximately 2.7km North-West of the Sydney International Airport Aerodrome Reference Point (ARP) and approximately 1.5km West of the nearest Runway end (RWY 16R).

The proposed development contains 15 buildings of varying elevation with the highest components, building 2 and 13, both at an altitude of 79.65m/262ft AHD. Appendix A shows the layout and heights of the proposed buildings on the development site.

The methodology employed for the preparation of this report focuses on the consideration of the key elements of:

- the Airports Act 1996 (Part 12, Protection of airspace around airports);
- the Airports (Protection of Airspace) Regulations 1996 (APAR's); and
- Civil Aviation Safety Regulations (CASR) Part 139 Manual of Standards (MOS), Chapter 7 Obstacle Restriction and Limitation and Chapter 11 Standards for Other Aerodrome Facilities.

The key elements of the report involved detailed assessments of:

- the Obstacle Limitation Surfaces (OLS);
- the Procedures for Air Navigation Services – Aircraft Operations (PANS OPS) Surfaces; and

- the Standards for Siting and Clearance Areas for Airways Facilities on Airports.

This aeronautical impact assessment will be used in support of an application to the Department of Infrastructure, Transport, Regional Development and Local Government (DITRD LG), via Sydney Airport Corporation Limited (SACL), seeking approval for the development under the Airports (Protection of Airspace) Regulations 1996 (APARs).

Subsequent to the grant of any approval for this development, an additional and related approval will need to be sought for cranes (temporary obstacles) required during the building process.

Summarised Results

Obstacle Limitation Surfaces

This development proposal penetrates the Inner Horizontal Surface (IHS) of the OLS and, as such, constitutes a penetration of the Prescribed Airspace of Sydney Airport. The IHS has an elevation of 51m AHD.

The tallest buildings within the development are building Nos 2 and 13 which, at an elevation of 79.65m/262ft, penetrate the IHS by 28.65m. Other buildings within the development also infringe the OLS but by lesser amounts.

Although these buildings penetrate the OLS, the proposed development may, subject to certain conditions and further consideration of the impact on radar coverage, be approvable under the Airports Act and the APAR's.

Because of the penetration of Prescribed Airspace, the Civil Aviation Safety Authority (CASA) is likely to stipulate that the buildings be lit in accordance with the provisions of CASR MOS Part 139, unless other nearby obstructions are lit and provide sufficient indication of obstacles in the area to meet CASA requirements.

This development proposal site is located immediately adjacent to an existing "multi-

storey" building which is reported to be at a height of 65.7m, some 14.7m above the IHS.

Additionally, Planning approvals currently exist for buildings at the Discovery Point site for buildings that exceed the IHS. This New Masterplan seeks minor variations to existing approved heights.

The International Civil Aviation Organisation recommends in Annex 14, paragraph 4.2.20 (for new objects) and paragraph 4.2.21 (for existing objects) that obstacles which penetrate the inner horizontal surface may be permitted "...*(if) after an aeronautical study, it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations by aircraft*".

PANS OPS Surfaces

This development proposal does not penetrate any PANS OPS surfaces for existing operational procedures at Sydney Airport.

The Noise Abatement Procedures at Sydney are sensitive and it is considered unlikely that any future approach paths will be affected by this development.

Siting and Clearance Areas for Airways Facilities

This development proposal does penetrate the clearance planes of the Terminal Area Radar (TAR) currently located on Sydney Airport. However, due to the proliferation of high rise buildings in this area potentially creating a loss of Air Traffic Control radar coverage, Airservices Australia may need to further assess the cumulative effect of these high rise buildings, including the proposed development of Discovery Point, on radar coverage.

This development proposal does not penetrate the clearance planes, critical and sensitive areas of the navigation aid facilities at Sydney Airport.

Development Project Approval

Based on the provisions of the Airports (Protection of Airspace) Regulations 1996, there appears to be no impediment to DITRDLG approving the development of the site as proposed, following examination of the application by Sydney Airport Corporation Limited, the Civil Aviation Safety Authority and Airservices Australia.

Approval for Use of Cranes during Construction

Cranes to be used during the construction phase (temporary obstructions) may be approved under condition of the developer providing timely advice to Sydney Airport prior to the construction commencing so that Notice to Airmen (NOTAM) action and possible temporary adjustment to PANS OPS procedures can be put in place.

1. INTRODUCTION

Discovery Point Pty Ltd has engaged The Ambidji Group to prepare an aeronautical impact assessment in relation to a proposed development at Discovery Point, Wollli Creek. The development is located approximately 2.7km North-West of the Sydney International Airport Aerodrome Reference Point (ARP) and approximately 1.5km West of the nearest Runway (RWY) end (RWY 16R). Fig. 1.1 below shows the location of the development site and its proximity to Sydney airport.

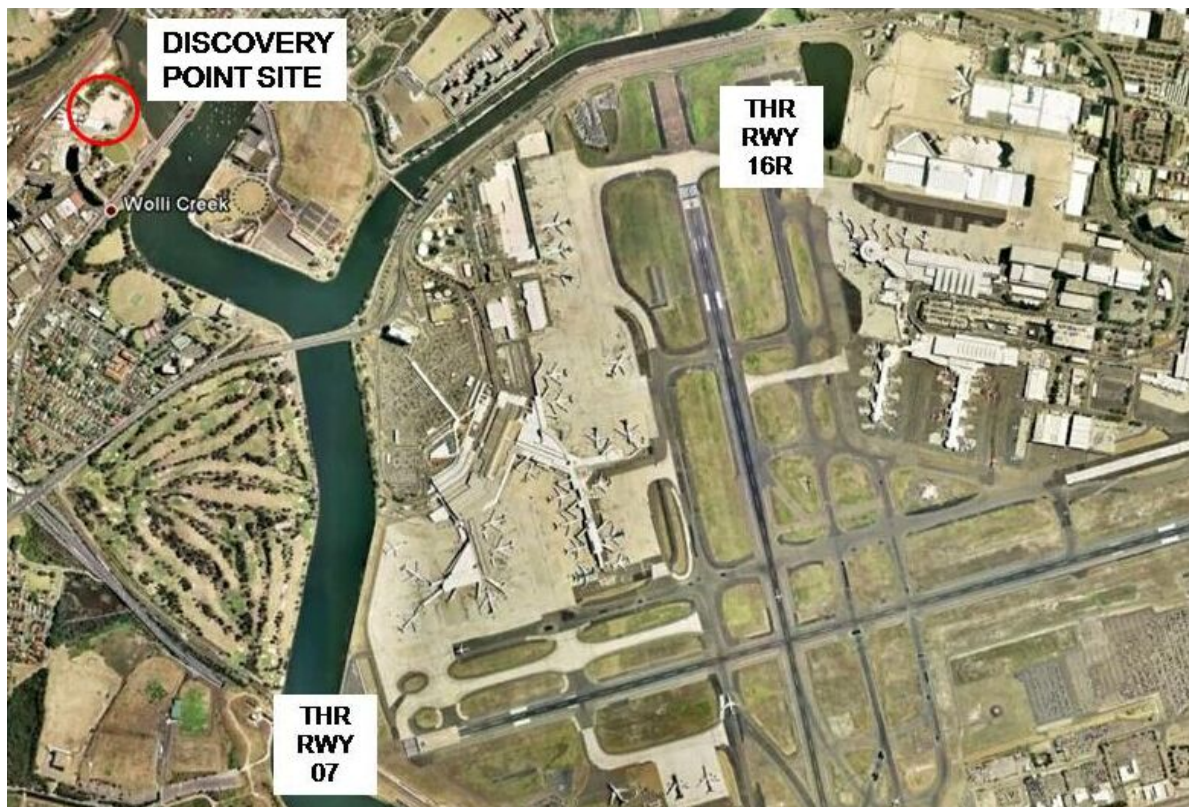


Fig 1-1 Development Site in relation to Sydney International Airport

The building development proposal contains a total of 15 buildings of varying elevation with the highest components being 79.65m (approx. 262ft) AHD.

Due to the proximity to the airport and proposed building heights which penetrate the OLS, the proposed development is defined as a “controlled activity” and will be subject to the Airports Act 1996 and the Airports (Protection of Airspace) Regulations 1996 (APARs).

This report takes into account the proposed site plan layout (refer Appendix A) and operational procedures for Sydney Airport, and will form the basis of the technical component of an application to DITRD LG, via Sydney Airport Corporation Limited, for the approval of the proposed development under the APARs.

It should be noted that the Discovery Point development is in an area where Planning approvals currently exist for developments that exceed the IHS. Importantly, several of the proposed buildings are sited where current approvals exist and this New Masterplan seeks minor variations to existing approvals.

Subsequent to any approval granted for the development plan as proposed, an additional and related approval will need to be sought for cranes (temporary obstructions) required during the building process.

2. METHODOLOGY

This report considers the existing Sydney International Airport facilities only.

The current Sydney Airport Master Plan 2009 details the extent of Prescribed Airspace, details growth opportunities, and the long term operating plan to ensure maximisation of the utilisation of Sydney International Airport up to 2029. This Master Plan indicates that there will be no changes to aircraft flight paths and no new runways.

This aeronautical study was undertaken as follows:

- Obstacle Limitation Surface penetrations were determined accurately based on the siting information provided by Discovery Point;
- potential shielding by existing obstacles (or known approved proposed developments) penetrating the OLS was assessed in relation to CASA standards;
- the relevant instrument approach procedures were examined in detail to determine whether the development would impose any restriction on those procedures. Any restriction on the instrument approach procedures would have to be examined by Airservices Australia to determine if a change to the instrument approach procedures is possible without restricting aviation movements and associated safety regulation standards at Sydney Airport;
- existing flight paths were examined, in relation to the proposed development, to determine if there would be any influence on those procedures;
- Civil Aviation Order (CAO) 20.7.1B relates to the minimum requirements for clearance of obstacles by an aircraft that has suffered a failure of a critical engine during take-off. The contingency procedures analyse the minimum safe altitudes (and therefore relate to maximum allowable obstacle heights) required in such a circumstance. The influence that development on the site would have on contingency (CAO 20.7.1B) procedures was considered. The consideration was extended to include any impediment to these procedures as a result of existing obstacles and possible and feasible flight paths from the airport over the development site;
- a preliminary assessment of potential impacts on navigational aids and air traffic control radar coverage; and
- a concise summary of findings and conclusion as to whether the proposal should be approved.

3. CONSULTATIONS

3.1 Flight Paths and Procedures

The Sydney Airport Master Plan 2009 states that there are no plans for new flight paths or runways prior to 2029.

As the location of the proposed development lies in the quadrant between RWY 16R and RWY 07, and at a sufficient distance to be outside of the critical final approach protection areas and departure protection areas for both runways, any new flight path proposals would need to take this proposed development into consideration.

3.2 Sydney Radar

Airservices Australia has developed conditions under which provisional consent for building developments in areas of interest may be granted if the development is likely to impact on radar coverage. These include reasonable acceptance by the proponent of conditions to enable installation of special equipment (at roof top level) to facilitate air traffic surveillance and monitoring where a proposed structure may cause loss of radar coverage. Evolving technologies and possible relocation of the Terminal Area Radar (TAR) are currently under review by Airservices Australia which, given the lead time for the building development and the radar relocation, may eliminate the need for roof top mounted equipment.

4. ANALYSIS OF OBSTACLE LIMITATION SURFACES (OLS) AND SHIELDING BY EXISTING OBSTACLES

International Civil Aviation Organisation (ICAO) Annex 14 and Civil Aviation Safety Regulation (CASR) Part 139 – Aerodromes, details the extent of OLS required at airports in Australia.

Analysis of the proposed Discovery Point development in relation to the OLS and any relief that may be provided by shielding of the development by existing obstacles has been undertaken with reference to Annex 14 and CASR Part 139 Manual of Standards.

4.1 OLS Analysis

The dominant OLS restriction on building heights in the Discovery Point area near Sydney Airport is the OLS Inner Horizontal Surface (IHS).

The IHS, which extends 4km from each runway threshold at Sydney Airport at a height of 51m AHD, is intended to protect circling or visual manoeuvring areas for lower performance aircraft while the Conical Surface slopes upward and away from the Inner Horizontal Surface protects the circling areas for higher performance aircraft.

The proposed development is sited beneath the Inner Horizontal Surface and the proposed buildings will infringe the Inner Horizontal Surface by a maximum of 28.65m. An overlay diagram showing the location of infringement of prescribed airspace by the proposed development is shown at Appendix C. Table 4-1 below shows the maximum elevation of each building and the impact upon the OLS.

BUILDING No.	MAX PROPOSED HEIGHT (m AHD)	IMPACT ON OLS
1B	20.75	Clear
1C	55.30	Infringement by 4.30m
2	79.65	Infringement by 28.65m
3	40.00	Clear
4	55.30	Infringement by 4.30m
5	62.40	Infringement by 11.40m
6	50.50	Clear
7	50.50	Clear
8	62.40	Infringement by 11.40m

BUILDING No.	MAX PROPOSED HEIGHT (m AHD)	IMPACT ON OLS
9	40.00	Clear
10	62.40	Infringement by 11.40m
11	55.30	Infringement by 4.30m
12	55.30	Infringement by 4.30m
13	79.65	Infringement by 28.65m
14	42.70	Clear

Table 4-1 Building heights and OLS impact

The circling area protection surfaces, as determined by PANS OPS standards, are located well above these two surfaces at Sydney Airport and are not penetrated by this development proposal.

4.2 Shielding by Existing Obstacles

Several other buildings (and existing approvals for developments) in the vicinity of the proposed development and in other areas of Sydney also penetrate the IHS and Conical surfaces of the OLS. Such buildings (and existing approvals for developments not yet constructed) are usually subject to lighting conditions imposed by CASA, in accordance with Civil Aviation Regulations 1988, to assist safety conditions for aircraft operations.

Buildings on a nearby site to the Discovery Point development are shown as having a height of 65.7m (refer Appendix A), which penetrates the IHS by 14.7m. Additionally, Planning approvals currently exist for building developments at or near the Discovery Point site that exceed the HIS.

There is insufficient information to determine whether nearby existing buildings would provide shielding of the Discovery Point development, but the extent of the buildings on the Discovery Point site would suggest that separate obstacle lighting may be required.

5. ANALYSIS OF PANS OPS SURFACES

A full and detailed PANS OPS assessment considering all operational procedures was undertaken and is included at Appendix B and the results are summarised in the following Tables 5-1 to 5-5. As indicated, the procedures considered are:

- Approach Procedures including Instrument Landing System (ILS) Precision Approach Procedures;
- Circling Procedures;
- Minimum Sector Altitude (MSA) Procedures;
- Standard Instrument Arrival Routes (STAR) Procedures; and
- Standard Instrument Departure (SID) Procedures.

PRECISION APPROACH PROCEDURES	IMPACT/COMMENTS
ILS or LOC RWY 16R	The development is located outside of the ILS Obstacle Assessment Surfaces. No impact.
ILS OR LOC RWY 25	The development is located outside of the ILS Obstacle Assessment Surfaces. No impact.
ILS OR LOC RWY 34L	The development is located outside of the Basic ILS surface and beneath the missed approach surface which has an altitude of 304ft above the proposed development site. No impact.
ILS-Y or LOC-Y RWY 07	The development is located outside of the ILS Obstacle Assessment Surfaces. No impact.
ILS-Z OR LOC-Z RWY 07	The development is located outside of the ILS Obstacle Assessment Surfaces. No impact.
ILS-Y OR LOC-YRWY 16L	The development is located outside of the Basic ILS surfaces. No impact.
ILS-Z OR LOC-Z RWY 16L	The development is located outside of the Basic ILS surfaces. No impact.
ILS-Y OR LOC-Y RWY 34R	The development is located outside of the Basic ILS surface and beneath the missed approach surface which has an altitude of 355ft above the proposed development site. No impact.
ILS-Z OR LOC-Z RWY 34R	The development is located outside of the Basic ILS surface and beneath the missed approach surface which has an altitude of 355ft above the proposed development site. No impact.

Table 5-1 Precision Approach Procedures

There are three steps available in the assessment of ILS surfaces. The first step is to assess penetrations of the Basic ILS surface. If a penetration occurs then an assessment of the ILS Obstacle Limitation Surfaces is undertaken. If the penetration still exists then a complex mathematical analysis, called the Collision Risk Model is undertaken to determine whether the obstacle is likely to cause a collision risk to aircraft using the ILS.

The proposed development infringes upon the Basic ILS surfaces for RWYs 07, 16R and 25 but does not infringe upon the associated Obstacle Assessment Surfaces (OAS).

NON-PRECISION APPROACH PROCEDURE	IMPACT/COMMENTS
VOR RWY 07	The development does not infringe the approach surfaces. No impact.
VOR RWY 16R	The development does not infringe the approach surfaces. No impact.
VOR RWY 25	The development does not infringe the approach surfaces. No impact.
VOR RWY 34L	The development is located beneath the missed approach surface which has an altitude of 503ft at the proposed development site. No impact.
DME or GPS ARRIVALS	The development is beneath the final approach protection surface. No impact.
RNAV (GNSS) RWY 07	The development does not infringe the approach surfaces. No impact.
RNAV (GNSS) RWY 16L	The development does not infringe the approach surfaces. No impact.
RNAV (GNSS) RWY 16R	The development does not infringe the approach surfaces. No impact.
RNAV (GNSS) RWY 25	The development does is located outside of the missed approach surfaces. No impact.
RNAV (GNSS) RWY 34L	The development is located beneath the missed approach surface which has an altitude of 486ft at the proposed development site. No impact.
RNAV (GNSS) RWY 34R	The development does not infringe the approach surfaces. No impact.

Table 5-2 Non-Precision Approach Procedures

CIRCLING PROCEDURE	IMPACT/COMMENTS
CIRCLING CAT A/B	The development is beneath the protection surface of 415ft. No impact.
CIRCLING CAT C	The development is beneath the protection surface of 606ft. No impact.
CIRCLING CAT D	The development is beneath the protection surface of 606ft. No impact.

Table 5-3 Circling Procedures

SID PROCEDURE	IMPACT/COMMENTS
SYDNEY TWO DEP (RADAR) - ALL RWYS	The development is beneath the protection surface, the lowest of which is at an altitude of 406ft at the site. No impact.
RWY 07 FISHA FOUR (JET)	The development is outside the protection surface. No impact.
KAMBA DEPARTURES RWY 07 & 16L (NON JET)	The development is outside the protection surface. No impact.
RWY 16L KEVIN THREE (JET)	The development is outside the protection surface. No impact.
RWY 16R DEENA FOUR (JET)(RNAV)	The development is outside the protection surface. No impact.
RWY 34L SOUTH WEST DEP (JET)	The development is outside the protection surface. No impact.
RWY 16R & 34L SOUTH DEPS (NON JETS)	The development is outside the protection surface. No impact.
RWY 34R ENTRA TWO (JET)	The development is outside the protection surface. No impact.
SYDNEY TWO DEP (RADAR) - ALL RWYS	The development is beneath the protection surface, the lowest of which is at an altitude of 406ft at the site. No impact.
RWY 34R MARUB THREE (JET)	The development is outside the protection surface. No impact.
RWY 16R KAMPI ONE (JET)	The development is outside the protection surface. No impact.
VIS DEP RWY 16L BOTANY BAY FIVE	The development is outside the protection surface. No impact.
RWY 16R CURFEW DEPARTURE	The development is outside the protection surface. No impact.

Table 5-4 Standard Instrument Departure (SID) Procedures

The SID (RADAR) procedures are the only departure procedures that allow departing aircraft to overfly any part of Sydney, albeit while complying with Noise Abatement Procedures. However, as the proposed development is located outside of the initial protection surfaces, aircraft will be above the height of the development plus the MOC by the time that they reach a position overhead the proposed development site.

MSA PROCEDURE	IMPACT/COMMENTS
25NM MSA*	The development is beneath the protection surface of 1716ft. No impact.
10NM MSA	The development is beneath the protection surface of 1116ft. No impact.

Table 5-5 Minimum Sector Altitudes (MSA)

The 10NM MSA is coincident with the Minimum Vector Altitude and has the same protection surface height.

6. CONTINGENCY PROCEDURES – ENGINE INOPERATIVE FLIGHT PATHS

The proposed development could only be determined to be a risk if an aircraft were to deviate from the nominal track that exceeds the normal contingency procedures currently in place by aircraft operators at Sydney International Airport. Even in such a case, it is likely that other existing obstacles, and those proposed developments that have also been approved, would preclude any such contingency procedure from reaching overhead the development site at the altitude of the proposed development maximum height of 79.65m AHD.

In the context of the operations at Sydney Airport and the physical environment, the proposed development at Discovery Point is considered as not having an impact on engine inoperative flight paths.

7. OTHER ISSUES

CASR Part 139 Manual of Standards (MOS) stipulates the siting criteria to ensure unrestricted performance of navigation aids, radar sensors and other aviation facilities located on and in the vicinity of aerodromes.

7.1 Radar Interference and Shadowing

Buildings or terrain that is higher than the radar coverage, or radar clearance plane, can hide aircraft for many miles behind the particular building or terrain, effectively placing a radar shadow in a particular area reducing the ability of Air Traffic Control to effectively control aircraft within the area of the shadow.

The nearest building within the development site is located 3.3km from the Terminal Area Radar (TAR) located on Sydney Airport and intrudes between the radar site and possible locations of desired targets, the maximum building height penetrating the 0.5 degree elevation plane above the antenna altitude of 34.5m/113.2ft.

The height of the radar clearance plane is 63.3m at the closest point of buildings 2 and 13 which, at a height of 79.65m, infringe the radar clearance plane by 16.35m. All other buildings are below the radar clearance plane.

BUILDING No.	MAX PROPOSED HEIGHT (m AHD)	IMPACT ON RADAR CLEARANCE PLANE
1B	20.75	Clear
1C	55.30	Clear
2	79.65	Infringement by 16.35m
3	40.00	Clear
4	55.30	Clear
5	62.40	Clear
6	50.50	Clear
7	50.50	Clear
8	62.40	Clear
9	40.00	Clear
10	62.40	Clear

BUILDING No.	MAX PROPOSED HEIGHT (m AHD)	IMPACT ON RADAR CLEARANCE PLANE
11	55.30	Clear
12	55.30	Clear
13	79.65	Infringement by 16.35m
14	42.70	Clear

Table 7-1 Building heights and Radar Clearance impact

It should be noted that Airservices Australia has studied the impact to radar coverage of cumulative developments on the skyline in the Sydney region and have developed guideline conditions for their approval of any such sites that may fall within these parameters. These guidelines include the imposition of conditions of any approval by DITRD LG that require the building proponent/owner to make provision for the potential installation at roof top level of Wide Area Multilateration (WAM) antennae and associated equipment at an unspecified time in the future. This is required so that Airservices Australia will be able to maintain effective air traffic surveillance and management services for the areas potentially shadowed by such developments, should and when the need arises. This condition will most likely apply to the proposed development at Discovery Point.

It is understood that Airservices Australia is currently conducting a study to determine a suitable site to either relocate Sydney TAR or provide new radar equipment to ensure adequate radar coverage. As such, Airservices Australia may need to undertake further investigations in relation to existing buildings and proposed developments to determine the actual affect on radar performance.

Airservices Australia may require a full survey be conducted to determine the affect of the proposed buildings on the TAR coverage.

7.2 Potential Impact on Airport Navigation Aids

Sydney VHF Omni-directional Range (VOR)

The VOR has a clearance area of 600m radius. The proposed development site is 2.8km from the VOR site and therefore it will not have an impact on the VOR.

Sydney Distance Measuring Equipment (DME)

CASR Part 139 MOS stipulates that large buildings within a clearance zone of 600m radius and above a plane of one degree elevation above the DME antenna may affect the performance of the DME.

The proposed development is located 2.8km from the Sydney DME site and therefore is located outside the clearance zone for the Sydney DME.

Instrument Landing Systems (ILS)

Each runway at Sydney Airport is served by an ILS with Localiser (LOC), Glide Path (GP), marker beacons and locator beacons.

The LOC sensitive area commences at the antenna and extends forward in a sector of 10 degrees either side of the runway centreline, with a clearance plane of 0.5 degrees elevation.

The proposed development is located outside the 10 degree plane of all runways at Sydney Airport and will therefore not have an impact on any ILS at Sydney Airport.

7.3 Future Developments

As indicated previously, the Sydney Airport Master Plan 2009 indicates that there will be no changes to aircraft flight paths and no new runways within the timeframe indicated in the Master plan.

7.4 Lighting of Buildings

The proposed development is planned at a height that would exceed the OLS.

While developers would prefer that obstacle lighting conditions not be imposed for this building, such a requirement is subject to a recommendation by CASA and its stipulation (i.e. the provision of obstacle lighting) by DITRD LG is likely to be a condition of approval of the application for this development.

8. CONCLUSION

This aeronautical assessment was conducted to consider the impacts of the proposed New Masterplan building development at Discovery Point, Wolli Creek. The study concludes that:

- The proposed development penetrates Prescribed Airspace, at Sydney Airport, specifically the Inner Horizontal Surface, to a maximum penetration of 28.65m. This penetration is unlikely to have an impact on aeronautical procedures at Sydney Airport;
- The proposed development does not penetrate any PANS OPS surface;
- The proposed development at Discovery Point does infringe the radar clearance plane and Airservices Australia may need to undertake further assessments as to the cumulative effect of high rise buildings on radar coverage. Airservices Australia concerns relating to radar shadowing are acknowledged and it is noted that a condition of approval may include potential provision for Wide Area Multilateration (WAM) air traffic surveillance and monitoring equipment on the rooftop of the building;
- The proposed development does not infringe the Sydney VOR/DME clearance plane;
- The proposed development does not infringe the ILS facility clearance planes;
- The proposed development will not impact on Contingency Procedures; and
- Cranes (temporary obstacles) would be approved under conditions of the developer providing timely advice to Sydney Airport prior to construction so that NOTAMS may be issued.

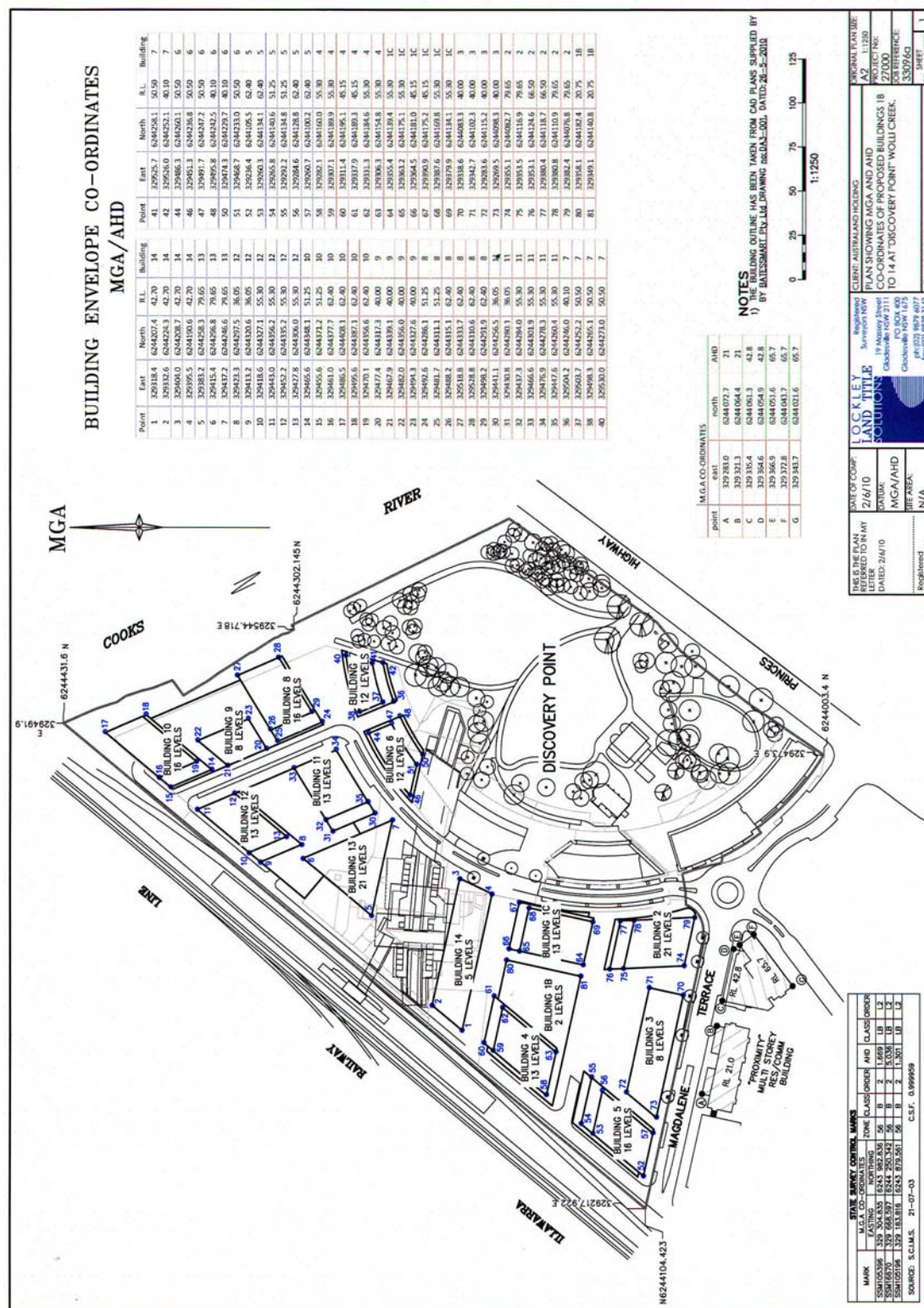
Therefore, based on the provisions of the Airports (Protection of Airspace) Regulations 1996, there appears to be no impediment to the Department of Infrastructure, Transport, Regional Development and Local Government approving the development of the site as proposed, subject to examination of the application by Sydney Airport Corporation Ltd, the Civil Aviation Safety Authority and Airservices Australia.

This aeronautical impact assessment may be used in an application to Sydney Airport Corporation Limited seeking approval for the proposed development.

APPENDIX A

Discovery Point, Wolli Creek, Sydney.

New Masterplan Development Layout



APPENDIX B

Discovery Point, Wolli Creek, Sydney.

PANS OPS Assessment Worksheet

APPENDIX B

PANS OPS ASSESSMENT WORKSHEET

Discovery Point, Wolli Creek

Date: 09 June 2010

DAP EFF DATE: 03 June 2010

OBSTACLE DETAILS	
Location	Discovery Point
Lateral Datum	
Altitude (M/FT)	Max 79.85M/262FT

MINIMUM SECTOR ALTITUDE				
	MDA	MOC	PANS OPS SFC ALT (FT)	RESULT
25NM MSA	2700	984	1716	BUILDING IS BELOW SFC
10NM MSA	2100	984	1116	

CIRCLING PROCEDURES				
CAT	MDA (ACT QNH)	MOC	PANS OPS SFC ALT (FT)	RESULT
A/B (4.9KM)	710	295	415	BUILDING IS BELOW SFC
C (7.85KM)	1000	394	606	
D (9.79KM)	1000	394	606	

DME/GPS ARRIVAL PROCEDURES				
	MDA (ACC QNH)	MOC	OIS (FT)	RESULT
CAT AB				
SECTOR A	1400	300	1100	BUILDING IS BELOW SFC
SECTOR B	1000	300	700	
SECTOR C	1000	300	700	

PRECISION APPROACH PROCEDURES	
ILS RWY 07	BUILDING IS LOCATED OUTSIDE OF OAS.
ILS RWY 16R	BUILDING IS LOCATED OUTSIDE OF OAS.
ILS RWY 16L	BUILDING IS LOCATED OUTSIDE OF BASIC ILS SURFACES.
ILS RWY 25	BUILDING IS LOCATED OUTSIDE OF OAS.
ILS RWY 34L	BUILDING IS LOCATED OUTSIDE OF BASIC ILS SURFACE AND BENEATH MISSED APPROACH SURFACE AT 304FT.
ILS RWY 34R	BUILDING IS LOCATED OUTSIDE OF BASIC ILS SURFACE AND BENEATH MISSED APPROACH SURFACE AT 355FT.

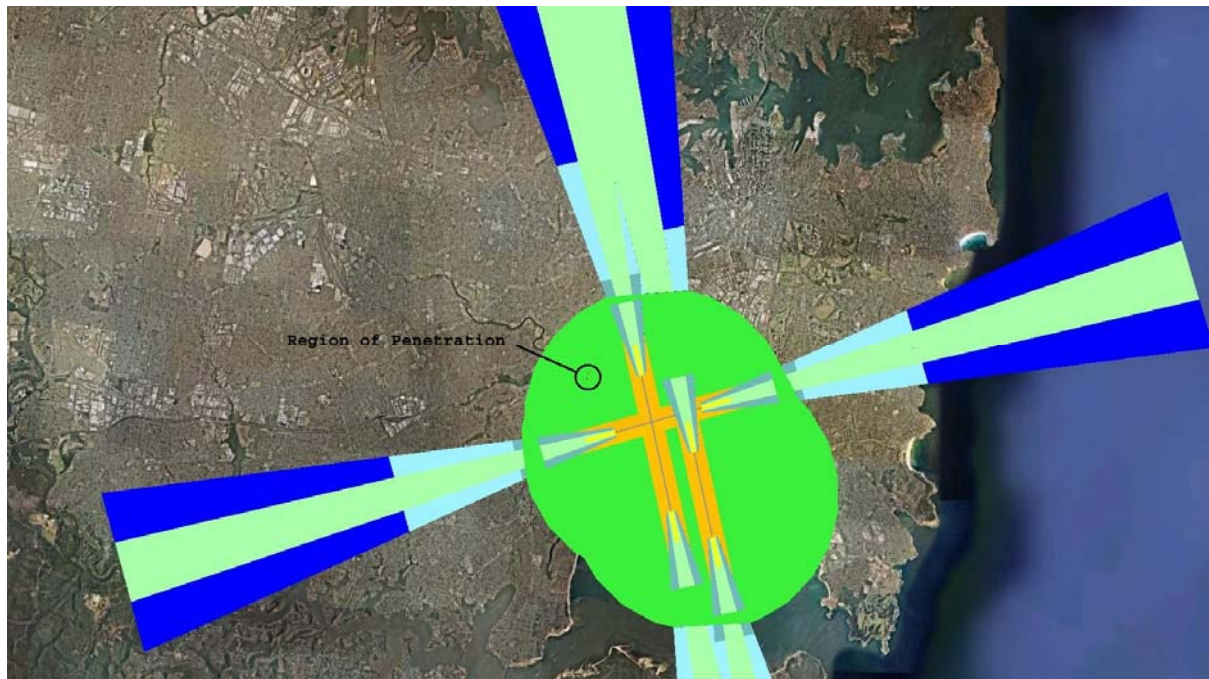
DEPARTURE PROCEDURES										
SID (RADAR)	DER ELEV (FT)	GRAD (%)	WI TIA (Y/N)	TURN ALT (IF APPLIC)	CLIMB DIST (M)	HGT GAIN (FT)	ALT AT OBS (FT)	MOC (FT)	PANS OPS SFC (FT)	RESULT
RWY 07	20	4.7% To 1500	NO	600 800 JET	1967	303	903	296	607	NO IMPACT
RWY 16R	14	3.3%	NO	600 800 JET	1755	190	790	296	494	NO IMPACT
RWY 16L	13	3.3%	NO	500	4324	468	968	296	672	NO IMPACT
RWY 25	16	3.3%	NO	700 1500 JET	1619	175	875	296	579	NO IMPACT
RWY 34R	16	4.7% To 1500	NO	500	1314	202	702	296	406	NO IMPACT
RWY 34L	8	3.3%	NO	600 800 JET	1124	175	875	296	579	NO IMPACT

NON-PRECISION APPROACH PROCEDURES (NPA)				
	MDA	MOC	PANS OPS MDA SFC ALT (FT)	RESULT
LOC RWY 07	600	246	354	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
VOR RWY 07	650	246	404	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
LOC RWY 16R	450	246	204	BUILDING IS OUTSIDE ILS OAS
LOC RWY 16L	480	246	234	BUILDING IS OUTSIDE BASIC ILS SURFACE
VOR RWY 16R	580	246	334	LOWEST SURFACE IS ABOVE MAX BUILDING HEIGHT
VOR RWY 25	580	246	334	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
LOC RWY 34L	400	246	154	BUILDING OUTSIDE BASIC ILS SURFACE AND BELOW MISSED APPROACH SURFACE OF 304FT
LOC RWY 34R	500	246	254	BUILDING LOCATED OUTSIDE BASIC ILS SURFACE AND UNDER MISSED APPROACH SPLAY OF 355FT
VOR RWY 34L	410	246	164	BUILDING LOCATED BELOW MISSED APPROACH SURFACE OF 503FT
LOC RWY 25	580	246	334	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
RNAV RWY 16L	480	246	234	OUTSIDE FINAL APPROACH SPLAY
RNAV RWY 07	580	246	334	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
RNAV RWY 25	520	246	274	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
RNAV RWY 16R	520	246	274	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT
RNAV RWY 34L	450	246	204	BUILDING BELOW MISSED APPROACH SURFACE OF 503FT
RNAV RWY 34R	550	246	304	LOWEST SURFACE ABOVE MAX BUILDING HEIGHT

APPENDIX C

Discovery Point, Wolli Creek, Sydney

Overlay Diagram Showing Location of OLS Penetrations



*Discovery Point : Wolli Creek : Proposed Development
Plan Showing Portion of the Obstacle Limitation Surfaces of Sydney Airport*

Note: The development site as shown is beneath the Inner Horizontal Surface (green colour) of the OLS

APPENDIX D

Discovery Point, Wolli Creek, Sydney.

Glossary of Terms and Abbreviations

APPENDIX D

GLOSSARY OF TERMS and ABBREVIATIONS

Abbreviations used in this report, and the meanings assigned to them for the purposes of this report are detailed in the following table:

Abbreviation	Meaning
AC	Advisory Circular (document support CAR 1998)
ACFT	Aircraft
AD	Aerodrome
AHD	Australian Height Datum
AHT	Aircraft height
AIP	Aeronautical Information Publication
AIRPORTS ACT	Airports Act 1996, as amended
AIS	Aeronautical Information Service
ALT	Altitude
AMSL	Above Minimum Sea Level
A(PoFA)R	Airports (Protection of Airspace) Regulations, 1996 as amended
APARs	Airports (Protection of Airspace) Regulations, 1996 as amended
ARP	Aerodrome Reference Point
AsA	Airservices Australia
ATC	Air Traffic Control(ler)
ATM	Air Traffic Management
CAO	Civil Aviation Order
CAR	Civil Aviation Regulation
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
Cat	Category
DAP	Departure and Approach Procedures (charts published by AsA)
DER	Departure End of (the) Runway
DEVELMT	Development
DME	Distance Measuring Equipment
Doc nn	ICAO Document Number nn
DITRDLG	Department of Infrastructure, Transport, Regional Development and Local Government. Also called "Infrastructure". (Formerly Department of Transport and Regional Services (DoTARS))
DoTARS	See DITRDLG above
ELEV	Elevation (above mean sea level)
ENE	East North East
ERSA	Enroute Supplement Australia
FAF	Final Approach Fix
FAP	Final Approach Point

Abbreviation	Meaning
ft	feet
GNSS	Global Navigation Satellite System
GP	Glide Path
IAS	Indicated Airspeed
ICAO	International Civil Aviation Organisation
IHS	Inner Horizontal Surface, an Obstacle Limitation Surface
ILS	Instrument Landing System
ISA	International Standard Atmosphere
km	kilometres
kt	Knot (one nautical mile per hour)
LAT	Latitude
LOC	Localizer
LONG	Longitude
m	metres
MAPt	Missed Approach Point
MDA	Minimum Descent Altitude
MGA94	Map Grid Australia 1994
MOC	Minimum Obstacle Clearance
MOS	Manual of Standards, published by CASA
MSA	Minimum Sector Altitude
MVA	Minimum Vector Altitude
NDB	Non Directional Beacon
NE	North East
NM	Nautical Mile (= 1.852 km)
nnDME	Distance from the DME (in nautical miles)
NNE	North North East
NOTAM	NOtice To AirMen
OAS	Obstacle Assessment Surface
OCA	Obstacle Clearance Altitude
OCH	Obstacle Clearance Height
OHS	Outer Horizontal Surface
OIS	Obstacle Identification Surface
OLS	Obstacle Limitation Surface
PANS-OPS	Procedures for Air Navigation Services – Operations, ICAO Doc 8168
PRM	Precision Runway Monitor
QNH	An altimeter setting relative to height above mean sea level
REF	Reference
RL	Relative Level
RNAV	aRea NAVigation
RNP	Required Navigation Performance
RPA	Rules and Practices for Aerodromes — replaced by the MOS Part 139 — Aerodromes
RPT	Regular Public Transport

Abbreviation	Meaning
RWY	Runway
SACL	Sydney Airport Corporation Limited
SFC	Surface
SID	Standard Instrument Departure
SOC	Start Of Climb
STAR	Standard ARrival
TAR	Terminal Approach Radar
TAS	True AirSpeed
THR	Threshold (Runway)
TNA	Turn Altitude
TODA	Take-Off Distance Available
V _n	aircraft critical Velocity reference
VOR	Very high frequency Omni directional Range

File No.: 10/00101

Reg No.: 10/0075

Your Ref.:

11 June, 2010

Mr Chris Pope
Discovery Point Pty Ltd
Level 3 1C Homebush Bay Drive
RHODES NSW 2138

Dear Chris,

**PROPERTY DEVELOPMENT - DISCOVERY POINT, 1 MAGDALENE
TERRACE, WOLLI CREEK**

I refer to your recent application for information on obstacles in regard to the above development.

Height Restrictions

The PROPERTY DEVELOPMENT at DISCOVERY POINT, 1 MAGDALENE TERRACE, WOLLI CREEK lies within an area defined in schedules of the Civil Aviation (Buildings Control) Regulations which limit the height of structures to 50 feet (15.24 metres) above existing ground height (AEGH) without prior approval of the Civil Aviation Safety Authority.

In this instance, I, Peter Bleasdale, as an authorised person of the Civil Aviation Safety Authority (CASA), under Instrument Number: CASA (BC) 01/1998, and in my capacity as A/Manager CADD Services, have no objection to the erection of the following buildings:

- Building 2: 8 levels - 32.1m above Australian Height Datum (AHD)
- Building 3: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 4: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 6: 12 levels - 44.1m above Australian Height Datum (AHD)
- Building 7: 12 levels - 44.1m above Australian Height Datum (AHD)
- Building 8: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 9B: 8 levels - 32.1m above Australian Height Datum (AHD)
- Building 11: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 13: 5 levels - 26.1m above Australian Height Datum (AHD)

The approved heights are inclusive of all lift over-runs, vents, chimneys, aerials, TV antennae, construction cranes etc.

Should you wish to exceed these heights, a new application must be submitted.

Should the height of any temporary structure and/or equipment be greater than 50 feet (15.24 metres) above existing ground height (AEGH), a new approval must be sought in accordance with the Civil Aviation (Buildings Control) Regulations Statutory Rules 1988 No. 161.

**Sydney Airport
Corporation Limited**
ABN 62 082 578 809

Locked Bag 5000
Sydney International
Airport NSW 2020
The Ulm Building
1 Link Road
Sydney International
Airport NSW 2020
Australia

Telephone:
61 2 9667 9111
www.sydneyairport.com

Construction cranes may be required to operate at a height significantly higher than that of the proposed controlled activity and consequently, may not be approved under the Airports (Protection of Airspace) Regulations.

SACL advises that approval to operate construction equipment (ie cranes) should be obtained prior to any commitment to construct.

Information required by SACL prior to any approval is to include:

- the location of any temporary structure or equipment, ie. construction cranes, planned to be used during construction relative to Mapping Grid of Australia 1994 (MGA94);
- the swing circle of any temporary structure/equipment used during construction;
- the maximum height, relative to Australian Height Datum (AHD), of any temporary structure or equipment ie. construction cranes, intended to be used in the erection of the proposed structure/activity;
- the period of the proposed operation (ie. construction cranes) and desired operating hours for any temporary structures.

Any application for approval containing the above information, should be submitted to this Corporation at least 35 days prior to commencement of works in accordance with the Airports (Protection of Airspace) Regulations Statutory Rules 1996 No. 293, which now apply to this Airport.

For further information on Height Restrictions please contact Ms Lynne Barrington on (02) 9667-9217.

Under Section 136 of the Airports Act 1996, it is an offence not to give information to the Airport Operator that is relevant to a proposed "controlled activity" and is punishable by a fine of up to 50 penalty units.

The height of the prescribed airspace at the site is 51.0 metres above Australian Height Datum (AHD). In accordance with Regulation 9 of the Airports (Protection of Airspace) Regulations Statutory Rules 1996 No. 293, "a thing to be used in erecting the building, structure or thing would, during the erection of the building, structure or thing, intrude into PANS OPS airspace for the Airport, cannot be approved".

Bird and Obstacle Hazard Management

The area in which the proposed development is located is immediately adjacent to Runway 16R/34L and 07/25. To minimise the potential for bird habitation and roosting, the Proponent must ensure that the following plans are prepared prior to construction commencing:

- Landscape Plan which only includes non-bird attracting plant species;
- Site Management Plan which minimises the attractiveness for foraging birds, i.e. site is kept clean regularly, refuse bins are covered, and detention ponds are netted.
- The proposed development incorporates anti-bird roosting measures to discourage bird habitation

The Proponent must consult with Sydney Airport Corporation Limited on the preparation of each plan.

All trees to be planted shall not be capable of intruding into the Obstacle Limitation Surface when mature.

Planning for Aircraft Noise and Public Safety Zones

Current planning provisions (s.117 Direction 3.5 NSW Environmental Planning and Assessment Act 1979) for the assessment of aircraft noise for certain land uses are based on the Australian Noise Exposure Forecast (ANEF). The current ANEF for which Council may use as the land use planning tool for Sydney Airport was endorsed by Airservices Australia on 13 March 2009 (Sydney Airport 2029 ANEF).

Whilst there are currently no national aviation standards relating to defining public safety areas beyond the airport boundary, it is recommended that proposed land uses which have high population densities should be avoided.

Yours faithfully



for:

Peter Bleasdale
A/Manager CADD Services
Sydney Airport

CC: Joseph Chan – Senior Planning Manager, SACL



Australian Government

**Department of Infrastructure, Transport,
Regional Development and Local Government**

TO: Peter Bleasdale Airfield Design Manager Sydney Airport corporation Ltd peter.bleasdale@syd.com.au Lynne Barrington Sydney Airport Corporation Ltd lynne.barrington@syd.com.au Cc Kevin Dyer Civil Aviation Safety Authority kevin.dyer@casa.gov.au	Steve Tattam Airservices Australia steve.tattam@AirservicesAustralia.com FROM Bill Hatossy Aerodrome Precincts Aviation and Airports Division 02 6274 6252 flysafe@infrastructure.gov.au
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**APPROVAL UNDER THE AIRPORTS (PROTECTION OF AIRSPACE)
REGULATIONS 1996:**

- PROPERTY DEVELOPMENT: Discovery Point
- 1 Magdalene Terrace
- Wolli Creek, NSW

I refer to the above application, submitted to the Department on **12 May 2010** by the Sydney Airport Corporation Ltd (SACL) on behalf Discovery Point Pty Limited (the proponent), of the mixed use development of 14 multi-storey buildings at 1 Magdalene Terrace, Wolli Creek NSW for approval for 5 of the buildings under the Airports (Protection of Airspace) Regulations 1996 (the Regulations).

Building 1	21 levels	71.1m above Australian Height Datum (AHD)
Building 2	8 levels	32.1m above Australian Height Datum (AHD)
Building 3	13 levels	47.1m above Australian Height Datum (AHD)
Building 4	13 levels	47.1m above Australian Height Datum (AHD)
Building 5	16 levels	56.1m above Australian Height Datum (AHD)
Building 6	12 levels	44.1m above Australian Height Datum (AHD)
Building 7	12 levels	44.1m above Australian Height Datum (AHD)
Building 8	13 levels	47.1m above Australian Height Datum (AHD)
Building 9A	16 levels	56.1m above Australian Height Datum (AHD)
Building 9B	8 levels	32.1m above Australian Height Datum (AHD)
Building 10	16 levels	56.1m above Australian Height Datum (AHD)
Building 11	13 levels	47.1m above Australian Height Datum (AHD)
Building 12	21 levels	71.1m above Australian Height Datum (AHD)
Building 13	5 levels	26.1m above Australian Height Datum (AHD)

At a maximum height of 71.1 metres above the Australian Height Datum (AHD), 5 of the proposed buildings will penetrate the Inner Horizontal Surface of the Obstacle Limitation Surface (OLS) for Sydney (Kingsford Smith) Airport at 51 metres AHD and would infringe by up to 20.1 metres.

The currently proposed operation is not a short term activity in accordance with the Regulations and therefore constitutes a “controlled activity” under Section 182 of the *Airports Act 1996* (the Act). Section 183 of the Act requires that controlled activities cannot be carried out without approval.

Under the Regulations, the Secretary is empowered to make decisions in relation to the approval of controlled activities, and the imposition of conditions on approvals. I have been delegated the Secretary’s powers under the Regulations.

In making my decision, I have reviewed the information and assessments submitted by the proponent, SACL, the Civil Aviation Safety Authority (CASA), Airservices Australia (Airservices) and the airlines. In detail:

- **Airservices** advised on **11 May 2010** that:
 - *The proposed development would not impact on Precision/Non-Precision Nav Aids, HF/VHF Comms, A-SMGCS, Radar, PRM or Satellite/Links. At a maximum height of 71.1m (34ft) AHD, the proposed property development would not affect any sector or circling, nor any approach or departure from Sydney airport. There were no Tower issues.*
- **CASA** had determined on **11 May 2010** that:
 - *Buildings 1, 5, 9A, 10 and 12 will be hazardous objects as per CASR 139.370 because of their location, height and lack of marking.*
 - *Buildings 1 and 12 create the greatest hazard and should be obstacle lit with medium intensity obstacle lights in accordance with MOS part 139-Aerodromes, Chapter 9, Subsection 9.4.*
- **Airlines’** comments are as follows:
 - **Jetstar** advised “*The development will not affect any of our procedures.*”
 - **Qantas** advised “*the above development would have no impact on Qantas operations.*”
 - **Rex** advised that “*No problems with this one.*”
 - **Virgin Blue** advised that “*based on AsA’s assessment Virgin Blue Group has no objection to this Property Development.....*”
- **SACL** advised on **12 May 2010** its recommendations for conditions to be imposed:
 - *“the maximum height of buildings 1 and 12 may not exceed 71.1m AHD, inclusive of all lift over-runs, vents, chimneys, aerials, TV antennae, construction cranes etc.*
 - *The maximum height of buildings 5, 9A and 10 may not exceed 56.1m AHD inclusive of all lift over-runs, vents, chimneys, aerials, TV antennae, construction cranes etc.*
 - *Buildings 1 and 12 are to be obstruction lit (medium intensity obstacle lights) in accordance with Part 139 of the Manual of Standards issued by the Civil Aviation*

Safety Authority. The obstruction lights must operate 24 hours and be maintained in working order at all times by the proponent.

- *Separate approval must be sought under the Airports (Protection of Airspace Regulations) for any cranes required to construct the buildings. Construction cranes may be required to operate at a height significantly higher than that of the proposed controlled activity and consequently, may not be approved under the Regulations. Therefore SACL advises that approval to operate construction equipment (ie cranes) should be obtained prior to any commitment to construct.*
- *The proponent must notify SACL upon completion of construction of the buildings.*
- *Finished building heights (in AHD) must be provided to SACL upon completion of construction so that it can update its plans and other records for Sydney Airport and its surrounds.*
- *Locations of obstruction lighting must be provided.”*

For further information on aviation impacts please contact Mr Peter Bleasdale of Sydney Airport on (02) 9667 9246.

Decision

I am required under Regulation 14 to approve a proposal unless carrying out the proposal would interfere with the **safety, efficiency or regularity of existing or future air transport operations** into or out of the airport concerned. Regulation 14(1)(b) provides that I may impose conditions on an approval.

Having taken into consideration the information submitted, I conclude that I must **approve the proposal**. In accordance with this Regulation, I **impose the following conditions**:

Conditions for the proponent

- The maximum height of buildings 1 and 12 must not exceed 71.1m AHD, inclusive of all lift over-runs, vents chimneys, aerials, antennae (of whatever type) construction cranes etc; and
- The maximum height of buildings 5, 9A and 10 must not exceed 56.1m AHD, inclusive of all lift over-runs, vents chimneys, aerials, antennae (of whatever type) construction cranes etc; and
- **Buildings 1 and 12** must be obstacle lit with medium intensity obstacle lights in accordance with Manual of Standards for CASR Part 139-Aerodromes, Chapter 9, Section 9.4; and
- A **separate application** must be submitted to SACL for any equipment/crane to be used in the installation of any building that exceeds the approved maximum height in metres AHD of each of the above buildings.
- The proponent must notify SACL upon completion of the development.
- The proponent must provide the data requested by SACL, properly surveyed and verified as accurate to SACL on completion of each building.

Conditions for SACL

- SACL must establish an obstacle light monitoring program in accordance with Manual of Standards Part 139-Aerodromes, Chapter 9, Subsection 9.4.10.

- SACL must raise a **NOTAM to alert all aircraft operators to the location and height of the buildings.**
- SACL (Airside Safety) must **monitor the height of the completed buildings** in order to ensure compliance with this approval.
- SACL is to report any non-compliance to the Department.

I draw to the proponent's attention that **breaches of approval conditions are subject to significant penalties** under Sections 185 and 187 of the Act.

Yours sincerely

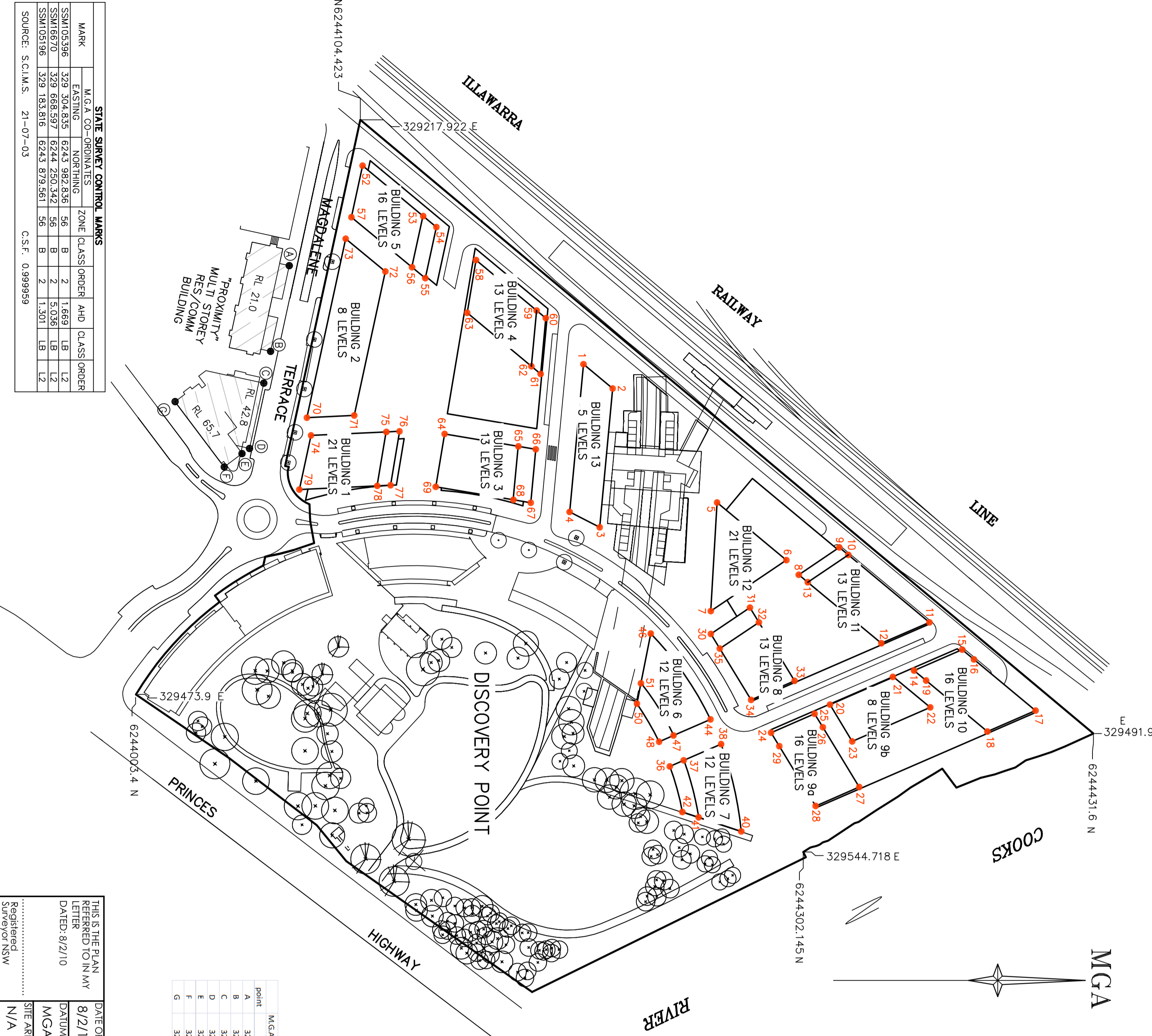
A handwritten signature in black ink, appearing to be 'Dilip Mathew', written over a horizontal line.

Dilip Mathew
Section Head
Aerodrome Precincts
Aviation and Airports Division

8 June 2010

BUILDING ENVELOPE CO-ORDINATES
MGA/AHD

point	east	north	R.L.	building	point	east	north	R.L.	building
1	329327.0	6244204.0	26.1	13	41	329529.2	6244255.4	44.1	7
2	329337.9	6244217.0	26.1	13	42	329526.9	6244248.1	38.1	7
3	329399.8	6244211.3	26.1	13	44	329485.6	6244260.7	44.1	6
4	329392.9	6244197.8	26.1	13	46	329447.2	6244234.0	44.1	6
5	329388.7	6244263.6	71.1	12	47	329492.7	6244244.2	44.1	6
6	329414.5	6244294.6	71.1	12	48	329495.5	6244237.7	38.1	6
7	329437.2	6244260.8	71.1	12	50	329478.5	6244227.9	38.1	6
8	329421.0	6244300.1	41.1	11	51	329469.4	6244229.7	44.1	6
9	329408.8	6244318.2	41.1	11	52	329238.4	6244105.4	56.1	5
10	329412.1	6244322.2	47.1	11	53	329265.8	6244138.4	47.1	5
11	329442.2	6244358.4	47.1	11	54	329286.6	6244133.4	47.1	5
12	329451.6	6244336.9	47.1	11	55	329288.6	6244127.5	56.1	5
13	329424.3	6244304.1	47.1	11	56	329283.7	6244120.4	56.1	5
14	329463.7	6244351.6	47.1	10	57	329261.4	6244100.4	56.1	5
15	329454.4	6244373.0	47.1	10	58	329280.5	6244156.1	47.1	4
16	329458.8	6244378.3	56.1	10	59	329303.0	6244183.1	47.1	4
17	329481.6	6244405.8	56.1	10	60	329306.4	6244187.2	41.1	4
18	329490.9	6244384.3	56.1	10	61	329327.9	6244180.8	47.1	4
19	329468.2	6244356.9	56.1	10	62	329327.9	6244180.8	47.1	4
20	329478.9	6244314.0	32.1	9b	63	329304.1	6244152.1	47.1	4
21	329466.6	6244342.4	32.1	9b	64	329358.1	6244142.0	47.1	3
22	329480.2	6244358.8	32.1	9b	65	329363.7	6244175.0	47.1	3
23	329495.4	6244324.0	32.1	9b	66	329365.0	6244182.7	41.1	3
24	329491.5	6244287.7	47.1	9a	67	329388.8	6244180.5	41.1	3
25	329483.0	6244307.2	47.1	9a	68	329387.5	6244172.7	47.1	3
26	329489.1	6244310.8	56.1	9a	69	329381.7	6244138.1	47.1	3
27	329515.7	6244327.1	56.1	9a	70	329350.9	6244080.6	32.1	2
28	329524.2	6244307.7	56.1	9a	71	329349.9	6244101.7	32.1	2
29	329497.5	6244291.4	56.1	9a	72	329285.6	6244115.6	32.1	2
30	329447.4	6244260.9	38.1	8	73	329271.0	6244097.9	32.1	2
31	329435.7	6244278.3	38.1	8	74	329358.8	6244082.4	71.1	1
32	329442.2	6244282.3	47.1	8	75	329357.2	6244116.0	71.1	1
33	329468.3	6244298.2	47.1	8	76	329356.9	6244121.9	62.1	1
34	329476.8	6244278.8	47.1	8	77	329381.0	6244117.9	62.1	1
35	329453.9	6244264.9	47.1	8	78	329381.3	6244112.0	71.1	1
36	329506.5	6244242.5	38.1	7	79	329382.9	6244077.2	71.1	1
37	329503.8	6244248.7	44.1	7					
38	329496.6	6244265.4	44.1	7					
40	329535.5	6244274.4	44.1	7					



MGA CO-ORDINATES			
point	east	north	AHD
A	329 283.0	6244 072.7	21
B	329 321.3	6244 064.4	21
C	329 335.4	6244 061.3	42.8
D	329 364.6	6244 054.9	42.8
E	329 366.9	6244 051.6	65.7
F	329 372.8	6244 043.7	65.7
G	329 343.7	6244 021.6	65.7

NOTES
1) THE BUILDING OUTLINE HAS BEEN TAKEN FROM CAD PLANS SUPPLIED BY
BY BAILESMART PTY LTD DRAWING NO:SK-001, DATED:02-02-2010

0 25 50 75 100 125
1:1250

STATE SURVEY CONTROL MARKS					
MARK	M.G.A CO-ORDINATES		ZONE	CLASS ORDER	AHD CLASS ORDER
SSM1053396	329 304.835	6243 982.836	56	B 2	1.669 LB L2
SSM16670	329 668.597	6244 250.342	56	B 2	5.036 LB L2
SSM105196	329 183.816	6243 879.561	56	B 2	1.301 LB L2
SOURCE: S.C.I.M.S. 21-07-03 C.S.F. 0.999959					

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED: 8/2/10		DATE OF COMP: 8/2/10	Registered Surveyors NSW 19 Macsey Street Gladesville NSW 2111 PO BOX 400 Gladesville NSW 1675 ph:(02) 9879 6077 fax:(02) 9879 7143		CLIENT: AUSTRALAND HOLDING PLAN SHOWING MGA AND AHD CO-ORDINATES OF PROPOSED BUILDINGS 1 TO 13 AT "DISCOVERY POINT" WOLLI CREEK.	ORIGINAL PLAN SIZE: A2 1:1250 PROJECT No: 27000 JOB REFERENCE: 32692
Registered Surveyor NSW		DATUM: MGA/AHD	SITE AREA: N/A		LGA: ROCKDALE	SHEET OF 1 SHEETS 1

FAD LYNNE BARRINGTON

ENQUIRY FORM

AVIATION EFFECTS ON AIRPORT ENVIRONMENTS

Airport Design Services

Sydney Airports Corporation Ltd

Locked Bag 5000,

Sydney International Airport. NSW. 2020

Phone: (02) 9667-9111; Facsimile: (02) 8338-4994

Email: CADDServices@syd.com.au



To obtain information on the effects of Aviation in the vicinity of Airports within the Sydney Basin, please complete this form and return to the details above:-

(1) Applicants Name: DISCOVERY POINT PTY LTD (C/O CHRIS POPE)

(2) Postal Address: L3, 1C HOMEBUSH BAY DRIVE, RHODES, NSW

(3) Telephone: 9767 2235 Postcode: 2138

Fax: 9767 2944

Mobile Phone No.: 0409575897 Email: cpope@australand.com.au

(4) Address of Site: DISCOVERY POINT, 1 MAGDARENE TCE, WOLLACREEK

(5) Nearest Cross Street: BRODIE SPARK DRIVE Postcode: 2205

(6) UBD Reference (if available) MAP 274 Q4

(7) Purpose of enquiry: ☒ Development ☒ Structure Height ☒ Construction Crane or Other

FOR CRANE OPERATIONS ONLY: Please supply the following information.

Mapping Grid of Australia (MGA94): Co-ordinates- PLEASE REFER E

ATTACHED PLAN N

Resting Crane Height in metres (AHD): —

Maximum Operating Height in metres (AHD): — (Compulsory)

Period of Operation: — (Compulsory)

Hours of Operation: — (Compulsory)

File No.: 10/00101

Reg No.: 10/0075

Your Ref.:

11 June, 2010

Mr Chris Pope
Discovery Point Pty Ltd
Level 3 1C Homebush Bay Drive
RHODES NSW 2138

Dear Chris,

**PROPERTY DEVELOPMENT - DISCOVERY POINT, 1 MAGDALENE
TERRACE, WOLLI CREEK**

I refer to your recent application for information on obstacles in regard to the above development.

Height Restrictions

The PROPERTY DEVELOPMENT at DISCOVERY POINT, 1 MAGDALENE TERRACE, WOLLI CREEK lies within an area defined in schedules of the Civil Aviation (Buildings Control) Regulations which limit the height of structures to 50 feet (15.24 metres) above existing ground height (AEGH) without prior approval of the Civil Aviation Safety Authority.

In this instance, I, Peter Bleasdale, as an authorised person of the Civil Aviation Safety Authority (CASA), under Instrument Number: CASA (BC) 01/1998, and in my capacity as A/Manager CADD Services, have no objection to the erection of the following buildings:

- Building 2: 8 levels - 32.1m above Australian Height Datum (AHD)
- Building 3: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 4: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 6: 12 levels - 44.1m above Australian Height Datum (AHD)
- Building 7: 12 levels - 44.1m above Australian Height Datum (AHD)
- Building 8: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 9B: 8 levels - 32.1m above Australian Height Datum (AHD)
- Building 11: 13 levels - 47.1m above Australian Height Datum (AHD)
- Building 13: 5 levels - 26.1m above Australian Height Datum (AHD)

The approved heights are inclusive of all lift over-runs, vents, chimneys, aerials, TV antennae, construction cranes etc.

Should you wish to exceed these heights, a new application must be submitted.

Should the height of any temporary structure and/or equipment be greater than 50 feet (15.24 metres) above existing ground height (AEGH), a new approval must be sought in accordance with the Civil Aviation (Buildings Control) Regulations Statutory Rules 1988 No. 161.

**Sydney Airport
Corporation Limited**
ABN 62 082 578 809

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Sydney International
Airport NSW 2020
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61 2 9667 9111
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Construction cranes may be required to operate at a height significantly higher than that of the proposed controlled activity and consequently, may not be approved under the Airports (Protection of Airspace) Regulations.

SACL advises that approval to operate construction equipment (ie cranes) should be obtained prior to any commitment to construct.

Information required by SACL prior to any approval is to include:

- the location of any temporary structure or equipment, ie. construction cranes, planned to be used during construction relative to Mapping Grid of Australia 1994 (MGA94);
- the swing circle of any temporary structure/equipment used during construction;
- the maximum height, relative to Australian Height Datum (AHD), of any temporary structure or equipment ie. construction cranes, intended to be used in the erection of the proposed structure/activity;
- the period of the proposed operation (ie. construction cranes) and desired operating hours for any temporary structures.

Any application for approval containing the above information, should be submitted to this Corporation at least 35 days prior to commencement of works in accordance with the Airports (Protection of Airspace) Regulations Statutory Rules 1996 No. 293, which now apply to this Airport.

For further information on Height Restrictions please contact Ms Lynne Barrington on (02) 9667-9217.

Under Section 136 of the Airports Act 1996, it is an offence not to give information to the Airport Operator that is relevant to a proposed "controlled activity" and is punishable by a fine of up to 50 penalty units.

The height of the prescribed airspace at the site is 51.0 metres above Australian Height Datum (AHD). In accordance with Regulation 9 of the Airports (Protection of Airspace) Regulations Statutory Rules 1996 No. 293, "a thing to be used in erecting the building, structure or thing would, during the erection of the building, structure or thing, intrude into PANS OPS airspace for the Airport, cannot be approved".

Bird and Obstacle Hazard Management

The area in which the proposed development is located is immediately adjacent to Runway 16R/34L and 07/25. To minimise the potential for bird habitation and roosting, the Proponent must ensure that the following plans are prepared prior to construction commencing:

- Landscape Plan which only includes non-bird attracting plant species;
- Site Management Plan which minimises the attractiveness for foraging birds, i.e. site is kept clean regularly, refuse bins are covered, and detention ponds are netted.
- The proposed development incorporates anti-bird roosting measures to discourage bird habitation

The Proponent must consult with Sydney Airport Corporation Limited on the preparation of each plan.

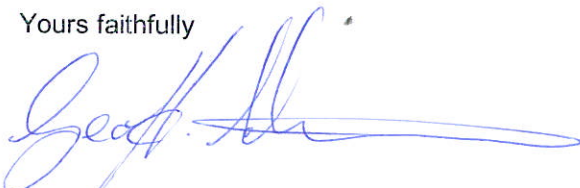
All trees to be planted shall not be capable of intruding into the Obstacle Limitation Surface when mature.

Planning for Aircraft Noise and Public Safety Zones

Current planning provisions (s.117 Direction 3.5 NSW Environmental Planning and Assessment Act 1979) for the assessment of aircraft noise for certain land uses are based on the Australian Noise Exposure Forecast (ANEF). The current ANEF for which Council may use as the land use planning tool for Sydney Airport was endorsed by Airservices Australia on 13 March 2009 (Sydney Airport 2029 ANEF).

Whilst there are currently no national aviation standards relating to defining public safety areas beyond the airport boundary, it is recommended that proposed land uses which have high population densities should be avoided.

Yours faithfully



for:

Peter Bleasdale
A/Manager CADD Services
Sydney Airport

CC: Joseph Chan – Senior Planning Manager, SACL



Australian Government

**Department of Infrastructure, Transport,
Regional Development and Local Government**

TO: Peter Bleasdale Airfield Design Manager Sydney Airport corporation Ltd peter.bleasdale@syd.com.au Lynne Barrington Sydney Airport Corporation Ltd lynne.barrington@syd.com.au Cc Kevin Dyer Civil Aviation Safety Authority kevin.dyer@casa.gov.au	Steve Tattam Airservices Australia steve.tattam@AirservicesAustralia.com FROM Bill Hatossy Aerodrome Precincts Aviation and Airports Division 02 6274 6252 flysafe@infrastructure.gov.au
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**APPROVAL UNDER THE AIRPORTS (PROTECTION OF AIRSPACE)
REGULATIONS 1996:**

- PROPERTY DEVELOPMENT: Discovery Point
- 1 Magdalene Terrace
- Wolli Creek, NSW

I refer to the above application, submitted to the Department on **12 May 2010** by the Sydney Airport Corporation Ltd (SACL) on behalf Discovery Point Pty Limited (the proponent), of the mixed use development of 14 multi-storey buildings at 1 Magdalene Terrace, Wolli Creek NSW for approval for 5 of the buildings under the Airports (Protection of Airspace) Regulations 1996 (the Regulations).

Building 1	21 levels	71.1m above Australian Height Datum (AHD)
Building 2	8 levels	32.1m above Australian Height Datum (AHD)
Building 3	13 levels	47.1m above Australian Height Datum (AHD)
Building 4	13 levels	47.1m above Australian Height Datum (AHD)
Building 5	16 levels	56.1m above Australian Height Datum (AHD)
Building 6	12 levels	44.1m above Australian Height Datum (AHD)
Building 7	12 levels	44.1m above Australian Height Datum (AHD)
Building 8	13 levels	47.1m above Australian Height Datum (AHD)
Building 9A	16 levels	56.1m above Australian Height Datum (AHD)
Building 9B	8 levels	32.1m above Australian Height Datum (AHD)
Building 10	16 levels	56.1m above Australian Height Datum (AHD)
Building 11	13 levels	47.1m above Australian Height Datum (AHD)
Building 12	21 levels	71.1m above Australian Height Datum (AHD)
Building 13	5 levels	26.1m above Australian Height Datum (AHD)

At a maximum height of 71.1 metres above the Australian Height Datum (AHD), 5 of the proposed buildings will penetrate the Inner Horizontal Surface of the Obstacle Limitation Surface (OLS) for Sydney (Kingsford Smith) Airport at 51 metres AHD and would infringe by up to 20.1 metres.

The currently proposed operation is not a short term activity in accordance with the Regulations and therefore constitutes a “controlled activity” under Section 182 of the *Airports Act 1996* (the Act). Section 183 of the Act requires that controlled activities cannot be carried out without approval.

Under the Regulations, the Secretary is empowered to make decisions in relation to the approval of controlled activities, and the imposition of conditions on approvals. I have been delegated the Secretary’s powers under the Regulations.

In making my decision, I have reviewed the information and assessments submitted by the proponent, SACL, the Civil Aviation Safety Authority (CASA), Airservices Australia (Airservices) and the airlines. In detail:

- **Airservices** advised on **11 May 2010** that:
 - *The proposed development would not impact on Precision/Non-Precision Nav Aids, HF/VHF Comms, A-SMGCS, Radar, PRM or Satellite/Links. At a maximum height of 71.1m (34ft) AHD, the proposed property development would not affect any sector or circling, nor any approach or departure from Sydney airport. There were no Tower issues.*
- **CASA** had determined on **11 May 2010** that:
 - *Buildings 1, 5, 9A, 10 and 12 will be hazardous objects as per CASR 139.370 because of their location, height and lack of marking.*
 - *Buildings 1 and 12 create the greatest hazard and should be obstacle lit with medium intensity obstacle lights in accordance with MOS part 139-Aerodromes, Chapter 9, Subsection 9.4.*
- **Airlines’** comments are as follows:
 - **Jetstar** advised “*The development will not affect any of our procedures.*”
 - **Qantas** advised “*the above development would have no impact on Qantas operations.*”
 - **Rex** advised that “*No problems with this one.*”
 - **Virgin Blue** advised that “*based on AsA’s assessment Virgin Blue Group has no objection to this Property Development.....*”
- **SACL** advised on **12 May 2010** its recommendations for conditions to be imposed:
 - *“the maximum height of buildings 1 and 12 may not exceed 71.1m AHD, inclusive of all lift over-runs, vents, chimneys, aerials, TV antennae, construction cranes etc.*
 - *The maximum height of buildings 5, 9A and 10 may not exceed 56.1m AHD inclusive of all lift over-runs, vents, chimneys, aerials, TV antennae, construction cranes etc.*
 - *Buildings 1 and 12 are to be obstruction lit (medium intensity obstacle lights) in accordance with Part 139 of the Manual of Standards issued by the Civil Aviation*

Safety Authority. The obstruction lights must operate 24 hours and be maintained in working order at all times by the proponent.

- *Separate approval must be sought under the Airports (Protection of Airspace Regulations) for any cranes required to construct the buildings. Construction cranes may be required to operate at a height significantly higher than that of the proposed controlled activity and consequently, may not be approved under the Regulations. Therefore SACL advises that approval to operate construction equipment (ie cranes) should be obtained prior to any commitment to construct.*
- *The proponent must notify SACL upon completion of construction of the buildings.*
- *Finished building heights (in AHD) must be provided to SACL upon completion of construction so that it can update its plans and other records for Sydney Airport and its surrounds.*
- *Locations of obstruction lighting must be provided.”*

For further information on aviation impacts please contact Mr Peter Bleasdale of Sydney Airport on (02) 9667 9246.

Decision

I am required under Regulation 14 to approve a proposal unless carrying out the proposal would interfere with the **safety, efficiency or regularity of existing or future air transport operations** into or out of the airport concerned. Regulation 14(1)(b) provides that I may impose conditions on an approval.

Having taken into consideration the information submitted, I conclude that I must **approve the proposal**. In accordance with this Regulation, I **impose the following conditions**:

Conditions for the proponent

- The maximum height of buildings 1 and 12 must not exceed 71.1m AHD, inclusive of all lift over-runs, vents chimneys, aerials, antennae (of whatever type) construction cranes etc; and
- The maximum height of buildings 5, 9A and 10 must not exceed 56.1m AHD, inclusive of all lift over-runs, vents chimneys, aerials, antennae (of whatever type) construction cranes etc; and
- **Buildings 1 and 12** must be obstacle lit with medium intensity obstacle lights in accordance with Manual of Standards for CASR Part 139-Aerodromes, Chapter 9, Section 9.4; and
- A **separate application** must be submitted to SACL for any equipment/crane to be used in the installation of any building that exceeds the approved maximum height in metres AHD of each of the above buildings.
- The proponent must notify SACL upon completion of the development.
- The proponent must provide the data requested by SACL, properly surveyed and verified as accurate to SACL on completion of each building.

Conditions for SACL

- SACL must establish an obstacle light monitoring program in accordance with Manual of Standards Part 139-Aerodromes, Chapter 9, Subsection 9.4.10.

- SACL must raise a **NOTAM to alert all aircraft operators to the location and height of the buildings.**
- SACL (Airside Safety) must **monitor the height of the completed buildings** in order to ensure compliance with this approval.
- SACL is to report any non-compliance to the Department.

I draw to the proponent's attention that **breaches of approval conditions are subject to significant penalties** under Sections 185 and 187 of the Act.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Dilip Mathew', written over a horizontal line.

Dilip Mathew
Section Head
Aerodrome Precincts
Aviation and Airports Division

8 June 2010

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